59. Categories of word-formation

Abstract

Categories such as agent noun, place noun, or gender marking, are the oldest, most common and most widely used semantic categories in word-formation, providing a suitable onomasiological basis for crosslinguistic comparison. Among the proposals to group such categories into more general semantic sets, the most well-known – especially in Slavic linguistics – is the one proposed by the Czech linguist Miloš Dokulil, who distinguished transposition, mutation and modification. In the present article, a more refined classification will be proposed.

Key-words:

category of word-formation, functional operation, modification, profiling, recategorisation, uniting, conceptual innovation

1. Categories of word-formation and function-oriented approaches

The main objective of this article is to present the typologically most prominent categories of word-formation, grouping sets of examples from English and from Slavic, the language subgroup which uses derivation to a greater extent than any other language group at least among the Indo-European languages. Categories of word-formation, i.e. sets of types or rules of word-formation with the same function, are the oldest and to this day the most common function-oriented descriptive tool used in word-formation. We define a function as a meaning component of a constituent form F, which is substituted or added or removed if F is substituted or added or removed. For example, the function 'the referent is the agent' is common to English deverbal derivatives with the suffixes *-ant* (*applicant*), *-er* (*teacher*), *-or* (*demonstrator, sailor*), *-ar* (*liar*), or Russian derivatives with the suffixes *-ant* (*konsul'tant* 'adviser'), *-ar* (*povar* 'cook'), *-ar'* (*tokar'* 'turner'), *-ator* (*restavrator* 'restorer'), *-ač* (*tkač* 'weaver'), *-nik* (*pomoščnik* 'assistant'), *-tel'* (*pisatel'* 'writer'), etc. Most of the articles in chapter VII of this Handbook ("Semantics and pragmatics in word-formation II: Special cases") are dedicated to categories of word-formation of this type.

Malkiel (1978: 141–142) called derivational categories the best "technique" for classifying derivational suffixes. A full description of categories of word-formation in Spanish along these lines is given in Rainer (1993: 193–244), who defines a category of word-formation as a set of rules of word-formation having identical meaning. For

various definitions of categories of word-formation in Slavic linguistics see Ohnheiser (2000).

Bauer (2002) gave a survey of major categories of derivation in his typological sample of more than 40 languages from different language families. He found that

a) the most frequent nominal derivational categories are deverbal abstract nouns and deverbal personal/agent nouns, followed by denominal diminutives and abstract nouns derived from nouns or adjectives (Bauer 2002: 40),

b) the most frequent verbal derivational categories are deverbal transitives, causatives, intensives, intransitives and denominal verbs (Bauer 2002: 41),

c) the most frequent adjectival and adverbial derivational categories are transpositions of other word classes (denominal adverbs and adjectives, etc., cf. Bauer 2002: 42).

Not surprisingly, the most frequent derivational categories, especially the verbal, adjectival, and adverbial ones, come close to inflectional categories, in other words, they show a high degree of grammaticalisation.

Just as rules of word-formation are grouped together in categories of word-formation, these categories can be further grouped into more general classes on the basis of functional similarities. A first important step in this direction was Kuryłowicz's (1936) distinction between *dérivation lexicale* and *dérivation syntaxique*. *Dérivation syntaxique* is a change in the primary syntactic function, which is, according to Kuryłowicz, part of the meaning of any content word. This change can be effected not only by derivational suffixes, but also by inflection (e.g., case endings) or context (e.g., word order), the lexical meaning (*valeur lexicale*) remaining unaffected. With *dérivation lexicale* additional semantic components come into play, changing the lexical meaning of a content word. It often presupposes *dérivation syntaxique*: "Quand on dit: *la hauteur de cette montagne*, il ne s'agit pas de la qualité d'être haut, mais de la dimension verticale, et nous nous trouvons […] en face d'une derivation à deux étapes: 1 *être haut → hauteur* (= qualité d'être haut) représente la dérivation syntaxique; 2 *hauteur* (= qualité d'être haut) → *hauteur* (= dimension verticale) représente la dérivation lexicale" ['When we say: *the height of this mountain*, we are not speaking about the quality of being high but about the mountain's vertical dimension, and we are [...] confronted with a derivation in two steps: 1 *to be high → height* (= the quality of being high) represents the syntactic derivation, 2 *height* (= the quality of being high) → *height* (= vertical dimension) is the lexical derivation.'] (Kuryłowicz 1936: 86). Notwithstanding the fact that Kuryłowicz is mainly concerned with the syntax of the parts of speech, his theory shows the various forms which a language and languages in general use to change the syntactical and lexical functions of content words. Hence this change is a first step to an onomasiological description of derivation in a broad sense, comprising word-formation.

A problem of purely onomasiological descriptions is the degree of granularity of notional categories. Motsch's "list of the most important elementary predicates" occuring in semantic patterns ("semantische Muster") comprises 60 items (Motsch 2004: 455–458). The onomasiological descriptors proposed by Deltcheva-Kampf (2000: 321–355) go down to categories like 'exam' (marked by Hungarian *-beli* and *-i*) or 'disease' (marked in Finnish, Hungarian, and Russian, e.g., R. *-anka* in *vodjanka* 'hydropsy' or *-izm* in *alkogolizm*). *-ism* in English, denoting a system of believe or theory (e.g., *marxism*) or a characteristic way of speaking (e.g., *malapropism*) is an analogous example, cited by Aronoff (1984). Another example is the prefix *mag-* (plus

reduplication) in Tagalog which can denote (with reduplication) 'vendor of the product designated by the base' or (without reduplication) 'two relatives, one of whom bears to the other the relation designated by the base' (Aronoff 1984: 48–49; for more examples see Bauer 2002: passim). Derivational categories like these induce Aronoff to deny the possibility of establishing a neat delimination between the semantics of words ("meanings which are more typical of lexical categories like noun, verb or adjective") and derivational semantics. As derivational categories cannot be confined to such notions as *abstract/concrete*, *mass/count*, and thematic roles, "even the less restricted theory of the semantics of derivation, which allows reference to syntacticosemantic dimensions, must be untenable" (Aronoff 1984: 48). In an onomasiological description of a specific language, such morphemes figure in a list of idiosyncratic items which lack onomasiological generalisation.

2. Describing categories of word-formation

2.1. Dokulil's categories

The first comprehensive function-oriented theory with a corresponding description of Czech derivation was presented by Dokulil (1962, 1968). His approach, and in particular the derivational operations "modification" and "transposition", were incorporated into the leading grammars of Polish (Grzegorczykowa, Laskowski and Wróbel 1998) and Russian (Švedova 1980). In a short article, Coseriu (1977) took an analogous path. Raecke (1999) presented Russian word-formation showing the terminological parallelism of Dokulil and Coseriu.

Dokulil's approach had an enormous influence on word-formation research in Slavic studies and in Eastern German linguistics. In Motsch's (2004) function-oriented monograph about German word-formation, however, there is no mention of Dokulil at all, even though many parallel terms are used due to the analogy of the subject and the onomasiological direction of the description. Neither he nor Fleischer and Barz (1995) make any mention of Kuryłowicz's (1936) relatively well-known French article. Motsch's (2004) descriptive basis consists of "word-formation patterns" that are represented in the format of predicate logic and for which case roles have a central function (on pp. 455–458 he provides a list of elementary predicates). As usual in such descriptions, the actual presentation of German word-formation is not fully onomasiological. It is structured according to the word class of the results of word-formation (V, A, N), and within these chapters according to the word class of the bases, e.g., deverbal nouns. Only then are onomasiological categories like "pure nominalisation (action nouns)" and "recategorisation and semantic change" encountered.

Dokulil's onomasiological approach is well-suited to comparative investigations into word-formation (see Ohnheiser 1997, 1987 for a comparison of Russian and German). This possibility is, however, not used in Engel's (1999) German-Polish contrastive grammar with its mixture of form-oriented and function-oriented descriptions. Nevertheless, derivational categories such as diminutives or action nouns are applied in lists of words and affixes. For Deltcheva-Kampf (2000), Dokulil's theory

provides the basis for the "contrastive-typological analysis" of Finnish, Hungarian and Russian word-formation, supplemented by the concept of functional operations.

According to Dokulil (1962: 229), "[t]he onomasiological categories form a conceptual basis in which are grounded the categories of word-formation, language facts in the full sense of the word". He distinguishes the following types of onomasiological categories (Dokulil 1962: 229 f.; here cited after the English summary, pp. 220–250):

"The transpositional type in which a phenomenon, usually conceived as a mark [in English texts referring to Dokulil, also translated as '[onomasiological] feature' – V. L.] dependent on a substance (or, possibly, as a determination of the mark), becomes conceived as independent of it (or, possibly, as the mark itself). In other words, one has to do here with (a) an objectivisation of quality […]", i.e. deadjective quality nouns like Cz. *rychlý* 'quick' → *rychlost* 'quickness', (b) "an objectivisation of action", cf. deverbal action nouns (nominalisations) such as Cz. *padat* 'to fall' → *pád, padnutí, padání* 'the fall, the falling', (c) derivations such as Cz. *statečně (žít)* '(to live) bravely' → *statečný (život)* 'a brave (life)'.

"The modificational type, in which the content of a given concept acquires a supplementary modifying mark", comprises the following categories: "diminutive" and "augmentative", "shift of gender", "mark of minor age", "collectiveness", "measure or degree", "supplementary marks denoting place, direction, time, phase, extent, and especially aspect", etc.

Dokulil's "fundamental type" (1968: 209), later called mutational type, is defined by a concept similar to the relation between genus proximum and differentia specifica. The genus proximum can be very explicit (cf. compounds like *business-plan*), very general (cf. derivatives like *writer*) or implicit (cf. conversions like *the green*). It is essentially a model for the onomasiological (functional) description of products of word-formation, as are categories of word-formation. In Fleischer and Barz (1995: 8) modification and transposition are accepted as onomasiological categories of word-formation, whereas mutation is not (cf. also article 132 on German).

Dokulil's examples of derivational categories already contain both purely grammatical types of derivation like verbal aspect and comparison (modification type) and types with a lower degree of grammaticalisation like action nouns (pure nominalisation; transpositional type). Derivation forms a continuum from lexicon to grammar (cf. article 15 on the delimitation of derivation and inflection), especially in Slavic languages, where the transition from lexical to grammatical word-formation concentrates on what Dokulil called transposition, in some languages being fully grammaticalized, e.g., participles or relational adjectives (see section 5.), and deverbal nominalisations like Polish *czytanie*/E. (*the*) *reading*. As shown by the typological findings of Kuryłowicz (1936), blending of syntactical and lexical processes in derivation is possible.

2.2. Functional operations

As indicated above, Dokulil's categories are onomasiological sets of derivational categories. For a full onomasiological system of word-formation his system must be adjusted by extension and differentiation in order to account also for compounding and other types of word-formation with more than one motivating word. This can be

accomplished by functional operations, i.e. rules, describing changes of meaning. Whereas the categories "transposition" and "modification" can be looked upon as functional operations, the category "mutation" should be construed as a set of different functional operations. With the help of functional operations, the way a new meaning is made out of one or two other meanings by word-formation or semantic extension (the development of polysemy) can be synchronically reconstructed. Functional operations are a tool for the description not only synchronic, but also diachronic and ontogenetic word-formation and semantic extension (cf. Lehmann 1999: 229–252; some examples for semantic extension are given below).

Functional operations are defined below in a traditional manner. If the definition of a functional operation is given as an instruction on how to change the definition of the meaning, we get for the operation of profiling applied to the agent noun *writer* the following rule: 'Change in the definition of the motivating word the relation of subordination between the head ('to write') and a subordinate component ('agent')'. For more definitions in the form of instructions concerning functional operations see Lehmann (1999: § 4.3).

On the one hand, functional operations include several categories of word-formation (or structural patterns in the sense employed by Motsch 2004). On the other hand, they differentiate Dokulil's basic type, the onomasiological category of mutation. Analyzing Dokulil's category of mutation, we obtain three functional operations: profiling (cf. section 4.), conceptual innovation (cf. section 7.), and uniting (cf. section 6.).

Word-formation can result in motivated words corresponding to different categories of word-formation, i.e. in polysemous words: R. *golubjatnik* 1. 'pigeon-fancier', 2. 'pigeon-hawk', 3. 'pigeon-house' (← *golub'* 'pigeon'); *kabotažnik* 1. 'coasting vessel', 2. 'coasting-trade sailor' (← *kabotaž* 'coasting trade, cabotage'). Besides such polyfunctional affixes there are, of course, numerous monofunctional affixes, cf. Russian place nouns with the sufix *-l'nja* 'room for …', e.g., *spal'nja* 'bedroom' (← *spat'* 'to sleep').

If a motivating word is polysemous, it is possible that derivation does not operate on all of its meanings. The set of meanings of the derivative *writer* is not identical with the set of *to write*. There is no derivation, e.g., from the meanings 'to make a permanent impression of', 'to make evident or obvious' (*guilt written on his face*), 'to force, effect, introduce, or remove by writing' (*write oneself into fame and fortune*), 'to take part in or bring about (something worth recording)'. Derivational categories select specific senses of the motivating word, the agent noun *writer* selects the meaning 'to author, to compose'. On the other hand, the motivated word can obtain a meaning that is not part of the motivating word (cf. *writer* 'one who writes stock options' (ibid.)).

Thus, a category of word-formation, being an onomasiological category, (i) gathers the types of word-formation, (ii) selects meanings in the motivating word, and (iii) functions in derivational morphemes. Especially with polyfunctional affixes, the derivational categories depend on the notional system of the description applied. A higher degree of objectivisation can be obtained when the meanings of monofunctional affixes are generalized and the differentiating power of distribution is used. It is even more objective yet when a cross-linguistic, typological or universal perspective is adopted. Furthermore, categories of word-formation, like any onomasiological description, presuppose a semasiological analysis (from form to meaning).

3. Modifying categories

In descriptions of word-formation the term "modification" is widely used for operations that do not affect the essentials of the meaning of the motivating word. For Dokulil, it is by means of modification that "the content of a given concept acquires a supplementary modifying mark [feature]" (Dokulil 1962: 229). The addition of a meaning component is the most frequent, but not the only way to realize modification. Defined as a functional operation, modification refers to the changes in meaning that arise by adding or substituting a component in the motivating meaning without altering the conceptual prototype. The relation between the motivating and the motivated word is therefore hyponymic (addition of meaning, e.g., 'little, dear') or co-hyponymic (substitution of meaning, e.g., 'female' for 'male').

Diminutives, hypocoristics, augmentatives, and the marking of degrees (intensification) are products of modification. Diminutives are formed by adding the semantic component 'little', e.g., R. *stolik* 'little table' (← *stol* 'table'), E. *hillock* (← *hill*), augmentatives by adding the semantic component 'big, great' (R. *stolišče* 'big table' (← *stol* 'table', E. *superpower*), hypocoristics by adding the pragmatic component 'I want to be near to you (using this word)' (cf. also Wierzbicka 1992: 251), e.g., R. *anekdotec* (← *anekdot* 'joke'), *matuška* (← *mat'* 'mother'), *bel'eco* (← *bel'ë* 'underwear, linen'). Pejoratives are formed by adding components like 'I don't like the referent of this word', cf. *redneck*, *faith-head*, P. *dziewczynisko* 'brat' (← *dziewczyna* 'girl'), *babsko/babsztyl* 'jade' (← *baba* '(old, country) woman'). Furthermore, it is not only in Slavic that diminutives are often functionally clustered with hypocoristic meaning, and augmentatives with pejorative meaning. Usually it is the context which underpins the semantic or the pragmatic component in these clusters.

Intensification (cf. article 75), the marking of degrees by adding components like 'very', 'more', 'less', in principle operates on verbs and adjectives, as in E. *reddish* (← *red*), R. *grubovatyj* 'rather, somewhat rude' (← *grubyj* 'rude'). Some of the so-called aktionsart-derivatives in Slavic have an intensifying meaning.

Aktionsarten in Slavic and German linguistics are mostly defined as a type of derivation; they are categories of deverbal verb derivatives, some aktionsarten having grammatical or semi-grammatical status (see section 4. and 5. on the operations of profiling and recategorisation). The other aktionsarten are lexical derivatives, as a rule by modification. There are analogous forms in German, but in Slavic they either have an aspectual partner of their own or don't have one depending on the language and on the aktionsart involved. Here are some examples from Russian, giving an impression of the types of aktionsart (all derivatives are telic verbs, except for iterative and comitative verbs):

a) Finitive action 'to bring sth. to an end', e.g., *dopet'* (← *pet'* 'to sing');

b) Exhaustive action 'to perform an action up to an exhausting degree', e.g., *ubegat'sja* (← *begat'* 'to run');

c) Saturative action 'to perform sth. up to a wholly satisfying degree', e.g., *nabegat'sja* 'to have one's fill of running' (← *begat'* 'to run');

d) Total action 'to perform sth. covering all objects or all parts of the object', e.g., *izbegat'* (*les*) 'to run all over (the forest)' (← *begat'* 'to run');

e) Cumulative action 'performing the action to achieve a considerable amount of sth.', e.g., *nabegat' (40 km)* 'to cover a total distance (of 40 km)' (← *begat'* 'to run');

f) Evolutive action 'to come gradually to the process of doing sth.', e.g., *razbegat'sja* 'to run up, to take a run' (← *begat'* 'to run');

g) Attenuative action 'to perform sth. to a lesser degree', e.g., *poprideržat'* (← *prideržat'* 'to hold (back)');

h) Intensive action 'to perform sth. with a high degree of intensity', e.g., *derganut'* (← *dergat'* 'to pull');

i) Iterative action 'to habitually realize the situation', e.g., *siživat'* (← *sidet'* 'to sit');

j) Comitative action 'to perform a parallel action', e.g., *podpevat'* 'to sing along (with)' (← *pet'* 'to sing').

The lexical morphemes forming aktionsart-verbs do not have a local, but rather a non-local, qualitative or quantitative meaning. Local prefixes and their semantic derivatives as in G. *ein-treten* 1. 'to enter (a room, …)', 2. 'to join (the EU, …)' modify the meaning of dynamic verbs, especially verbs of motion. In the Slavic languages they have, as a rule, a grammatical aspectual partner, e.g., R. *vojti* (perfective) 'to enter' → *vchodit'* (imperfective), *výrezat'* (perfective) 'to cut out' → *vyrezát'* (imperfective). In the Slavic languages, or, e.g., in German, the local prefixes partly coincide with local prepositions and can denote all sorts of directions and locations.

There are other operations of modification as well. Individual nouns can be changed to collective nouns, i.e. nouns for groups of persons or things, adding the component 'group of' and presupposing the plural, e.g., R./E. *krest'janstvo/peasantry* (← *krest'jane/peasants*), *listva/leafage* (← *list'ja/leaves*), *dubnja/oakery* (← *duby/oaks*).

If status nouns (cf. article 73) are products of word-formation, a component 'status or state of …' is added, cf. R./E. *korolevstvo/kingship* (← *korol'/king*), *detstvo/childhood* (← *deti/child*), *družba/friendship* (← *drug/friend*).

Negation as a device in word-formation (cf. article 76 on negation in Slavonic and Germanic languages) – e.g., E. *illogical*, *discontented*, R. *nechorošij* 'not good' (← *chorošij* 'good'), *bezporjadok* 'disorder' (← *porjadok* 'order') – adds a negative or privative component to the motivated word and thereby changes the mostly positive default of the motivating word.

An operation of modification by semantic substitution is the operation of gender marking (see also article 65). The dynamics in the extension of gender marking differ depending on political and linguistic factors (cf., e.g., Łaziński 2006 for Polish).

As the operation of modification has a stricter definition than Dokulil's category "modification", most of the "supplementary marks denoting place, direction, time, phase, extent, and especially aspect" (cf. section 2.1.), with the exclusion of 'extent', do not belong to modification, but to extrinsic profiling (see section 4.). Aspect belongs to the operation of recategorisation, profiling and modification (cf. Lehmann 2005), but as it has the status of a grammatical category, its classification is not commented on here.

The operation of modification can also apply to semantic extension, but relatively seldom, e.g., E. *quality* in the meaning 'high quality' (cf. *a man of quality*), R. *plavat'* 1. 'to swim', 2. 'to be able to swim'.

4. Profiling categories

Profiling categories change the highlighting of a component in the motivating lexical concept. The term "profiling" goes back to Langacker (1987); in this article it is not used in a manner totally equivalent to Langacker's use of the term, but is also based on

the gestalt concept of figure and ground. The functional operation of profiling consists in shifting the figure-status (the semantic focus, the highlighted component) from one component of a meaning to another component. It applies above all to parts of situations, especially to the arguments of situations denoted by verbs. An example can be seen in agent nouns like E. *writer*/R. *pisatel'*/G. *Schreiber*. With a simple notation the formula for 'to write' is 'WRITE (Agent, Effect)' with the predicate 'write' profiled, while the formula for 'writer' is 'Write (AGENT, Effect)', where the 'agent' is profiled. While 'WRITE (Agent, Effect)' corresponds to the action meaning of *writing* or R. *pisanie*, the second, metonymical, meaning of the derivatives *writing* (cf. *the writings of Chaucer*) or R. *pisanie* (cf. *Svjaščennoe Pisanie* 'Holy Scripture') profiles the effect: 'Write (Agent, EFFECT)'. Profiling corresponds to what has also been called topicalisation (cf. Brekle 1970: 127–140).

Profiling in word-formation usually applies to the elements of a dynamic situation (including, as seen above, the predicate-argument-structure of a situation and its phases), of a script (time and place), or of a frame (parts and whole). In the typological sample of Bauer the hierarchy of thematic roles is: "agent is more frequent than instrument is more frequent than location" (Bauer 2002: 41).

Categories of word-formation profiling arguments: A g e n t n o u n s (cf. article 72), e.g., *writer*, R. *kuritel'* 'smoker' (← *kurit'* 'to smoke'); p a t i e n t n o u n s (cf. article 72a.), e.g., R. *podarok* 'gift' (← *podarit'* 'to make a present'), P. *kochanek* 'lover (beloved)' (← *kochać* 'to love'), P. *strata* 'loss' (← *stracić* 'to lose'); i n s t r u m e n t n o u n s (cf. article 72), e.g., R. *ukazatel'* 'pointer' (← *ukazat'* 'to point'). Profiling can also apply to the argument structure of motivating adjectives and nouns, cf. R. *fokusnik* 'conjurer, person who performs magic tricks' (← *fokus* 'hocus-pocus, trick performed by a magician or juggle').

Categories of word-formation profiling the p o s s e s s o r o f a q u a l i t y : E. *weekling*, *sweetling*, etc., G. *Fremdling* 'stranger', *Neuling* 'newcomer', etc. (cf. Baeskow 2002: 624), P. *głupiec* 'idiot' (← *głupi* 'stupid').

Deverbal nominalisations (abstract nouns) often develop a second, metonymic meaning by profiling the result of the action, cf. E. *work*, G. *Arbeit,* R. *rabota*: 'to be active in order to obtain a physical or mental product' → (by word-formation) 'activity directed toward the physical or mental production of something' → (by semantic extension) 'physical or mental product of an activity'; cf. section 5.

Categories of word-formation profiling parts of situations (p h a s e m a r k i n g): When pure phases are marked by affixes, the operation is considered by many authors to be semi-grammatical in Slavic, e.g., R. *zaplakat'* 'to begin to weep'. When it conveys additional meaning, the operation is lexical, in Slavic subsumed under aktionsarten: *doigrat'* 'to play to the end, to finish playing'. The operation of profiling makes it possible to reconstruct word-formation as well as metonymic polysemy. In both cases there is a change of semantic focus, i.e. of the profile, on intrinsic or extrinsic components of the meaning, cf. *Kremlin* for 'political power of Russia (residing in the Kremlin)'. Profiling by means of word-formation and semantic extension (metonomy) can be combined, cf. E. *redneck* or R. *bel'ë* 'underwear, linen' → 'washing laundry'.

5. Categories of recategorisation

Recategorisation involves a transfer into another category, whereby the original meaning is superimposed but not deleted. A prominent category consists of words traditionally referred to as a b s t r a c t n o u n s, also known as nominalization (cf. article 71 on nominalization in Hungarian) or action nouns (cf. article 68), e.g., action nouns such as *the reading of x*, or quality nouns such as *the brightness of x*. It corresponds to Dokulil's onomasiological category of transposition and Motsch's (2004) "Umkategorisierung" (= recategorisation). Recategorisation also refers to semantic extension by metaphorisation, which in Russian is frequently – more often than in English or German – combined with derivational word-formation, cf. R. *grib-ok* 'darning mushroom' (← *grib* 'mushroom'), *syn-ok* 'young soldier' (← *syn* 'son').

Examples of transposition given in Dokulil (1962) show that the operation is also used for grammatical (inflectional) marking, e.g., for adjectival participles like E. *reading (student)*/R. *čitajuščij (student)* '(a) reading (student)' and gerunds/adverbial participles like E. *(sat) reading*/R. *(sidel) čitaja* '(sat) reading'. In contrast, deverbal derivatives such as the nouns E. (*the*) *beginning*/R. *načalo*/P. *początek* 'the beginning, start' (← *načat'/począć* 'to begin') have a clear lexical status.

Frequently there is a transitional zone between categories with lexical and grammatical status. In Polish, action nouns are grammaticalized, derivable from all verbs, including many aspect partners, cf. the imperfective *czytanie* (← *czytać* imperfective 'to read') and the perfective *przeczytanie* (← *przeczytać* perfective 'to read'). In Russian there is only a corresponding tendency (Kukla 2013). Not only in Russian, but apparently cross-linguistically, these derivatives have a further tendency: abstract nouns easily form metonymies by implicit profiling. Examples include the result noun *the writings (of Chaucer)*, R. *rabota* 'work' 1. 'process', 2. 'result'; profiling of the possessor of an attribute: E. *a beauty*/R. *krasota*/G. *Schönheit*. In Russian, 54% of the 423 deverbal abstract nouns studied by Kukla (2013) show a metonymical secondary meaning, and 31% of those do so with profiling of the result, so that the derivational suffixes are not purely recategorisation markers.

A similar statement can be made about Slavic denominal r e l a t i o n a l a d j e c t i v e s (cf. article 44 on relational adjectives and composition in Slavic languages), e.g., R. *gorodskoj* 'town (adj.), urban, municipal' (← *gorod* 'town'), G. *städtisch* (← *Stadt* 'town'). Traditionally they are dealt with in connection with lexical derivation. However, in Russian, for example, they have a grammatical status since in principle they can be derived from any noun (as long as the nouns are not products of recategorisation themselves). Relational adjectives are often reinterpreted as qualitative adjectives that are then gradable, whereas 'pure' relational adjectives are not. In general, products of recategorisation often loose certain grammatical categories which are typical of the respective part of speech: relational adjectives cannot form the comparative, abstract nouns cannot be pluralized, when used with their standard meaning.

In Slavic languages, other types of recategorisation do not have a tendency towards grammaticalisation, e.g., verbs motivated by adjectives like *belet'* 'to be white' (← *belyj* 'white').

Recategorisation is also the functional operation that concerns homogeneity, the "count/mass distinction". It is responsible for changing homogeneous nouns and verbs to heterogeneous ones. These changes are not caused by modification through substitution as is done with diminutives or augmentatives, gender or negation, where the prototype is preserved and only receives the additional attributes 'little' or 'big',

'negative/opposite', or the alternative attribute 'male' or 'female', etc. The meanings of the homogeneous *snow* and heterogeneous *snowflake* belong to different categories; there is not a common prototype with additional or alternative attributes.

By deriving singulatives (cf. article 66) from mass nouns (words for homogeneous substances) the latter are changed to individual nouns (count nouns, nouns for heterogeneous substances, for individuals), R. *solomina* 'culm' (← *soloma* 'straw'), *snežinka* 'snowflake' (← *sneg* 'snow'), *malinina* 'strawberry (singulative)' (← *malina* 'strawberry (mass noun)'). The English noun *snowflake* shows that an individualized part of a homogeneous mass can be designated by a composite noun. But as it is motivated by different nouns referring to two distinct concepts, the word-formation of *snowflake* is a case of uniting categories, cf. section 6., while R. *snežinka* refers to the same concept as the motivating *sneg*.

Recategorisation can also apply to grammatical categories of the verb, cf. progressive aspect *be sitting* ← non-progressive aspect *sit*; R. perfective aspect *posidet'* (← imperfective aspect *sidet'* 'to sit'). Formerly this process in Slavic was regarded as the lexical derivation of a "temporal aktionsart", nowadays its grammatical status is widely acknowledged.

The purely semantic analogues corresponding to derivational recategorisation in word-formation are metaphors. When *mushroom* is used for all sorts of artefacts that have the form of a mushroom, a meaning is shifted from the category of plants to the category of artefacts, whereby the original meaning is not deleted, but only superposed.

6. Uniting categories

The operation of uniting (or semantic combination) consists in forming a new lexical unit by combining two lexical concepts. Various types of word-formation are available for the explicit procedure of uniting where both motivating concepts are conveyed by the motivating words, with compounding as the central type which has been the subject of much linguistic research (cf. articles 35 on synthetic compounds in German, 36 on verbal pseudo-compounds in German, 40 on noun + noun compounds in French, 41 on VN compounds in Romance), including the rather complex meaning construction processes (cf. article 64 on noun-noun compounds). Consider the following examples:

(a) compounds such as E. *keyboard*, *fire-engine, swimming pool*; R. *biznes-plan* 'business plan', *biznes centr* 'business centr', *biznesspecializacija* 'business specialisation';

(b) formations at the boundary between syntax and word-formation, both constituents of which are inflected (in Slavic studies also called "binomina"), e.g., R. *aktër-direkto*r, cf. F. *acteur-directeur* (see Bergmann 2006, whose investigation is also based on the concept of functional operations);

(c) various forms of abbreviations (*NATO, UK, Oxfam*).

The explicitly motivated operation of uniting can in principle be motivated by any type of content words, cf. E. *goodlooking*, *everybody*, *output*, *runaway*, *tonight*; R. *sineglazyj* 'blue-eyed'. (a)-(c) are default-cases of uniting. When uniting is not motivated by more than one content word, an implicit lexical concept is added, cf. R. *korovnik* 'cowshed' (← *korova* 'cow'), *zadačnik* 'problem book' (← *zadača* 'problem, task'), *spa-l'nja* 'bedroom' (← *spat'* 'to sleep'). Sometimes it is difficult to decide between the operations of profiling and uniting, i.e., to decide whether or not a semantic

component is part of the motivating concept. A possible empirically based solution can be found in association tests: the motivating stimulus words *korova*, *zadača*, *spat'* don't have reaction words with the meaning of *shed*, *book*, or *room* (cf. Russkij associativnyj slovar').

The operation of uniting is also applied to elliptical derivations from multi-word expressions that are called "univerbation" in Slavic word-formation research, e.g., R. *večerka* (← *večernjaja gazeta* 'evening newspaper'), *maršrutka* (← *maršrutnoe taksi* 'route taxi'). The derivatives from numerals can have different implicit complements, e.g., R. *dvojka* (← *dvoe* collective numeral 'two') 1. 'number', 2. 'various types of public transport such as a tram or a bus (according to their number)', 3. 'grade/mark in school (in Russia: 'poor')', 4. 'type of boats ('pair-oar boat'), etc.', 5. 'playing cards ('deuce')'.

It can be necessary to combine various functional operations in order to reconstruct products of word-formation. For example, E. *smoker*/R. *kuril'ščik* 'a person who habitually smokes tobacco' (← *to smoke/kurit'*) exhibit profiling for an agent noun together with the modification 'habitually'. Many operations of uniting are combined with the concurrent operation of profiling, e.g., with the profiling of the agent (*salesperson*), patient (*stockbroker*), or instrument (*boat trip*). Profiling, then, is a secondary operation together with the primary operation of uniting. In *crybaby*, being derived from 'some baby crying', the agent *baby* is profiled (topicalized, see Brekle 1970: 131).

For handling uniting in cases that require more than one functional operation (or a problematic decision between uniting and another operation), a form-oriented preference can be applied (see Lehmann 1999: § 4.4.): For the description of compounds and other words motivated by two words, preference goes to uniting, for derivatives motivated by one word, preference goes to an operation other than uniting.

7. Conceptual innovation

Conceptual innovation is one of three general types of l e x i c a l   i n n o v a t i o n s with formal changes:
(1) Formal innovations without conceptual changes: Only the formal structure of the lexical unit is changed by one of the types of abbreviation.
(2) Conceptual alterations: Word-formation changes an existing lexical concept by the functional operations of modification, recategorization, profiling, or by combining existing lexical concepts by operations of uniting.
(3) C o n c e p t u a l   i n n o v a t i o n s : New lexical concepts are introduced into the lexicon using word-formation to denote the new concept. We call it conceptual innovation, because this is n o t   o n l y   a n   a l t e r a t i o n   o f   a   g i v e n   c o n c e p t, as is brought about by functional operations, b u t   t h e   a d d i t i o n   o f   a   n e w   i t e m   t o   t h e   c o n c e p t u a l s y s t e m .

The quantity of the types of lexical innovations has been very different in the history of the lexicon (see section 8.), but let us first take a look at conceptual innovations. It is an operation which consists in assigning a whole concept to one or more motivating bases, resulting, e.g., in a scientific term or an expressive speech act. The denotative component of the added concept is not motivated by an existing concept, there is only a motivational link between the connotation of the motivated word and the motivating

concept. Hence, the motivation is very weak. The given definition does not preclude that an analogous concept already exists in the language or that there is a synonym for the product of a conceptual innovation. In Lehmann (2004) terminological and expressive innovations are mentioned as types of conceptual innovations. Chemical, medical, biological and other terms can often be recognized by certain suffixes: E. *germanium, indium, mendelevium, cubanite/barracanite, gagarinite* or R. *germanij, indij, mendelevij, plutonij, kubanit, gagarinit* are names for chemical elements with the suffixes *-ium*, *-ite*, or *-ij*, *-it*. In structuralism the suffix *-eme* was favored (*phoneme*, *morpheme*, *grammeme*, etc.). Kanngießer (1987), who postulates a continuum of motivational compositionality for compound nouns, mentions the word *Hausberufung* 'internal appointment as a professor at a university' (← *Haus* 'house', *Berufung* 'calling') – a term from the German academic system – as an example for a compound that is not motivated compositionally.

Scientific terms are usually not formed by changing a given concept. Instead, a word is sought that can be assigned to a definition, a word that can serve as the communicative carrier of this meaning. If *Gagarin* acts as the motivating word for *gagarinit*, then only because of the connotation connected with the name. If a new word is originally based on profiling, e.g., using a discoverer's name as an eponym for the object discovered, cf. E. *dahlia*, named after the botanist Andres Dahl, and if it is demotivated historically, it functions synchronically like other conceptual innovations. You must have the concept of a specific plant in order to understand the word *dahlia*. The motivating base is no help to the denotative semantics (definition) of the motivated word. Even if you know or assume that *dahlia* is formed in accordance with an eponymic pattern.

Arbitrariness is also a feature of expressive innovations as they occur in swear words, cursing, maledictions, and other pragmatic words. Rammelmeyer (1988) has described derivatives that cannot be labelled with any of the usual motivational relations, but are characterized by a strong expressiveness. Rammelmeyer distinguishes derivatives whose motivating words (i) are stylistically neutral, such as R. *pereborščat'* 'to exaggerate' (← *boršč* 'red-beet soup'), (ii) have an expressive connotation, such as R. *vtreskat'sja* 'to fall in love' (← *treskat'* 'to crack; to bust; to form cracks; (vulgar) to batter'), and (iii) are expressive themselves like R. *vyebyvat'* 'to leave, to fuck off' (← *jebat'* 'to fuck'). When *fucking* represents an expressive concept, especially when it is used as an infix in words like *unfuckin(g)believable, fanfuckin(g)tastic, absofuckin(g)lutely*, etc., there is no denotative component which could be motivated. Only its expressive content is motivated by expressive components of the verb *to fuck*.

In both of these lexical domains, neologisms are entirely or strongly characterized by conceptual innovations. In addition, there are many further weakly or purely formally motivated words of this kind. However, these must be differentiated from other real or apparent derivatives that lack motivation, i.e. from demotivation and remotivation. Demotivation is present when the content of an originally motivated word loses its connection to the motivating word(s), e.g., E. *hallmark* 'mark of quality' (< 'official stamp of purity in gold and silver articles' < 'mark from Goldsmiths' Hall in London, site of the assay office'; cf. http://www.etymonline.com/index.php, 23.12.2011). In order to distinguish conceptual innovations and demotivations, etymological studies have to be employed. After all, the reconstruction of motivations is a linguistic task and not a mental process.

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8. Historical aspects

Havránek, one of the most significant proponents of the Prague linguistic circle, emphasized intellectualization as a line of development of standard language. By intellectualization of a standard language, the Prague linguists understood "its adaptation to the goal of making possible precise and rigorous, if necessary abstract, statements expressing the complexity and interaction of thoughts" (Havránek 1983: 147 [1932: 45]). The term is useful for the interpretation of some diachronic facts of word-formation. Russian word-formation, in areas such as trade, transportation, agriculture, law, and art in the period of intellectualization, has been researched in a series of theses and term papers at the University of Hamburg. As has become obvious, conceptual innovations make up the smallest proportion of word-formation operations (for more information see Lehmann 1999: 232–238). The bulk of the data concerns recategorization, modification, and profiling.

Evidently, these functional operations serve primarily to make the syntax of content words more flexible (especially the operation of recategorization) or to make implicit components of lexical concepts explicit, i.e. to give them a linguistic form (especially the operation of modification and profiling). These changes primarily serve the modus operandi of a language as well as the effectiveness of denomination processes thus expanding the possibilities to express particular contents by differentiated and effective means.

Intellectualization characterizes the stage in the development of a language whose elementary means are already constituted and a system of lexical concepts has already been established, primarily by conceptual innovation. In the following stage of intellectualization of a language like Russian on its way to becoming a standard language, central functional procedures are the derivationally based operations of recategorization, modification, and profiling. For the 20th century, when intellectualization is, in principle, achieved and a standard language established, the data show an increase in the use of the operation of uniting and an overwhelming majority of all types of abbreviations.

Thus, for the lexicon of Russian and other Slavic languages, and it might be reasonably assumed for the lexicon of European standard languages in general, typological differences notwithstanding, we can suppose a development from lexical dynamics with an emphasis on conceptual innovations (and an abundance of synonymic word-formation in many languages especially during the middle ages), via a period of intellectualization with alterations of lexical concepts by functional operations much more than with conceptual innovations, up to modern times with a predilection for changes of graphemic/phonemic forms only and with an increasing number of conceptual innovations in scientific and technical varieties.

Along with semantic extension and borrowing, word-formation is the key instrument used in expanding the vocabulary. The description of lexical expansion on the basis of the categories of word-formation and functional operations can show the development this expansion takes with regard to content.

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