nomasiological approach to word-formation

1. Theoretical approaches

1.1 Miloš Dokulil

While little known in the English-speaking countries, Dokulil’s position in the countries of Central and Eastern Europe may be compared to that of Marchand in Western Europe. No wonder, his onomasiological theory of word-formation, published as early as 1962 (and further developed in Dokulil 1964, 1968 a-d, 1997), is a pioneering, highly seminal work, presenting a unique, comprehensive theory of WF in which he – long before the generativists – discussed a multiplicity of essential word-formation issues, such as the place of word-formation in the system of linguistics, the differences between morphological and WF analyses, WF motivation, productivity, internal form of a word, lexicalization, WF paradigms, and the notion of WF type. In terms of its significance for the development of WF theory, this ingenious book is on a par with Marchand’s Categories (1960, 1969). Although his theory is illustrated with Czech examples its theoretical principles are of general validity.

WF is conceived by Dokulil as an ‘autonomous domain within the system of linguistics’ (1997: 185). The cornerstone of his onomasiological theory of WF is the idea of onomasiological category. Any act of naming an object is based on its reflection and processing in human consciousness. Onomasiological categories are thus defined by Dokulil as different types of structuring the concept in view of its expression in the given language, i.e., the essential conceptual structures establishing the basis for the act of naming. In principle, they consist of two elements. The phenomenon to be named is first classed with a certain conceptual group and functions as onomasiological base. Then, within the limits of this group, it is determined by an onomasiological mark. For example, the onomasiological base of blackberry is berry (because the concept of BERRY is common to the whole conceptual group of various berries). Its onomasiological mark is black. While one can trace an analogy with Marchand’s word-formation syntagma, analysed as determinant-
determinatum, Dokulil’s terms put emphasis on the level of conceptual processing. While base is always simple (any differences concern the level of abstraction), mark may be either simple or compound. A simple mark within the limits of the conceptual category of SUBSTANCE is Quality (blackberry)\(^1\) or Action conceived without regard to its Object (worker). Examples of a compound mark include woodcutter, where the Object of Action is specified, and policeman illustrating a non-Actional relation. The previous examples also indicate that the two elements of mark, i.e., the determining and the determined elements, may but need not be explicitly expressed. In Dokulil’s view, the basic types of onomasiological structure can be determined according to the categorial nature (SUBTANCES, ACTION, QUALITY, CIRCUMSTANCE) of its polar members, i.e., according to the base and the determining element of mark, called motive. For example, a concept of the category of SUBSTANCE is determined by its relation to a concept of the category of (a) SUBSTANCE (policeman), (b) QUALITY (blackberry), (c) ACTION (teacher), (d) CONCOMITANT CIRCUMSTANCE (evening paper). Other onomasiological structure types are determined analogically. These types can stand for the multiplicity of semantic relations, including the Bearer of Quality (blackboard), Agent (teacher), Instrument of Action (excavator), Patient (prisoner), Result of Action (print-out), etc.\(^2\) A certain structure may be realised by several naming units (NUs), emphasising its different aspects (compare hot-house, glass-house, green-house).

Dokulil distinguishes three Onomasiological Categories. The basic type discussed above is called Mutational (or, Relational). In this case, an ‘object’ of one conceptual category is characterized (and named) according to its direct or mediated relation to an ‘object’ of the same or some other conceptual category.

In the Transpositional type, the phenomenon, usually conceived as a mark, dependent on a SUBSTANCE, is abstracted from all the phenomena upon which it objectively depends, and is viewed as an independently existing phenomenon, for example, the objectification

\(^1\) My examples, if no suitable English equivalents to the Czech examples are available.

\(^2\) Dokulil (1962) gives a highly fine-grained classification of these relations.
of Quality (rapid – rapidity) and the objectification of Action (fallIV – fallN). The Modificational type is based on adding a modifying feature, for example, diminutives (dog – doggy), augmentatives (a big dog), change of gender (waiter – waitress), names of the young (fox-cub), collectiveness (mankind), measure/degree (the tallest).

1.2 Pavol Štekauer

Štekauer’s cognitive onomasiological theory (Štekauer 1996, 1998, 2001b) was inspired by Dokulil’s idea of onomasiological structure and, primarily, by Horecký’s multilevel model of linguistic sign (1983, 1989). At the same time, it responds to the one-sided formalism of the mainstream generative word-formation. The general linguistic background is that of the functional-structural approach of the Prague School of Linguistics. Therefore, the form-meaning unity, i.e., the bilateral nature of morphemes is regarded as the fundamental principle.

1.2.1 Word-formation as an independent component

The basic scope and principles of word-formation can be defined as follows:

1. Word-formation deals with productive and rule-governed patterns (word-formation types and rules, and morphological types) used to generate motivated naming units in response to the specific naming needs of a particular speech community by making use of word-formation bases of bilateral naming units and affixes stored in the Lexical Component.

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3 An important and most valuable exception to this formalism is Beard’s Lexeme-Morpheme Base Morphology (1995) (cf. chapter... in this volume) which is, in effect, a variant of an onomasiological approach to word-formation.

4 This term was first introduced by Mathesius (1975). In my approach, it substitutes for the terms like word, lexeme, lexical unit, etc., because of their inconsistent use and various connotations in linguistic literature. “Naming unit” refers here to a complex unit generated by the Word-Formation Component.
The individual aspects of this definition are discussed below. The cognitive onomasiological theory identifies word-formation as an independent component of linguistics, as illustrated in Figure 1. The scheme represents a crucial triad of relations between extra-linguistic reality (object to be named), a speech community (represented by a ‘coiner’), and the word-formation component, thus emphasising the fact, ignored by the vast majority of the mainstream word-formation theories, that each act of naming responds to a very real and specific naming demand on the part of a member (members) of speech community. The notion of speech community should not be taken absolutely, i.e., there is hardly any word-formation process which responds to a naming demand of all the speakers of a particular language. Rather, such a demand is closely connected with a limited number of ‘first-contact’ users; a coinage may or may not subsequently find a wider use.

The above-mentioned triad reflects the following principles:

(a) It lays emphasis on the active role of language users in the process of giving names to objects instead of presenting word-formation as an impersonal system of rules detached from the objects named and from language users.

(b) The naming act is not a purely linguistic act. Naming units do not come into existence in isolation from factors, such as human knowledge, human cognitive abilities, experiences, discoveries of new things, processes, and qualities, human imagination, etc. This position is in accordance with Koch’s idea that the onomasiological viewpoint is closer to that of the speaker as a linguistic innovator than the semasiological viewpoint (2001: 17). An object to be named is not named in isolation but is envisaged in relation to the existing objects. By implication, any naming act is necessarily preceded (or dominated) by a network of ‘objectively’ existing relationships. By implication, the naming act is a cognitive phenomenon relying on the intellectual capacities of a coiner.

(c) It stresses a close interconnection between linguistic and extra-linguistic phenomena.
Figure 1 Word-Formation Component and its relation to other components

The model represented in Figure 1 also indicates a direct connection between the WF and the lexical components, and a mediated connection between the WF and the Syntactic components. This makes this model different from those theories that consider WF as a part of the lexicon or a part of syntax.5 The relation between the

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5 Cf. Dokulil (1964) for an insightful discussion supporting the separation of word-formation from syntax.
WF and the lexical components is based on their close ‘co-operation’. On the one hand, the 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. On the other hand, all new naming units formed in the WF component are stored in the lexicon. It should be noted that WF focuses on the process of forming isolated naming units rather than on using them (this being the scope of syntax). A naming unit which falls within the scope of WF must be a structurally analysable linguistic sign, and the sign nature must also be an inherent feature of its constituents. This condition is identical to that proposed by Marchand (1960: 2).

It is assumed that each act of naming is preceded by scanning the lexical component by a coiner. The scanning operation determines the next procedure. Either a completely new naming unit is coined by taking the path of the WF component; or, if a naming unit is found in the lexical component that can serve as a basis for semantic formation, it is the path of the lexical component which is preferred (hence, two downward arrows from the ‘Conceptual level’ in Figure 1). By implication, no new naming units, formed according to productive and regular rules of WF are generated in the lexicon (however, any and all later semantic shifts and/or formal modifications (clipping, acronymization) of naming units, productively formed in the WF component, take place in the lexicon).

1.2.2 The act of naming

The following theoretical account of the act of naming interprets the model graphically represented in Figure 1. For ease of understanding, the theory is illustrated with an example of giving a name to the class of ‘persons whose job is to drive a vehicle designed for the transportation of goods’

Extra-linguistic reality vs. speech community

As mentioned above, a speech-community, through its diverse cognitive activities, selects what there is in extra-linguistic reality that deserves a name. This interrelation between extra-linguistic reality and a speech community predetermines all the subsequent steps within
the act of naming. One of thousands of ‘objects’ of extra-linguistic reality that were considered as worth naming sometimes in the past was ‘a person whose job is to drive a vehicle designed for the transportation of goods’.

**Conceptual level**

The primary task to be mastered at the conceptual level is to analyse the object (in the broadest sense of the word) to be named; or better, a class of objects – a name is not given to a single object but to a whole class of similar objects. This is the task of the conceptual level which, based on the processes of generalisation and abstraction, captures the prototypical features of the class of objects by means of logical predicates (simple declarative sentences, also called noemes). A set of logical predicates constitutes a logical spectrum. The logical spectrum is an ‘onomasiological answer’ to the generation of complex words from a single ‘ill-defined’ kernel sentence by transformationalists, and to the account of the internal structure of complex words by a single paraphrase by lexicalists. The logical spectrum provides a more comprehensive view of the class of objects to be named, and is therefore less voluntaristic.

In our example, the logical spectrum can be represented as follows:

\[
(2) \quad \text{The motivating Object 1 is SUBSTANCE1.}
\]

\[
\text{A SUBSTANCE1 is Human.}
\]

\[
\text{The Human performs an ACTION}.
\]

\[
\text{The ACTION is the Human’s Profession (=Agent).}
\]

\[
\text{The Human is an Agent.}
\]

\[
\text{The ACTION concerns SUBSTANCE2 (=Object of Action).}
\]

\[
\text{The ACTION is based on an Operation of SUBSTANCE2.}
\]

\[
\text{SUBSTANCE2 is a class of Vehicles.}
\]

\[
\text{SUBSTANCE2 is an Object of the ACTION performed by SUBSTANCE1.}
\]

\[
\text{The Vehicles are designed for the Transportation of goods.}
\]

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Etc.

Semantic level
The logical spectrum is not a part of a linguistic sign, and is language-independent. Therefore, the individual logical predicates of this supralinguistic level must be represented by semes constituting the semantic structure (meaning) of the linguistic sign proper.

Thus, the semantic level as the meaning facet of linguistic sign maps the defining spectrum, represented in (2), onto the semantic level of a new linguistic sign:

(3) [+Material] [+Animate] [+Human] [+Adult] [+Profession] [+Agent];
    [+Material] [–Animate] [+Vehicle] [+Transportation] [+Object of Operation] etc.

Onomasiological level
At the onomasiological level, one of the semes is selected to function as an onomasiological base denoting a class to which the object belongs, and one of them is selected to function as a mark that specifies the base. The mark can be, in principle, divided into the determining constituent and the determined constituent. The latter always stands for the category of Action in one of its three modifications (Action proper, Process and State). The semantic relations between the base and the two mark constituents constitute an onomasiological structure. Since this structure consists of semes which reflect, at the semantic level of a linguistic sign, the respective logical predicates of the conceptual level, it may be concluded that the onomasiological structure is a conceptual-semantic basis for the act of naming.

To return to our example, it follows from the conceptual level analysis that a good candidate for the act of naming seems to be an onomasiological structure in which the base stands for an Agent (a class of Humans performing the Action as their profession) of Action

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7 The notion of 'seme' is conceived here in accordance with the notion of 'semantic marker' used in the theory of componential analysis.
8 The majority of logical and semantic categories have been taken over from Hansen et al. (1982).
(determined constituent of mark) aimed at its Object, i.e., the class of Vehicles (determining constituent of mark):

(4) (Logical) Object ← Action – Agent

**Onomatological level**

At this level, the onomasiological structure is linguistically expressed in accordance with the Morpheme-to-Seme-Assignment Principle (MSAP). In particular, the individual constituents of onomasiological structure (its semes) are assigned morphemes, in particular, WF bases of naming units and affixes stored in the lexicon. The operation is based on matching the meaning facet of a potential morpheme with the respective seme of the onomasiological structure. The MSAP operates both horizontally and vertically. Vertically, it scans the lexicon with regard to the lexical and affixal morphemes that can be retrieved to represent the semes of the onomasiological structure. Horizontally, it reflects the semantic compatibility and formal combinability/restrictions of the individual lexical and affixal morphemes.

In our example, there are several options at this level. Thus, Agent can be expressed, inter alia, by -er, -ist, -ant, -ian, -man, because the meaning facet of each of these morphemes can be represented as ‘Agent’. The Action of operating the SUBSTANCE2 can be expressed, for example, by WF bases of naming units drive, steer, operate, because the meaning facet of each of them matches with the seme ‘Operation’. Finally, the (logical) Object can be represented by truck, lorry, and possibly some other WF bases, the meaning of which is Vehicle. The selected options in our particular case are as follows:

(5) Object ← Action – Agent
    truck       drive       -er

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9 In Štekauer (1998) and all the subsequent publications I use the term Form-to-Meaning-Assignment Principle. However, I find the present labeling more accurate as it is morphemes (rather than pure formal elements) that are assigned to semes.

10 This concept of onomasiological structure differs from that of Horecký in three points. First, Horecký’s onomasiological level is a formal level; second, all morphemes in the present model are stored in the lexicon; and, third, the function of MSAP is elaborated.
There are at least two other basic representation types of the selected onomasiological structure. First, SUBSTANCE2 may be backgrounded, in which case the resulting naming unit may be, for example, driver; and second, Action may be backgrounded, which may yield something like truckist or truckman. The fact that all naming units are based on assigning linguistic units to semes, constituting an onomasiological structure, makes it possible to dispense with the traditional notions of WF processes, including compounding, prefixation, suffixation, back-formation, and blending. The traditional classification of WF processes is based on purely formal criteria, i.e., on the external form of naming units. Consequently, it does not reflect the ‘interactions’ above and within the WF component. Therefore, it appears to be more appropriate to classify the processes leading to new naming units by reflecting the mutual interaction between the concept-grounded onomasiological level and the morpheme-grounded onomatological level, i.e. by interrelating the supra- and the intralinguistic levels. This makes it possible to view all new naming units as resulting from the identically grounded acts of coining. Put differently, the generation of all naming units is put on a uniform basis. This approach makes it possible to show what is, for example, common to ‘compounding’ and ‘suffixation’.

For illustration, they may express the same onomasiological structure of ‘Action – Agent’ (the common feature) of, for example, ‘a person who frequently smiles’, with the difference being in assigning different morpheme types: WF base + -er (smiler) vs. WF base + WF base (smile person).

Similarly, blending is, in principle, viewed as the same process of WF as compounding. It is accounted for as a regular act of naming taking place in the WF component. During this process, a particular onomasiological structure is assigned two WF bases (e.g., slang + language). Such a naming unit is then formally reduced in an unpredictable (and hence, irregular) way which cannot be captured by any productive WF Type/Rule. Such a change necessarily takes place in the lexical component.11

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11 Cf. Štekauer (1998) on the onomasiological account of back-formation and exocentric compounds.
Phonological level
The final step in the act of naming consists in phonological shaping the new NU in accordance with relevant phonological rules. In our example, it is the assignment of the corresponding stress pattern.

(10) ‘truck,driver

1.2.3 Onomasiological Types
Onomasiological Types result from the interaction between the onomasiological and the onomatological levels. There are five possible relations between the two levels that identify five basic Onomasiological Types.

In Onomasiological Type 1, illustrated in the above-given example, all three onomasiological structure constituents, i.e., the base, the determining and the determined constituents of the mark, are linguistically expressed at the onomatological level. Two more examples will illustrate the point (it should be noted that the following onomasiological structures are based on logical spectra that are not specified here for space reasons):

(11) house-keeping (the Process of performing some Action aimed at an Object):

Object – Action – Process
house  keep    -ing

(12) signal-generator (Instrument for an Action producing some Result)

Result – Action – Instrument
signal generate -or

The onomasiological structure of Onomasiological Type 2 is binary, the determining constituent of the mark is absent. However, this Type is extendable to Onomasiological Type 1.

(13) Action – Agent
write    -er
A crucial feature of the first two types is that the Actional seme (the determined constituent of the mark) is morphematically expressed, which facilitates the interpretation of naming units.

The onomasiological structure of Onomasiological Type 3 is ternary as in Type 1, but the determined constituent of the mark is left unexpressed at the onomatological level:

14) Action – Instrument
spinning wheel

15) Result – Action – Agent
novel 0 -ist

16) Patient – State – Evaluation (Diminutive)
dog 0 -ie

17) Temporal Stative – State – Patient
summer 0 house

In Onomasiological Type 4, the mark is simple and unstructured, i.e., it cannot be divided into the determining and the determined constituents.

18) Negation – Quality
un happy

19) Quality – State
blue-eye -ed

20) Repetition Action
re- gain

The MSAP principle eliminates the problem of whether or not new words can be based on non-existing words (cases like handedness, unsightly, sabre-toothed, coined – as claimed by some generativists –
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on the basis of non-occurring words *handed, *sightly, *toothed). For example, sabre-toothed is based on assigning the morphemes sabre, tooth, and -ed to the onomasiological structure resulting from the conceptual-level analysis, indicating a Quality of something that has [=State] teeth similar [=Pattern] to those of a sabre:

(21) Pattern – Quality [=State]
sabre tooth -ed

In this case, sabre functions as the specifying and tooth as a specified element of the unstructured mark.

1.2.4 Conceptual (onomasiological) recategorization

Štekauer (1992) argues against the notion of zero-morpheme in English inflectional and derivational morphology, and by implication, against the concept of conversion as zero-suffixation. The onomasiological approach to conversion (Štekauer 1996, 1997) is based on the fact that each naming unit results from an intellectual analysis of an extra-linguistic object to be named. Within this analysis, the object is classed with one of four general conceptual categories (cf. 3.1 above): SUBSTANCE, ACTION (including ACTION PROPER, PROCESS, and STATE), QUALITY, and CIRCUMSTANCE. The individual aspects of extra-linguistic reality do not exist in isolation; on the contrary, they can be conceived of and subsequently linguistically expressed in various relationships, from different points of view. These different ‘angles of reflection’ of extra-linguistic reality can be cognitively brought into a close relation by re-evaluating the already existing logical spectrum, which has its effects upon all the lower levels. Then, the most striking feature of conversion is that it linguistically expresses the conceptual (onomasiological) recategorization of extra-linguistic reality.

Thus, for example, databank represents a SUBSTANCE. When conceptually recategorized, it becomes an ACTION; experiment expresses a PROCESS – after recategorization it refers to an ACTION

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12 For the discussion on this issue see, for example, Roeper & Siegel (1978) and Botha (1984))
13 It should be noted that the determining constituent of mark can only be represented by an Action/State/Process seme
PROPER; limit is a CIRCUMSTANCE – after recategorization it is an ACTION; feature is a QUALITY – its recategorization yields a STATE; insert is an ACTION – when recategorized it becomes a SUBSTANCE; stand is a STATE – when recategorized it becomes a SUBSTANCE.

What is the mechanism of these changes? As already mentioned, the individual logical predicates constitute a hierarchy. The recategorization process consists in replacing the original dominating logical predicate with a new one which determines the conceptual category of a new extra-linguistic object to be named. The conceptual re-evaluation of extra-linguistic reality precedes the linguistic processes proper. It is the conceptual recategorization which provides us with the evidence that conversion cannot be identified with zero suffixation; conceptual recategorization is vital to conversion while only possible for suffixation.

Let us illustrate the point. The naming unit milk belongs to the conceptual category of SUBSTANCE. Its typical hierarchy of logical predicates is given in Figure 2. When the hierarchy within the logical spectrum in one of the converted meanings of milk ('to obtain milk from a female mammal') is changed, the recategorization from SUBSTANCE to ACTION takes place. The central position within the hierarchy of logical predicates is assumed by a predicate focusing on the Actional aspect of the particular extra-linguistic object.

![Conceptual level: Original logical spectrum](conceptual_level.png)

![Conceptual level: New logical spectrum](conceptual_level_new.png)
One of the basic postulates of the present onomasiological theory is that all naming units, falling within its scope, that is to say, all naming units coming into existence in the Word-Formation Component, are coined by productive word-formation and morphological types/rules. Any and all post-word-formation deviations take place in the lexicon.

One of the major deficiencies of various computation methods, employed within the generative framework for the evaluation of productivity, seems to be their limited scope; they are usually restricted to the productivity of affixes. It may be therefore proposed that instead of the too restrictive affix-driven productivity approach we need a general WF-Rule-driven theory of productivity covering the whole stock of complex naming units. This implies the importance and the necessity of defining the (so far) vague notion of Word-Formation Rule (WFR). The present model distinguishes the following levels of productivity:

\[\text{Semantic level: [Material] [Inanimate] [Liquid] [From Female Mammal] [Foodstuff]} \ldots\]

\[\text{Onomasiological level: SUBSTANCE Result ACTION}\]

\[\text{Onomatological level: milk}\]

\[\text{Phonological level: ‘milk ‘milk}\]

Figure 2 The conceptual level of Onomasiological Recategorization

As opposed to Types 1-4, Onomasiological Type 5 is characterized by an unstructured onomasiological level. There is neither onomasiological base nor onomasiological mark. The original and the new dominating conceptual categories are related directly (Figure 2).

1.2.5 An Onomasiological Approach to Productivity

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1. the productivity at the level of Onomasiological Types
2. the productivity at the level of Word-Formation Types
3. the productivity at the level of Morphological Types
4. the productivity at the level of Word-Formation Rules

Productivity of Onomasiological Types
As indicated above, the present model distinguishes five Onomasiological Types ranging over all productive ways of forming new naming units. Since they are based on the criterion of which constituents of the onomasiological structure are linguistically expressed at the onomatological level, the determination of their respective productivities is an important indicator of the preferences of language users (or better, coiners) in terms of employing different cognitive processes underlying the act of naming, on the one hand, and the different ways of their linguistic representation, on the other. The productivity calculation at this level may indicate which of the two universal, contradictory tendencies, i.e., economy of speech and explicitness of expression (comprehensibility), dominates in a particular language (area). Here we face two gradual oppositions: (a) Types 1-3 (complex analysis at the conceptual level) vs. Type 4 (simplified onomasiological structure) vs. Type 5 (absence of onomasiological structure), (b) Type 1 (complex linguistic representation of complex structure) vs. Types 2 and 3 (economized expression of complex structure) vs. Type 4 (economy due to onomasiological structure) vs. Type 5 (absolute economy).

Productivity of Word-Formation Types
A more specific level is represented by WF Types. The computation of productivity of WF Types is related to a conceptual category, such as Agent, Instrument, Location, Action, Result of Action, etc. This makes it possible to include in the computation of the productivity of, for example, Agent names (broadly defined as ‘persons performing some activity’), naming units of different structures, hence different WF Types ([Object ← Action – Agent]; [Action – Agent]; [Location – Action – Agent]; [Result ← Action – Agent]; [Instrument – Action – Agent]; [Manner – Action – Agent]; etc.). All of these different structures represent various WF Types. All of them, however, may be used to coin new naming units falling within
one and the same conceptual category (Agent, in our example), and therefore represent a single Word Formation Type Cluster (WFTC). Any WFTC is – with regard to the particular conceptual category – 100% productive; the productivity of the individual WF Types may be computed internally, within the WFTC, as a share of the individual WF Types of the total number of naming units belonging to the given WFTC.

Productivity of Morphological Types

Any WF Type may have various morphological representations (wood-cutter [N+V+er] – novelist [N+ist] – writer [V+er] – cheat [N–V] – oarsman [N+s+man] – transformational grammarian [A+N+ian] – bodyguard [N+N], etc.). All of these different morphological structures represent various Morphological Types. Since they are used to coin new naming units falling within one and the same conceptual category (Agent, in our example), they represent a single Morphological Type Cluster (MTC). Any MTC is – with regard to the particular conceptual category – 100% productive, and the productivity of the individual Morphological Types may be computed internally, within the particular MTC.

Productivity of Word-Formation Rules

Word-Formation Rules (WFRs) are constituted by the unity of WF Types and Morphological Types. Thus, the conceptual category of Agent may be exemplified, inter alia, by the following WFRs:

(23)  a. Action – Agent
      Verb  -er  (driver)
  b. Instrument – Agent
      Noun  (s) man  (oarsman)
  c. Object – Action – Agent
      Noun  Verb  -er  (wood-cutter)

From this it follows that the WFR is constituted by the unity of the onomasiological and onomatological structures. The reason for preferring this approach to the calculation of productivity is that it makes it possible to
(a) examine productivity from different viewpoints reflecting both linguistic and supralinguistic levels;
(b) take into consideration all new naming units (not only some WF processes – for example, affixation);
(c) restrict the evaluation/calculation to actual words.15

From the previous discussion it follows that productivity is conceived as an implemented capacity reflecting the naming needs of a particular speech community. As suggested in Štekauer (1998, 2001b), what seems to be crucial is that by coining a naming unit in response to the specific demand of a speech community the particular language manifests its productive capacity to provide a new, well-formed linguistic sign by employing its productive Types/Rules whenever need arises.

This approach is in accordance with Bauer’s assumption that “[t]he fact remains ... that the production of new words may be the only evidence the observer has of this potential, and the lack of new words appears to deny the potential” (2001: 21) and that “…words are only formed as and when there is a need for them, and such a need cannot be reduced to formal terms” (2001: 143). In principle, the conception of productivity as implemented capacity corresponds with Bauer’s (2001) notion of ‘profitability’.

Productivity vs. creativity

These two terms are usually understood as mutually excluding principles in coining new naming units. While productivity is said to be rule-governed, creativity is conceived as any deviation from the productive rules. In the present context, creativity is used in a different meaning in which it is complementary with productivity. First, the logical spectrum does not necessarily lead to one single onomasiological structure. For illustration, if we try to form a naming unit for ‘a person who meets space aliens on behalf of the human race’ the logical spectrum may lead to various WF Types, and, second,

15 ‘Actual word’ is defined here rather loosely, i.e. a naming unit which was coined to satisfy a linguistic demand, be it the demand of a single member of a speech community, be it a single-act one-off demand. A word may only qualify for the status of an actual word if it has been coined. Whether its use will be spread over the whole speech community (implying frequent use), or whether it will be confined to a single use on the part of a single speaker, is insignificant. What is important is that the respective language has, by responding to the specific demand, manifested its capacity to provide a new, well-formed linguistic sign by its productive Word-Formation Rules whenever need arises.
these different WF Types may be assigned various morphological realizations by the MSAP principle, e.g.,

(24)  

a. Theme – Action – Agent
    human race representative
    (OT1)
    homosapience representative  (OT1)

b. Location/Theme – Action – Agent
    earth-representative  (OT1)
    earth ambassador  (OT2)
    world ambassador  (OT2)

c. Location – Action – Agent
    intergalactic diplomat  (OT2)
    interstellar diplomat  (OT2)

d. Object/Location – Action – Agent
    extra-terrestrial greeter
    (OT1)
    space alien meeter
    (OT1)
    outerspace welcomist
    (OT1)

e. Object – Action – Agent
    contactee  (OT3)
    greeter  (OT3),

etc.16

Example (24) illustrates what can be labeled as creativity within the productivity constraints. On the one hand, there are different onomasiological realizations of a particular logical spectrum, and, on the other hand, different onomatological realizations of various onomasiological structures. It is the interaction between the conceptual, onomasiological, and the onomatological levels that – within the limits of productive types and rules and the relevant constraints – provides certain space for a creative approach to word-formation (as it follows from several options in our example). The inclusion of speech community in the model and viewing each new naming unit as a result of a very specific and real act of naming by

16 The examples in (11) were proposed by native speakers.
a coiner makes it possible to reflect individual preferences, the influence of one’s age, education, and profession, one’s linguistic background (in a bilingual setting), fashionable trends, etc., i.e., the sociolinguistic factors which may affect the application of the MSAP in those cases that provide more than one option.

1.2.6 Headedness

Head identification in word-formation has been a frequent topic, and a number of various criteria and theories have been proposed. An onomasiological contribution to the discussion is Štekauer (2001a). It follows from the exposition in Section 3.3.3 above that out of five Onomasiological Types, the onomasiological recategorization (Type 5) does not admit discussion of headedness: the converting and the converted naming units fall within different conceptual categories and different word-classes, feature different paradigms and, hence, different morphosyntactic features. Nothing is inherited, nothing is percolated.17 For the remaining four Onomasiological Types, it is proposed that the onomasiological base is the head because it is this constituent that stands for the most general class of all constituents of the onomasiological structure. Instead of identifying head either positionally or morphologically (no particular morpheme of a naming unit) the onomasiological model shifts the criterion of headedness to extra-linguistic level, in particular, the conceptual level. By implication, head can be a suffix, a prefix, or a word-formation base. The head defined in this way meets the basic headedness criteria:

(a) hyponymy (truckdriver – Type 1, writer – Type 2, honeybee – Type 3, restart – Type 4)

(b) subcategorization (e.g., -en only combines with monosyllabic bases which end in an obstruent, optionally preceded by a sonorant – therefore blacken; -al requires Verb bases stressed on the last syllable – arrival; un- combines with (i) adjectives (ii) whose meaning is preferably positive – unadjustable.)18

17 The elimination of head from conversion is based on the presented model. Certainly, a zero-morpheme theory, such as that proposed by Marchand (1964a,b, 1965) and Kastovsky (1968, 1969, 1982) brings different results.

18 The conceptual level of unadjustable is, roughly, ‘Negated Capacity’ where Negation is logically the dominant conceptual category within this naming unit. For the determination of head in structures with more than one suffix see Štekauer (2001a).
(c) The head determines the word-class and is the distributional equivalent of the whole naming unit. In the first three Types (truckdriver, writer, honeybee), the onomasiological base determines the word-class irrespective of whether it takes the form of affix or base). The head for restart, which exemplifies Type 4, is identified with re- which, in traditional terminology, is a class-maintaining prefix. The question which necessarily arises is whether a class-maintaining prefix may determine the word-class. The doubt is even stronger with counter- that combines with nouns, verbs, and adjectives. The onomasiological theory responds to this problem by assigning the head the decision-making capacity. This capacity can be exercised in two different ways: either, the affix determines the word-class (class-changing affixes) or it acknowledges the word-class (class-maintaining affixes). Conceived this way it is the base which behaves as a true head. Hence, en- as a head determines the word-class (and consequently, the distribution) of encage in the same way as counter- in the role of head acknowledges the word-class of counter-evidence. By implication, -ish is the head of greenish, and -ling is that of duckling.

1.2.7 Summary
This model came into existence, inter alia, as a reaction to the formalism that has been a mainstay of many generative morphologists. Therefore, its advantages must be sought in the areas which deviate from the mainstream generative approaches. They can be summarised as follows:

1. It reflects the triad of relations existing between the indispensable components of each act of naming: the class of objects of the extra-linguistic reality to be named – (a member of) the speech community who performs the act of naming – the word-formation component of the language system (langue) acting in close cooperation with the lexical component.

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19 Cf., for example, Lieber (1981) and her Feature-Percolation Convention 3.
20 Cf. Štekauer (2001a) for more detailed discussion on various aspects of head identification.
2. By implication, the model interrelates the cognitive abilities of a speech community with both extra-linguistic and linguistic phenomena.

3. The account of word-formation as a very real act of naming within a speech community, and performed by a member of that speech community makes it possible to interrelate the role of productive WF Types/Rules and the creative approach to word-formation by a specific coiner.

4. All ‘traditional’ WF processes are put on the same basis by being accounted for by means of the same WF principles, which makes the model of WF simpler.

5. The introduction of the MSAP principle (replacing the binary principle) makes it possible to do away with the problems connected with the traditional accounts, including ‘bracketing paradoxes’, ‘exocentric compounds’, ‘blends’, ‘back-formation’, etc.

6. The proposed model lends itself to the calculation of productivity that covers all types of naming units.