

## Lexical nests revisited: a Cognitive Grammar account

Henryk Kardela, Maria Curie-Skłodowska University

### *Abstract*

*The paper develops a cognitive grammar analysis of lexical nests, an important concept in Slavic onomasiological research. It is argued that a viable cognitive theory of Slavic morphology, Polish morphology included, must take into account the lexical nest-related process of “onomasiological naming” performed by the derived morphological formations.*

**Keywords:** *lexical nests, semasiology, onomasiology, Cognitive Grammar, A/D Asymmetry.*

### 1 Introduction

The concept of *lexical nest* is connected with the “naming-act perspective” offered by an *onomasiological* approach to word-formation processes. The idea of lexical nests, one of the conceptual pillars of onomasiological studies, was proposed as early as 1962 by the Czech linguist Miloš Dokulil (1962/1979).

As defined by Zych (1999:12),<sup>92</sup> a lexical nest is a set of one-root words standing in the motivating relationship to one another. The centre of the nest is occupied by a word which motivates directly or indirectly all the remaining words in the nest. It is the most complex word-forming unit consisting of *word chains* and *paradigms* which interact with each other and thus reflect the syntagmatic and paradigmatic relations between the words in the nest.

In accordance with this definition, the lexical nest of the Polish noun *człowiek* ‘man’ looks as follows (based on Nagórko 1998: 215; cf. also Kardela 2004)<sup>93</sup>:

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<sup>92</sup> All translations of the Polish texts are mine.

<sup>93</sup> This is a substantially modified version of the lexical nest of *człowiek* as proposed by Nagórko. In order to specify the type of the derivative (nominal, verbal, adjectival or adverbial) appearing in the nest, Nagórko (1998: 214) adopts a convention in which a vertical arrow pointing downwards symbolizes a

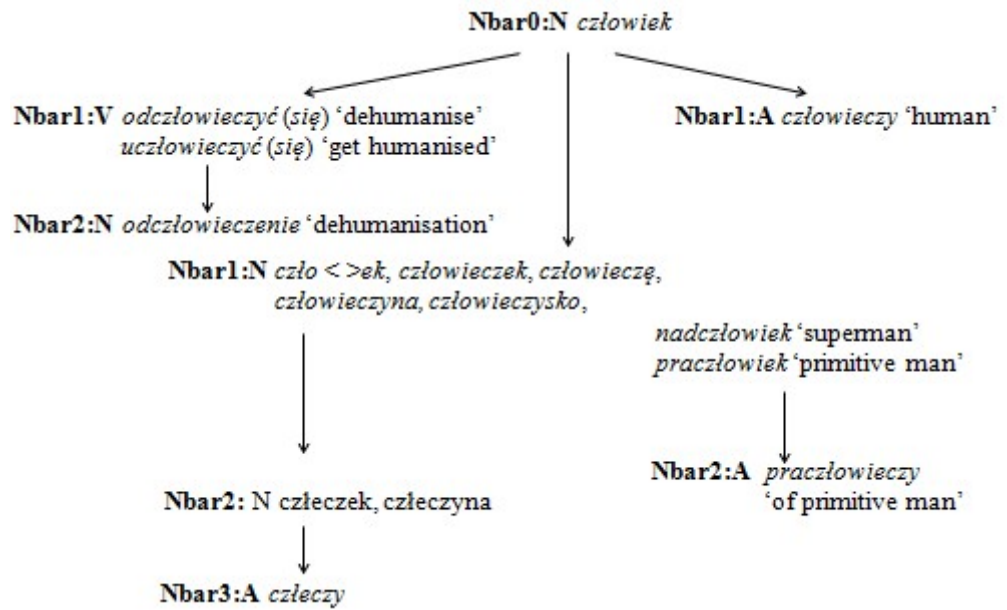


Figure 1 The lexical nest *człowiek* 'man'

Generally speaking, the derivatives which appear in the nest enter in two types of relations: they form *chains* of motivated lexical items (Pol. *ciąg, łańcuch*), symbolized by arrows, and so-called *paradigms* (Pol. *paradygmat słowotwórczy*). Thus in Fig. 1, the central word *człowiek* 'man' motivates, at Nbar1-level, derivatives such as *odczłowieczyć się* 'dehumanize', *człowieczek* 'little man' or *człowieczy* 'human'. The derivative *odczłowieczyć się*, in turn, motivates, at Nbar2-level, the nominal derivative *odczłowieczenie się* 'dehumanization'. Finally, *człeczy* 'human; of man' is motivated, at

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noun, an arrow pointing leftwards stands for a verb, an arrow pointing to the right signifies an adjective, while a horizontal arrow pointing to the right symbolizes an adverb. We, on our part, propose a lexical nest graph which contains the following specifications: the actual "nest-bar level" (Nbar; pol. *takt*), the appropriate digit number which indicates the distance between the central motivating word and its derivatives, and the category specification (N, A, V, Adv) of the given lexical item.

Nbar3-level, by the Nbar2-level derivative *człeczek* ‘little man’. The digit number which appears with the given bar indicates the distance between the motivating word and the remaining derivatives in the nest (cf. Note 2). In the case at hand, the denominal adjective *człeczy* ‘of man’ (Nbar3) is three bars away from the motivating word *człowiek* (Nbar0), while the denominal adjective *praczlowieczy* ‘of primitive man’ and the denominal verbal derivative *odczłowieczyć* ‘dehumanize’ are two bars- and one bar-distant from it, respectively.

Whereas chains consist of derivatives which stand in the motivating relationships to each other, paradigms contain derivatives that appear at the same bar-level and thus share the same distance with the motivating word. In Fig. 1, the lexical items that appear at the Nbar1:N level, namely *człek*, *człowieczek*, *człowieczę*, *człowieczyna*, *praczlowiek*, etc., belong to the same paradigm. At the same time, however, the lexical unit *praczlowiek* ‘primitive man’, which is part of the paradigm at this level, motivates, at the Nbar2:A level, the adjective *praczlowieczy* ‘of primitive man’, thus forming a chain with it.

The theoretical import of the idea of lexical nest should be obvious: the nests form a network of interrelated lexical items which help state the complex derivational relations between the various lexical items and derivatives thereof. Commenting on the importance of derivation in Polish morphology, Janowska (2009: 28), for instance, notes that

derivation is the most important means of enriching and developing vocabulary in Slavic languages. Miloš Dokulil, in his *Theory of Derivation*, observed that in Slavic languages the vocabulary is, in great measure, motivated and that such words are preferably used. [...] It is believed that as many as 2/3 of Russian and Czech vocabulary are morphologically dividable words. We can assume that the same is true of Polish. Motivated words are more important semantically than non-motivated ones. And this is perhaps one of the reasons we so often use them as a means of naming. “Motivation, Nagórko (1998: 169) writes, “presupposes the perspective of the addressee and refers to

the way lexis is understood; it helps remember words and brings order to the vocabulary.”<sup>94</sup>

Commenting, in the context of foreign language teaching, on the difference between “non-motivated” English words such as *pub* and *bar* and Polish expressions such as *herbaciarnia* ‘tea house’ and its motivated derivatives such as *herbaciany* ‘of tea; *herbatnik* ‘biscuit’ and *herbatka* ‘(herbal) tea’; ‘tea time’, Janowska notes that (pp. 28-29)

a derivative, in contrast to a non-motivated word, evokes two domains: a domain that is linked to its morphological base and the family of words and a domain that is associated with a group of words similar in form formally and semantically. In this way it is associated with two lexical sets which form a complex network of interrelationships. [...] Owing to its extended derivational system, Polish has large lexical nests. A new derivative always exists in the context of the entire family of words. In this way, a new lexical formative is immersed in the lexical set of a given language, with its meaning upheld by the lexical nest.

According to Pastuchowa (2009), the teaching of Polish vocabulary to foreign students can greatly benefit from drawing the students’ attention to the system of lexical nests. She writes (pp. 24-25):

It seems that, for the purpose of foreign language teaching, the change of perspective which consists in placing the stem (Pol. *temat*) and not the affix (Pol. *formant*) in the centre of attention [of students] can be very effective. The departure from a binary approach to the motivational relations between derivatives opens up a possibility of forming word-groups (lexical nests), structured according to specific linguistic

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<sup>94</sup> Similarly, a Polish scholar, Jan Rozwadowski (1904/1960) claimed that “Polish, just like almost all other Slavic languages, tends to use affixed form in place of compounds. If we compare German and Polish, for instance, then it should be clear that German compound forms have their equivalents in Polish simple forms (*simplicita*).” Root suffixes in Polish, Rozwadowski holds, play a role similar to that of the second formative in German compounds, where the second formative “completes the overall image of a concept, drawing on its principal feature which is supplied by the root.” (pp. 24-25).

mechanisms. Based on one's knowledge of vocabulary, this technique makes it possible to develop the lexical stock on one's own.

It is the "personal" creation of the vocabulary stock, "on one's own", that is particularly important in teaching Polish vocabulary to foreign students of Polish. It is important because, as Pastuchowa (2009: 25) notes, quoting Satkiewicz (1969: 194)

The speaker is aware of a schema, which consists of units with well-defined relations and reappearing exponents thereof, and the new structures which are potentially predictable, as it were, by the derivational chains (Pol. *szeregi słowotwórcze*) of such units, are evoked irrespective of whether one can find a solid empirical justification for such derivations.

In view of the fact that, in many cases, derivatives in Polish are doubly motivated (cf. Malicka-Kleparska 1985) and that, very often, the founding base of the motivating word is missing and can only be established on the basis of diachronic analysis, the prospect of relinquishing the requirement imposed on linguistic units "irrespective of whether one can find a solid empirical justification for such derivations" seems to be particularly important in teaching Polish vocabulary. Pastuchowa writes (p. 25)

The teaching of word formation using the lexical-net method has another important advantage. Even if in modern Polish vocabulary not all places in particular lexical nests are actively used, by presenting the existing models [of nests] to the learners we give them a tool, which makes it possible for him to navigate among the multitude of neological expressions in Polish.

Concluding, Pastuchowa observes (p.25)

It makes little difference what the status of a particular morpheme is; what is important is its ability to build new units. As is well known, one of the word formation mechanisms is analogy. [...] Owing to word formation processes based on analogy, a series of lexemes modelled on one lexeme are created. This leads to a replacement of elements that very

often can hardly be called “morphemes”. [...] it is enough to evoke on this occasion series such as *autostrada/Wisłostrada/nartostrada, uniwersjada/familiada, maraton/ kabareton*, etc. It makes little difference that one “juggles” here with elements which traditionally are not labelled as “morphemes”; what is important is that they have a naming function.

In this paper an attempt is made to develop a cognitive grammar analysis of lexical nests and thus shed more light on the complex onomasiological aspect of lexical items’ meaning.

## 2 The semasiology-onomasiology distinction in cognitive grammar

As already mentioned, the idea of a *lexical nest*, which was proposed as early as in the 60s of the past century, is closely linked with the onomasiological, “naming perspective” of word formation. And yet it is only during the past decade or so that the onomasiological study of lexical structure has been seen to slowly regain its rightful place in today’s main-stream morphological research (cf. Geeraerts 1997, 2010, Lipka 2002, Grondelaers and Geeraerts 2003, Štekauer 2005, Körtvelyessi 2009, Grondelaers, Speelman and Geeraerts 2010).

Following Baldinger (1980), we can state the semasiology-onomasiology distinction thus:

Semasiology... considers the isolated word and the way its meanings are manifested, while onomasiology looks at the designations of a particular concept, that is at a multiplicity of expressions which form a whole (Baldinger 1980: 278; quoted after Grondelaers, Speelman and Geeraerts (2010: 989)).

It is clear that the expressions “(isolated) word” and “concept” that appear in this quotation relate directly to the Saussurean idea of the linguistic sign as consisting of two parts: the signifier (form) and the signified (concept). Seen from this perspective, the distinction between semasiology and onomasiology, Grondelaers, Speelman and Geeraerts (2010: 989) observe,

equals the distinction between meaning and naming: semasiology takes its starting point in the word as a form and charts the meanings that the word can occur with; onomasiology takes its starting point in a concept or referent and investigates by which different expressions the concept or referent can be designated or named.

In the case of semasiology, Dirven and Verspoor (2004:22) note, “we go from the form of a word to the various senses,” whereas in the case of onomasiology, we “take a given concept and then see what different words are available as synonyms to refer to the entities in our conceptual world.”

Since the aim of this paper is to develop an analysis of lexical nests, we shall primarily focus on the onomasiological aspect of an expression’s meaning, although we have to remember that the two approaches to meaning, the semasiological and onomasiological perspectives, are mutually related.

Stressing the importance of the onomasiological approach to word meaning vis-à-vis the semasiological perspective in modern morphological research, Grondelaers and Geeraerts (2003: 88-89) note that

the choice of a lexical item as the name for a particular referent is determined by the degree of prototypicality of the referent with regard to the semasiological structure of the category, by the onomasiological entrenchment of the category represented by the name, and by contextual features which interact with these principles. Of these three components, only semasiological salience has enjoyed some theoretical attention in main-stream Cognitive Linguistics, though predominantly in the shape of prototypicality effects, never in the context of lexical selection. The importance of onomasiological perspective has mostly been neglected, and interfering contextual factors are—incorrectly assumed to be outside the scope of Cognitive Linguistics.

To amend this highly unsatisfactory situation in the study of lexical meaning, the authors aim at constructing of what they call a “sociolexicological approach” to lexicon and grammar, based on semasiological and onomasiological variation, in which

The importance of the extrapolation of lexicology towards a use-oriented conception of onomasiology [...] lies in [...] the extrapolation from lexicology to grammar that is

typical of Cognitive Linguistics might be effectuated here as well. The focus then shifts from lexical selection to the choice of a grammatical construction. The key concept here is that of motivation: just like lexical items, constructions can be both semasiologically and onomasiologically motivated. Semasiologically, a construction is motivated if the idea to be expressed fits in the semantic range of the construction. Onomasiologically, the choice of a particular construction is motivated if it is plausible, given the joint effect of prototypicality and entrenchment (Grondelaers and Geeraerts 2003: 88-89).

Now, given the importance of semasiological and onomasiological perspectives in the study of lexicon, it is obvious that the semasiology-onomasiology distinction must also be taken into account by cognitive grammar, all the more so that, as Langacker (1987: 11) notes, cognitive grammar “embraces the spirit of classic Saussurean diagrams [representing the linguistic sign as consisting of the signifier-signified relationship—H.K].” By “embracing the spirit” of the Saussurean sign, cognitive grammar goes further than Saussure, however—beyond morphemes and words—thus providing a much richer account of the signifier-signified relation (for a discussion of the “Saussurean roots” of cognitive grammar, see Taylor (2002, Ch. 3)).

As an illustration of such an “extended” signifier-signified relation in cognitive grammar could be the so-called *compositional path* of linguistic units. In the case of the expression *pencil sharpener*, for instance, such a path looks as follows (Langacker 1988: 25):



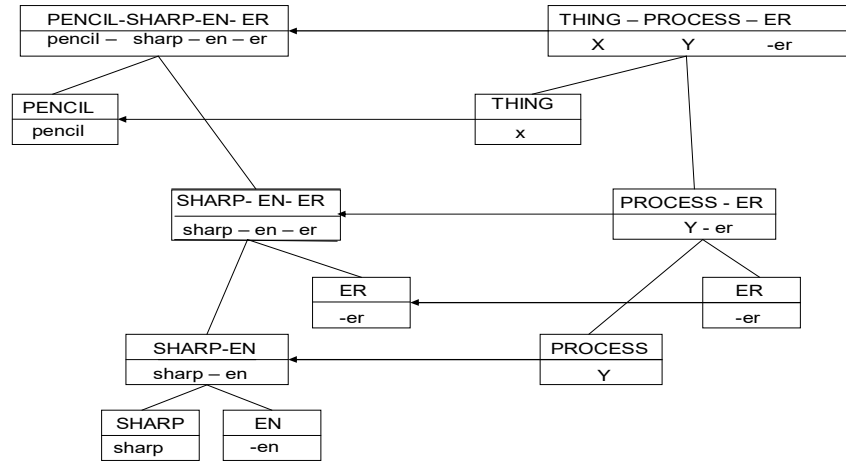


Figure 2 The compositional path of pencil sharpener

Fig. 2 shows the “compositional path” along which the phonological and semantic poles of the schemas, THING/X, PROCESS/Y, ER/er (schematic conceptualization for Instrument) and EN/en (schematic representation of “deadjectival process”) are *elaborated* by the respective component structures: PENCIL/pencil-SHARP/sharp-EN/en-ER/er.

The question which arises now is: What is the nature of the [S]/[p] relation in composite structures such as those in Fig 2? According to Langacker, the relations between the semantic and phonological poles of any expression involves: *composition—c*, *integration—i*, and *symbolization—s*. In the case of a composite expression like *jar lid*, for instance, the relations are as follows (Langacker 2008: 162):

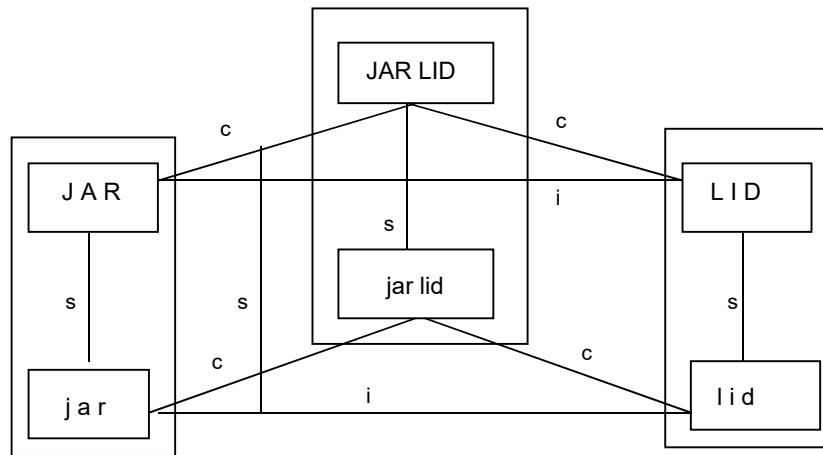


Figure 3 [S]/[p] relation in *jar lid*

Seen both from the semasiological and onomasiological perspectives, the relations between [S] (signified) and [p] (signifier) are becoming even more complex. Thus consider the table given below, which illustrates the complex semasiological and onomasiological relations involving an expression's meaning (Dirven and Verspoor (2004: 41):

Table 1 The semasiological and onomasiological relations

Conceptual relations	In semasiology (how senses of one word relate to each other)	In onomasiology (how concepts and words relate to each other)
1. hierarchy (top/ bottom)	generalizing and specializing, e.g. <i>school of artists</i> vs. <i>school of economics</i>	conceptual domain: Taxonomies (e.g. <i>animal</i> , <i>dog</i> , <i>labrador</i> ) and lexical fields: e.g. <i>meals</i>
2. contiguity (close to sth.)	metonymic extensions of senses ( <i>school</i> as <i>institution</i> → <i>lessons</i> → <i>teaching staff</i> )	conceptual metonymy, e.g. CONTAINER FOR CONTAINED
3. similarity (like sth.)	metaphorical extensions of senses ( <i>win an argument</i> )	conceptual metaphors, e.g. ARGUMENT IS WAR

Notice that as stated in Table 4, metonymic and metaphorical relations are claimed to be involved in both the semasiological and onomasiological perspectives on words' meaning. Yet, whereas in semasiology, metaphor and metonymy underlie the polysemic relations holding between an expression's different senses, the metaphor and metonymy in the onomasiology-related word formation process *structure this part of the concept which is named by the synonym used*. Thus, when formulating the goals of onomasiological theory, Dirven and Verspoor (2004), make reference to the notion of "conceptual domain", defining it as "any coherent area of conceptualization such as meals, space, smell, colour, articles of dress, the human body, the rules of football, etc." It is precisely some portions of such a domain—say, the cognitive domain 'meals'—that, as Dirven and Verspoor claim, are "named" by expressions such as, *lunch*, *breakfast* and *brunch*.

While we accept the basic tenets of this analysis, we would like to slightly modify the notion of 'cognitive domain' as used by the authors. In particular, what Dirven and Verspoor call a 'cognitive domain' appears to correspond to what Langacker (1988b)

refers to as a *matrix domain*, i.e. a cluster of domains which are evoked by a particular predication (i.e. the semantic pole of an expression). Indeed, because a ‘cognitive domain of meals’ or a ‘cognitive domain of the human body’ are complex concepts, we will be referring to such concepts as *matrix concepts* (MC). Thus, given a matrix concept of [WORK], the English suffix *-er* can be claimed to “name” (or: (en)code) the “agentive part” of the MC; the suffixes *-un* and *-able*, found, for instance, in the expression *unworkable*, could be said to jointly “name” a “privative” part of the MC, say, [LACK OF POSSIBILITY OF BEING WORKED OUT]; and the noun phrase *hard work* could be seen as encoding this part of the MC which relates to the [QUALITY OF WORK].

Now, since “the part of the concept that is named by a given (synonymous) form” is structured in terms of (cognitive) metonymy as stated in (4), we have to define the term “metonymy”. Following Radden (2009), Janda (2011: 316) defines metonymy as “an inferential relationship between two concepts: a source concept [...] which provides mental access to a target concept in a given context.” On her analysis, (i) the source is associated with the source words on which the derivation is based, (ii) the context for the metonymic relationship is created by the affix, and (iii) the target is the concept which corresponds to the derived word.

Consider, for instance, the following metonymy-based “naming functions” of the suffix Czech suffix *-nik*, discussed in Janda (2011: 379):

Source	Target	Source	Target
ABSTRACTION	FOR ENTITY	<i>služba</i> ‘service’	<i>služebník</i> ‘servant’
ACTION	FOR AGENT	<i>pracovat</i> ‘work’	<i>pracovník</i> ‘worker’
ACTION	FOR LOCATION	<i>chodit</i> ‘walk’	<i>chodník</i> ‘sidewalk’
CONTAINED	FOR CONTAINER	<i>čaj</i> ‘tea’	<i>čajník</i> ‘teapot’
LOCATED	FOR LOCATION	<i>ryba</i> ‘fish’	<i>rybník</i> ‘fishpond’
MATERIAL	FOR ENTITY	<i>pára</i> ‘steam’	<i>párník</i> ‘steamboat’
QUANTITY	FOR ENTITY	<i>pět</i> ‘five’	<i>pětník</i> ‘5 crown piece’
MATERIAL	FOR AGENT	<i>zlatý</i> ‘gold’	<i>zlatník</i> ‘goldsmith’

If, as Janda claims, “the context for the metonymic relationship is the affix” (p. 360), then we should treat the affix to be precisely “this part of linguistic unit which, together with the word’s stem, explicitly points to the (part of) of the concept to be named.” More concretely, *-nik* in the derivative *služebník* ‘servant’ can be said to be capable of pointing to this part of the Czech matrix concept [SLUŽBA/SERVICE] which is structured by the ABSTRACTION FOR ENTITY metonymy. In the case of *chodník* ‘sidewalk’, *-nik* could be held to name this part of the matrix concept [CHODIT/WALK] which is structured by the ACTION FOR LOCATION metonymy. Finally, *-nik* in *zlatník* ‘goldsmith’, can be said to relate to this part of the matrix concept [ZLATY/GOLD] which is structured by the MATERIAL FOR AGENT metonymy. (See also Szymanek 1988, Grzegorzczkova and Szymanek 2001, for a discussion of onomasiological categories.)

### 3 A/D asymmetry

Before we attempt to incorporate the lexical-nest analysis into the cognitive account of morphological structure, we have to introduce the notion of A/D asymmetry (autonomy/dependence asymmetry), a principle according to which, in a composite structure such as derivative, for instance, one element is autonomous while the other, is dependent. In particular, in the case of stem-affix combination, the stem is treated as an autonomous unit, while the affix, as a dependent structure. A/D asymmetry is a matter of degree; it forms a cline along which the degree of departure from the prototypical stem-affix combinability can be measured.

A/D asymmetry is based on the notion of *dependence*, defined by Langacker as follows: “One structure, D, is dependent on the other, A, to the extent that A constitutes an elaboration of a salient substructure within D” (Langacker 1987: 300). As observed by Tuggy (1992: 242),

this [dependence vs. autonomy] parameter can be understood as the extent to which one structure can be conceived of independently of its syntagmatically linked partner. An autonomous structure does not need its partner in order to be a complete concept,

whereas a dependent structure is incomplete, and its partner supplies what is lacking to complete it. Put another way, dependent structures have holes, and their autonomous partners are spikes that fill the holes.

The A/D Asymmetry Principle involves two major parameters (cf. Tuggy, p. 243):

- (i) the degree of salience of the e-site (or e-site prominence) (Langacker's "substructure" of D as formulated in (14))
- (ii) the degree of elaboration of the e-site by a component structure (i.e. by "A structure" in (14))

According to Tuggy (p. 289, fn. 13), highly schematic concepts are not, as a rule, highly salient; nor do salient concepts tend to be highly schematic. This claim has an important consequence for the stem-affix distinction. Because, as Tuggy observes, stems are "heavy forms" in the sense that they contain rich semantic specification, they, in contrast to "light forms" such as suffixes (which are highly schematic), have to be considered salient entities. Because they tend to be relatively small, the e-sites of heavy forms should be considered less salient than the e-sites of light forms like suffixes. This follows from the fact that, to use Tuggy's formulation, "[G]iven two structures with e-sites of equal salience in absolute terms, the one with the greater number of other salient specifications (i.e. with greater semantic weight) will be less dependent: the e-site will tend to get lost in the crowd, so to speak." (p. 256; also quoted in Kardela 2000: 17) In other words: the suffix's e-site is more prominent than the e-site of a heavy form, because in contrast to the latter, the suffix's e-site will not be "downgraded" by the fewer number of suffix's specifications.

The A/D relationship obtaining between stems and affixes can be presented graphically as follows (Kardela 2000: 49-50; modified):

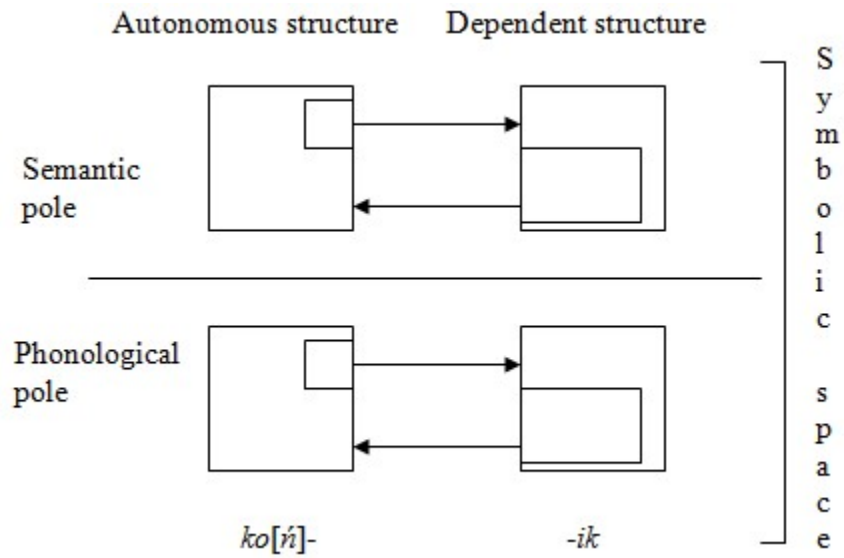


Figure 4 The elaborative relations in the Polish derivative *konik* ‘little horse’

Fig 4 represents a two-way elaboration process held to operate in the derivative *ko[ń]* ‘little horse’. The autonomous nominal stem *ko[ń]-* elaborates both the semantic and the phonological pole of the dependent structure *-ik*, and *vice versa*: *-ik* elaborates the respective e-site of the stem *ko[ń]-*. Because the stem’s semantic contribution to the composite structure it form with the suffix is far greater than the suffix’s, the stem must be viewed as elaborating the affix’s e-site to a greater degree than the affix elaborating the e-site of the stem.

#### 4 Lexical nests again

In order to provide a cognitive grammar account of lexical nests we have to bring under one rubric three elements of the analysis: (i) the relations of integration, composition and symbolization between the component structures of a composite expression as given in Fig 3, (ii) the elaborative relations in a derivative, as presented in Fig 4, and, finally, (iii), add “a third dimension”—the “lexical nest dimension.” Such a 3-dimensional structure, enriched by a compositional path involving the lexical nests structure, looks as follows:

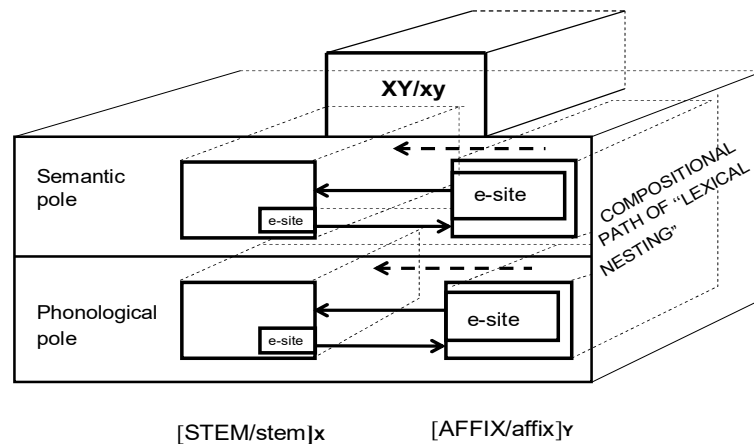
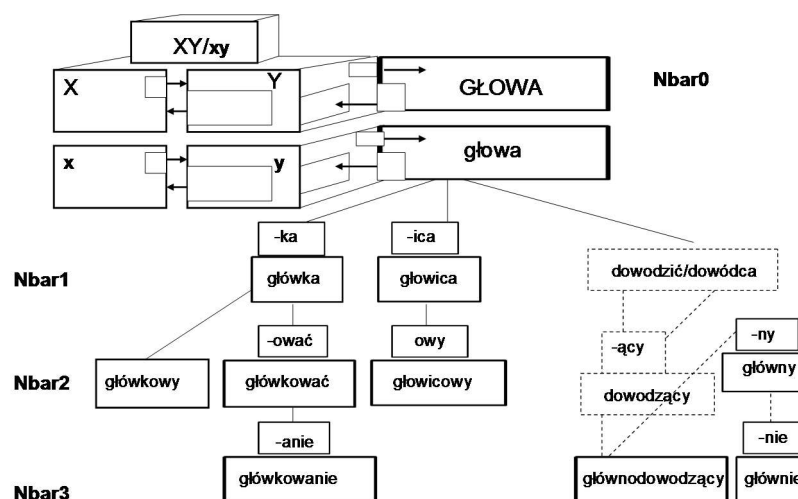


Figure 5 A 3-D schematic A/D structure incorporating lexical nesting

We can now propose a 3-D model of morphology, incorporating the idea of lexical nest. A model of this kind for the expression *głowa* ‘head’, for example, might look as follows (simplified):





*głowa* 'head'; *główka* 'little head; header'; *głowica* '(atomic) head'; *główkowy* 'of header'; *główkować* 'to deliberate, try and think hard'; *główkowanie* 'thinking hard'; *dowodzący* '(person) in command'; *głównodowodzący* 'commander-in-chief'; *główny* 'main'; *głównie* 'mainly'

Figure 6 The lexical nest of the Polish expression *głowa* 'head'

## 5 Concluding remarks

Semantic studies can hardly afford to ignore the onomasiological aspect of word meaning. For its "rediscovery" as a field of study, onomasiology had to wait for almost half a century. Now, with the rapid development of cognitive linguistics, onomasiological studies are gathering steam again, opening up new vistas for modern semantic research. One promising area of this research is undoubtedly the study of lexical nests, as it

- (i) provides a deeper insight into the *signifier-signified* relation;

- (ii) lays foundations for a “sociolexicological approach” to lexicon and grammar;
- (iii) lends supports to applied linguists’ claim about the (relative) ease of mastering the lexical stock of the language.
- (iv) provide the learners with a “tool, which makes it possible for him to navigate among the multitude of neological expressions.”

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*Henryk Kardela*  
*Department of English*  
*Maria Curie-Skłodowska University*  
*pl. Skłodowskiej 4a*  
*20-031 Lublin, Poland*  
*[henkar@klio.umcs.lublin.pl](mailto:henkar@klio.umcs.lublin.pl)*