

# Categories of Word Formation and Borrowing



# Categories of Word Formation and Borrowing:

*An Onomasiological Account  
of Neoclassical Formations*

By

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# CHAPTER ONE

## INTRODUCTION: NEOCLASSICAL WORD FORMATION AS A CHALLENGE FOR MORPHOLOGICAL THEORY

This monograph explores neoclassical word formation in English and Russian. In contrasting these two languages, I will highlight the question of the boundary between word formation and borrowing. One of the central hypotheses is that neoclassical formations belong to the domain of word formation in English, but are borrowings in Russian. Examples will be drawn from medical language, which is relatively rich in neoclassical formations.

Neoclassical word formation is a theoretically interesting phenomenon although quantitatively rather peripheral. In English studies, it has its place though concise in all main reference books discussing word formation in English. *The Oxford Reference Guide to English Morphology* (Bauer et al., 2013: 441) defines neoclassical formations “as forms in which lexemes of Latin or Greek origin are combined to form new combinations that may or may not be attested in the original languages”. After a brief overview of the problems with the status of neoclassical elements, Bauer et al. (2013: 442) conclude that neoclassical formations are best analysed as compounds, not as derivatives. In *The Oxford Handbook of Compounding* (Lieber & Štekauer, 2009), neoclassical compounds are mentioned as a marginal class by Scalise and Bisetto (2009) in their classification of compounds. The definition of neoclassical compounds is the main focus in Kastovsky (2009a). Lieber (2009: 364) emphasizes that neoclassical compounds “continue to be coined in English, especially in technical and medical fields” and gives examples of the twentieth century medical terms *angioplasty* or *arthroscopic*. This also explains the relevance of neoclassical word formation to medical terminology, which is the main source of the data in this book.

Despite a number of recent papers on neoclassical compounding or neoclassical word formation, especially on English (Bauer, 1998; Kastovsky, 2009a, 2009b; ten Hacken, 2012), French (Fradin, 2000; Amiot and Dal, 2007), Greek (Ralli, 2008) and Italian (Iacobini, 2004), it is surprising that no comprehensive overview in the form of an academic monograph has been written in English. Stockwell and Minkova (2001) discuss neoclassical words in English in terms of their history, structure and pronunciation, but do not address the underlying word formation system in much detail. Baeskow's (2004) monograph deals with the description of complex words in English that contain at least one morpheme of foreign origin, which constitutes a larger class that includes neoclassical formations. In chapter 3 she focuses on neoclassical compounding in English in the theoretical framework of the feature-based theory of word formation developed by Baeskow (2002), which makes use of some concepts from Chomsky's (1993, 1995) Minimalist Program. Ralli (2012) explores compounds in Modern Greek and compares Greek compounds including neoclassical compounds with similar formations of languages that are genetically and typologically different.

In the study of Russian, it seems that the question of neoclassical word formation is even more marginal, especially in studies about Russian written in English. Merely a mention of neoclassical formations can be found in the morphological overview by Benigni and Masini (2009). In Slavistic linguistic literature, what has been called *internationalisms*, a category which may include neoclassical formations, has recently been discussed by Zemskaja (2002), Ohnheiser (2003) in Russian, and in other Slavic languages, for instance by Buzássyová (2003), Kleczkowska (2000), Waszakowa (1994, 2000, 2003). However, to my knowledge, a comprehensive overview of the issues directly related to neoclassical formations in Russian is not available at the moment.

The theoretical frameworks of the studies mentioned above do not take meaning as their point of departure. However, as will be argued here, meaning is a better starting point than form in accounting for neoclassical word formation. Therefore this monograph focuses on the study of neoclassical word formation and its place in the lexicon from an onomasiological perspective. The main advantage of an onomasiological theory is that it starts from a particular concept and explores how a name for this concept is found. To put it differently, the meaning is determined first and the system of a language provides the most appropriate form. This contrasts with the semasiological approach that takes a particular form as its starting point and concentrates on the range of its potential meanings. The study of word formation in generative linguistics can be

viewed as semasiological because it concentrates on the form rather than the meaning. In most generative approaches, word formation rules are perceived as rules combining morphemes. For instance, Selkirk's (1982) theory proposes a system of rewrite rules that determine the form of the new word as well as fundamental syntactic properties. The meaning of the resulting words is discussed in more detail only in relation to headedness and argument structure. This approach to morphology has subsequently inspired Halle & Marantz's (1993) Distributed Morphology, which became the mainstream approach in the Minimalist Program.

Neoclassical word formation always has an element of borrowing in it. For instance, ten Hacken and Panocová (2014: 1060) demonstrate that the formations *orthogonal* and *orthopaedic* are both composed of Ancient Greek elements, but at the same time the formations can be contrasted. The word ὀρθόγωνος ([orthógonos] 'rectangular') was attested in Ancient Greek and can be analysed as being formed from ὀρθός ([orthós] 'straight') and γωνία ([gonía] 'angle, corner'). This means it is plausible to classify *orthogonal* in English as a borrowing from Ancient Greek. In contrast, there is no word in Ancient Greek corresponding to *orthopaedic*. The word *orthopédique* was created by the French physician Nicolas Andry de Boisregard (1658-1742) in 1741. Later, it was adopted by other European languages. Theories of word formation have in general nothing to say about borrowings.

It is well known that mainstream generative approaches take syntactic structure as the only generative component from which phonetic form and meaning are derived. Therefore Jackendoff's (2002) theory of Parallel Architecture, which is based on the generative tradition, is special because it treats phonological structure, syntactic structure and conceptual structure as parallel. Each of them operates with its own set of generative rules. For Jackendoff, individual speakers have their own lexicon where frequent combinations are stored as independent entries. This also means they are retrieved rather than formed out of different entries. In Jackendoff's framework neoclassical items can be dealt with by redundancy rules. If the hypothesis that neoclassical formations in Russian are borrowings is correct, a representation by means of redundancy rules is adequate. However, in English, neoclassical elements must be in the lexicon and neoclassical word formation is rule-governed, so that new formations are possible. Such neoclassical formations are formed by meaningful constituents; they never function as formal components only. This is in line with ten Hacken and Panocová (2011) who argue that a particular word has a specific meaning in a speech community.

Against this background, it is possible to formulate the most essential questions that guide the research in the remaining chapters:

- How can the boundary between word formation and borrowing be determined?
- Does neoclassical word formation constitute a separate word formation system?
- If a separate mechanism is involved, how is its scope delimited? What implications does it have for the distinction between derivation and compounding?
- If no separate mechanism is devised for neoclassical formations, how is it possible to account for the possibility of producing new words to name new concepts by combining items that cannot appear as words on their own?

In onomasiological theories, it seems that neoclassical formations have not been covered. I am not aware of any detailed discussion of them in Štekauer's onomasiological theoretical framework or indeed in any related meaning-based word formation theory. In the analysis of English and Russian neoclassical word formation presented here, it will be shown how the onomasiological approach results in an intuitively appealing account of neoclassical word formation in both languages.

This book is structured into six chapters and a conclusion. The remainder of this chapter gives a brief introduction to the main concepts and questions addressed in the book. Chapter two introduces Štekauer's onomasiological theory of word formation and its place in the tradition of the Prague school of linguistics. The notion of semantic categories is discussed in more detail, as it is particularly relevant for the analysis of neoclassical formations.

Štekauer's onomasiological model of language distinguishes three separate components: the lexical component, the word formation component and the syntactic component. This means that neoclassical borrowings and neoclassical formations can be dealt with within one model, but by different components. Borrowings can be treated by the lexical component and neoclassical formations by the word formation component. A key property of lexical items is that they have the nature of a Saussurean sign, i.e. that they combine meaning and form. Only such signs can be included in the lexicon and serve as word formation bases. This highlights the meaning as a central point in which an onomasiological theory differs from formal theoretical approaches.



Central to Štekauer's onomasiological model is the notion of an *onomasiological type* (OT). The OT is a resulting output of the relation between onomasiological and onomatological levels. The OTs differ in their *onomasiological structure* (OS). The OS has a maximum of three components, but not all of them are represented by a morpheme. On the basis of which components of the OS are present in the morphological structure of a word, individual OTs are distinguished. Thus, *novel writer* and *novelist* belong to different OTs, because in one case the action of writing is expressed and in the other not. Traditional terminology like prefixation, suffixation, or compounding is replaced by Onomasiological types, which offers an elegant solution of delimitation problems known from other theories. In the presentation of the theory, the relations between cognitive categories and the structure of Štekauer's (1998) five onomasiological types (OTs) are discussed as well as later developments in this aspect of the theory and a new classification of eight OTs (Štekauer, to appear), which provides the basis of my analyses here.

After presenting a framework for the analysis of word formation, I turn to the alternative possible analysis of neoclassical word formation, borrowing. Chapter three introduces theories of borrowing, in particular onomasiological models that can account for neoclassical formations. It aims at defining the process of borrowing in general and summarizes the main results of the research into borrowing and discusses the usefulness of terminological differences and various approaches to the classification of borrowings. Starting with Bloomfield (1933), Haugen (1950) and Weinreich (1953), it turns to rule-based approaches such as Moravcsik (1978) and Thomason and Kaufman (1988) and more recent work, including Haspelmath (2008, 2009), Johanson (2002), Matras and Sakel (2004), Treffers-Daller and Mougeon (2005), Heine and Kuteva (2005), Braunmüller and House (2009), etc. These approaches are discussed and compared in detail. Then, the theory of borrowing is considered from an onomasiological perspective. It gives an overview of onomasiological models by Koch (2001), Blank (2003), and Grzega (2003), which explicitly include neoclassical formations. The models are then compared and their compatibility with Štekauer's model of word formation is discussed.

An issue that has to be addressed before we can make any general claims on neoclassical word formation is the delimitation of the concept. Therefore, on the basis of the analysis of previous research, chapter four aims to formulate a working definition of neoclassical word formation. Such a definition has to take decisions in five areas that will be discussed in detail. These include the morphological status of neoclassical

formatives, rules governing the formation of neoclassical words, productivity of neoclassical formations, their characteristic properties, and neoclassical word formation versus native word formation. Because of available research output, many examples in these sections will be taken from English (Bauer, 1998; Baeskow, 2004; Kastovsky, 2009; ten Hacken, 2012), German (Lüdeling, Schmid, Kiokpasoglou, 2002; Lüdeling, 2006), and French (Fradin, 2000; Amiot and Dal, 2007). Then I explore how these five problematic areas of neoclassical formations have been treated in Russian grammatical theory (Švedova, 1982; Zemskaja, 2002. etc.).

Chapter five approaches neoclassical word formation in English from an onomasiological perspective. As a working domain, I chose medical terminology, more precisely the names of symptoms, syndromes and diseases. The motivation for this domain is that medical terminology is well known as a domain where neoclassical formations are frequent. Moreover, medical science develops fast, which is also reflected in new terminology that often makes use of neoclassical elements. Finally, medical terminology is well documented in a variety of specialized dictionaries. The data were collected from Stedman's (1997) *Concise Medical Dictionary for the Health Professions*, featuring 40 000 entries. For the selection of the particular lexical items the following criteria were chosen. The first essential criterion for the selection of a particular lexical item to be included in the sample was its neoclassical nature. Secondly, all analysed neoclassical formations belong either to the lexical field of diseases and conditions or to that of symptoms and syndromes. The word class of the items in the sample was restricted to nouns. Within these constraints, a random sample of 446 lexical items was taken. Then, each item in the sample was analysed in terms of Štekauer's eight onomasiological types (OTs) and their onomasiological structure was determined. The chapter describes the procedures of collection and analysis and summarizes the results.

Chapter six investigates how the phenomenon of neoclassical word formation can be approached in Russian on the basis of an onomasiological theory; it analyses the data and compares the results with the English data. It shows how Štekauer's onomasiological theory can account for both the borrowing aspects and the word formation aspects of Russian neoclassical terms.

The final chapter summarizes the most relevant conclusions obtained in previous chapters. I will demonstrate the advantages of an onomasiological approach to neoclassical word formation. It will be argued that Štekauer's onomasiological theory can account for the differences and similarities between English and Russian in an intuitively

appealing way. Štekauer's onomasiological model distinguishes a separate word formation component, which makes it possible to account for a rule-based neoclassical word formation in languages such as English, German or French. In Štekauer's theory there is a separate lexical component that can deal with the treatment of neoclassical formations as borrowings in Russian or Slovak. Thus, in this theory the different positions of neoclassical word formation in the two types of language emerge as two natural possibilities in the naming process. I will show how Štekauer's onomasiological model makes it possible to account for both the regular and the idiosyncratic aspects of neoclassical word formation. In this way, English can be analysed as having a rule system, whereas in Russian, borrowing is the predominant factor.



# CHAPTER TWO

## ONOMASIOLOGICAL THEORIES OF WORD FORMATION

An in-depth discussion of the main research problems concerning neoclassical word formation is not possible without introducing a theoretical framework. My research will be based on Štekauer's onomasiological theory of word formation (Štekauer 1998, 2005, to appear). Section 2.1 briefly explains the historical roots of the onomasiological approach to word formation and outlines some predecessors of Štekauer's theory. In section 2.2, an overview of Štekauer's onomasiological model and its application to word formation is presented. Then, section 2.3 addresses the problem of semantic categories. Questions concerning the essence of semantic categories, their characteristic properties and motivation for semantic categories are dealt with in more detail. Finally, the relations between different notions of categories and Štekauer's onomasiological model are discussed.

The examples used to illustrate relevant aspects of the onomasiological theory are from English and where appropriate from Russian and other languages. As mentioned in Chapter 1, my research questions address neoclassical formations in English and Russian. Therefore the domain of medical terminology, which is a rich source of such data, has been selected. In order to exemplify the onomasiological types proposed by Štekauer, both general and neoclassical medical terms will be used.

### **2.1 Historical background of the onomasiological approach to word formation**

The broader context of Štekauer's onomasiological model of word formation is determined by the theoretical assumptions of the Prague school of linguistics. Two attributes often used to characterize the research of the Praguians are *functional* and *structural linguistics*. Both terms are "equally important and emphasize what is new in the Prague school" (Dušková, 2003: 81). Essential here is the understanding of a *function* as

a task and Prague school linguists concentrate on research of functional tasks of language. Language is viewed as “a structure of linguistic signs, i.e. a basic series from the domain of signs with a direct relationship to reality. Such a structure of a given language is, of course, a social institution and it is functional. Therefore this linguistic approach is called *functional*, or at least *functional* and *structural*” (Dušková, 2003: 149). In other words, the Prague school is concerned with the problem of how language is structured and what relations exist between individual parts.

From the Praguian perspective, Dušková (2003: 156) states that language is seen as “a linguistic system composed of several large sub-systems which intersect and cooperate smoothly without overlapping or friction. These systems are phonological, morphological and syntactic.” All are considered independent or autonomous, but “none makes any sense without the rest” (Dušková, 2003: 156). It is also emphasized that language consists of planes or levels. These reflect the relations between *signifiant* and *signifié*. The phonic plane is related to the *signifiant* and the semantic plane to the *signifié*. The phonic and semantic planes are in opposition although it is understood that the semantic plane itself is complex. The existence of lexical-semantic/grammatical planes and morphological/syntactic planes is accepted, but according to (Dušková, 2003: 131), “it would be dangerous if we wanted to isolate the grammatical and lexical-semantic planes within this plane. It is even more difficult to separate the morphological and the syntactic planes. Every language has its own solution.”

Within the functional and structural theoretical framework of the Praguians, Dokulil (1958; 1962; 1994) developed a theory of word formation, or in his terminology *derivology*. He applied it to the Czech language. The semantic aspect is crucial in Dokulil’s approach to word formation, which at the same time made his theory significantly different from more formal theories developed in the same period, for example Marchand (1969), Chomsky (1957), Lees (1960), etc.

In order to elaborate a sound methodological basis for an onomasiological theory of word formation, it was necessary to identify the position of word formation especially in relation to other components of the language system (i.e. morphology, lexicology, syntax) and delimit the scope of study. Dokulil (1962: 221) delimits the position of word formation in the system of language as in (1).

- (1) “On the one hand, the study of word-formation is a part of lexicology, examining the whole of the word-stock; on the other hand, however, as far as word-formation in the proper sense of the word is concerned, it

necessarily belongs to morphology as well, because it employs morphological methods.”

This status of word formation raises the question of whether word formation is a part of grammar. The answer depends on the definition of the term grammar. Dokulil’s theory is based on Czech, which, in his opinion, is a language without clear-cut distinct boundaries between word formation and inflectional morphology (Dokulil, 1962: 222). Dokulil gives two main reasons for this. First, “the means primarily proper to morphology (grammatical word-formative suffixes and inflexional endings) may secondarily serve as means of word-formation” (Dokulil, 1962: 222). Second, there are some morphological categories, which “are not unequivocally classed with either lexical or inflexional morphology” (Dokulil, 1962: 222). These may be exemplified, for instance, by number on nouns, aspect and tense forms of verbs, or comparison of adjectives. Despite the absence of a clear distinction between word formation and inflection, Dokulil claims it is possible “to distinguish in principle between the two indicated levels” (Dokulil, 1962: 222). He considers the degree and quality of abstraction to be the main difference between word formation and inflectional categories. This means that word formation categories are always connected with lexico-semantic classes whereas inflectional categories “are only built up on lexical meanings, and abstract from them” (Dokulil, 1962: 222). More than thirty years later Dokulil (1994: 127) specifies the position of word formation as in (2).

- (2) “Since lexicology deals with the whole of the lexicon, the theory of word formation is basically understood as *a part of lexicology*; however, since word formation in the narrow sense uses morphological means, word formation is also closely connected with morphology, being distinguished from syntactic morphology by the term “*lexical morphology*”.”<sup>1</sup>

As can be seen in (2), Dokulil views word formation as tightly linked with the morphological and lexical plane or level of language. Even though the connection is obvious, word formation is understood as having a specific position, distinct from syntax. This distinction is not mentioned in (1) because the main focus is on positioning word formation in relation to morphology and lexicology. This remains the same in (2). The object of word formation entails two aspects: *genetic* and *functional-structural* (Dokulil 1962: 9; 1994: 127). While the former focuses on “formation in the proper processual meaning of the word on the processes of word

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<sup>1</sup> The emphasis is in the original

formation”, the latter concentrates on “the result of these processes on the patterning of words and on its impact on the system of language” (Dokulil, 1994: 127). Central to Dokulil’s theory is the notion of *onomasiological category*. Onomasiological categories are defined as “basic conceptual structures establishing the foundations of naming activity in the given language” (Dokulil, 1994: 133). It is assumed that the process of conceptualizing takes place in the human mind. Conceptualization includes registering the object, classifying it and then forming an expression in line with the word formation means of the language. The onomasiological category is composed of an onomasiological basis and an onomasiological mark. It is understood that the mark determines the basis. The onomasiological basis is always simple, which means “there can only be a difference in the level of abstraction, e.g. substance, animate being, man” (Dokulil, 1994: 133). This also means that all structures are left-branching. The onomasiological mark can be either simple or compound as illustrated in (3).

- (3) a. beeper  
 b. blood bank  
 c. bronchodilator  
 d. white blood cell

The examples (3a) and (3b) demonstrate a simple onomasiological mark, whereby the onomasiological base represented by Substance is specified by a simple mark of Action in *beeper* ‘a small piece of electronic equipment that makes short high sounds as a signal to telephone someone’ and that of another Substance in *blood bank* ‘a store of human blood to be used in hospital treatment’.<sup>2</sup> In (3c), the meaning of *bronchodilator* is ‘an agent or a substance that dilates the bronchi’. The onomasiological basis is represented by a Substance and realized by *-or*. It is specified by an Action aimed at an Object, which means the onomasiological mark is complex. Similarly, (3d) presents a compound onomasiological mark with a non-actional relation. In *white blood cell* ‘a type of blood cell that protects the body against infection’, the Substance is determined not only by another Substance, but also by a Quality. Although *white* and *blood* do not form a constituent because *white* modifies *blood cell*, not *blood*, they are together the onomasiological mark. Dokulil’s concept of onomasiological category is used by many linguists working in onomasiological theory, for

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<sup>2</sup> The paraphrases are taken from the Longman Dictionary of Contemporary English, online version



instance by Horecký (1983, 1994), (see below) and Štekauer (1998, 2005), (see 2.2).

Dokulil (1962: 47) distinguishes three onomasiological categories: mutational (relational), transpositional and modificational. The mutational category is the most basic type. The concepts of one semantic category constituting the onomasiological base are specified by the concepts of either the same or a different semantic category representing the onomasiological mark. For instance, the semantic category of SUBSTANCE is determined by its relation to the concept of the semantic category of SUBSTANCE (*blood bank*) or ACTION (*extensor, flexor*). The meaning of the resulting derived word differs substantially from the meaning of the base.

In the transpositional category a phenomenon understood as a mark dependent on a SUBSTANCE is generalized (abstracted) and becomes independent of the SUBSTANCE. An example is the objectification of QUALITY (*obsessive – obsessiveness*). It is only the word class that changes, not the lexical meaning of the base. A more detailed explanation of the nature of the dependence on a SUBSTANCE is needed at this point. The mark represented by a quality, action or determination of the mark depends on a SUBSTANCE in the sense that it is generalised and abstracted as an independently existing and delimited phenomenon, for instance *good – goodness, tall - tallness*. As Dokulil (1962: 43) points out, the transpositional onomasiological category is only conditionally referred to as an onomasiological category. The main reason is that with transposition, it is not possible to speak of naming of a phenomenon, but rather of re-evaluation of an already named phenomenon. The three subtypes Dokulil (1962: 43-46) distinguishes support this statement. The first subtype is an objectivization of QUALITY (*rychlý* ‘quick’ → *rychlost* ‘quickness’, *hravý* ‘playful’ → *hravost* ‘playfulness’). The second type of transpositional category is based on an objectivization of ACTION (*padnout, padat* ‘to fall’ → *pád, padnutí, padání* ‘the fall, the falling’). The essence of the last type is in the change of the determination of the mark into the mark itself (*noviny visící na stěně* ‘(a) newspaper hanging on the wall’ → *noviny nástěnné* ‘wall newspaper’); these examples are taken from Dokulil (1962: 229). A similar account of transposition can be found in Beard’s (1995) meaning-based Lexeme-Morpheme Base Morphology. For Beard, transposition takes place when a lexeme changes a syntactic category without changing a lexical meaning as in *obsessive – obsessiveness*. Beard’s Separation Hypothesis makes a sharp distinction between the addition of formal elements, such as suffixes, and the change or addition of semantic or morpho-syntactic features. This means that in

the example *obsessive – obsessiveness*, it is only the form, i.e. the syntactic category that changed. For Beard, transposition is one of four types of Lexical (L-) derivation, whereas for Dokulil there are some reservations as to the status of transposition in the sense of whether it can be considered a truly onomasiological category within the scope of word formation or not.

The modificational category differs from the other two in the fact that a modifying feature (mark) is added to a concept of a particular semantic category. The modification can be of several types including not only diminutives but also augmentatives, collective nouns and changes of gender. In medical terminology, diminutives in an etymological sense are quite frequent e.g. *platelet, arteriole, venule, ventricle*, but they are not perceived as such synchronically.

Interestingly, Dokulil (1994: 135-136) gives four main types of onomasiological categories and their validity specifically for Czech is emphasized. The most important category is the mutational (relational) category. Coordinative and reproductional onomasiological categories are added to the transpositional and modificational ones. The coordinative type is characterized by two or more components of the same type, for instance *opočlověk* ‘ape-man’. The reproductional onomasiological categories take a natural sound as a starting point for naming, frequently activity, e.g. *hafat* ‘utter the sound *haf* usually produced by dog’.

Dokulil’s onomasiological theory (1962) influenced the work of many other researchers such as Filipec (1972), Hauser (1986). It also had an impact on the development of onomasiological theories applied to Slovak, for instance Furdík (1978a, 1978b) and Horecký (1983, 1994). As Dokulil and Horecký inspired the onomasiological model of word formation developed by Štekauer (1998, 2005), I will now turn to a brief description of Horecký’s model.

Horecký’s model of the linguistic sign begins with a particular object of extra-linguistic reality and is organized in conceptual, semantic, onomasiological, onomatological and phonological levels. The conceptual level is also referred to as the pre-semantic component (Horecký, 1994:12) and describes an object of extra-linguistic reality by means of logical predicates. Based on the Saussurean concept of the linguistic sign, the semantic level constitutes the *signifié* while the onomasiological, onomatological and phonological levels combine to form the *signifiant*.

Let us first turn to the formal levels. The onomasiological structure is expressed by the *onomasiological base* and the *onomasiological mark*. As can be seen, this is entirely in line with Dokulil’s basic notions. The onomasiological base also carries a set of features, e.g. word class and

related categories. Both the onomasiological base and the onomasiological mark are expressed by morphemes (formants) at the onomatological level. The phonological level specifies the phonological features of a particular naming unit and applies the appropriate phonological rules.

The semantic level deserves more detailed discussion because it plays the most prominent role in Horecký's multi-level model of word formation. Horecký (1994) differentiates between four types of meaning: categorial, invariant, specific and lexical. As pointed out by Štekauer (2005: 211), "the first three meanings as a whole are labelled as the *structural* meaning (given by the interrelation between onomasiological base and mark), and underlie the lexical meaning". Horecký (1980: 84) provides the example of the Slovak word *hovädzina* ('beef') to illustrate the four meanings. The categorial meaning (i.e. value)<sup>3</sup> of *hovädzina* ('beef') is a denominal noun and the invariant meaning is defined by a string of semantic features: -HUM +CONCR +RES -INS +MAT -FIN +ORIG. Horecký does not explain the meaning of these abbreviations, but some of them can easily be recognized as human, concrete, instrument, material and origin. The specific meaning is 'meat from a certain animal' and its lexical meaning is 'meat from beef cattle'. The specific meaning specifies that it is a particular kind of meat and it represents a model for denoting the whole class of different kinds of meat. Only the lexical meaning comprises the information that the meat comes from beef cattle.

Horecký (1994) sets out a list of distinctive semantic features, explains their relations and finally provides their hierarchical arrangement. In this theory, a set of distinctive semantic features constitutes the semantic level of the language and describes a particular word formation field. It is the word class of the word formation base and the resulting naming unit (deadjectival adjectives, deverbal nouns, denominal verbs, etc.) that define a corresponding word formation field. For a semantic description of diminutives in Russian, cf. Panocová (2013). As can be seen, Dokulil's model focused on a detailed elaboration of the concept of onomasiological category and naming processes of nouns, verbs and other word classes in Czech were investigated from the perspective of such conceptual structuring. Horecký added to this a model of the linguistic sign, which in his view was seen not only as a form and meaning unit, but also as a multi-level hierarchically organized element consisting of onomasiological, onomatological and phonological levels constituting the formal part, and semantic level corresponding to meaning. These two contributions were

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<sup>3</sup> In Slovak, *význam* is used in the sense of 'meaning' but it is broader in scope than the English equivalent. In this case, it is more idiomatically translated as 'value'.

then elaborated by Štekauer (1998, 2005) into a more comprehensive model of word formation, to which we turn now.

## 2.2 Štekauer's onomasiological theory of word formation

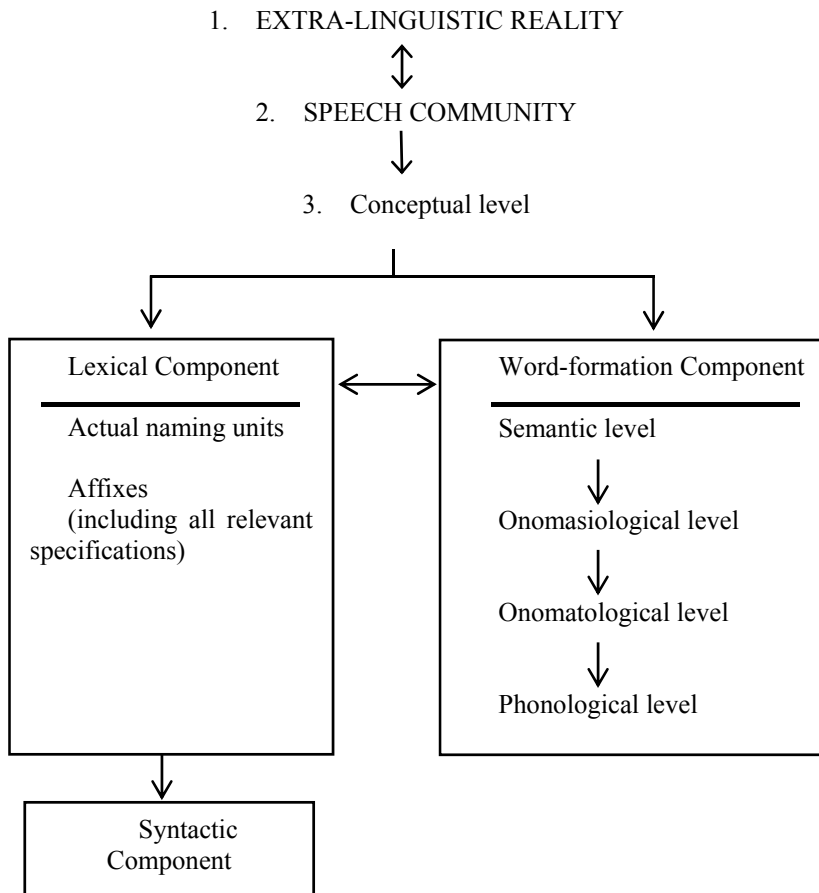


Figure 2-1 Štekauer's onomasiological model of word formation (after Štekauer, 2005: 213)

This section introduces Štekauer's (1998, 2005, to appear) onomasiological theory of word formation. As mentioned in 2.1, this theory draws on the assumptions of the Prague school of linguistics, more precisely the theories developed by Dokulil (1962) and Horecký (1983). The model is represented in Figure 2-1.

In Štekauer's model of word formation, a language such as English, Russian or Slovak is based in the speech community and realized in the minds of speakers. The onomasiological approach takes as a starting point the way language is used to talk about concepts. These concepts are based on the extra-linguistic reality and the way the speech community interacts with it. When a need to name a new concept arises, the speech community determines the relevant conceptual properties and turns to its language, which provides naming mechanisms such as word formation. As alternative mechanisms, the meaning of an existing word can be extended or a word can be borrowed.

A crucial distinction in this model is the one between linguistic and extra-linguistic components of the naming process. In terms of the Saussurean model of the sign, the extra-linguistic part of the process results in a *signifié* and the linguistic part assigns a *signifiant* to it.

As illustrated in Figure 2-1 there are three main components in Štekauer's model: the Lexical component, the Word Formation component and the Syntactic component. These three components are related to each other and together they constitute the language. The Word formation component consists of four levels that bridge the gap between the meaning and the form. When a naming need arises, the speech community determines whether a name can be retrieved from the existing Lexical component or a new name is needed. The naming process in the Word formation component follows the trajectory through all four levels. The semantic level specifies semantic properties and the onomasiological and onomatological levels gradually specify form classes. Finally, the phonological level determines the name as it can be pronounced. This is also a point where Horecký's and Štekauer's model differ because in the former model, the onomasiological level is considered to be the part of the formal part of linguistic sign.

At this point it is worth outlining some fundamental assumptions of Štekauer's meaning-based theory of word formation. Štekauer (1996, 1998) highlights seven crucial tenets of his theory, which will be dealt with in more detail in turn in the paragraphs below.

For Štekauer (1998: 2-3), Word formation has its own position next to the Lexical component and the Syntactic component. The independence of the Word formation component is emphasized. Although a direct

connection between word formation and the Lexical component exists, there is no direct connection with the Syntactic component. The model also makes a sharp distinction between word formation and inflection. Inflectional morphology is part of the Lexical component.

Word formation rules in Štekauer's model are productive and regular in the sense that they are ready to "fully respond to naming needs of a speech-community" (Štekauer 1998: 3). In Štekauer's model, once a new naming unit is coined in the Word formation component, it is passed on to the Lexical component. The Lexicon is the place where morphosyntactic features are assigned and other lexical relations are specified. Moreover, the Lexical component accounts for all idiosyncracies. This feature also supports the argument that word formation is regular and productive. Štekauer's Lexicon "stores all naming units (monemes and complex words, borrowed words, clippings and acronyms) as well as affixes and feeds the WF component with WF bases and affixes in accordance with its needs" (Štekauer 2005: 214). This brings us to another important claim, which is that only the items stored in the Lexicon serve as a basis for coining new naming units in the Word formation component. This implies that the Lexicon and Word formation are viewed as independent, but collaborating components in a language.

The notion of productivity is complex and there are several perspectives from which it can be approached. Corbin's (1987) analysis of various aspects of productivity seems useful especially in relation to Štekauer's understanding of this notion. Corbin (1987: 177) distinguishes three interpretations of "productivity" presented in (4):

- (4)
- a. régularité (regularity): predictability of form and meaning of the output,
  - b. disponibilité (availability): availability of a rule for new formations,
  - c. rentabilité (profitability): extent to which a rule can be applied to many bases and have many outputs.

*Profitability* sees productivity as a matter of degree. The productivity of a rule or process can be placed on a scale from rarely used to generally used. *Regularity* is similar to *profitability* as a property of rule application. However, the former is linked to an individual rule application whereas the latter applies to a collection of rule applications. *Availability* sees productivity as an absolute notion. A rule or process is productive if it can be used to produce new expressions. It seems plausible to assume that all three of Corbin's notions of productivity play a role in Štekauer's onomasiological model. Štekauer (2005: 221) distinguishes four levels of productivity: productivity of Onomasiological types, productivity of Word formation types, productivity of Morphological types, and productivity of