

Didactically Relevant Mechanisms of Onym Formation in the Ukrainian Language Today: A Neuropsychological Approach

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Abstract

The article considers didactically relevant mechanisms of creation and functioning of proper names, psychological and linguistic mechanisms of onym formation in the contemporary Ukrainian language, which can become a starting point for both scientific generalization and development of didactic programs to study the mechanisms of emerging current onomasticon, which is relevant to this research. The purpose of the article is to theoretically substantiate and outline the linguo-didactic aspects of lexicosemantic word formation of onyms, their motivation, nature and mechanisms of domination, which can be a comprehensive basis for both understanding these mechanisms by students in the process of study of linguistic disciplines, and in the acquisition of practical competencies in their application. Within the framework of the theoretical-modelling approach the methods of pedagogical observation, analysis of theoretical sources, generalization, selection of relevant mechanisms were used; partly - methods of modelling and interdisciplinary extrapolation. As a result, the authors of the article proved that children are prone to creating their own words. Perception, study and construction of simple and compound onyms by primary school students promotes the development of the cognitive, emotional and creative spheres. International significance of the article. The article is one of the few in the scientific discourse that theoretically proved the connection between the mechanisms of onym creation and their

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study in school. This can be used for further methodological research on the material of any language.

Keywords: *Lexical-semantic word formation, associative thinking, metaphorical-metonymic transfer, factors of linguo-didactic potential*

Introduction

Recently neurosciences have become increasingly close to pedagogy, which, due to this fact, increases the tools to influence the younger generation (Berbets, 2021; Demchenko, 2021; Karasievych, 2021; Kosholap, 2021; Sarancha, 2021; Prots, 2021). Previously, social educators and rehabilitation professionals used the cognitive potential of proper names only when teaching or correcting children with disabilities (Bates, McDonald, MacWhinney & Appelbaum, 1991; Brooks, Seiger-Gardner, Obeid & MacWhinney, 2015). However, recently scientists have found out the cognitive processes of onyms processing in the norm.

Neuroscientific studies of the neural basis of speech processes have shown that creation of onyms as model varieties of lexical-semantic modern word formation requires a phase of excessive activity and stress from the human brain. There is an active reaction of the brain in the morphological word formation as well. Data on neurovisual mapping of spontaneous word formation, including models of neural processing of simple, compound, associative and unrelated words. Morphological processes of word formation (formation of onyms) should be considered in the interdisciplinary context. At the same time, the presence of separate neuropsychological mechanisms in situational, reference and conceptual nomination was recorded. The main differential factor is the personal significance of the object of nomination (MacWhinney, Bates, 1993). The above mechanisms (spontaneous word formation, associativity, personal significance, etc.) absolutely correspond to the laws of children's speech behavior.

Observations of similar patterns of derivation of onomastic vocabulary and its connection with cognitive processes prompted the authors of this article to the opinion that we formulate as a key thesis of our study: derivational and functional mechanisms of onomastic vocabulary largely coincide with the cognitive and pragmatic processes of the use of this vocabulary by primary school children. Based on this, it is

possible to outline the didactic and developmental potential of the onyms by the method of establishing the functional compliance or ontological extrapolation.

Relevance of the study. In this article, we will consider mainly lexical-semantic word formation (hereinafter - LSWF) and some complex derivatives common in living speech on the basis of association. LSWF in the process of which rethinking takes place, is characterized by the obligatory presence of a hierarchical relationship between the semantics and the motivating basis, according to the researchers. Motivational connections in the language system are typical, regular, which allows to identify several model varieties of LSWF, that can be used in the education process. In this regard, it is also essential to study psychological mechanisms of such word formation to reinforce cognitive processes when studying mechanisms of word formation and using them.

Classical formal-structural views on these phenomena no longer correspond to new, cognitive ideas about word formation. For example, although rethinking the units available in the language is traditional for the Ukrainian language, and the lexico-semantic derivatives - LSWF products - are quite common in terminology, nomenclature, PN nomination system, but LSWF is still put beyond the word formation and refers to lexicology. Onomasiological works contain only mentions of metaphor and metonymy (hereinafter MP and MT) as varieties of the word formation method, and the issues of the cognitive mechanisms of creating semantic derivatives, the classification of model varieties of LSWF remains on the periphery of scientific interests. Meanwhile, MP and MT are widely used in the practice of naming brands, business associations of people, branded products, unique artifacts or just situationally significant objects (for example, animal nicknames).

Thus, the aim of the article is to try to find out the neurocognitive and language mechanisms of creation and use of onyms, which can be used as a linguo-didactic tool.

Methods of data collection. We obtained fragmentary data from a one-time observation of the 4th grade students who performed exercises related to the use, explanation and creation of onyms (pedagogical observation). The rest of the data were obtained by analytical and generalizing methods based on theoretical sources.

Research methods. Among the empirical ones - observation of children's speech and performance of tasks that contain onyms or the

need to create them; among the theoretical ones - analysis and generalization of linguistic, neuroscientific and didactic sources. Of the didactic methods, we used the modeling: extrapolation of linguistic phenomena and the establishment of a functional correspondence between the linguistic patterns and the didactic possibilities of onomastic word formation.

At some points, we went beyond the above patterns, as the scope of children's word formation and the word use is largely a spontaneous and unpredictable individual process. Thus, domestic researcher Nesina (1977) confirms the idea of the active use of MP and MT in the toponymy, but her observations can be fully transferred to the synchronous word formation. She emphasized that "Individualization can take place on the basis of comparing a nominated object with a specific subject by identifying a motivating feature or by abstracting an appellation. In both cases there is a metaphorical transfer of the finished sound complex from one subject to another" (Nesina, 1977).

The ethical aspects. We received permission from the administration and the consent of teachers to attend the Ukrainian language class. Since there was no experiment, we did not consider it necessary to contact the ethics committee.

Research limitations. The research is of theoretical, framework nature and requires further development of the methodological basis and empirical verification.

Aesthetic, neurocognitive and linguistic factors of the linguo-didactic potential of the onyms

Many scientists pay attention to the onyms as literary rather than linguistic phenomena. In this functioning, they also have a clear developmental and cognitive potential. Onyms in a work of art is an element of the form and style of the author, part of the artifact. However, they may have an unusual phonetic design or expressive imagery and aesthetics, and even a "hidden associative" background (Khamitova, Zakirova, Burenkova & Gilyazeva, 2016). These characteristics, even in the unconscious perception by the child already provide a developmental impact on it. At the same time, each literary tradition or the author style can use the expressive cognitive potential of onyms in different ways: irony, characteristic name, richness of language (expression, erudition, a wide range of names). We believe that such a wide range of functioning of literary onyms against the background of

the general perception of the work will inevitably have a developmental impact on the child, and memorization of new names will have a didactic effect.

An important phenomenon for the linguo-didactics is autopoiesis, when language is part of reality and a means of knowing it “in a nutshell” (Belyayev, 2013). This self-creating system, according to the theories of Varela and Maturana, is generally ideal for understanding the phenomena of language and the world.

Separately, we can talk about the word formation of onyms as a linguo-didactics tool. Linguists used to view natural morphology as an inductive or even intuitive cross-linguistic concept. Today, a recognized psycholinguistic fact is the naturalness, accessibility, and cognitive simplicity of spontaneous word formation (Dressler, 2005). Children can easily observe this and create situational onyms themselves. These simple facts allow one to balance Jakobson’s iconic model of the word and Stampe’s universal natural model. It means that word formation motivation lies outside of morphology, namely, in phonology, syntax, linguistic discourse and even extralinguistic aspects. It is based on such two key functions as communicative and cognitive. Formal and semantic motivation of a derived word is also recognized as equivalent within this model. The latter integrates denotative, connotative, associative, and cohesive enrichment of language tools, to which young children are extremely sensitive.

It has long been recognized that the usual and, more often, individual-occasional word formation leads to the emergence of emotional shades. The integration of linguistics into neurosciences has enabled one to study both the cognitive and affective nature of word formation. The neurophysiological nature of words for emotions, as well as those with additional connotative coloring, proves the following: the speaker subconsciously seeks to constantly perform communicative, cognitive, and emotional-evaluative functions, which reveals the integrity of higher neural activity. In this regard, there is a tendency to divide the linguistic item under study between affective and cognitive neurosciences (Wu & Zhang, 2020). Children directly correlate emotions, communication and cognition with these facts, which can be used in language learning both controlled and spontaneous.

At the same time, the main generally accepted mechanisms for creating lexical and semantic variants of words are metaphor and metonymy as the universals of human thinking and cognition. Even on

an everyday level, where there is no place for imagery and rhetoric, metaphor and metonymy are universal tools of human cognition and speech (Lakoff and Johnson, 1980). This mechanism of cognition and expression is the most universal and does not need a broad explanation.

There are neurocognitive arguments about the didactic potential of morphological word formation of onyms (Schiller & Lieber, 2020). Today, the actual morphological approach to word formation can no longer reflect the completeness of neurocognitive mechanisms. Sufficient data on neurovisual mapping of spontaneous word formation have already been obtained. Besides, morphological processing models (full-listing models; full-parsing or compositional models; hybrid, so-called dual route, models) have been developed (Schiller, Verdonck, Audring, Masini, 2019). However, there are some separate neuropsychological mechanisms within situational, referential, and conceptual nomination. The main differential factor is the personal significance of the nominee (Akhutina, Glozman, 1995). For children, personal or situational significance is paramount because they learn and create “here and now”.

Thus, neologization is a natural psycholinguistic reaction to language deficit when there is a need for situational nomination. This is the most reflexive, automatic and cognitively simple process. It is followed by perseveration, avoidance of repetition, associative communication, and other reactions of language consciousness to a new situation (Pitts, Bhatnagar, Buckingham, Haccin-Bey, Bhatnagar, 2010). In the child's psyche it happens simply and easily. The mechanism of neologism creation, because of feedback (response) to verbal and nonverbal stimuli, covers a wide range of such stimuli: from phonemes to extralingual factors (Ontko, Gillespie, Bhatnagar, Buckingham, 2005).

A typical model of neurocognitive language processing mainly includes conceptual aspects and denotation scope. However, affective mechanisms are almost always involved in spontaneous perception or word formation in the environment of slang or everyday speech (Hinojosa, Moreno, Ferré, 2019). Being more superficial and accessible for study, they represent semantically relevant temporal neural connections in the affective network. The latter implies a set of sensory, motor, facial and speech structures that act synergistically.

In Ukrainian discourse, a linguistic approach offers its own system of word formation mechanisms, which is not devoid of the linguo-didactic meaning. Thus, Shmelev (1977) long ago identified the

following types of LSWF: metaphor (hereinafter MP), metonymy (hereinafter MT), synecdoche, functional transference. However, the nature of lexical-semantic transfers can only be conditionally described in these terms. For the most part, the semantic changes of a word are simultaneously influenced by different associations - by similarity, by contiguity, by function (Shansky, 1985, p.105).

Thus, the spontaneous educational mechanism of onyms is hidden in a wide range of cognitive processes, aesthetic perception and semantic transformations. First of all, these are different types of transfers (metaphorical, metonymic, functional), changes in the semantic volume of words (expansion and contraction, specialization of meanings), semantic borrowings, etc.

Metaphorical and metonymic creation of onyms and similar thinking in children

The metaphor underlies the well-known anthroponyms such as *Wolf*, *Bear*, *Hare*, and so on, which is easily and naturally perceived by children. Such names were used in the past as pre-Christian names. The name *Wolf* could be obtained from a parent as traditional or from other people on the basis of similar features (external or characterological) with a particular animal, i.e., by metaphorization.

According to the Hungarian researcher Lengyel, it is necessary to clearly distinguish between the transfer of the name and the transfer of meaning: the meaning cannot be so easily transferred to a name, as you can transfer the name to a meaning.... All images originate from the transfer of the name, and the transfer of the name plays a major role in the emergence of the polysemy (Lengyel, 1972, p. 54). Due to their situationally defined emotions and motives, children are more inclined to transfer the name (title). Similarly, in the "adult" language usage in our opinion, creation of motivated models of onyms, only the transfer of the name, in our opinion, should be discussed in the creation of motivated models of onyms. It is simply impossible to talk about any *figurative meaning*. If we can talk about any transfer, then only about the transfer of a lexical unit from one denotation to another in the presence of speakers permanent (temporary) ideas, ideas about external, functional, spatial or other similarities and proximity of objects - ideas that reflect the real, desired or completely fantasy state of the sphere of the material and spiritual world to which this object belongs.

Traditionally, there are four main types of figurative, or metaphorical, use of the word: 1) endowment of natural phenomena, inanimate objects with qualities, properties of living things - persons or other beings; 2) endowment of inanimate objects, natural phenomena with qualities, properties of other inanimate objects; 3) endowment of persons with the qualities and properties of other beings and vice versa; 4) endowment of persons with the qualities and properties of non-beings.

The specificity of the groups of vocabulary we study revealed productivity only for the first two types, because they are easily and naturally perceived by children and they, by analogy, can produce similar names, for example:

1. Endowment of inanimate objects with the qualities and properties of persons or other beings, i.e., the transfer of the name from living to inanimate: *"Hero" (shop)*, *"Knight" (joint venture)*, *"Cossack" (hotel)*, *"Leader" (advertising agency)*, *"Friendly" (shop)*, *"Fine" (shop)*.

2. Endowment of inanimate objects with qualities and properties of other inanimate objects, i.e., transfer of the name from inanimate to inanimate: *"Waterfall" (laundry)*, *"Winter" (studio, fur)*, *"Snowflake" (dry cleaning)*, *"Typhoon" (bar)*, *"Wave" (baths)*.

Therefore, children implement similarity due to its two-dimensionality - the application of a name in two objects at the same time: the properties of what is in question can be traced through the properties of the one whose name it affects. Thus, *"Snowflake"* (dry cleaning) causes a complex set of associations: snowflake by color white → white - the color of purity → white = clean things after cleaning; *"Leader"* (private enterprise): leader - the first in the competition → the company claims the championship in its field.

Obviously, derivational metonymy is not the only method of nomination, but its universality and specificity is that it operates with an image-associative complex, absent in other methods of secondary nomination. This corresponds to the dominance of figurative thinking in primary school children.

The image that underlies the derivational metonymy plays the role of an internal form with associations characteristic of this image. Any metaphor is an image, because figurative is the principle of its formation and mode of expression.

In addition to associations that are more or less unambiguously associated among members of the language community with a particular

name, in individual use, each person has his own special and unique associations.

The regularity of metonymic transfers also allows us to identify the standard schemes by which they occur:

1. By spatial contiguity: “Arcadia” (bank), “Near the Pidzamche market” (limited liability company), “Valdaisky” (shop), “Kyiv” (champagne), “Lypky” (shop), “Under the forest” (shop), “Shulyavka” (cafe);

2. By time contiguity: “Day and night” (shop), “Moment” (photo studio), “Minute” (cafe);

3. The relationship between the company and its business profile: “Azalea” (shop), “Atlas” (factory), “Coffee” (cafe), “Computers” (shop), “Pearl” (shop), “Propolis” (pharmacy), “Emerald” (shop), “Foundation” (limited liability company);

4. The relationship between the company, the range of goods and services and their recipient: “Everything for the home” (joint-stock company), “For you, women” (shop), “Protection” (firm), “Copier-express” (limited liability company), “Maxima-lawyer” (limited liability company), “Travels” (limited liability company). “Mr. and Mrs.” (hairdresser), “Law-audit” (firm), “Universal” (shop);

5. By kinship: “Abrikosov and Sons” (private enterprise), “Gordeev and Sons” (commercial firm); or co-owners: “Alina and Co” (firm), “Valery Safronov and Partners” (joint stock company), “Ivan and Co” (limited liability company), “Pylypchuk and Company” (limited liability company) responsibility), “Tkachenko, Sonin and Co” (commercial firm);

6. By sympathies or family ties: “Gloria” (hairdresser), “Katrya” (limited liability company). “Lyudmila” (shop), “Margarita” (shop), “Marichka” (private enterprise), “Natalia” (cafe), “Rudolfina” (hairdresser), “Yulka” (cafe);

7. By the name of the potential buyer: “Bilychanka” (shop), “Halychanka” (studio), “Kiyanochka” (shop), “Kremenchuzhanka” (cafe), “Poltavchanka” (shop), “Sumchanka” (shop), “Frankivets” (shop).

In our opinion, it can be argued that most of the lexical and semantic innovations of the studied groups are created by DMT. The reason for this is probably a simpler mechanism of metonymic transfer compared to the metaphorical one, and accordingly a simpler motivational connection between the original word and the newly formed name.

However, we have noticed that metaphorical transferences predominate in children's speech, which is due to the metonymic ones. The motivation in the "adult speech", both for metonymic and metaphorical transference is often, we believe, transparent only to speakers familiar with the realities that underlie such transference. For others it is necessary to "hint" in order to properly understand the name, and especially for the first and sixth types of transfers. Due to the peculiarities of their psyche, children do not even need rational explanations, nor obvious sense of similarity. For them, the lexical and semantic word formation is the territory of language game, self-expression and creative freedom.

Creation of complex onyms and development of associative thinking and imagination in children

As is well known, metaphorical, metonymic and functional transferences are based on various associations by adjacency or similarity. However, in complex proper names there are more complex and ambiguous associations, that help to transfer the essence of new phenomena of reality in a visual form: "Beauty and Youth" (hairdresser), "Pink Panther" (beauty salon), "Old Piano" (restaurant), "New Home" (joint venture), "Good Master" (shop), "Winter Garden" (cafe) (examples were taken from the observations of the authors of the article).

Here we are dealing with a less definite in terms of origin, but free for interpretation and imagination linguo-didactic material for younger students. More than a century ago, Academician Potebnya drew attention to the fact that the associative possibilities of compound names are much wider than the associative possibilities of a word (Potebnya, 1976, p.104).

According to Zhuravlyov (1982) and Aleksenko, Grigoreva (1985) the main way to create compound names is elementary coherence: cat and black → black cat, steamer and white → white steamer, beauty and youth → beauty and youth, gifts and forests → gifts of forests. Coherence can be 1) simple (its result is phrase, each component of which acts in its direct nominative meaning): "Analytical systems" (private enterprise), "Finance and audit" (firm), "Hot sandwiches" (cafe), or 2) complicated by semantic transformations of metaphorical or metonymic type, etc. At the same time, both a single component of a phrase can be reinterpreted: "Iron Waters" (shop), "Gold Market" (cafe),

“Sweet House” (limited liability company), and phrase in general: “Golden Rain” (advertising agency), “Alpha and Omega” (limited liability company), “Fifth Guard” (shop), “Balloon” (private enterprise).

We believe that the second type of coherence (association) has an impressive impact on the child, while children tend to independently produce such names. Most such binary names are formed in a lexical-syntactic way in combination with a lexical-semantic one, which is accompanied by their reinterpretation, which has no unambiguous interpretation or connection. Transferring the names of some objects or phenomena to others without direct association with the denotation causes children cognitive dissonance, surprise, stimulates imagination. For example, a shop name of a joint stock company: pearl and mountains → pearl of mountains → “Pearl of the mountains”.

The above nominates are characterized by semantic integrity, imagery, pronounced emotionality, by which we mean the emotionally expressive components of meaning, or the pragmatic aspect. The high productivity of such formations is primarily due to the tendency to expressive secondary names. It is possible to offer schoolchildren to come up with such bright and figurative names for absolutely pragmatic denotations that will develop in them figurative and non-standard thinking, aesthetic sense of language, the ability to use its richness.

Children can be guided in terms of formal, structural construction of such secondary nominations. It is known that according to the structural and grammatical features, the most common are the attributive-substantive (combination of a noun with a dependent adjective or ordinal number) and substantive-substantival, mostly genitive names (combination of two nouns with or without a preposition).

It is needed to note that the attributive-substantive PhN is more productive. The function of an adjective in such phrase is not only emotional, but also word-forming. It updates the general meaning, i.e., strengthens, emphasizes any characteristic feature: “Amber Coast” (joint venture), “Hospitable yard” (joint-stock company), “Mirror stream” (shop), “Honey cave” (LLC).

Children need to be explained that the greatest “magic” dwells in the adjective. Adjectives in the phrase-nominative detail the denoted, clarify the meaning of the noun, supplement the semantic volume of the main word with additional meanings - in all cases, the adjective highlights one characteristic property and thus gives the name a narrower meaning:

“Ukrainian Capital” (bank), “Literary Lviv” (publishing house), “Ukrainian dishes” (cafe), “Lviv chest” (limited liability company), “European yard” (shop), “Sports world” (limited liability company); “Old Lviv” (balm), “Honey taste” (candies), “Cherry aroma” (candies). In this case, in the combination “noun + adjective”, which functions as a “double name”, there are modifications of the values of both the adjective and the noun, and the whole name acquires a certain imagery.

The ability of an adjective to merge with a noun into one semantic whole is an expression systemically conditioned in the language, this property is traditionally actively used to denote toponyms and hydronyms: Nova Sloboda, Velyka Chercehchyna, Nyzhnia Syrovatka, and at the present stage it has spread and become entrenched in the system of nomination of ergonyms, pragmonyms and other categories of proper names: “White Elephant” (shop), “Green Light” (publishing house), “Land Capital” (bank), “Golden Symbol” (shop), “Starry Sky” (limited liability company), “Southern Bridge” (firm), “Old Gallion” (bar), “Magic Lily” (cafe); “Evening Odessa” (champagne), “Dnieper stars” (candies), “Zaporizhzhya Niva” (cookies), “Golden root” (balm).

Less productive, but requiring bigger creative effort from children are the substantive-substantival names. Close to attributive-noun by type of connection of words in phrase are substantive-substantival names, which often have the form of a subordinate phrase. The dependent form of the noun indicates a sign of a certain concept. This combination of words helps to narrow the meaning of the main word, the dependent noun seems to “shine” the semantics of the main through the prism of its substantive content: “Aroma of Gardens” (shop), “Gifts of Forests” (shop), “Quality Mark” (firm), “Fashion Success” (hairstylist). With the help of the genitive case, according to Vinogradov (1975, p.183), more complex, subtle and diverse properties, characteristic features are expressed, rather than with the help of an adjective.

Conclusions

The scientists emphasize that the onomasticon is a very relevant field for primary school children, who figuratively and sound-symbolically learn the names of ethnic countries, individual objects, people (Vulâne, 2009). On our part, we add: in childhood, onyms perform identifying, connotative, situationally evaluative, characteristic functions. Also, as research has shown, the perception and creation of

onyms as the “freest” words in the language contributes to the development of cognitive, emotional and creative spheres of the child’s psyche.

Therefore, the semantic word formation (metaphor and metonymy) in application to proper names is one of the traditional ways of nomination, which can be easily assimilated and produced by the child. We also believe that the child’s tendency to create their own words, including onyms by associative combination in phrases is due to the intralinguistic factors (the tendency to expressiveness and the tendency to the maximum motivation of language units) and the extralinguistic (the child is prone to associative thinking and feels more subtle, often subjective connections between the realities of the world). The above-mentioned patterns should become a starting point for updating the derivatological component of linguistic education, given the multifaceted mechanisms of word formation.

In our opinion, practicing in the creation of simple and compound proper names on the basis of the analyzed mechanisms will promote the development of the following skills in children: a) creation of figurative free associations; b) tracing the real cause-and-effect relationships between words and objects; c) the formation of their own interpretation on the basis of “the magical thinking in children”; d) creative thinking and creation of occasional names, syntagms based on rethinking, contiguity and similarity, etc.

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