

# Word-Formation Processes in Koiné Greek Language in the Light of Papyri<sup>1</sup>

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## **Abstract**

This paper investigates the word-formation processes, particularly, the argument of the compounding and the derivation: their definitions, their differences, and their intermingling cases. This study will concentrate on word-formation processes throughout the *Koiné* Κοινή Greek language in the light of papyri. The elements of the affixes, which had been discussed in several studies, are also taken here into consideration regarding their assisting functions whether in compounds or derivatives. Due to the idea that the *Koiné* Greek language is a stem-based one, it became necessary to examine the inflection process associated with the compounding or the derivation and may occupy an initial or a final position. Another word-formation process is obtained through the usage of derivational suffixes. This process is called the changing of word class and it is produced in the *Koiné* Greek language by using conversion which involves the endocentric nominal compounds as the most common formations. This will be discussed through the zero grade to avoid the usage of full formations of words.

## **Key Words**

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<sup>1</sup> This research is a chapter of the M.A dissertation which titled “The compound words in the *Koiné* language in the light of the Greek Papyri” by Marwa Mostafa Lotfy, demonstrator of Ancient Greek in Art Faculty, Ancient Greek & Latin studies department, Mansoura University, Egypt. Under supervision of: Prof Sayed Mohamed Omar, Ain Shams University. & Prof: Magdy Ahmed Ismail, Mansoura University.

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Compounding, derivation, affixes, inflection, the changing word class, the *Koiné* Greek language.

### Introduction

Following the conquest of the Mediterranean regions by Alexander III in the 4<sup>th</sup> century BCE, *Koiné* language began to expand slowly in all the conquered territories and Egypt in particular. *Koiné* was the daily-spoken language of the elite and the middle-class people in Egypt. With the progress of time, *Koiné* language began to be used in all spheres of life, i.e., commerce, official letters, taxes, and administrative documents. After the Romans invaded Egypt in the first century BCE,<sup>2</sup> the *Koiné* kept its status as an official language. In the middle of the 7<sup>th</sup> century CE, the Arabic language started to replace the *Koiné* Greek language slowly till it became the national and official language of Egypt. Despite that fact, some Greek papyri mentioned that the late *Koiné* language remained and continued to be in use in Egypt during the 7<sup>th</sup> to the 9<sup>th</sup> centuries CE. Interestingly, *Koiné* was the first national language survived in the Mediterranean Eastern regions<sup>3</sup> in the Hellenistic Ages, particularly in Egypt.

*The Koiné* was a combination of the ancient Greek dialects. It mostly was influenced by the *Ionic/Attic* dialects. Other ancient dialects (e.g., *Doric* dialect.<sup>4</sup>) were also influenced on the *Koiné* by the Greeks who came from different places in Greece.

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<sup>2</sup> Horrocks, G. (1997). *Greek a history of the language and its speakers*, (1<sup>st</sup> ed.) London and New York: Longman, p.71.

<sup>3</sup> Horrocks (1997), p. 33.

<sup>4</sup> Horrocks (1997), pp.41-42.

The main resource of this paper is the Greek papyri (e.g., papyri.info, HGV and TM) which can prove the formal and the informal styles by either the Greeks or the native Egyptians who spoke and wrote in *Koiné* Greek language.<sup>5</sup>

The word-formation processes in the Greek language have been the main concern of several studies. Compounding and derivation are among these processes, and they are the points of interest in this paper, specifically, their differences and intermingling cases. The differences between compounding and derivation manifested mainly in their structures, which depending upon different criteria such as the nature of the first constituents, the linking vowels, and the relations among the components of the compound words. Due to the fact, that the affixes are employed in most grammatical items by the morphological rules. So, this paper examines if the affixes could assist in both compounding and derivation in the *Koiné* Greek language, or just involved in the derivation process. One more feature of compounding and derivation is the reception of inflection. The paper shows how the inflectional element is very important to be determined to recognize the heads of compounds, particularly in the exocentric compounds. Finally, the changing word class is very phenomenal in the Greek word-formation, and it takes place as a process of conversion; that turning the categories of the words such as verbs into nouns or vice versa.

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<sup>5</sup> Horrocks (1997), p. 41.

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According to Bauer, Plag, and Lieber<sup>6</sup> the word-formation processes include all complex<sup>7</sup> words, such as those that constitute compounding, derivation, conversion, blending, backformation, clipping, etc. In this paper, the researcher will discuss compounding and derivation, the distinction and the interface between compounding and derivation, the affixes, the inflection, and finally the changing of the word class process.

### The Compounding and the Derivation

**The compound** is a process of two or more stems/autonomous words with the addition of inflection endings if the second constituent is a stem. The stems of the compounds are mostly linked by connecting vowels<sup>8</sup> with only one stress on the whole compound word, e.g., βαρυ-κέφαλος<sup>9</sup> ‘heavy headed’. The structures of compounds and derivation belong to the same word-formation domain, which is morphology but with different structures. The structures of the *koiné* Greek compounds can be one of these following four formations:<sup>10</sup>

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<sup>6</sup> Bauer, Laurie. (1983). English word-formation. Cambridge Textbooks in linguistics. Cambridge & United Kingdom: Cambridge University Press, p.30.

Plag, Ingo. (2002). *Word-Formation in English*. Cambridge: Cambridge University Press, p.12.  
Lieber, Rochelle. (2009). *Introducing Morphology*. Cambridge: Cambridge University Press, p.383.

<sup>7</sup> Katamba, Francis. (1993). Morphology. *Modern linguistics series*, London: Macmillan Press LTD.

<sup>8</sup> Ralli, Angela. (2009). I.E Hellenic. In Lieber, Rochelle & Pavol Štekauer (Eds.), *The Oxford Handbook of Compounding*. Oxford: Oxford University Press, p.717.

<sup>9</sup> P. Kell.1.72. 326 CE-375 CE. Line: 43.

<sup>10</sup> Ralli, Angela. (2013). Compounding in Modern Greek. *Studies in Morphology*, vol.2, New York & London: Springer, pp. 88-89.

Ralli, Angela. (2010). Compounding Versus Derivation. In S. Scalise & I. Vogel (Eds.), *Cross-Disciplinary Issues in Compounding*, Current Issues in Linguistic Theory. vol. 311, pp.57-76. Amsterdam & Philadelphia: John Benjamins, p.101.

- 1) Stem + Stem + Inflectional ending = compound βαρυκέφαλος ‘heavy headed’ (βαρύς ‘heavy’ + κεφαλή ‘Head of a man’)
- 2) Stem + Word = compound λογοποιέω<sup>11</sup> ‘Write compose’ (λόγος ‘account’+ ποιέω ‘do, make’).
- 3) Word + Stem + inflectional ending = compound, νυκτιβάτης ‘Walking by night’ (LSJ) (νυκτι in a dative case from νύξ ‘night’ + βάτης ‘walk’ derivation form of the verb βαίνω)<sup>12</sup>
- 4) Word + Word = compound, παλινδικέω<sup>13</sup> ‘go a law again’ (πάλιν ‘back’ + δικέω ‘extract money from someone’), κατα-βαίνω<sup>14</sup> ‘Go down’ (κατά ‘down from’+ βαίνω ‘walk’), τρίστομος<sup>15</sup> ‘three-edged’ (τρεις ‘three’+ τόμος ‘land’), άγορα-νόμος<sup>16</sup> ‘clerk of market’ (άγορά ‘market’ + νόμος ‘usage’ < derivation form of νομή ‘pasture’ < νέμω ‘deal out’

The formations of Stem + Stem or the formation of Stem + Word are frequently used in the *Koiné* Greek language, in comparison with the formations which contain full words in the first constituents of their compounds. For instance, the formations of Word + Word or Word + Stem are non-common in the *Koiné* Greek texts. In the *Koiné* Greek, the usage of the stem in compounding in the first constituents started to replace the autonomous word. In order to clarify the notion of compounding for the foreign readers

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<sup>11</sup> P. Eirene. 3.15. 551CE-600 CE. Line: 4.

<sup>12</sup> Chantraine, Pierre. 1977. *Dictionnaire étymologique De La Langue Grecque Histoire des mots*. Paris : Klincksieck, p.156.

<sup>13</sup> P. Mert.3. 104. 1 CE- 399 CE. Line : 17.

<sup>14</sup> BGU.2.380. 201CE-300 CE. Line: 17.

<sup>15</sup> P. Mil. congr. XVII, pg40. 25 BCE- 25 CE. Line : 3.

<sup>16</sup> BGU.1.141. 242 CE- 243 CE. Line:13.

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which dealt with the *Koiné*.<sup>17</sup> Then the stems became one of the basic features of compounding onwards.

The constituents of the compound words are free morphemes with open class words or close class.<sup>18</sup> The free morphemes with open class are fixable to receive more inflectional endings, e.g., the nominal χωρά ‘place’, adjectival κάλός ‘beautiful’, and verbal stems λέγω ‘speak’.

The free morphemes with close class cannot receive any inflectional endings ‘non-inflected items’ such as prepositions, pronouns, cardinal numbers, certain adverbs, e.g., ἀποθνήσκω<sup>19</sup> ‘renounce’, αὐτοδικος<sup>20</sup> ‘With independent jurisdiction’, ἔναμιος<sup>21</sup> ‘With blood in one’ εὖ-βουλος<sup>22</sup> ‘Well advised’.

**The derivation** consists of stems and affixes with the additional of inflectional ending, e.g., prefix + stem οὐδ-έτερος<sup>23</sup> ‘not either, neither of two’ (οὐδέ ‘but not’ + ἕτερος ‘the other of two’), or stem + suffix, e.g., φυλακ-ικός<sup>24</sup> ‘watchful’. The affixes which assist in derivation are bound morphemes with open or close class. The open class includes the prefixes, while the close class includes suffixes. The prefixes are more open class than the suffixes, since they modify the semantic

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<sup>17</sup> Ralli (2013), p.283.

<sup>18</sup> Kortmann, Bernd. (2020). *English Linguistics Essentials*. (2<sup>nd</sup> ed.). Berlin: LehrBuch J.B. Metzler, p.53.

Yule George. (2010). *The study of language*. (4<sup>th</sup> ed). Cambridge: Cambridge University Press, pp.68-69.

<sup>19</sup> P. Giss. Apoll,13.113 CE- 120 CE. Line :9.

<sup>20</sup> Analpap.26.157. 250 CE - 251 CE. Line :6.

<sup>21</sup> P. Mich.17.758. 300 CE- 399 CE. Line :14.

<sup>22</sup> P. Lond. 3.604B. 47 CE. Line :90.

<sup>23</sup> BGU.4.1037. 48 CE. Line:35.

<sup>24</sup> P. Tebt.1. 68. 116. BCE. Line:89.

feature of their hosts, but without changing in the inflection category of the whole word. These prefixes contain clitics, particles intensive, i.e., ἀρι/έρι<sup>25</sup>, που ‘somewhere’, τις ‘how big’<sup>26</sup> and the negators, e.g., δύς ‘not’, ἀ/ἄν<sup>27</sup>, οὐ ‘not’, μη ‘not’, δις ‘twice’, as the below:

- 1) ἄν-εικος<sup>28</sup> ‘Without demur’  
    άν ‘non’+εἰκός ‘truth’
- 2) ἐρί-βρομος<sup>29</sup> ‘loud shouting’  
    ἐρί ‘very’ + βρόμος ‘noise’ < βρέμω ‘ring, clash’
- 3) δυσ-αρεστέω<sup>30</sup> ‘suffer annoyance’  
    δύς ‘not’ +ἀρέσκω ‘make good, please’
- 4) ἄνισος<sup>31</sup> ‘unequal’  
    ἄν ‘un’ + ἴσος ‘right, equal’

The suffixes are close class of the bound morphemes such as the derivational suffixes, they are only responsible for the categorial of the whole structure, e.g., ικός in φυλακ-ικός ‘guardian’, ος in χορεῖ-ος<sup>32</sup> < χορεία ‘belonging to a chorus’, κός in παιδι-κός<sup>33</sup> <παιδιά <παίζω ‘playful’.

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<sup>25</sup> Jannaris (1897), p.306.

<sup>26</sup> Palmer, Darrly. (2021). *Intermediate Ancient Greek Language*. Australia: Australian National University Press, p.151.

<sup>27</sup>In The Doric and Aeolic dialects, the negative form of κε(v) was used instead of the negative form ἄν (cf., Palmer 2021:161).

<sup>28</sup> SB.6. 9050. 117 CE-127 CE. Line :7.

<sup>29</sup> TM.62564. 200 CE- 299 CE. Line :3.

<sup>30</sup> P. Herc. 222. 99 BCE-1 BCE. Line:19.

<sup>31</sup> P. Herc.1061. 150 BCE-51 BCE. Line:2.

<sup>32</sup> TM 59293. 100 CE-299CE. Line :31.

<sup>33</sup> P. Dryton 1.38. 153 BCE-141 BCE. Line:14.

### The Distinction between Compounding and Derivation

In early linguistic studies, the confusion between the derivation and the compounding process was noticeable. Marchand (1967) classified transposition as a derivation process which contains suffixes, while expansion is a compounding that contains prefixes.<sup>34</sup> Basically, Marchand's theory may be applied on the Greek language, e.g., stem+suffix=derivation παιδικός (stem παιδι + suffix κός), and the prefix (preposition, adverb, pronoun, etc.) + stem/word= compound, e.g., ἐπιβάλλω<sup>35</sup> 'cast upon' (prefix ἐπι + word βάλλω). With consideration, this theory will not include all possibilities of compound and derivation structures. For instance, the prefixes are not the only items that assist in the creation of compounding, the free morphemes with the open class (i.e., Noun, Adjective, and Verb) are mostly commoner in the creation of the compounds.

On one hand, the prefixes and compounding were treated under the domain of morphology by some theorists, (cf. Allen 1978, Siegel 1979<sup>36</sup>). On the other hand, the suffixes, and derivatives were treated under the domain of syntax.<sup>37</sup> However, the early linguistic studies distinguished between the prefixes and suffixes since they go to different word-formation processes. But the compounding and the derivation were still treated in the same level of grammatical categories as same as the stems and affixes. Thus, the compounding and derivation

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<sup>34</sup> Marchand, Hans. (1969). *The Categories and types of present-day English word-formation A synchronic-diachronic approach*, (2<sup>nd</sup> ed.) Munich: Beck, pp.21-22.

<sup>35</sup> BGU.2.614. 217 CE. Line:17.

<sup>36</sup> Allen, Margaret. (1978). *Morphological Investigations*. PhD. The university of Connecticut. Siegel, D. 1979. *Topics in English Morphology*. New York: Garland.

<sup>37</sup> Ralli (2010), pp. 57-60.



listed in the *lexicon* λεξικός' as idioms (cf. Lieber 1980 Mohanan 1986<sup>38</sup>). Recently, the differences between compounding and derivation recognized through the types of their morphemes. The theorists tried to suggest some properties to illuminate the distinction between compounding and derivation. In order to eliminate the overlapping between compounding and derivation (cf. Anderson 1992, Iacobini 1999, Dimela & Melissaropoulou 2009<sup>39</sup>, Ralli, 2010), this can be summarized as follows: a) The nature of the first constituent, if it contains a free morpheme or a bound morpheme, the free morphemes are always attached to compounding. While bound ones are mostly created through affixes in the first constituent in derivation. b) The derivation only shows the subordination among the constituents, while compounding shows coordination, determinative, and attribution.<sup>40</sup> c) The connecting vowels usually occur among the constituents in compounding. But they never do in derivation.<sup>41</sup> d) The compounding can form all types of structures, while derivation cannot have Word + Word structures.

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<sup>38</sup> Lieber, Rochelle. (1980). *On the organization of the lexicon*. PhD diss., MIT.

Mohanan, K.P. (1986). *The Theory of Lexical Phonology*. Dordrecht, Boston, Lancaster & Tokyo: D. Reidel Publishing Company.

<sup>39</sup> Anderson, S.R. (1992). *A-Morphous Morphology*. Cambridge: Cambridge University Press, p.318.

Iacobini, Claudio. (1999). Distinguishing derivational prefixes from initial combining forms. In *proceedings of First Mediterranean Morphology Meeting, Mytilene (Grecia)*, 19-21. G. Booij, A. Ralli, S. Scalise (Eds.), pp.132-140.

Dimela, Eleonora & Dimitra Melissaropoulou. (2009). On prefix like adverbs in Modern Greek, *Morphology*, vol.1, pp.72-94.

<sup>40</sup> Iacobini (1999), p. 138.

<sup>41</sup> Ralli, Angela. (1990). Compounding in Modern Greek. *Laboratorio di linguistica*, pp.143-174.

### The Interface between Compounding and Derivation

The compounding and derivation are categorized under the same domain which is, morphology, but they do not belong to the same pattern of word-formation.<sup>42</sup> Thus, the borderline between compounding and derivation is hard to draw. On one hand, the derivation precedes the compounding since the compounding has internal structure relations which allow derived items to enter the compounding system. This case happens when the second constituents of the compounds are full words, which means these second constituents are inflected before joining to compounds e.g., κατα-βαίνω<sup>43</sup> ‘go down’, τρίστομος<sup>44</sup> ‘three-edged’. On the other hand, the compounding precedes the derivation when the second constituents of the compound are stems, and the derivational suffixes which are entered in the compounding process for determining the categorical of whole compound, e.g., ἀρχ-ε-φοδ-(ος)<sup>45</sup> ‘chief of police’, (ἀρχω ‘be a leader of’ + ἔφοδος ‘proceedings in a law-court’ < ἔφοδεύω ‘watch over’). With consideration that the compound words do not usually bear the derived items at the first constituents, but rather they usually require stems, with the meaning of the derived items.<sup>46</sup> The reason for this is “the bare-stem constraint” which dominates the ability to recognize the derivational suffix in structures such as Stem + Stem which needs the inflectional marking. According to (Nespor and Ralli 1996,<sup>47</sup> and Ralli 2013)<sup>48</sup> the derivational

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<sup>42</sup> See, Ralli (2010), pp.57-59, Ralli (2013), p.222.

<sup>43</sup> BGU.2.380. 201 CE- 300 CE. Line :17.

<sup>44</sup> P. Mil. congr. XVII, pg40. 25 BCE-25 CE. Line : 3.

<sup>45</sup> BGU.1.6. 157 CE-158 CE. Line :22.

<sup>46</sup> Ralli (2013), pp.133-134.

<sup>47</sup>Ralli, Angela & Marina Nespor. (1996). Morphology-Phonology interface: phonological domains in Greek compounds. *The Linguistic Review* 13(3-4),pp.357-382.

<sup>48</sup> See, Ralli (2013), p.223 for more details.

suffixes which appear in the second constituents when the compound bear stems of deverbal adjectives, are mostly nominal compounds e.g., Adj. + Ver. = nominal compound, with the appropriate of the inflectional suffixes ‘τος’, e.g., πολύστρεπτος ‘much twisted’ (LSJ) (πολύς ‘much’ + στρέφω ‘To turn, twist’), προ-άγγελος<sup>49</sup> ‘announcing beforehand’, Ἀγέστρατος ‘host-leading’ (LSJ).

The autonomous words in compounds, e.g., Stem + Word have no changes in their morpho-syntactic features. These structures have built their derived items before joining the compounds, e.g., φυλακάρχης<sup>50</sup> ‘commandant of the watch’ (φύλαξ ‘guardian + ἀρχή ‘command’), παιδοποιέω<sup>51</sup> ‘child-make’. Subsequently, they receive their stress, and their inflectional ending before joining the compounding system. Hence, it concluded that when these autonomous words attached to compounds, they were created before joining compounding, and they express the condition of the following the derivation.<sup>52</sup>

In some cases, the derivation can be preceding the compounds in the exocentric compounds, which is also one of the cases that proved the derivation follows the compounding. For instance, the exocentric compounds imply stems in their constituents Stem + Stem, which need derivational suffixes to attach to the compounding as the inflectional markings. In these cases, the derivational suffixes are the heads of the compound words,<sup>53</sup> which means that the compounding is preceding the derivation, e.g., πολύ-αστρ(ος) ‘with many stars’(LSJ), λευκ-ώ-λενος<sup>54</sup> ‘white-armed’ (λεύκη ‘white poplar’ + ώλένη ‘elbow’). Nevertheless, the

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<sup>49</sup> TM.63906. 100 CE-299 CE. Line :11.

<sup>50</sup> P. Cairo. Zen. 1.59006. 259 BCE. Line :23.

<sup>51</sup> P. Cair. Masp. 1, 67005. 568 CE. Line: 12.

<sup>52</sup> Ralli (2013), p. 225.

<sup>53</sup> Ralli (2013), pp.119-120.

<sup>54</sup> P. Gen.3. 118. 199 BCE- 1 BCE. Line:8.

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productivity of the exocentric compounds, some counterexamples prove the opposite, such as Adverbs + Ver./Adj compounds, these adverbs cannot modify their verbs/adjectives,<sup>55</sup> παλινδικέω<sup>56</sup> ‘extract money from someone’, (πάλιν ‘back’ + δικέω ‘mulct’), and Adv. + Adj, e.g., άγχιμαχητής<sup>57</sup>=άγχέμαχος ‘fighting hand to hand’ (άγχι ‘near’ + μαχητής ‘fighter < μάχομαι ‘fight’).

### Affixes

The affixes are very productive items, which are employed in most grammatical processes. The affixes contain three categories the prefix: the morphemes which employ at the beginning of the word, the infix: inserts in the word, and the suffix employs at the end of the word to determine the category of the word. Therefore, in the Greek language, the prefix indicates stems, the infix indicates the connecting vowel in the complex item, and the suffix indicates the categorial of the word.<sup>58</sup>

The Greek affixes have three classes: a) Affixes derived from other languages such as the negative Latin prefix “non” combined with the Greek stem, e.g., νώνυμος<sup>59</sup> ‘unnamed’, (vo ‘non’ + όνομα with lengthening ο+ο=ω). The Latin suffix “Inus”<sup>60</sup>

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<sup>55</sup> Ralli (2013), p.226.

<sup>56</sup> P. Mert.3. 104. 1CE-400 CE. Line:17.

<sup>57</sup> Άγχιμαχητής = άγχέμαχος fighting hand to hand (LSJ), BKT 5.1, p.4. 150 CE- 250 CE. Line:173.

<sup>58</sup> Efthymiou, Angeliki. (2015). Modern Greek Parasynthetic verbs. A hierarchical relationship between prefixes and suffixes? In S. Manova (Ed.) *Affix ordering languages and frameworks*. New York: Oxford University Press, pp. 82-107, p.86.

<sup>59</sup> TM. 60155. 350 CE- 450 CE. Line:154.

<sup>60</sup> The Latin suffix Inus influenced on derivation process, as be noticed in the inflectional ending, e.g., ούδα-τιός < ούδενός < ούδενόω ‘bring to naught’ (BASP.58.138. 369 CE. Line:24), λογγ-εϊνος Latin proper name ‘Longinus’ (BGU. 1.71. 189 CE. Line:1/2)

was also a very common suffix in the Greek language, e.g., πράσ-ινος<sup>61</sup> ‘Leek green’ b) Independent affixes with a close class of the free morphemes such as pronouns, prepositions, certain adverbs, and cardinal numbers, such as αὐτός, ἀπό, εὔ, εἷς, and c) Dependent affixes such as negators, clitics, and particles intensive ἄν, ἄρι, and τις.

In some cases, multiple affixes may be attached to the same stem (which is called para synthetic process).<sup>62</sup> These complex items are common in the *Koiné* Greek papyri, e.g., in derivation δυσ-αρεις-τέω<sup>63</sup> ‘to be displeased’, αρειστέω < nominal derivative αρειστός<sup>64</sup> ‘pleasant’ < ἀρέσκω ‘please’ (prefix: δυσ+stem: ἀρεσ+suffixal ending τέω), δυσ-χερ-ής<sup>65</sup> ‘hard to manage’, (prefix: δυσ + stem: χεῖρ + suffixal ending: ἴς), μη-δέποτε<sup>66</sup> ‘never’(μηδέ μή+δέ ‘negative particle not’+ πότε ‘what’), in compounding: ἀντι-δια-γραφω<sup>67</sup> ‘Pay in money instead of a kind’ (1<sup>st</sup> preposition: ἀντι+ 2<sup>nd</sup> preposition: δια+ stem:γραφ+ verbal ending ω).

In discussion that the affixes are involved only in derivation (cf. Ralli 2003, 2013, 2020),<sup>68</sup> particularly, the notion of affixes participates the derivation process

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<sup>61</sup> Magni, Elisabetta. (2017). Suffix borrowing and conflict through Latin-Greek hybrid formations. Pallas, vol. 103, 283-291. *Études de linguistique Latine II*, Presses Universitaires de Midi, p.284.

<sup>62</sup> Plag, Ingo. (2002). *Word-Formation in English*. Cambridge: Cambridge University Press, p.53.

<sup>63</sup> P. Herc.222. 99 BCE-1 BCE. Line:19.

<sup>64</sup> Chantraine (1977), p.107.

<sup>65</sup> BGU. 3.915. 49 CE-54 CE. Line :11.

<sup>66</sup> BGU.7.1567. 201 CE-300 CE. Line :10.

<sup>67</sup> BGU.6. 14446. 147 BCE- 136 BCE. Line: 4.

<sup>68</sup> Ralli, Angela. (2003). *Morphology in Greek Linguistics: A State-of-the art*. *Journal of Greek Linguistics* 4, pp.77-130.

Ralli, Angela. (2020). Affixoids an intriguing intermediate morphological category. In P. Štekauer, & Livia Körtevelyessy (Eds.) *Complex Words*, pp. 217-238. Cambridge: Cambridge University.

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as an essential part of the process, e.g., Prefix + Word δυσ-άγγελος ‘messenger of ill’ (LSJ). It worth to be noticed that the affixes have two types; the independent items which employ in compounds and the dependent items which employ in derivation. The independent items, such as prepositions, pronouns, cardinal numbers can be attached to *lexemes* and in turn, they assist in the compounding process, e.g., κατα-βαίνω<sup>69</sup> ‘go down’. These independent affixes are very less in usage in compound words.<sup>70</sup> Since they are not always able to be in the first constituents of the compounds. Also, some elements could never be attached to compounds, such as the number ένα ‘one’ which is replaced by μονο in the Modern Greek except for ενοποιώ<sup>71</sup> ‘unify’. In the *Koiné* Greek papyri, it can be founded some uses of ένα, e.g., έναμιος<sup>72</sup> ‘With blood in one’ (ένα ‘one’+ αίμα ‘blood’).

While the dependent items such as negators, clitics, and particles intensive assist in derivation, e.g., ού-δέτερος<sup>73</sup> ‘not either, neither of two’. Hence, the affixes could assist in compounds as well as in derivation.

For instance, the combination of the preposition with stems/ autonomous words is considered a prepositional compound not a derivation process. On one hand, the preposition attaches to compounds without any visible changes in the inflectional endings. One the other hand, when the preposition attaches to compounds, they function as modifiers for the second constituent of the compound

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<sup>69</sup> BGU.2.380. 201 CE- 300 CE. Line :17.

<sup>70</sup> Ralli (2013), p.42.

<sup>71</sup> Ralli (2013), p.43, P.BAD.2.31. 376 CE-399 CE. Line :12.

<sup>72</sup> P. Mich.17.758. 300 CE-399 CE. Line:14.

<sup>73</sup> BGU.4.1037. 48 CE. Line:35.

in the Greek language instead of being governors,<sup>74</sup> illustrate the difference between ἐπι-βάλλω<sup>75</sup> ‘cost upon’, and δια-βάλλω<sup>76</sup> ‘throw or carry over, both bear the same second constituent βάλλω but with different modifiers ἐπι vs δια.

The suffixes can also assist in compounding when the second constituents involve stems, and the derivational suffixes express the heads of compounds particularly, in the exocentric compounds.<sup>77</sup> Hence it can conclude that affixes could assist in compounding either by prefixes or suffixes, as same as in the derivation process.

#### **A. *prefixation***

Many prefixes impact the meaning of the compound more than suffixes do.<sup>78</sup> For instance, the prepositions can be modified by the meanings of the stems they attach to, e.g., ἀποθνήσκω<sup>79</sup> ‘renounce’, προαγγέλλω<sup>80</sup> ‘declare’. The prefixes (i.e., prepositions, and adverbs) are also called pre-verbs, and they are usually derived from the Ancient Greek prepositions to the *Koiné* Greek.<sup>81</sup>

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<sup>74</sup> Ralli (2003), p.16, and Tribulato, Olga. (2015) *Ancient Greek Verb-Initial Compounds: Their Diachronic Development Within the Greek Compound System*. Berlin & Boston: De Gruyter, p.104.

Yule George. (2010). *The study of language*, (4<sup>th</sup> ed.). Cambridge: Cambridge University Press.

<sup>75</sup> BGU.2.614. 217CE. Line: 17.

<sup>76</sup> P. HERC.222.100BCE-1BCE. Line:41.

<sup>77</sup> Ralli & Andreou (2015), Ralli (2005,2007,2010,2013) claimed in exocentric compounds Stem + Stem +inflectional ending, which is not fully headless, but rather the border of structure, which is the derivational suffixes consider heads, e.g., αὐτοδικος ‘With independent jurisdiction’ αὐτοδικος ‘With independent jurisdiction’ (BGU. 1.81. 189 CE. Line:5) (prefix αὐτο ‘self’+ stem δίκη ‘right’+ suffix ος)

<sup>78</sup> Efthymiou, (2015), p.83.

<sup>79</sup> P. Giss. Apoll. 13. 113 CE-120 CE. Line:9.

<sup>80</sup> BGU. 13.2252. 330 CE. Line:5.

<sup>81</sup> Ralli (2003:97-98) claimed the preposition which are joined to the stems considered prepositional compounds in the Ancient Greek.

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The reason that they were called pre-verbs, diachronically the preposition-elements were placed before the verbs, particularly, in the Classical Greek duration. Thus, they were so-called pre-verbs such as (ανά, αντί, από, διά, εκ, ἐν, and επί, etc.). Additionally, some of these pre-verbs have kept their old formations and functions in the Modern Greek language,<sup>82</sup> ἐπί ‘upon’ ἐπιείκελος<sup>83</sup> ‘like’, (ἐπί ‘upon’ + εἵκελος ‘like’), ἀνα ‘on’, ἀναβαίνω<sup>84</sup> ‘on board’. In the earlier linguistic frameworks, the prepositions were treated as derived originally from the adverbs; hence they were mostly attached to the verbal compounds.<sup>85</sup> With the development of the language, it became necessary to create more structures than verbal structures such as nominal and adjectival structures into the compounding system. Thus, the prepositions and the adverbs began to separate from their verbs<sup>86</sup> a process which is termed “τμησις” ‘cutting’ ‘*tmesis*’.<sup>87</sup> This τμησις was happened in the Ancient Greek, and the prepositions become independent words in the sentences to modify the rest *lexical* units. Finally, the prefixes do not influence the inflectional ending, but they modify their hosts, unless the prefixes contain temporal augment, i.e., (ἐ) ἀν-ε-λύ-σα<sup>88</sup> ‘not give up’, ἐ-ποίη-σα<sup>89</sup> ‘did’, or reduplication in the

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<sup>82</sup> Ralli (1992), p. 149.

<sup>83</sup> P. Oxy.32.2651. 100CE-199 CE. Line :6.

<sup>84</sup> BGU.3.884. 75 CE-84CE. Line:14.

<sup>85</sup> Goodwin, William. (1900). *Greek Grammar*. Boston: Ginn & Company, p.245.

<sup>86</sup> Mendez-Dosuna, Julian. (1997). Fusion, Fission and Relevance in Language Change: De-  
Univerbation in Greek Verb Morphology, *Studies in Language* 21:3, 577-612.

<sup>87</sup> Mendez-Dosuna (1997), p. 582, Ralli (2004), p. 247, Tribulato (2015), p. 126.

<sup>88</sup> BGU.8. 1762. 58 BCE. Line: 2

<sup>89</sup> BSP.49.124. 279 CE. Line:26



perfect tenses of verbal compounds, i.e., κατά-λελύκα<sup>90</sup> ‘put down’ <καταλύω (κατά ‘down’ + λελύκα ‘depose’ perf. of λύω ‘release, deliver’).

### ***B. Suffixation***

The function of the suffixes determines the type of the word (e.g., noun or verb), in the inflected languages: i.e., Greek, and Latin languages.

For example, in compounds:

(Stem/Word1+Stem2) + derivational suffix (The derivational suffix indicates the type and the gender + inflectional suffix indicates number and case), e.g., ἵππλήλατος 'Driven by horses' (LSJ) (ἵππεύς ‘rider’ + ἔλατήρ ‘driver’ < ἐλάωνω ‘omitted’) + τος. The purpose of suffixes is the changing categorial and the selectional features of the words, a thing which is dependent on the requirement of each structure.<sup>91</sup> These derivational suffixes are class markers, they cannot bear any semantic features, but only they refer to either a grammatical category or a semantic category.<sup>92</sup> Many linguists agreed that the suffixation is commoner in comparison with the prefixation. Since, it does not necessary that all complex items to have prefixes, but mostly they will have suffixes when the second constituent is a stem. Additionally, some languages have no usage of prefixes at all, but rather suffixes only such as Basque, Finnish, Quechua, and Turkish.<sup>93</sup> The suffixes can assist in the compounding process through the derivational suffixes, which are attached to the stems

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<sup>90</sup> BGU.4.1097. 41CE-67CE. Line :6/ Trismegistos :

<https://www.trismegistos.org/words/detail.php?lemma=καταλύω&morph-type=verb>

<sup>91</sup> Ralli, Angela. (2015). Greek (Word Formation) In O. Müller et al. (Eds.), *A handbook of word formation*, vol. 172, pp. 3138-3156. Berlin: De Gruyter. p.11.

<sup>92</sup> Efthymiou (2015), p.86.

<sup>93</sup> Bauer, Laurie. (2008). Derivational Morphology. *language and linguistics compass* 2/1, pp. 196-210.

particularly, in exocentric compounds which mostly have stems in their second constituents, in order to determine the whole compound. Additionally, suffixes function as the suffixal head, a thing that makes the exocentric compounds are headless.

As a result, prefixes cannot change the category of the word class; thus, the prefixes are considered determiners with no *lexical* categories. In other words, they are class-maintaining. Suffixes are changing the categorical features of the bases they are attached to. The suffixes are always responsible for the function determining the grammatical category and the semantic category as well.

### **The Inflection and the Compounding**

Usually, the inflection employs on the right side of the compounds in the *Koiné* Greek, e.g., *ια* in *καλλιγραφ-ία*<sup>94</sup> ‘beautiful writing’, *ω* in *άγαθοποιέω*<sup>95</sup> ‘make well’. With consideration that there are cases bearing inflection on the left side of the compounds, particularly in the Ancient Greek language, e.g., *ατο* in *θανατο-ποιός* ‘causing death) (LSJ), *μα* in *όνομά-κλυτος* ‘famous name’ (*όνομα* ‘name’ + *κλυτός* ‘noble’> *κλέω* ‘make famous’).<sup>96</sup>

The left-inflected items in compounds had appeared in the Classical Greek, but since the *Koiné* period, these formations started to be less in usage till the notion of the stem took the place of the full words in most of the compounds. Nevertheless, the inflection and the compounding impact on each other, but they do not necessarily have to be in accompanied. For instance, the

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<sup>94</sup> P. Petra 4. 39. 574CE. Line:445.

<sup>95</sup> PGM. 2.28. 301CE- 500CE. Line:16.

<sup>96</sup> Tribulato (2007), p.542.

compound which has an inflectional ending may originate from the derivative item before the process compounding.<sup>97</sup> According to, (Booij 2005,<sup>98</sup> Ralli 2013<sup>99</sup>) the position of the inflection is recognized by the position of the head, so mostly the inflection takes the right side of the endocentric compounds. Since most of the Greek endocentric compounds are right headed. But this not the only case in the Greek endocentric compounds, in some sentence it can be noted that the second constituent of the compound has different inflection from its head, e.g., ἐχενη-ίς<sup>100</sup> ‘ship-detaining’ as can be noted that the difference νηίς and ναῦς ‘ship’. This example proves that the second constituent of the compound different inflectional ending from the head of the compound. Hence, the inflection not always coincides with the position of the head, but this depends on the nature of the inflectional ending of the second constituent of the compounds.

The inflection process in the compounds depends on the nature of the second constituent if it bears either a stem or an autonomous word. In the cases, the compounding precedes the inflection process, the second constituents of the compounds must be stems, ἐχενηίς ‘ship-detaining’ (ἔχω ‘to have’ + νηίς < νηῦς <sup>101</sup>epic Ionic = ναῦς ‘ship’). In contrast with the autonomous words in the second constituent of the compounds, these second constituents will retain their inflectional endings without any changes even after attaching to the

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<sup>97</sup> Ralli (2013), p.221.

<sup>98</sup> Booij, G.E. (2005). *The Grammar of Words: An Introduction to Linguistic Morphology*. (3<sup>rd</sup> ed.). Oxford & New York: Oxford University Press, p.77.

<sup>99</sup> Ralli (2013), p.233.

<sup>100</sup> TM.113881. 100 BCE-1 BCE. Line:155.

<sup>101</sup> Beekes (2010), p. 999.

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compounding system, ἀγαθο-ποιέω<sup>102</sup> 'make well', ποιέω which was inflected word before joined to the compound. In this case, the inflection precedes the compound. The only cases which usually preserve their original forms without any changes when they attached to compounds, and they are considered uninflected items, these are the adverbs.<sup>103</sup> When the adverbs are attached to the compounding, εὐαγής<sup>104</sup> 'bright' (εὖ 'well' + ἀγής 'pure'), παλινδικέω<sup>105</sup> 'mulct', (πάλιν 'back' + δικέω 'mulct').

### The Changing of Word Class

The changing of word class is happening through conversion. Conversion is one of the word-formation processes, which is defined as a process of changing the category of a word without any visible markers, (cf. Bauer 1983, Plag 2002, Katamba 1993, Booij 2005). As a simple definition of conversion was suggested by Bauer (1983:32) "The conversion is the change in form class of a form without any corresponding change of forms." The denominative verbs one of the conversion cases, when the compounds have bound stems based on the exocentric compounds (*bahuvrihi*) nominal compounds: κακο-γλωσσώ 'talk badly' < κακο-γλῶσσω<sup>106</sup> < γλῶσσα 'who has a bad tongue'.

The deverbal nouns are another case of the conversion process when the nouns are derived from verbs, and usually, these structures are appearing in the determinative endocentric compounds in nominal shapes (Noun + Noun). In the *Koiné* Greek language, deverbal nouns are a more common formation

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<sup>102</sup> PGM. 2.28. 301 CE-500 CE. Line :16.

<sup>103</sup> Ralli (2013), p.239

<sup>104</sup> CPR. 10.122. 545 CE. Line :10.

<sup>105</sup> P. Mert.3. 104. 1CE-400CE. Line :17.

<sup>106</sup> P.OXY.67.4557. 100 CE- 199 CE. Line :9.

than the denominative (verbs derived from nouns). Thus, it will concentrate on the deverbal nouns in the following.

The process of changing word class is very common in the *Koiné* Greek morphology, it was appeared from archaic times, after the Homeric period. Then the determinative endocentric compounds became more common in Greek contexts. In the 5<sup>th</sup> and the 4<sup>th</sup> centuries BCE., deverbal nouns developed through the zero grade. The zero grade or the ablauting are the most common reduced processes of the formations in the *Koiné* Greek language. In the zero grade the internal vowel of the root disappeared or changed to another internal vowel, and these vowels are usually derived from the perfective/ aorist, imperative tenses, or changing in internal vowels in verbs that turned to bound stems, as the following:

- I. The perfect and the aorist cases, μαρτυρο-ποίημα<sup>107</sup> ‘statement on oath’, (μάρτυς ‘witness’ + ποίημα<sup>108</sup> < ποιέω ‘production’), ποίημα in the aorist tense is ἐ-ποιῆ-σα, and in the perfect tense is ἤε-ποίη-κα, so ποιή is a stem derived from either aorist or perfect + μα neutral ending, καθαροποίησις<sup>109</sup> ‘freedom from encumbrances’ <καθαροποιέω ‘cleanse’ ποίησις ‘production’ <ποιέω ‘made’, ποιή is a stem derived from either aorist ἐ-ποιῆ-σα or perfect ἤε-ποίη-κα + nominal ending σις.
- II. In other sentences, the internal long vowels of the stems change to be short vowels rather than long vowels or vice versa, e.g., ὄνοματο-

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<sup>107</sup> BGU.4. 1093. 265 CE. Line:22.

<sup>108</sup> ποιήμα <ποιέω ‘produce’, ποιήμα is nonclear derivation (cf. Beekes Robert. (2010). Etymological Dictionary of Greek, Leiden. Boston, Brill. Vol. I, p. 1216.

<sup>109</sup> P. BODL.1.45. 610 CE-611 CE. Line : 32.

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θέτης ‘one who gives a name’, θέτης <τί-θη-μι. This happens through the zero grade with a decline of (τί) and replacement of the long vowel (η) by a short one (ε), νουθέτησις<sup>110</sup> ‘admonition’ (νόος ‘mind’ + θέτης < τίθημι set, put’).

- III. Changing in the internal vowel of the root, ῥῦσις<sup>111</sup> ‘deliverance’ < ῥέω ‘flow’, in future/perfect stem ῥευσ. The ῥῦσις was a new form derived from the verb ῥέω through the zero grade which means the loss of vowel (ε) and replaced by the vowel (υ) with additional of the nominal ending σις.
- IV. The internal vowel derived from the imperative tense, e.g., ἀνάβασις<sup>112</sup> ‘going up’ <ἀναβαίνω ‘placing’, βάσις ‘steps’, βά a stem derived from the imperative form of βα-ίνω ‘go’+ the nominal ending σις, κατάλυσις<sup>113</sup> ‘dismissal, putting down’<καταλύω ‘put down’, λύσις ‘losing’, λυ a stem derived from the imperative form of λύ-ω ‘loose’ + with additional of the nominal ending σις.
- V. The bound stems are originally verbs and they are changed to nouns through the zero grade. Mostly these bound stems are taking place on the second constituents of the compounds, e.g., ἀγορα-νόμος<sup>114</sup> ‘clerk of market’ (ἀγορά ‘market’ + νόμος ‘usage’ < derivation form νομή ‘pasture’ < νέμω ‘deal out’), σημαιο-φόρος<sup>115</sup> ‘shield bearing’

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<sup>110</sup> P. Brem.61. 113 CE-120 CE. Line :32.

<sup>111</sup> P. Col. 8. 239.301 CE- 400CE. Line :1.

<sup>112</sup> P. Flor.3.346. 401CE- 500CE. Line:4.

<sup>113</sup> BGU. 8.1767. 64 BCE- 63 BCE. Line: 6.

<sup>114</sup> BGU.1.141. 242 CE- 243 CE. Line :13.

<sup>115</sup> BGU.2. 600. 140 CE. Line :11.

(σημεία ‘military’+ φόρος ‘tribute’), καρπο-φόρος<sup>116</sup> ‘fruit-bearing’ (καρπός ‘fruit’ + φόρος<φέρω ‘bear’). These bound stems cases usually end with ος/ον.

As a normal development of any language, the tendency was not only the ablauting, but rather it was to put certain verbs in new formations. Finally, zero grade or ablauting was used in order to avoid the use of full forms. For instance, the zero grade was in purpose to show the actions through the nouns, and the new forms of verbs are no longer having any special formal relationship with aorist passive, (cf., Horrocks & Stavrou 2000).<sup>117</sup>

### **Conclusion**

After examining the differences between compounding and derivation, these points are concluded: the ability of compound to create more structures than derivation. The first constituents in compounding contain free morphemes, while the derivation contains bound morphemes. The connecting vowels among the constituents appear in compounds only. Also, the relationship among the components usually occurs in the compounding system (subordination, attribution, and coordination) while in derivation, has only the subordination that occurs among the constituents. Regardless of these differences, the compounding and derivation are showing a kind of intermingling state. This happens when

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<sup>116</sup> JUR. Pap. 36. 88 BCE. Line:13.

<sup>117</sup> Horrocks, G. & Melita Stavrou. (2000). Lexeme-based separationist morphology: evidence from the history of Greek deverbals abstracts. In Booij, Geert & Jaap Van Marle (Eds.), *Yearbook of Morphology* (1<sup>st</sup> ed., pp. 19-42) Springer Science Business Media D, p.23.

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the derivative items occur in compounding either by meaning into the first constituents or by autonomous words in the second constituents of the compounds. This leads to the conclusion that the derivative precedes or follows the compounding. A thing that depends on the nature of the second constituents of the compounds. Subsequently, the affixes assist in both compounding and derivation. The prefixes are class-minting elements that cannot make changes in inflectional endings, while the suffixes can change the word class. Consequently, the inflection usually takes place on the right side of the compound, but in the Ancient Greek language, it can be noticed that some sentences show the inflection taking place on the left side until the *Koiné* period when the process started to bear the stems at their components. Finally, the changing of word class is a very rich system in the Greek language. It usually takes place through the zero grade or ablauting to reform certain verbs to new nominal formations.

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