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■ INFLECTION AND DUAL LEXICAL CATEGORIES¹

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Polazeći od još uvek nerazjašnjene dileme o statusu i međusobnom odnosu fleksije i tvorbe reči, ovaj rad predstavlja nastojanje da se baci novo svetlo na taj problem i da se detaljnije opišu participske i gerundske forme u engleskom jeziku, kao i svi oblici nastali nastavcima *-ed* i *-ing*. Iako je problem participskih adjektivala, kao i adjektivala tipa *N+-ed* i imenica *N+-ing*, dosta razmatran u brojnim studijama (Hirtle 1970, Hudson 1975, Beard 1976, Borer 1990, Blevins 2005, Vujic 2006) konsenzus oko njihovog statusa nije postignut u savremenoj morfologiji engleskog jezika. Čini se da moderna morfološka teorija nudi mogućnosti za potpuniji opis ovih pojava. U tom smislu, rad se oslanja na teoriju dvostrukih leksičkih kategorija (eng. *Dual Lexical Categories*), koju je početkom devedesetih godina dvadesetog veka postavio Lapoint, a kasnije razvio Jon.

Ključne reči: fleksija, derivacija, tvorba reči, leksička kategorija, koren, baza, sufiks, gerund, particip.

1. INTRODUCTION

This paper starts from one of the central problems in morphological theory which persistently avoids definiteness and definition. The problem in question is the distinction between derivational³ and inflectional morphology. Although sometimes the distinction seems quite clear and undoubtful, the formal criteria for defining the

1 At the beginning of this paper, I must say that the study on which this paper relies concerns the English language and does not pretend to have a universal value. Thus, examples used in this paper mainly come from English although in some languages such as Serbian, grammatical affixes are recognized as a legitimate mechanism for word-formation (see Stanojčić & Popović 1997).

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3 For the purpose of this paper I will rephrase the term "derivational morphology" into "word-formation morphology" (WF morphology).

distinction in question provided so far have more or less all failed to provide firm and objective guidelines for the separation of two major segments of morphology. Such a lack of formal criteria becomes extremely relevant for this paper as its main goal is not to look for some formal criteria for distinction of word-formation and inflection but rather to support those views in contemporary morphological theory (Bybee 1985; Haspelmath 2002) which claim that derivation and inflection should not be distinguished from one another but placed along the same continuum with two definite poles, one containing the most inflectional patterns and the other containing the most clearly derivational ones (Haspelmath 2002: 60).

2. STATUS OF INFLECTION AND WORD-FORMATION IN CONTEMPORARY THEORY OF MORPHOLOGY

Few would dispute that the provided functional, semantic and syntactic criteria for distinguishing between inflectional and word-formation affixes have often failed. The reasons for that should be found not in the distinctiveness of two types of affixes but rather in their similarities. Clearly, the boundary between inflectional and word-formation processes is quite elusive as the formal operations by which words are inflected are not distinct from those by which new words are formed.

Scholars have been aware of word-formation-inflectional overlapping for quite some time. Indeed some, researchers like Lieber (1980), Di Sciullo and Williams (1987) and Bochner (1992), Booij (1996) have concluded that there are no good grounds for distinguishing inflection and word-formation in morphological theory⁴.

English seems to be one of the languages in which the aforementioned overlapping is quite evident. A significant number of lexemes in modern English lexicon are formed by the means of what appear inflectional suffixes whose status has troubled many linguists. The troubling suffixes, which have drawn the attention of many scholars and inspired many linguistic studies, are participial *-ed* and gerund/participial *-ing*. Hirtle (1970), Hudson (1975) and Beard (1976) were just some of the linguists who studied *-ed* adjectives, and gerund was the central topic in the studies of Borer (1990), Blevins (2005) and Vujić (2006), among others. At present the situation is getting even more complicated as *-ed* and *-ing* formations seem to be particularly popular in contemporary English and their number is increasing on a daily basis.

3. WORD-FORMATION, INFLECTION AND SYNTAX

In order to fully comprehend the closeness of word-formation and inflection we must move beyond strict morphological WF theory and our study should include the syntactic aspects. Such an interaction with syntax is required by the very fact that our study takes interest in inflectional suffixes and one of the often mentioned (and indeed largely true) criteria for distinction between inflection and derivation claims

4 See Stump (2005: 60).

that inflectional processes are syntax relevant. The problem of a “morphosyntactic information expressed by morphological sub-constituent of a word such as affix which becomes ‘syntactically relevant’” is one of the central problems in morphosyntax and much research has been done on it. Such structures are known as mixed lexical category structures.

Let us start by paraphrasing Yoon (2005: 143) that in traditional morphology, it is hypothesized that inflectional affixes contribute information to the word (x) node as long as the information does not contradict those coming from the root (Selkirk 1982, DiSciullo and Williams 1987, Lieber 1992). It is widely assumed that inflectional affixes do not bear part-of-speech (POS) specifications, or if they do, then the specifications cannot differ from those coming from the root lexeme to which they attach. Many morphological studies (Anderson 1992, Lieber 1992) rely on the primacy of the root lexeme over the inflectional affixes, the idea which Yoon (2005: 151) calls the Assumption of the Primacy of the Root. Another notion relevant to this paper is that the scholars studying inflectional morphology assume that morphosyntactic features introduced by inflections augment those coming from the root monotonically. In other words, inflectional affixes are never category/feature changing.

In syntax, features contributed by inflectional affixes together with the part-of-speech (POS), or features of the root, are known as Head features. Traditional syntax presupposes that the two types of features are in harmony and that both external and internal features of inflected forms are harmonious. The problem arises when this important precondition is not met, which is the case with *-ed* and *-ing* formations in English.

3.1. THEORY OF DUAL LEXICAL CATEGORIES

In the following section I argue that there are examples of usage of inflectional affixes in English which clearly contradict the morphosyntactic postulates presented in the previous section of this paper.

For illustration let us compare the following examples:

- (1) a. Mary has worked hard.
She was kissed by her boy-friend.
- b. to shorten > shortening (n.)
to act > acting (n.)
to breathe > breathing (n.)
to clip > clipping (n.)
to gamble > gambling (n.)
to paint > painting (n.)
- c. dairy (n.) > dairying (n.) – milk production
bus (n.) > busing (n.) – traveling by bus
suit (n.) > suiting (n.) – fabric used for making suits
salad (n.) > salading (n.) – vegetables suitable for salad

- d. terrace (n.) > terraced (adj.) as in terraced house
 money (n.) > moneyed (adj.) as in moneyed man
 talent (n.) > talented (adj.)
 heart (n.) > hearted (adj.)
 dog-ear (n.) > dog-eared (adj.)

The examples⁵ given in (1a) represent inflected forms created in accordance with the previously given assumptions. In *Mary has worked hard*, the inflected form *worked* manifests a complete harmony of POS features [+V] and inflectional affix features [+V]. In other words, we see that the morpho-syntactic features of verb coming from the root *work* are augmented, indeed, by those coming from the verbal inflectional suffix for past participle *-ed*. The internal features of the root *work* defining it as a lexical category of verb specify the suffix *-ed* as the one whose features match those of the root.

A similar situation is with the other example *She was kissed by her boy-friend*. The POS and lexical category features match and are complemented by the features and properties of the inflectional suffix *-ed*. Both external and internal properties act harmoniously.

However, the situation is somewhat different in the examples given in (1b) which show the mismatch of internal and external properties. As it is seen, all the examples (1b) represent forms of gerunds. So far it has been always presumed that gerund is a noun (verbal noun) whose meaning may be paraphrased as “the action of doing V or being involved in V” where V stands for the verb root to which gerundial *-ing* suffix is attached. Another quite important issue is that traditionally the suffix *-ing* for gerund forming verbal substantives with verbal rection represents a syntactic phenomenon. For that reason, gerund is traditionally seen as an inflected form. What makes gerund structures problematic is their dual nature: verbal features and nominal distribution and semantics.

In an attempt to find appropriate theoretical treatment of such problematic structures manifesting contradictory features, Lapointe (1993) developed the theory of Dual Lexical Categories (DLC), recognizing gerund as a typical mixed category. Its definition is given below as cited in Yoon:

A dual lexical category is a category of the type <X/Y>, where X and Y are major lexical categories. X determines the external syntactic properties of the phrase of which the item is a lexical head. Y determines the internal syntactic properties of that phrase. (Yoon 2005: 145)

In other words, if X=Y as in (1a) no mismatching occurs and such structures are unmixed, normal categories. However, a mismatching occurs when X≠Y as in (1b) and (1c). It is evident that internal and external properties of structures in examples (1b) do not act in unison, but are rather disharmonious.⁶

5 It is essential to make a clear distinction between clear-cut cases of inflected structures such as those given in (1a), whose external and internal properties act in harmony with each other and which accordingly have appropriate syntactic distribution, and mixed category structures as are examples given in (1b and 1c).

6 Yoon (2005: 146) refers to structures X=Y as symmetrical, while structures X≠Y are called *asymmetrical*.

Gerund, according to Yoon (2005), as a dual lexical category has the following pattern: <N/V>. This formula means that the N-feature in gerund will attribute to gerund the external distribution of nouns (NPs), while the V-feature from the second half of the formula determines that the gerund form in question will have internal syntax of verbs (VPs).

4. INFLECTION AND DLC

Since in the previous section we have clearly shown that gerund, as an inflected structure, is classified and defined as a mixed category, the hypothesis is that DLC theory may be used in treatment of other equally problematic structures containing inflectional suffixes such as *-ed* adjectives, and other *-ing* formations in English (see 1c and 1d). Just like gerund, they are extremely intriguing for researchers and seem to be ideal representatives of DLC. They fit DLC description given in the definition above. Yoon (2005: 151) suggested something similar, advocating the notion that inflected words⁷ are also mixed categories.

In order to support Yoon's claim we should look into the examples given in (1c) in which we encounter the contradiction of two types of information. The information coming from the root (noun features) strongly contradicts the information coming from the suffix (whose usage presupposes verbal features). In particular, formations N+ *-ing* are internally nominal, but externally seen they are partially nominal (in function) and partially verbal (in structure). From the semantic aspect they simultaneously possess two sets of contradictory information saying "Z (root) + *-ing* denotes the action of Z except that 'to Z' does not exist as a verb".

- (2) *busing* ← to bus*
dairying ← to dairy*
brown-bagging ← to brown bag*

Although some may argue that the forms in question should not be regarded as gerunds, it is their meaning which, in my opinion, proves otherwise. Studies conducted on the way inflectional forms are learned and stored prove that speakers more easily learn the forms with high-frequency occurrence (Clahsen 1999) which gerund and participle forms certainly are. Once stored, inflectional forms may certainly show dual usage. So by storing the meaning of inflectional endings such as *-ed* and *-ing* speakers

7 In order to avoid possible objections, in this paper all *-ing* formations and *-ed* formations (including controversial *-ed* adjectives) are seen as inflected forms. Even those scholars (Hirtle 1970) who classified *-ed* in adjectives such as *verandahed*, *moneyed* or *-ing* in *dairying*, *shirting* as derivational, all agree that the homophony of the inflectional suffixes and their derivational counterparts is more than a coincidence. To support this, Hudson (1975: 71) states that no formal criteria have been established which will lead to making a clear distinction between inflectional and derivational *-ed*. In my opinion the relation between inflectional suffixes and their WF counterparts may be explained by a homonymy motivated by a common element in meaning. In other words, in majority of *-ed* adjectives, *-ed* is perceived as attributing semantic information [+ passive] to the root they are attached to; similarly, when used with nominal roots, gerundial *-ing* suffix is perceived to denote the name of the action that is somehow related to the root lexeme. More about the derivational status of participial and gerund forms through the concept of inherent inflection can be found in Haspelmath (1996) and Booj (1996).

are able to deconstruct forms even though they might have never encountered them before. Therefore they are able to interpret *-ing* forms given in (2) as gerunds or as “actions of performing Z” where Z stands for the root lexeme whichever POS features it may have.

In the examples given in (1d) a pattern $X \neq Y$ is encountered, where X stands for noun properties, while Y stands for verb properties represented by the information provided by *-ed* suffix, which is perceived as verbal suffix. However, unlike gerund as a dual lexical category (see 1b) where the criterion of obligatoriness⁸ is respected in (1d) (just like in 1c) lexical properties and POS features of the root do not determine the affixes which attach to them. In our examples (1c) and (1d) the criterion of obligatoriness is questioned in a way that the root lexeme does not act as suffix determinant. Contrary to expectations, in (1d) the nominal root lexeme is suffixed with the verbal suffix *-ed*. As a result, we are faced with the change of root-lexeme category (N>Adj). The meaning of a new lexeme may be paraphrased as “being equipped with or possessing S” where S stands for the root lexeme, whatever POS features it may possess.⁹

This completely challenges the assumption that inflectional suffixes can either add information to the root or to an inflected stem (Lieber 1980, Lieber 1992) or spell out features that are marked on the root lexeme (Stump 2001).

The examples presented and analysed in the previous sections of this paper point out to one thing: inflectional suffixes in contemporary English are much more complex in their function and meaning than the traditional derivation/inflection dichotomy theories claim. Their morphosyntactic and semantic properties urge us to relax the constraints on WF processes as strictly derivational in nature. The examples presented here speak in favour of the assumption that inflectional suffixes, apart from grammatical meaning, possess the lexical meaning of their own. This assumption turns to the lexicon of contemporary English which is growing with such a speed that it needs every possible mechanism available for that purpose.

4.1. INFLECTIONAL SUFFIXES AS WF SUFFIXES; EXAMPLES OF NEOLOGICAL FORMATIONS

It was pointed out earlier in this paper that cognitive studies show how speakers and users of English store the meaning and usage of particular high-frequency inflectional forms. Thus, both native and non-native speakers of English with appropriate language competence become fully aware of grammatical, semantic and lexical features of inflectional affixes. Majority of speakers, in their mental lexicon, successfully interpret the information which is added to the lexical root or stem by the inflectional affixes, largely due to their regularity in meaning. It is exactly the regularity and predictability in meaning that attributed to the fact that certain forms with inflectional endings have dual usage, and therefore may be seen as dual lexical categories. As a result there is

8 According to Bybee (1985: 81) the criterion of obligatoriness was proposed by Greenberg (1954). Obligatoriness means that obligatory categories force certain choices upon the speaker when it comes to selection of affixes.

9 This interpretation of meaning is based on Nesfield's interpretation that the meaning of the suffix *-ed* in the adjectives of N+*-ed*-type originates from the past participle adjectival usage (Nesfield 1956: 71). For closer insight into the issues of meaning of *-ed* adjectives see, among others, Firth (1951), Hirtle (1970) and Hudson (1975).

a growing number of neological formations created by the means of inflectional suffixation showing the DLC mixed category features discussed in the previous sections of this paper. Despite the fact that they typically disregard the criterion of obligatoriness, they continue to exist in English giving rise to new forms and making this WF mechanism quite productive. The examples of such neological formations are given below in (3)¹⁰

- (3) a. Zorbing
 Skilling
 Cocooning
 Birthing
 Cupping
 Simulsequeling
 Prarie-dogging
- b. Bladdered
 Supersized
 Credentialed
 Anthrax-laced
 Golf-themed

Examples (3) illustrate the mixture of grammatical and lexical information coming from nominal roots which licence the usage of verbal suffixes: noun-forming gerundial *-ing* in (3a) and, adjective-forming participial *-ed* in (3b).

5. CONCLUSION

In this paper I have tried to show that in modern English WF processes of inflection can no longer be viewed as opposed and distinct from derivation. I have presented some arguments advocating the position that inflectional and word-formation mechanisms and features clearly overlap in some lexemes in English and that it is neither a rare nor recent phenomenon. This calls for a somewhat different approach to treatment of inflectional and WF suffixes in English. Instead of trying to treat and analyze them as two distinct and totally polarized types of suffixes I propose that they be placed closer to each other along the same continuum. In that respect the DLC theory seems to offer some flexible and plausible grounds. I am well aware of the possible objections to the arguments (mostly regarding the class of suffixes and lexical roots in question) I have presented in this paper. However, I have steered clear out of that kind of debate, since my purpose was to argue for a more unified treatment of inflectional and word-formation suffixes in English as an increasing number of new lexemes in modern English lexicon seems to combine and unify the inflectional and word-formation (derivational) features. This interplay between inflection and word-formation deserves a proper and studious treatment.

¹⁰ Examples taken from Hargraves (2004). For the explicit specific meanings of the given neological formations, see Hargraves (2004).

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SUMMARY

INFLECTION AND DUAL LEXICAL CATEGORIES

This paper is motivated by the studies of *-ed* adjectives (Hirtle 1970, Hudson 1975, Beard 1976) and gerunds (Borer 1990, Blevins 2005, Vujić 2006) in English. I base my study on the concept often advocated in modern morphological studies that gerunds and “*-ed* formations” are seen as dual representations, mixed category structures or dual lexical categories (Yoon 2005). In other words it is a well-known fact that, occasionally, administering a certain inflectional suffix may lead to a change in a part of speech category (class) of the base or Head (Yoon 2005). I use this fact as a starting point and continue with providing the arguments which support a hypothesis that the increasing number of similar dual category formations in the lexicon of modern English, allow for a revision of the position of inflection in relevance to derivation and WF in general. My point is that these two morphological mechanisms (inflection and derivation) in modern WF practice in English do not oppose each other. Rather, the limited and regulated scope of inflection is used to complement the imperfections and deficiencies of WF processes.

Such a notion is additionally supported by the fact that both native and non-native speakers of English are familiar with grammatical, semantic and lexical features of inflectional affixes. Majority of speakers, in their mental lexicon, successfully interpret information added to the root or stem by the inflectional affixes. As a result, there are numerous new formations and neological formations showing dual nature in their internal and external properties (external distribution of one part-of-speech and internal syntax of another) (Lapointe 1999).

KEYWORDS: inflection, Dual Lexical Categories, part-of-speech properties, derivation.

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