Lexical Innovations (Neologisms) in Children’s Speech: Evidence from Greek

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This paper aims at studying the lexical innovations in Greek preschool children’s speech. Lexical creativity is a widespread phenomenon in childhood: the frequency and ease with which children coin words indicate that children have already perceived the existence of word formation devices and they try to apply principles governing the word formation system. The core of this paper focuses mainly on derivational neologisms: we will make an attempt to investigate to what extent Greek preschoolers have mastered specific features of derivational rules in their language, what kind of meanings they most frequently create and which forms they prefer to use to express the intended meanings.

Keywords: lexical innovations / neologisms, preschool children, compounding, derivation

1. Introduction

The aim of this paper is to present data and to describe the phenomenon of lexical innovation in Greek children’s speech, especially in preschool years. We attempt to illuminate the acquisition of word formation by focusing on semantic aspects concerning Greek morphology.

It has been observed that, at least from the age of two, children attempt to create new words to express meanings for which they have not yet acquired the adult form.
They retrieve units from their mental lexicon and combine them together: the result of this word building process is a new word that has never been heard before. This creative ability reflects the linguistic knowledge that a preschool child has at a given developmental stage. When children coin new words, they do not do it accidentally: they follow the morphological rules of their language, they rely on what they know about the internal structure of words and they make use of them (Bowerman 1982; Berman 2000; Becker 2006; Clark 2009). In other words, neologisms can reveal what kind of morphological / semantic knowledge has already been acquired and pinpoint what is most basic (perhaps useful or easier, too) for a child to acquire at its current developmental stage.

The data collected for this purpose has been drawn: (A) from my own detailed longitudinal observation of three Greek-speaking children, aged 3.5–6.5 years, through the systematic recording of utterances during their linguistic development and the simultaneous audio taping of children’s spontaneous speech; from this corpus I have extracted a collection of neologisms formed by the three toddlers. (B) Certain neologisms have been drawn from recordings of the speech of 60 preschool children, conducted in three kindergartens in Greece (Thessaloniki, October–November 2004, 20 hours of recording). The collected data from Greek consists mostly of derivational neologisms (derived nouns and verbs); therefore, the focus of this paper is on the importance of derivational processes in children’s acquisition of the word formation system as it is revealed in their neologisms. The material we have used is hard to collect and demands years of observation and recording. Furthermore, our database was not the outcome of experiments but it comprises the recordings of spontaneous child utterances: hence, our corpus is not considerably extended. For the above reasons, the reliability of the conclusions that were presented could be easily doubted. However, many of our findings are in agreement with data from other languages, whereas the differences are predictable considering the morphology of Greek language. The fact that the selected material is the recording of children’s spontaneous speech offers a distinctive advantage: we could use our observations and conclusions as hypotheses for a carefully planned experiment (i.e. guided production of neologisms), so that they could be tested and gain maximum possible reliability.

Little children are often faced with the problem of lacking in labels when talking about extralinguistic reality. This is an important reason why little children create neologisms: they need them in order to fill lexical gaps in their incomplete and still developing vocabulary. In other words, they try to find an appropriate form to express the intended meaning – the form does exist in the adult vocabulary but has not yet been acquired by the child. In order to fulfill this need (the expression of a meaning that is not conveyed by the meaning of available words) the little child coins a word form, which will be dropped out immediately after the conventional form will be learned (Clark 1980; 1993; 2009, etc.). For example, my five-year-old daughter coined the word emfanístria meaning ‘the woman who exposes herself in public’ when talking about a nudist on the beach (verb-base: emfanízo ‘to expose, to appear’ and the suffix -t-ria denoting an agent), replacing the adult form γimnístria (γimnós ‘naked’). This function of children’s coinages has been emphasized quite often. There is another reason why children create new words: like adults, they need a form to fill a gap in the
conventional, adult vocabulary. For example, a four-year-old boy coined the verb *pinelévo* for expressing the meaning 'draw with a brush' (from the noun-base *pinélo* 'brush' and the suffix *-ev(o)* denoting an activity), explaining that he is 'not just drawing!'. This aspect of lexical creativity has not gained as much attention as the previous one, although the difference in function has been mentioned (see Clark’s *legitimate/illegitimate innovations* distinction – for the second and first type respectively: Clark 1980; 2009). The study of neologisms covering an actual lexical gap is very interesting, especially from a psychological point of view, as they have multiple functions: firstly, they fill a gap in the conventional adult vocabulary and they also offer an option / cover the need to talk about something in a more precise way. Moreover, they create a category and they broaden the existing semantic fields as well. Many times children create neologisms to express playfulness and / or an attitude towards something: for example a six-year old girl created the word *trelístas* when referring to a ‘crazy driver’ (from the noun-base *tréla* ’madness’ and the suffix *-ista(s)* denoting an agent – formed on the analogy with the conventional Greek word *ralístas* ’race driver’). In addition, some of the neologisms can be characterized as pure child metaphors: for this purpose, an adult word form is used with a non conventional meaning, indicating the need to express a concept in a new way as well as combining the features of iconicity, playfulness and emotionality (naming, for example, the hair bun as *sidriváni* ’fountain’). All the above neologisms do not have only referential function, but also aesthetic and emotive / expressive. It is remarkable that in my collection of data from preschool children, the vast majority of neologisms fall within the category of words coined not for filling gaps in the child’s vocabulary (which means that a respective adult word exists) but for covering a true gap in the conventional vocabulary, forming a new word that contrasts in meaning with the existing conventional ones, in Clark’s terms (Clark 1987; 1991, etc.).

2. Lexical innovations in the speech of Greek preschool children

The 73 neologisms collected from the speech of Greek speaking preschoolers can be grouped into the following categories:

i. **Derivational neologisms**: 65% (for example, the denominal verb *γραματίζω* 'to teach, to educate sb'; from the stem *γραματ-* (*γράματα* 'letters'/ 'learning') and the suffix *-iz(o)*, denoting an activity).

ii. **Compound neologisms**: 25% (for example, the compound noun *aeroplanomástoras* 'aircraft engineer'; from the words *aeropláno* 'airplane' and *mástoras* 'craftsmen').

iii. **Other**: 10%

In the third category we isolated neologisms with conventional, adult word forms that express an extended (or non-literal) meaning (e. g. the Greek word *sidriváni* meaning conventionally the fountain, which is used to refer to the hair bun) or neologisms with a base of unspecified morphological classification and meaning (for example, the novel verb *kupóno* used to describe the action of ‘stuffing something into something else’; stem: *kup-* (Greek word *kúpa* ’cup’) + *-ón(o)*, suffix denoting an action, 'do sth').
2a. Compound neologisms

Children begin with a restricted set of word formation devices; compounding and derivation are the main types of word formation. In sharp contrast to English (and other Germanic languages) the compounds constitute only 25% of neologisms produced by Greek preschoolers (for English data see Clark 1982; 1993; 2009. Swedish data: Mellenius, 1994). The compounds in Greek language fall within three major grammatical categories: nouns, verbs, adjectives and a few adverbs (Ralli 2005: 178–184). In our data, we detected (among compound neologisms): compound nouns (N + N, Adj + N, V + N structure) and very few compound verbs (N + V structure). Most of the compound neologisms were nouns and had a N + N structure. All compound words in our data display the relation of subordination among their constituents and for the most part they demonstrate the grammatical relation of the complement type between the head (which, in Greek, is positioned strictly at the right-hand side of the structure, determines its distribution and carries the dominant meaning) and the non-head (always to the left of the head). Examples from children’s coinages are: the maimudotenía, that is ‘a cartoon with monkeys’ (maimúdes ‘monkeys’ + tenía ‘film’); the milofágos is the ‘apple-eater’ (mílo ‘apple’ + -fágos, a bound stem/morpheme, meaning ‘sb who eats sth’ [non head meaning]). In few compounds, the head – non-head relation was the one of the appositive / attributive type, for example, the neologism robotánthropos, a ‘robot-man’: from robót ‘robot’ + ánthropos ‘man’ (Bisetto, Guevara, Scalise 2005; Xydopoulos 2008: 199–200). Most compound neologisms have the structural pattern „stem-word“: thalas-o-mayévome meaning ‘to be enchanted by the sea’ (from thálassa ‘sea’ + mayévome ‘be enchanted’); fewer compounds have the pattern „stem-stem“: fið-ó-psaro meaning ‘snake-fish’ (from fiði ‘snake’ + psári ‘fish’) with the presence of the compounding marker -o- among the stems (Ralli 2005: 166). The above structural patterns are the most frequent in Greek: much rarer is the structure „word-word“ that appears in the neologism aeroplanomástoras, meaning ‘aircraft engineer’; from aeropláno ‘airplane’ and mástoras ‘craftsmen’ (Ralli 2005: 190–199).

2b. Derivational neologisms

The other major word formation process, which children utilize in creating new words, is derivation. Derivational neologisms comprise 64% of the total of neologisms in our data: according to their grammatical category, we divided them into derivational verbs, derivational nouns and derivational adjectives. Considering the grammatical category of the base word (origin) of derivational verbs we found the types: (a) N > V (+ suffix): novel verb derived from a familiar noun (e. g. ekloyízome meaning ‘to vote’; noun-base: ekloýés ‘elections’ + suffix -iz(o) denoting an activity); (b) V > V (+ prefix): novel verb derived from a familiar verb (e. g. ksepináo meaning ‘to become un-hungry’; prefix kse- ‘un-’ + pináo ‘to be hungry’); (c) Adj > V (+ suffix): novel verb derived from a familiar adjective (e. g. lemaryízo meaning ‘to eat greedily’; adjective-base: lémaryos ‘greedy’ + suffix -iz(o)).

Considering the grammatical category of the base (origin) of derivational nouns, we gained the structural types (a) N > N (+ suffix): novel noun derived from a familiar noun (e. g. ksilás meaning ‘someone who sells wood’; from the noun-base ksílo ‘wood’ + the suffix -a(s) denoting an agent); (b) V > N (+ suffix): novel noun derived
from a familiar verb (e.g. *psoonistís* meaning ‘someone who shops’; from the verb-base *psoonizo* ‘to shop’ + the suffix *-ti(s)*, denoting an agent). On the whole, derivational verbs make up 44% of the total of derivational neologisms and derivational nouns 53%, thus, forming two main categories with the total percentage 97%¹. Berman’s results differ from ours in that the same percentage of coined nouns and verbs was found for preschool children (aged 3–7) and only for younger children the percentage of coined nouns was higher than for coined verbs (Berman 2000: 83). The categories with the highest percentage of members in the total number of neologisms were deverbal nouns (V > N) [28%], denominal verbs (N > V) [32%] and derived novel nouns (N > N) [21.5%]. Clark claims that the process of forming nouns from verbs has always been less common in English than the formation of verbs from nouns (Clark 1982: 418, 422). She attributes this fact to the particularity of the vocabulary acquisition process: children acquire more nouns than verbs at the early stages of language development.

But this is not always the truth, as this tendency is not present in all languages (Berman 2000: 70) and it is probably applicable to very young children, not for older preschoolers (aged 4 or more). In our data, the category of denominal verbs accounts for a slightly higher percentage than the category of deverbal nouns: however, a confirmation with more data is definitely required. In addition, denominal verbs (N > V) comprise over 70% of all verb derivatives, while the preferable structure is base (noun) + suffix. Berman has mentioned that children prefer the coinage of deverbal as opposed to denominal verbs (Berman 2000: 83–84): this was not found in our results. One way to create a novel verb from a familiar one is to attach a prefix to the verb: in Greek language though, suffixes are much more than prefixes. Among the most frequently used are the negative prefixes *kse-* ‘un-’, *a-* ‘a’, *ef-* ‘-able/-ible’ and *dis-* ‘un-/in-/dys-’¹. There is also a group of ancient Greek prepositions that became prefixes in Modern Greek (e.g. *andi*, *kata*, *meta*, *sin*, etc.; the literary nature of those prefixes, as well as their incompatibility with familiar word bases (Ralli 2005: 42–44) are possibly the reasons for the lack of transparency in the meaning of derived verbs with those prefixes (for example, the conventional Greek words² *ana-kalípto* ’to discover’ or *día-théto* ’to have, to possess’).

We suppose that these are the reasons why so few prefixes are found in children’s coinages (one of the few examples is the neologism *ksepináo* meaning ’to become un-hungry’, which is formed from the conventional verb *pináo* ’to be hungry’ and the prefix *kse-*).

It is accepted in morphological studies that affixes encode semantic information and select (as heads) the words (bases) they can attach to (Bisetto, Guevara, Scalise 2005; Lehrer 2000; Booij, Lieben 2004; Plag 2004, etc.). Therefore, the meaning of a derivative verb is the result of affixal semantic information along with the interaction of the base meaning. We will use the notions of affixal meaning and affixal selection in examining novel derived verbs with *-iz(o)* and *-on(o)* in children’s created words.

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¹ For similar results regarding the percentage of derivational verbs and nouns see Becker 2006; Berman 2000.
² From now on, CGW.
We will try to reveal some aspects of affixal semantic requirements and to connect them to children’s language development.

The derivational affixes attach to bases with certain characteristics, resulting in the production of derived forms with certain features. Many affixes take more than one base category, but usually there is one major base category (in our data, verbs or nouns). Furthermore, many affixes are polysemous: they may have more than one sense – as the affixal meaning interacts with the grammatical/semantic information of the base, but they usually have one general meaning (Lehrer 2003). Let us now see which are the most frequent derivational suffixes for derived verbs. The suffix \(-iz(o)\) accounts for the highest percentage of occurrence in our data, followed by \(-ôn(o)\). Derivatives involving suffix \(-iz(o)\) are very heterogeneous in Greek, in terms of their semantics and the types of bases the suffix applies to. However, there is a restriction on the grammatical category of bases that the suffix selects: it does not attach to verbs. In our data the suffix \(-iz(o)\) is mainly denominal. The general semantic information of denominal \(-iz(o)\) is the denotation of an activity and the change of a state. The two senses found in children’s neologisms are:

1. 'to make someone / sth acquire features of [base meaning]', e. g. γramat-\(-iz(o)\) 'to teach, to educate' (γράματα 'letters')
2. 'to do sth with [base meaning]', which is clearly an instrumental meaning, e. g. floγer-\(-iz(o)\) 'to play the flute' (flογέρα 'flute')

In both senses, the focus is on the agent and its activity, so we can formulate the description of the affixal meaning of \(-iz(o)\) as the denotation of an activity / change of state focused on the agent and its action. The above observations are in agreement not only with Clark’s findings – that the most commonly coined denominal verbs are activity and instrumental verbs (Clark 1982; 2009) – but also with the fact that the majority of the derived denominal verbs with \(-iz(o)\) in Greek conventional vocabulary fall into the two categories described above, especially the first one. The children’s innovative verbs with \(-izo\) follow this general tendency too.

Let us turn to the second mentioned suffix \(-ôn(o)\). Like \(-iz(o)\), this affix selects nominal bases, (and few adjectival) and its general meaning refers to 'an activity / change of a state'. The two senses expressed by children’s denominal verbs with the suffix \(-ôn(o)\) are:

1. 'to fill with [base meaning] / surround with [base meaning] the object/subject of the derived verb', e. g. θalas-ôn(o) 'dive into the sea' (θάλασα 'sea').
2. 'to do sth with [base meaning]', which is an instrumental meaning, e. g. pirun-ôn(o) 'to spear food with the fork' (πιρονί 'fork').

If we draw a comparison with the suffix \(-iz(o)\) we observe the same general meaning 'performance of an activity / change of a state'. Both of them generate derivative verbs with an instrumental meaning: the difference is that \(-ôn(o)\) is focused on the in-
strument of the action (and the cause of change). Comparing the children’s data with conventional Greek vocabulary we found that the vast majority of derived denominal verbs with -óν(o) in Greek conventional vocabulary denote generally the same semantic information (see 1 and 2, above e.g. *mandróno* ‘to corral’, *epiplóno* ‘to furnish’, *klióno* ’to lock’, *kamakóno* ’to spear’, etc.; source: The Reverse Index, 2002).

On the other hand, concerning derivational nouns, the category V > N (52% of all derivational nouns) seems fairly larger than N > N (40% of all derivational nouns). However, the most important remark is that in the novel deverbal nouns category (V > N) only one suffix -tí(s) is used (e.g. *χαϊδεφίτις*, meaning ’someone who caresses’: *χαϊδέφεν* ’to caress’). The suffix -tí(s) has been studied in Greek, as well as the equivalent English -*er*. It has been mentioned that it is a highly productive suffix, which makes a restricted selection: it attaches only to verbs with agentive subject; it cannot attach to state verbs with non-agent subjects (Kakouriotes 1993, in: Ralli 2005: 154–155); Xydopoulos, 2008: 189). The derived deverbal nouns are concrete, denoting: (a) an agent: 'someone who does [base meaning]'; e.g. *CGW kolimwitíς* ’swimmer’, or (b) an instrument e.g. *CGW metritíς* ’a meter’. To sum up, the suffix -tí(s) is deverbal, dynamic, with general affixal meaning that can be glossed as ’sb or sth that does (as agent/instrument) + [meaning of the base]’. Note that the agentive/instrumental meaning is a pure affixal meaning (independent from the base meaning). Our data of children’s deverbal, novel nouns with -tí(s) reveal an interesting pattern: -tí(s) is used to denote almost exclusively the agents. We believe that this particularity is due to the existence / function of another suffix selecting verbal bases, whose meaning is almost completely instrumental: the suffix -tíri (e.g. CGW *ksipnitíri* ‘alarm clock’, verb-base *ksipnáo* ’to wake up’; compare with children’s coined word *anakateftíri*, meaning ’the mixer’; verb-base *anakatévo* ’to mix’) So, from our data it seems to be the case that -tí(s) is selected by children for denoting agents, whereas -tíri is used to denote instruments. Clark notes that the English-speaking children use just a few suffixes in their innovations; among them, the most productive is -*er*, which attaches to verb bases to denote agents and instruments (e.g. the *stopper*; the *burner*: Clark 1982; 1993; 2009; Clark, Hecht 1982). Children need suffixes to denote agents and instruments at most: many researchers found equivalent results and came to the same conclusions (Berman 2000 [Hebrew]; Konieczna, 2002 [Polish]; Becker 2006; Clark 2000 [English]).

Another suffix forming many innovative nouns in our data is -*a*(s). In conventional Greek vocabulary the derived nouns with the suffix -*a*(s) are classified traditionally as „professional“. The suffix attaches only to concrete noun bases to denote agents: its general meaning is ’someone who does [base meaning]’. More precisely, the suffix refers to a person who possess a specific set of features indicated in the base meaning (*CGW rokás* ’a fun of rock music’) or to a professional whose occupation / specialty is named in the base (e.g. *CGW psarás* ’a fisherman’). In examining children’s novel words formed with -*a*(s) we noticed the same restrictions as in conventional derived nouns with -*a*(s), with one exception: children use the suffix -*as* to formulate concrete nouns denoting only professionals (e.g. *ksilás* ’someone who sells

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5 We distinguish two senses of agentive deverbal nouns with -*tis* a) profession / occupation; b) an activity performed by someone frequently, or, 'sb is a fun of doing [base meaning]'; the same distinction holds for the suffix -*as*. 28
wood’, from the noun-base ksílo ‘wood’). The suffix -a(s) seems to be at least partially synonymous with -ti(s). Compare CGW trayúdistis ‘singer’ and psarás ‘fisherman’: the general affixal meaning in both cases can be glossed as ’someone who does the [base meaning] professionally’ (or, ’is a fun of doing [base meaning]’). In our data, we compared children’s novel nouns from -ti(s) category with the novel nouns from -a(s) category: both express the common meaning ’a person who is involved in an activity which lends him a particular quality’. We noticed that the children’s deverbal nouns with -ti(s), as compared with the nouns with -a(s), lack the feature of permanence: the ’specific feature / occupation with sth’ that is expressed in -ti(s) is temporary / cancellable. Compare, for example, the neologisms:

- kimistís ’someone who puts the others to sleep’ (kimízo ’put sb to sleep’) and ksilás ’someone who has / brings / sells wood’ (ksílo ’wood’).

- psonistís ’someone who shops’ (psonízo ’to shop’) and portokalás ’someone who has/brings/sells oranges’ (portokáli ’orange’).

It seems that children use the suffix -a(s) for forming only professional nouns (non cancellable/permanent features) and -ti(s) for referring to people who have a specific set of features that can be lost.

### 3. Concluding remarks

The goal of this paper was to present certain aspects that concern preschool children’s lexical innovations, based on data from Greek. We found that the main function of the collected neologisms was to fill a gap in the conventional vocabulary, that is, to express a meaning that has not a form. Preschool children, especially aged 4–6 years, have already acquired a great amount of the adult vocabulary; they don’t have considerable deficiency in common, frequently used, conventional words. In general, preschool children seem to create novel words either because they try to express a meaning –whose word form is unknown – or because they attempt to express a more particular aspect of meaning; or, just because they want to be creatively playful. In our data, most neologisms belong to the latter two categories, or they are a combination of them.

The main word formation processes that children use in creating novel words are compounding and derivation. Compounding in Greek does not seem as much productive as derivation: the majority of collected neologisms in our data are derivational – in sharp contrast to collected data from Germanic languages. It may be accounted for by the difference of the morphological type of these languages; consider the simplicity of the compound formation process, for example in English: it has been mentioned that the simplest way to form a compound is to combine two words. This is a much more simple process in comparison with Greek, where compounds are formed usually by combining two stems with the help of compounding marker -o- (Ralli 2005: 165–171). Furthermore, derivational devices are probably preferred by Greek children because the affixal selection is more constant / fixed, and the meaning of the derived

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6 It is possible that the grammatical category of the base (noun=material, concrete etc, as opposed to verbs) plays a role in this differentiation.
word is more transparent and predictable. On the contrary, the selection that is made by the head of the compound is less strict; many relationships between the components could be expressed, allowing different possible interpretations for the novel compound.

We also focused on the main derivational suffixes children used, as found in our data: -ız(o) and -on(o) for denominal verbs, -ti(s), -tiri and -a(s) for deverbal nouns. After a brief semantic analysis of these suffixes, we found semantic generalizations that applied to a large percentage of their instances. Then a comparison with data from the conventional Greek vocabulary was made. We concluded that the class of the base word as well as the semantic information carried in suffixes are crucial for children (as well as for adults) when they choose certain word formation devices. The children rely more heavily on the affixal semantic information, choosing to express the main sense a suffix has, and showing the tendency not to use the same suffix for expressing different meanings (avoiding polysemy). To sum up, children do not create neologisms by accident, neither randomly: they coin words following the same word formation rules as adults do and they seem to be aware of the phenomenon of polysemy (of affixes, in particular). They rely on the most transparent and constant word formation process and they use the most productive and common suffixes to denote general semantic information that is basic for them in a given developmental stage: agents, instruments, results. Here our results support the data collected from other languages.

The study of children’s coined words offer valuable insights into vocabulary development: the outcomes could be exploited in order to teach pupils and students simple and effective methods of word-learning in L1 as well as in L2.

References


Лексикалните иновации (неологизми) в детската реч: наблюдения над гръцки деца

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Статията разглежда лексикалните иновации у деца с роден език гръцки, в предучилищна възраст, с цел да хвърли светлина върху усвояването на словообразувателната морфология в родния език. Изследването се основава на корпус, който съдържа данни от лонгitudно изследване на 3 гръцки деца в периода от 3,5 до 6,5-годишна възраст и от спонтанното речево поведение на 60 деца в предучилищна възраст, записано в три детски градини в Солун.

Застъпена е тезата, че след двугодишна възраст децата се стремят да изразяват зна-чения, за които все още не са усвоили формите, стандартно използвани от възрастни носители на езика. За да компенсират тази липса, децата в тази възраст използват наличния си ментален лексikon и креативно комбинират изразни средства, за да предадат значение, което искат, и така създават неологизми, които много често имат емоционално-експресивна мотивация и функция. Неологизмите, използвани за попълване на липси в детския речников състав, и креативните процеси на тяхното създаване се разглеждат като източник на информация за развитието на езиковите знания на децата в тази възраст. Иновативната лингвистична продукция показва какви семантични и морфологични знания децата в тази възраст са усвоили, което предполага, че усвоените знания са най-основните, най-полезните и най-достъпните.

Резултатите от изследването сочат, че неологизмите, създавани от гръцки деца, са разпределени в следните две словообразувателни категории: 65% лексеми, образувани чрез афиксация, и 25% – чрез композиция. Предлагат се детайлни семантични и морфологични анализи на неологизмите, на словообразувателните модели, на класовете изходни лексеми, на продуктите, както и на най-често използваните афикси. Анализите водят до извода, че в разглежданата възраст създаването на глаголи надхвърля създаването на съществителни; като при избора на афикси водещо е прототипното значение на конкретния афикс и се цели избягване на полисемията.

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