

‘WHO’S A PROFICIENT SECOND LANGUAGE LEARNER?’ EVIDENCE FROM COMPOUND FORMATION

“ΠΟΙΟΣ ΘΕΩΡΕΙΤΑΙ ΕΠΑΡΚΗΣ ΑΛΛΟΓΛΩΣΣΟΣ ΟΜΙΛΗΤΗΣ;” ΕΝΔΕΙΞΕΙΣ ΑΠΟ ΤΗ ΔΙΑΔΙΚΑΣΙΑ ΣΥΝΘΕΣΗΣ ΛΕΞΕΩΝ

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Abstract

This paper evaluates the ability of Albanian second language learners of Greek to form compound words. 15 Albanian learners of Greek participated in an off-line experimental task and were asked to form existing compounds as well as non-existing compound forms which are morphologically possible/ acceptable but semantically non-acceptable or vague. Emphasis is placed on a) compounds’ internal structure, b) headedness, c) the relation holding between compound elements as well as the status of linking elements, and d) the relevance of the above to various categories of compound words in Greek. The findings reveal that, compared to other groups of Albanian learners of Greek who have not attended the Greek educational system, the participants in the current study display very high scores in the tested linguistic tasks, similar to those of native speakers. We argue that high language proficiency level is attributed to language teaching strategies and methods applied at school.

Key words

Compound formation, mnemonic mechanisms, word formation mechanisms, language instruction, proficiency level.

Περίληψη

Στο παρόν άρθρο αποτιμάται η ικανότητα Αλβανόφωνων αλλόγλωσσων ομιλητών της Ελληνικής να σχηματίζουν σύνθετες λέξεις. 15 αλβανόφωνοι αλλόγλωσσοι ομιλητές της Ελληνικής συμμετείχαν σε μια off-line πειραματική διαδικασία κατά τη διάρκεια της οποίας τους ζητήθηκε να σχηματίσουν υπαρκτές και μη υπαρκτές, μορφολογικά αποδεκτές, αλλά

σημασιολογικά αμφίσημες σύνθετες λέξεις. Έμφαση δίνεται α) στη δομική σύσταση των σύνθετων λέξεων, β) την κεφαλή, γ) τη σχέση μεταξύ των συστατικών μερών της σύνθετης λέξης και το ρόλο του συνδετικού φωνήεντος, δ) τη συνάφεια μεταξύ των παραπάνω και των διαφορετικών κατηγοριών σύνθετων λέξεων στην Ελληνική. Τα αποτελέσματα αποκαλύπτουν ότι, συγκριτικά προς άλλες ομάδες αλβανόφωνων αλλόγλωσσων ομιλητών της Ελληνικής οι οποίοι δεν παρακολούθησαν την ελληνική εκπαίδευση, οι συμμετέχοντες στην παρούσα έρευνα σημείωσαν πολύ υψηλές επιδόσεις στην εξεταζόμενη γλωσσική δραστηριότητα, πολύ κοντά σ' αυτές των φυσικών ομιλητών. Υποστηρίζουμε ότι το υψηλό επίπεδο γλωσσομάθειας είναι συνάρτηση των στρατηγικών και των μεθόδων γλωσσικής διδασκαλίας οι οποίες εφαρμόζονται στο σχολείο.

Λέξεις κλειδιά

Σύνθεση λέξεων, μηχανισμοί απομνημόνευσης, μηχανισμοί σχηματισμού λέξεων, γλωσσική διδασκαλία, επίπεδο γλωσσομάθειας.

0. Introduction

Although there are extensive and thorough theoretical analyses of Greek compound formation (cf. Anastasiadi-Simeonidi, 1983, 1986, Drachman & Malikouti-Drachman 1994, Nespor & Ralli 1994, 1996, Ralli, 1989, 1991, 2005a, 2005b, 2007, Revithiadou, 1996), research that investigates a) the perception and processing of Greek compounds by native speakers (cf. Jarema et al., 1999, Kehayia et al., 1999, Tsiamas et al., 2015), b) the production of compounds by native speakers of preschool and early primary school age (cf. Konstantzou et al., 2015, Stephany & Thomadaki 2017, Tzakosta & Manola 2012), c) the process and the order of learning and teaching Greek compounding to various groups of L2 learners, children and adults (cf. Tzakosta, 2009, 2010, 2011a, 2011b, Tzakosta & Mamadaki 2013), d) the implications and findings of various studies and their findings for primary and secondary education (cf. Gavriilidou, 2004, Gavriilidou & Efthimiou 2001, Koufou & Tzakosta 2015, Tzakosta & Manola 2012) is not as much but it is increasing.

A cross-linguistically accepted definition of compounding is that a compound word is a linguistic form consisting of at least two lexical elements. Each one of these elements belongs to the major grammatical categories of Nouns (N), Adjectives (A), Verbs (V) or Prepositions (P) (Selkirk 1982). In Greek, Adverbs (Adv) may also be involved in compound formation, as shown in (1) (cf. Ralli, 2005b, 2007, among others).

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|-----|----------------|----------------|
| (1) | a. eksó-porta | ‘street door’ |
| | b. kato-sédono | ‘bottom sheet’ |

Two fundamental properties of one-word compounds are a) headedness and b) the use of the linking element. On the one hand, heads assign compounds their semantic and morphosyntactic characteristics. According to Williams (1981), compound heads tend to emerge at the right side of the compound form, therefore, heads are the second or the rightmost compound constituents (cf. Tzakosta, 2017, for a detailed discussion on compounds internal structure in Greek and cross-linguistically). Linking elements, on the other hand, intra-connect compound constituents. In Greek, the linking element takes the shape of vocalic /o/ (cf. Ralli, 2007). Regarding their grammatical categories, nominal compounds are the most commonly found cross-linguistically (cf. Becker 1992, for German, Booij, 1992, 2002a, b, 2005, for Dutch, Kiefer, 1992, for Hungarian, Anastasiadi-Simeonidi, 1983, Anastasiadi-Simeonidi, 1986, 1996α, 1996β, Ralli, 1992, 2002, 2003, 2005, for Greek).

In the present paper, we evaluate the ability of Albanian L2 learners of Greek to form compound words. The participants in the study were asked to form existing compounds which are morphologically possible/ acceptable but semantically non-acceptable or vague. It is revealed that, compared to other groups of Albanian learners of Greek who have not attended the Greek school, our participants score very high in the tested linguistic tasks, similar to those of native speakers. We assume that high language proficiency level is attributed to language teaching strategies and methods applied in school. A challenge for the paper is that it aims to address the issue of compound teaching and learning on the basis of theoretical approaches to compounding only and not through language acquisition/ learning theories. We argue that a strong theoretical approach to compounding should be explanatory enough for issues related to acquisition/ learning and/ or teaching as well. The paper is organized as follows: sections 2 and 3 revise the properties of compounding in Greek and Albanian, respectively. Section 4 summarizes previous research while section 5 discusses the data of the present study. Section 6 concludes the paper.

1. Compounding in Greek

Greek compounds fall under the scope of two major categories; they are lexical and morphosyntactic (cf. Drachman & Malikouti-Drachman 1994). Lexical compounds are of two types, namely, [stem + stem], [stem + word] one-word compounds, while morphosyntactic compounds are [word + word], i.e. two-word compounds. (2a) and (2b) are lexical compounds of the [stem + stem] and [stem + word] compounds, respectively, while (2c) is a loose two-word compound which acts more like a syntactic phrase (cf. Malikouti-Drachman, 1995, Nespor & Ralli 1994, 1996).

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|-----|-----------------|-------------------|
| (2) | a. Pali-ó-filos | ‘old pal’ |
| | b. pali-o-filos | ‘not good friend’ |
| | c. peδί – θ vma | ‘wonder child’ |

As far as (2a) and (2b) are concerned, there is one single distinguishing property, i.e. stress shift. Stress shift is active in (2a) but not in (2b) in which the second constituent retains all its morphophonological characteristics. In other words, [stem + stem] compounds receive unmarked phonological values, while in [stem + word] compounds, the second constituent retains all its morphophonological characteristics (cf. Ralli, 2005b, 2007).

Like in most languages (Williams, 1981), compound heads are located at the right edge of the compound form in Greek (cf. Ralli, 2007). The field of study of Greek compounds is determined by a) the order of compound elements in coordinate and subordinate forms and b) the internal structure of compound elements categorized in exocentric and endocentric compounds (cf. Aronoff & Mille, 2001, Ralli, 2007). It is important to note that there are no clear heads in coordinate exocentric compounds. This entails that the position of compound constituents is not fixed. On the other hand, heads determine the semantics of the compound form in subordinate endocentric compounds, whereas the position of compound constituents cannot vary [this is shown in the examples in (3)].

- (3) a. maher-o-pírouno vs. b. piroun-o-m hero 'fork & knife/ knife & fork set'
c. spanak-ó-rizo vs. d. *riz-o-sp nako 'spinach rice'

The linking element is an important trait of Greek compounding and mostly takes the shape of vocalic – o –, which is considered to be a relic from ancient Greek (Anastasiadi-Simeonidi, 1983, Ralli 2005b, 2007, Ralli & Raftopoulou 1999). It emerges across-the-board when the second constituent starts with a consonant (4a), it is absent when the second constituent starts with a vowel (4b), whereas it is always produced when it is stressed, irrespective of whether the second constituent starts with a consonant or a vowel (4c).

- (4) a. hion-ó-nero 'sleet'
b. hion άνθροπος 'snowman'
c. kocin-ó-aspros 'red & white'

2. Compounding in Albanian

Albanian compounds may be polysyllabic. For this reason, they tend to be written as two separate words with or without dashes. The Albanian linking elements are /a/ and /o/ (Elsie, 2006, Orel, 2000), though the conditions determining the prevalence of one over the other are not clear (see (5) for representative Albanian compound forms (adopted from Newmark et al., 1982: 17)).

- (5) a. gusht, vjeshtë < gusht-o-vjeshtë 'end of August-beginning of September, Autumn'
b. dash, mirë < dash-a-mir 'beloved'

Given that Albanian compounds are written as two separate words, stress is not readjusted, compounds are not characterized by a specific internal structure, and the head is not clearly the second/right constituent, contra Greek (see also Elsie, 2006, Orel, 2000).

Summing up, Greek and Albanian share the properties of headedness and the emergence of the linking vowel. However, they do not share the internal properties of compound structure and stress shift/ readjustment. Therefore, we expect L2 learners to have difficulties handling these two non-shared properties.

3. Results of previous studies: native and Albanian learners of Greek

Before we delve into the properties of Greek compound formation by Albanian second language (hereafter L2) learners, we need to review previous studies on the performance of native speakers and other groups of L2 learners. In these studies, participants were asked to form existing as well as novel compound words in an off-line experimental task which took the shape of two distinct questionnaires, namely Test 1 (T1) and Test 2 (T2) (examples in 6a and 6b, respectively, cf. Tzakosta, 2009). T1 and T2 tested all compound categories, namely, nominal and verbal compounds.

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|-----|------------------|---------------|
| (6) | a. spanak-ó-pita | ‘spinach pie’ |
| | b. *moliv-ó-pita | ‘pencil pie’ |

In Tzakosta (2009), the questionnaires were distributed to 40 native speakers of Greek (age range: 18-58 years). The tests’ findings reveal that native speakers perform better at the existing compounds test (T1) rather than the non-existing compounds test (T2). They also score better at nominal compounds as opposed to verbal compounds. More specifically, nominal and verbal compounds are accurately produced across-the-board in T1, while they are correctly formed in 97% of the attempted compounds in T2. Verbal compounds are correctly produced in 88% of the attempted cases.

It is worth noticing that native speakers equally produce [stem + stem] and [stem + word] compounds in T1 (50%) (see also Ralli, 2007). However, [stem + stem] forms are preferred in T2 (64%) (cf. Tzakosta 2009). On the other hand, data are vague as far as other groups of native speakers of preschool and primary school age are concerned (cf. Kalligiannaki & Tzakosta 2013, Tzakosta & Manola 2012). More specifically, preschool children tested by Kalligiannaki & Tzakosta (2013) prefer [stem + stem] compounds in T1 (51%) and T2 (61%). Tzakosta & Manola (2012) further show that preschool children prefer [stem + stem] compounds in T1 (65%) but not in T2 (45%). The preference for [stem + stem] compounds is rather fixed in early primary school age (T1 = 90%, T2 = 75%). In general, native speakers tend to produce forms which obey the fundamental stress assignment rule, namely, the fact that stress falls on one of the last three syllables of the

word, irrespective of whether they produce [stem + stem] or [stem + word] compounds.

As far as heads are concerned, they massively appear at the right edge of the compound form (100% in T1, and 90% in T2). In addition, the linking vowel appears to be the second equally important perceptual cue for compounding. Native speakers seem to have fully perceived the conditions under which the use of the linking vowel is obligatory or arbitrary both in existing and non-existing/ novel words. Linking vowels are such strong cues for perception and production that they display marginally higher scores in T2 (85%) than in T1 (84%). The statistical difference may seem negligible; however, it underlines the perceptual load carried by the linking vowel and the importance of the latter for accurate and productive application of compounding rules (cf. Tzakosta, 2017).

In one of the studies on Greek compound learning, four Albanian adults (age range 20-30 years) who were not born in Greece and learned Greek by experience (i.e. they did not attend the Greek school) were asked to fill in the same tests as native speakers did (Kalligiannaki & Tzakosta (2013)). The findings of Kalligiannaki & Tzakosta (2013) are in complete alignment with the theoretical properties of Albanian compounding. In other words, the characteristic of Albanian compounds being written as two separate words drives the preference of Albanian L2 speakers of Greek for [stem + word] rather than [stem + stem] compounds, especially in T2 (table 1).

Table 1: Compound internal structure

	[stem +stem]	[stem + word]
T1	41%	59%
T2	37%	63%
Mean	39%	61%

According to Kalligiannaki & Tzakosta (2013), this characteristic is also responsible for the fact that heads are not always located at the right side of the compound forms. As shown in table 2, there is a clear preference for right heads in T1 but the picture is a mirror image in T2 where heads are mostly located at the left edge of the compound form.

Table 2: Headedness

	Right head	Left head
T1	75%	25%
T2	40%	60%
Mean	57,5%	42,5%

Finally, as displayed in table 3, the absence of linking vowels in Albanian justifies the low rate of linking vowels appearing in the T2 data. Kalligiannaki & Tzakosta (2013)

assume that the main reason for these results and the non-satisfaction of Greek compound rules/ strategies, like stress readjustment, head placement and the use of the linking vowel, is attributed to the fact that their Albanian learners have learned Greek by experience and have not received systematic language instruction.

Table 3: Linking vowels

	Pr-Nec	Abs-Nec
T1	84%	16%
T2	69%	31%
Mean	76,5%	23,5%

In sum, Kalligiannaki & Tzakosta (2013) have illustrated that Albanian learners of Greek display patterns of variation which are equivalent to those of native speakers. Compounding seems to be highly influenced by word formation mechanisms in the mother language (hereafter L1). L1 influence tends to be minimized in the speech of speakers who reach a high level of proficiency in Greek. In addition, mnemonic knowledge is minimized in the formation of non-existing words both in L1 and L2, a fact that was also verified by the data of other groups of L2 learners of Greek (Tzakosta 2010, 2011a, 2011b, Tzakosta & Mamadaki 2013).

4. Research methodology

4.1. Tool

In the present study we adopt the off-line experimental task previously applied in Tzakosta (2009, 2010, 2011a, 2011b), Kalligiannaki & Tzakosta (2013), Tzakosta & Koufou (2017) and Tzakosta & Mamadaki (2013). This experimental task takes the shape of two questionnaires, which are also abbreviated here as Test 1, (T1) and Test 2 (T2). T1 asks participants to form real/ existing compound forms, while T2 requires the formation of morphologically possible but semantically vague/ non-existing compounds (cf. data in 6, above). This study delves into the subtle properties of different compound classes (cf. 6.1. below). It is important to note that the paper does not measure general language proficiency level. The latter would be measured through tasks which evaluate comprehension and production of oral and written speech. Here, we use a task focused to measure compound formation, specifically, the formation of existing and non-existing compounds.

4.2. Participants

The experimental group of our study consists of 15 Albanian L2 learners of Greek (age: 15 years) (G2) who attended the third grade of a Greek High school in Nafpaktos, a city located in the southwest part of the Greek mainland years in Greece. All students were

born in Albania and came to Greece at the age of 10 and 11. This means that they started attending the 5th and 6th grade of Primary School in Greece. All students were speaking Albanian at home. It seems rather obvious that under these conditions the participants of our experimental group were native speakers of Albanian and second language learners of Greek. Albanian-Greek bilinguals who were attending the same class as the participants were excluded from participating in the task to reassure that the scores would not be affected. The group of 40 native speakers of Greek (age range: 18-58 years) of Tzakosta (2009) serve as control group in the current study.

4.1.1. Working hypotheses

The working hypotheses underlying our study are the following:

- a. Both L1 and L2 learners of Greek prefer to produce [stem + stem] rather than [stem + word] compounds given that they prefer the unmarked prosodic pattern of untepenultimate stress in Greek.
- b. Linking vowels/ elements are strong perceptual cues for compounding. Therefore, linking vowels/ elements drive accurate compound perception and production of compounds.
- c. Heads emerge at the right edge of the word for both native speakers and L2 learners. Like vowels/ elements, heads are strong compounds perceptual cues.
- d. Mnemonic mechanisms are activated in T1 while true word formation ability is attested in the formation of novel compound forms.
- e. Both native speakers and L2 learners draw from the same pool of word formation mechanisms governed by Universal Grammar (hereafter UG).
- f. L2 speakers who attend the Greek school perform better than speakers who have learned the language only by being exposed to its oral dimension (on the usefulness of explicit and implicit instruction for language learning see also Chamot 2005, Stanat et al. 2012).

5. Results and discussion

5.1. A first analysis by Tzakosta & Koufou (2017)

The major outcome of Tzakosta & Koufou (2017) is that Albanian L2 learners of Greek perform better at verbal compounds rather than nominal compounds as displayed in table 4. This is not an expected outcome since nominal compounds tend to be more productive cross-linguistically (cf. Selkirk, 1982, Tzakosta, 2009, on Greek). However, this finding is in line with Ralli (2007) according to which verbal compounding is much more productive in Greek compared to other languages. Tzakosta and Koufou (2017) are led to the assumption that, although verbal compounds are characterized by abstract semantics,

they are defined by clearer morphological rules than nominal compounds. This fact renders the perception and production of verbal compounds more straightforward.

Table 4: L2 rate of successfully and unsuccessfully formed nominal and verbal compounds

	Nominal		Verbal	
	Successful	Non-Successful	Successful	Non-Successful
T1	67,6%	32,2 %	78,2%	21,8%
T2	62,7%	37,3%	71,2%	28,8%
Mean	65,15%	35%	74,7%	25,3%

The findings become rather obscure when we turn to the emergence of different compound types. Table 5 illustrates that [stem + stem] nominal compounds are slightly preferred than [stem + word] forms both in T1 (57,9%) and T2 (48,9%). [stem + word] compounds, on the other hand, are massively preferred in verbal compounds in T1 (96,1%) but less clearly in T2 (57%).

Table 5: L2 compound types

	Nominal		Verbal	
	[S + S]	[S + W]	[S + S]	[S + W]
T1	57,9%	42,1%	3,9%	96,1%
T2	48,9%	51,1%	43%	57%
Mean	53,4%	46,6%	23,45	51%

Tables 6 and 7 provide evidence for heads and linking vowels being salient perceptual cues in compound formation. More specifically, heads emerge massively as the second compound constituent in both nominal (T1 = 96,3%, T2 = 91,2%) and verbal compounds (T1 = 98,1%, T2 = 97,8%), existing and non-existing forms. The prevalence of right-headedness is almost as high in T2 as it is in T1, although non-existing compounds do not always provide accurate semantic information.

Table 6: L2 headedness

	Nominal		Verbal	
	Right	Left	Right	Left
T1	96,3%	3,7%	98,1%	1,9%
T2	91,2%	8,8%	97,8%	2,2%
Mean	93,75%	6,25%	97,95%	2,05%

The data in (7) provide some examples of unsuccessful head assignment (i.e. heads being located at the right edge of the word). The starred forms are those produced by L2 learners with the head being wrongly located at the left edge of the word as the first compound constituent. We assume that, in such cases, failure of head assignment is attributed to semantic misperception rather than difficulty in the comprehension of compound formation rules.

- (7) a. *δαςόpefko, *δαςopéfkó < pefkódasos 'pine forest'
 b. *koutósπirto < spirtókouto 'matchbox'
 c. *tavernops rja < psarotavérna 'fish tavern'

High scores in the use of the linking vowels ('o' and 'others') in nominal and verbal compounds in T1 and T2 reveals the special role of the linking element in compound formation (table 7).

Table 7: L2 linking vowels

	Nominal		Verbal	
	"o"	Other/ absent	"o"	Other/ absent
T1	70,7%	39,3%	98%	2%
T2	86,5%	13,6%	97,4%	2,6%
Mean	78,6%	26,4%	97,7%	2,3%

The data in (8) display cases of compounds where the linking element is other than 'o'. In these cases, the linking element is an unmarked vowel, i.e. 'e', as shown in (8a) and (8b), or takes the shape of the inflectional suffix of the first constituent (8c-d), a strategy which is not at all common in Greek, though it is evident in other language, for example, Dutch (cf. Tzakosta, 2017, for a detailed discussion).

- (8) a. stafidépsomo > stafidópsomo 'plum cake'
 b. varískala > varióskala 'heavy ladder'
 c. asprarúxa > aprsóruxa 'white linen'
 d. krasipíno > krasopíno 'drink wine-1PRES.SG.'

To highlight the importance of such findings for language teaching it is essential to comparatively discuss current and previous results. In tables 8-10 we compare the scores of native speakers, Albanian L2 speakers of Greek who have learned Greek by being exposed to the language in everyday life (L2 speakers G1) and Albanian L2 speakers of Greek who have attended the Greek school (L2 speakers G2). Specifically, table 8 shows that L1 speakers show preference for [stem + stem] compounds only in T2. The picture

is vague for existing compounds though (50% for both compound categories). However, L2 – G1s prefer [stem + stem] forms both in T1 and T2 (T1 = 59%, T2 = 63%), while L2 – G2s prefer [stem +word] words, mostly in T1 (T1 = 69,1%, T2 = 54%). School books do not show preference for a certain compound type since they focus on the functionality of the compound constituents (cf. Koufou, in prep., for detailed discussion). This explains data variability in table 8.

Table 8: L2 rate of emergence of compound types

	[S+S]	[S+W]	[S+S]	[S+W]	[S+S]	[S+W]
	L1 speakers		L2 speakers G1		L2 speakers G2	
T1	50%	50%	59%	41%	30,9%	69,1%
T2	64%	36%	63%	37%	46%	54%
Mean	57%	43%	61%	39%	38,45%	61,55%

Right headedness and linking vowels seem to be strong perceptual cues for both L1 and L2 speakers, as displayed in the tables 9 and 10, respectively. Interestingly, the L2 - G2 participants exhibit higher rates for right-headedness for T1 (97,2%), they even perform better than native speakers of Greek in T2 (94,5% vs. 90%). L2 – G1 participants perform worse than both L1 speakers and L2 – G2s in T1 (75%); in addition, their score drops dramatically in T2 (40%). Such findings highlight the importance of systematic language teaching for the achievement of high levels of language proficiency.

Table 9: Comparison of L1 and L2 compound headedness

	Right	Left	Right	Left	Right	Left
	L1 speakers		L2 speakers G1		L2 speakers G2	
T1	100%	0%	75%	35%	97,2%	2,8%
T2	90%	10%	40%	60%	94,5%	5,5%
Mean	95%	5%	55%	47,5%	95,9%	4,1%

Linking vowels tend to be accurately used by all groups for both T1 and T2. It is important to mention that, like in the case of headedness, L2 – G2s exhibit higher scores in T2 (91,9%) compared to native speakers (85%). This further underlines the important role of linking vowels as compound perceptual cues and as tools for the teaching of compounding.

Table 10: L2 Comparison of L1 and L2 compound linking vowels

	Pr-Nec	Abs-Nec	Pr-Nec	Abs-Nec	Pr-Nec	Abs-Nec
	L1 speakers		L2 speakers G1		L2 speakers G2	
T1	88%	12%	84%	16%	84,4%	15,6%
T2	85%	15%	69%	31%	91,9%	8,1%
Mean	86,5%	13,5%	76,5%	23,5%	88,2%	11,8%

In general, the statistical analysis provided in Tzakosta & Koufou (2017) displays that L2 learners who attend the Greek educational system reach a high level of L2 proficiency sooner than L2 speakers who have not attended classes in the Greek school. It is worth noting that G2 uses headedness and linking vowels as strong perceptual cues for compounding even to a higher extent compared to native speakers. This entails that strong perceptual cues should be salient also in language teaching.

5.2. *The present analysis*

With the present approach we add to the analysis of Tzakosta & Koufou (2017) by considering different compound groups of the nominal and verbal categories. More specifically, in the current analysis, nominal compounds are categorized in 6 groups (NCat), i.e. Noun + noun [N + N] (NCat 1), Adjective + noun [A + N] (NCat 2), Noun/ Adjective/ Adverb + Adjective [N/ A/ Adv + A] (NCat 3), Noun + Deverbal form [N + DF] (NCat 4), Adverb + Noun [Adv + N] (NCat 5), Numerical + Noun [Num + N] (Ncat 6). Verbal compounds are categorized in 3 groups (VCat), namely, Noun + Verb [N + V] (VCat 1), Verb + Verb [V + V] (VCat 2), Adverb + Verb [Adv + V] (VCat 3). Nominal and verbal compound types are summed in table 11 and relevant examples appear in (9) and (10), respectively.

Table 11: Distinct categories of nominal and verbal compounds

Nominal compounds	Verbal compounds
[N + N]	[N + V]
[A + N]	[V + V]
[N/ A/ Adv + A]	[Adv + V]
[N + DF]	
[Adv + N]	
[Num + N]	

(9)	N + N	→ ανθοδοχείο	‘vase’
	A + N	→ ομορφάνθρωπος	‘beautiful person’
	N/ A/ Adv + A	→ ηλιοκαμμένος	‘sunburnt’
	N + DF	→ ηλιοβασίλεμα	‘sunset’
	Adv + N	→ εξώπορτα	‘out door’
	Num + N	→ πεντάευρο	‘5 euros banknote’
(10)	N + V	→ κρασοπίνω	‘drink wine’
	V + V	→ ανεβοκατεβαίνω	‘bob’
	Adv + V	→ σφιχταγκαλιάζω	‘hug tightly’

The statistical package used for the present analysis is the IBM SPSS 18 package (SPSS 2009).

5.2.1. Nominal compounds

The categorization of nominal compounds reveals that there is no statistically significant difference for T1 (existing compounds) and T2 (non-existing compounds) regarding internal structure for two of the 6 nominal categories. More specifically, L2-G2 learners used [stem + stem] and [stem + word] compounds in the same way for NCat 4 and NCat 5. Probabilities are 0.5 (N=2) for NCat 4, namely [N + DF] compounds and 0.125 (N=16) for NCat 5, i.e. [Adv + N] compounds. However, there is statistically significant difference for NCat 1 [N + N], NCat 2 [A + N], NCat 3 [N/ A/ Adv + N] and NCat 6 [Num + N]. Specifically, probabilities are 0.002 (N=442) for NCat 1, 0.031 (N=30) for NCat 2, 0.004 (N=44) for NCat 3 and 0.000 (N=21) for NCat 6. This is illustrated in table 12.

Table 12: Internal structure scores in different groups of nominal compounds

Nominal compounds	NCat 1	NCat 2	NCat 3	NCat 4	NCat 5	NCat 6
Internal structure	sig=0.002, N=442	sig=0.031, N=30	sig=0.004, N=44	sig=0.5, N=25	sig=0.125, N=16	sig=0.000, N=21

The above show that in NCat 1 63,2% of the L2-G2s use [stem + stem] compounds, while the rest 38.8% use [stem + word] forms in T1. On the other hand, 56,7% use [stem + stem] forms as opposed to 43,3% of the learners who use [stem + word] forms in T2. In NCat 2, 57,1% of L2-G2s use [stem + stem] while 42,9% produce [stem + word] compounds in T1. In T2, the results are more straightforward since 86% of the learners form [stem + stem] compounds while 14% of them form [stem + word] compounds.

The picture is opposite in NCat 3, given that 31.4% of the learners attempt [stem + stem] vs. 68.6% use [stem + word] in T1, while 25.5% of the students target [stem + stem] vs. 74.5% who target [stem + word] compounds in T2. The clearest picture is given by NCat 6 in which, for T1 92% of the L2-G2s form [stem + stem] compounds as opposed to 8% who use [stem + word] compounds. In T2, the score drops to 86% for [stem + stem] and goes up to 14% for [stem + word] forms. These data underline the fact that [Num + N] compounds clearly favor [stem + stem] compounds while [N/ A/ Adv + A] clearly favor [stem + word] forms. Preference are summed up in table 13 (and are the same for T1 and T2 for distinct compound types). Table 13 displays that compounds whose constituents belong to the same grammatical category prefer the [stem + stem] compound type.

Table 13: Preferences of different compound groups regarding internal structure

T1/T2	[stem + stem]	[stem + word]
[N + N]	√	
[A + N]	√	
[N/ A/ Adv + A]		√
[N + DF]	√*	√*
[Adv + N]	√*	√*
[Num + N]	√!	

As far as the use of the linking vowel is concerned, there is no statistically significant difference for NCat 5 and NCat 6. Probabilities are 1 (N=16) for G5 and 1 (N=21) for G6. In NCat4, all participants used 'o' as a linking vowel. However, there is statistically significant difference regarding NCat 1 and NCat 2 (see table 14).

Table 14: Linking vowels scores in different groups of nominal compounds

Nominal compounds	NCat 1	NCat 2	NCat 3	NCat 4	NCat5	NCat 6
Linking vowel	sig=0.006, N=443	sig=0.001, N=30	sig=0.125, N=44	Full use of 'o'	sig=1, N=16	sig=1, N=21

Specifically, in G1, 88,5% of the learners use 'o' while 11,5% use other or no linking vowels in T1. In T2, 56,7% of the learners use 'o', while 43.3% use other or no linking vowels. In Group 2, 73% of the learners use 'o' vs. 27% of the students who use other or no linking vowel in T1. All students use 'o' across-the-board in T2. 'o' seems to be a strong perceptual cue as it has been reported for native speakers and second language learners of Greek (cf. Tzakosta 2017).

As far as headedness is concerned, there is no statistically significant difference in NCat 2, NCat 3, NCat 4 and NCat 5. In other words, for these compound groups learners used both right- and left-headed compounds. Probabilities are 0.125 (N=31) for NCat 2, 1 (N=44) for NCat 3, 0.5 (N=24) for NCat 4 and 1 (N=16) for NCat. In NCat 6, right headed endocentric compound are produced across-the-board. However, there is statistically significant difference regarding learners' answers for NCat 1. The probability is for both T1 and T2 for Group 1 is 0.000 (N=437). This is exhibited in table 15.

Table 15: Headedness scores in different groups of nominal compounds

Nominal compounds	NCat 1	NCat 2	NCat 3	NCat 4	NCat5	NCat 6
Headedness	sig=0.000, N=437	sig=0.125, N=31	sig=1, N=44	sig=0.5, N=24	sig=1, N=16	Full production of right-headed endocentric forms

Specifically, 95,9% of the L2-G2s produce right headed endocentric compounds, while only 4,1% produce left headed endocentric compounds in NCat 1 and T1. The picture is relatively the same in T2 of the same compounds group since 92,2% of the learners produce right headed endocentric compound and only 7,8% produce left headed endocentric compound forms. Therefore, right headedness is a major perceptual cue for [N + N] compound forms.

Verbal compounds

Production of different compound types were also evaluated on the basis of their verbal origin. Therefore, and as far as internal structure of verbal compounds is concerned, there is no statistically significant difference for both T1 and T2. In other words, L2-G2s equally produced [stem + stem] and [stem + word] compounds for all three verbal compounds types, i.e. [N + V], [V + V] and [Adv + V]. Probabilities for all three categories are 1 (N=41) for VCat 1, 0.5 (N=14) for VCat 2 and 1 (N=26) for VCat 3.

Table 16: Internal structure scores in different groups of verbal compounds

Verbal compounds	VCat 1	VCat 2	VCat 3
Internal structure	sig=1, N=41	sig=0.5, N=14	sig=1, N=26

No statistically significant difference was reported for T1 and T2 for all verbal compound categories as far as the use of linking vowels is concerned. Probabilities are 1 (N=41) for VCat 1, 0.5 (N=26) for VCat 3 while for VCat 2 all learners used 'o' as the linking vowel.

Table 17: Linking vowel scores in different groups of verbal compounds

Verbal compounds	VCat 1	VCat 2	VCat 3
Linking vowel	sig=1, N=41	Full use of 'ο'	sig=0.5, N=26

Finally, there is no statistically significant difference regarding headedness for both T1 and T2 either. Right headedness was used for both endocentric and exocentric compounds. The probability for VCat 1 is (N=41), it is 0.5 (N=14) for VCat 2, while right headed endocentric compounds are used for Group 3 across-the-board.

Table 18: Headedness scores in different groups of verbal compounds

Verbal compounds	VCat 1	VCat 2	VCat 3
Headedness	sig=1, N=41	sig=0.5, N=14	Full use of right endocentric headedness

Summing up the statistical data presented above, three major findings stem from the present study. First, Albanian L2 learners of Greek display similar scores for both T1 and T2. It appears the right headedness and the linking vowel constitute strong perceptual cues in the process of learning the rules of compound formation. Second, verbal compounds, though they are characterized by more abstract semantics, therefore, they are expected to be more difficult in their learning, display a higher rate of homogeneity in compound production. More specifically, L2 learners perform as high in T1 and T2 regarding all variables. Third, we argue that higher rates of successful compound production by L2 learners who have attended the Greek school is attributed to the application of successful teaching methods, even though L2 learners joined the Greek educational system at a relatively late age (i.e. after having exited the critical period of learning (cf. Tzakosta 2016).

As far as our working hypotheses are concerned, the ones regarding headedness and the use of the linking vowel are satisfied. However, the hypothesis regarding the preference for a certain compound type, i.e. [stem + stem] or [stem + word], is not satisfied, since we need to delve into the subtle characteristics of different compound categories in order to define compound types' preferences.

6. Concluding remarks

Aim of the present study was to test the ability of Albanian L2 learners of Greek to form compound words. The data have shown that the Albanian L2 learners of Greek who participated in our research have a high proficiency level in Greek, therefore, they

broadly draw from the same pool of word formation rules like native speakers do (cf. also Tzakosta 2010, 2011a, b). However, although it has been reported that there are instances of L1 influence (cf. Tzakosta & Koufou 2017), the present data support the claim that L1 influence descends the higher the level of proficiency gets (cf. Tzakosta, 2017, Koufou, in prep). In addition, T1 displays extensive activation of mnemonic knowledge, whereas T2 provides evidence of true mastery of rules underlying compound formation in Greek. Moreover, the data illustrated that L2 learners of Greek who attend the Greek school have better scores compared to L2 learners who have not attended the Greek school. Therefore, L2 learners' high proficiency level is largely attributed to the language teaching methodology applied in school (cf. also Koufou & Tzakosta 2015, 2017, Koufou, in prep., for detailed criticism of the structure of compound teaching methodology as it appears in school books of primary and secondary education). The data highlight the fact that language instruction should delve into the subtle characteristics of compound formation so that learners achieve good scores. Finally, another issue that rises from the present study is our assumption that L1 and L2 learners' compound perception is influenced by word frequency in L2 and language use. Specifically, words of high frequency in directed speech are also frequently produced by L2 speakers. A limitation of the paper is that the number of the participants is rather low to make general conclusions. However, we assume that the data stemming from our research are enough to show a strong tendency further supported by previous research. It is essential that the topics addressed in this paper are supported by larger groups of L2 participants.

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