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## **DEVELOPMENTAL SEQUENCES OF L2 GRAMMAR ACQUISITION IN THE INTERLANGUAGE OF CROATIAN EFL LEARNERS**

### **Abstract**

The aim of this paper is to explore the developmental patterns in the acquisition of morphological phenomena in the interlanguage systems of Croatian primary school EFL learners. Developmental sequences in learner language morphology were observed longitudinally thus including learners across grades 6, 7, and 8. The data illustrate the use of morphemes (regular and irregular variants for the third person singular –s, the auxiliary verb BE, the present progressive ING) in obligatory contexts (Brown 1973). Interlanguage development was examined in accordance with the Input Processing theory of VanPatten (2004). Samples of spontaneous speech production were elicited via communicative activities. The study findings suggest that the progressive ING is processed earlier due to its higher communicative value when compared to –s.

**Key words:** morphological phenomena, interlanguage development, input processing

### **1. Introduction**

Establishing form-meaning connections in interlanguage grammars is claimed to be of major importance in second language acquisition. Form-meaning mappings occur during input processing and enable the formation and development of the learner's linguistic system. Thus, the point of departure for the present research is the Input Processing (IP) theory proposed by VanPatten (2004). Moreover, this study hopes to provide a broader perspective on how Croatian L2 learners of English interact with the available input from which form-meaning connections are being made. Special emphasis regarding how learners process incoming verb morphology was placed on

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the preference for non-redundancy sub-principle of the IP theory. This paper provides a theoretical overview related to L2 verb morphology acquisition and delineates the shift from the early morpheme studies towards a more psycholinguistic approach to second language acquisition. Finally, it describes and discusses the obtained results.

## 2. Theoretical overview

The goal of second language acquisition research is to explore how learners construct and develop their linguistic competence about the target language over time. Ever since the early 1970s, researchers have been trying to gain insights into developmental sequences underlying the acquisitional process. Studies, which became known as *the morpheme order studies*, charted the order of emergence of verbal morphemes in the developing interlanguage systems.

In an attempt to discover the path of child L1 acquisition, Brown (1973) introduced two core notions in his research: obligatory context and the scoring of each obligatory occasion as a test item. Obligatory context was identified as the environment which requires mandatory presence of a particular morpheme so, for instance, the obligatory environment for the auxiliary verb *be* is the presence of a progressive verb. Furthermore, obligatory occasion seen as a kind of “test item” (Brown 1973: 255) enabled the author to distinguish between non-suppliance, misformed and correct suppliance in the use of grammatical morphemes. *Obligatory occasion analysis* introduced by Brown (1973) was initially used as an instrument for examining L1 acquisition and subsequently adopted by L2 researchers among which Dulay and Burt (1973, 1974) who additionally assigned points on a three-point scale for each occasion referring to the suppliance of grammatical morphemes (see section 4.4.).

However, during the mid 1980s the research into the emergent grammatical knowledge was outgrown by the studies investigating the acquisition of tense and aspect. These studies not only examined the sequences in the acquisition of tense-aspect morphology (Klein 1995; Ramat and Banfi 1990; Salaberry and Shirai 2002) but they also explored how learners connect the forms and meanings expressed by the verb tense-aspect systems (Bardovi-Harlig 1992, 2000). A significant contribution was provided by the European Science Foundation scholars (Dietrich, Klein and Noyau 1995) who identified four general principles<sup>1</sup> in the acquisition of L2 tense-aspect system.

Within the last few years, a more psycholinguistic approach to SLA research occurred with the Input Processing (IP) theory of VanPatten (1996, 2004, 2008). The principles underlying this theory sought to account for the fact that learners sometimes connect formal features to their meanings and functions and sometimes they do not. Based on the Krashen’s (1982) input hypothesis, IP theory acknowledges the role of

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<sup>1</sup> For more information regarding the principles of tense-aspect acquisition see Dietrich et al. (1995).

input as the building block for successful acquisition. Namely, this theory is concerned with how learners process linguistic material they are exposed to when forming and developing their mental representations of L2 grammar.

VanPatten's IP model consists of two basic principles and several sub-principles which will not be addressed in full detail<sup>2</sup> in this paper. However, special emphasis is placed on the sub-principle which in the model's early stage was formulated as "learners prefer processing "more meaningful" morphology before "less or nonmeaningful morphology"" (VanPatten 1996: 24). The notion of meaningfulness was associated with the communicative value of verbal morphology thus regarding –ing as having high communicative value in comparison to –s which is relatively low in communicative value. In a sentence "What are you doing?" (VanPatten 1996: 24) the inflectional morpheme –ing is the only marker of progressive aspect whereas in "He loves me" (VanPatten 1996: 25) verbal –s is marked twice, i.e. once by the pronoun and once by the verb form. As a result, L2 learners of English must process the progressive marker –ing in the input due to its non-redundancy whereas they may not immediately establish form-meaning connection for –s since it is redundant. Judging the previously stated sub-principle as incomplete since it failed to include the feature of redundancy, VanPatten (2004: 11) reformulated it into the preference for non-redundancy sub-principle according to which "learners are more likely to process non-redundant meaningful grammatical form before they process redundant meaningful forms."

In the pursuit of putting together the pieces of SLA puzzle, this study hopes to provide additional evidence of L2 grammar development. Examining a rich pool of Croatian L2 language data, the current study investigates the processing of morphological markers from the aspect of their sequences of acquisition.

### **3. Research questions**

1. What is the suppliance of grammatical morphemes in terms of their obligatory, omitted, misformed and correct use and how is it distributed across grades 6, 7 and 8?
2. What are the sequences of development in the acquisition of grammatical morphemes across grades 6, 7 and 8?
3. What error types occurred in both omitted and misformed suppliance in the use of grammatical morphemes and how were they distributed across grades 6, 7 and 8?

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<sup>2</sup> Due to limitations of word count, the principles of IP theory cannot be fully presented. Nevertheless, a more insightful view of IP theory can be found in VanPatten (1996, 2004, 2007, 2008).

## **4. Methodology**

### **4.1 Participants**

The study was conducted on the same group of primary school learners of English as a foreign language during three years of research, i.e. in grades 6, 7 and 8. The total number of participants was 20. All the learners started their EFL studies in the first grade, since English is a compulsory school subject in the Croatian education context.<sup>3</sup> According to the Croatian national curriculum (2011), eighth grade learners completing primary education are expected to reach the CEFR A2 level.<sup>4</sup>

### **4.2 Data collection**

During the observation period 36 tape-recorded samples of segments of EFL classroom interaction were obtained. There were 15 recordings in both grades 6 and 7 and only 6 recordings in grade 8. There are several reasons accounting for the reduced number of recordings in grade 8. On the one hand, the study was discontinued due to time restraints and on the other hand, learners were no longer enthusiastic about it in the third year of research. What's more, the recording sessions, although prearranged, were not always carried through due to some unexpected situations (e.g. poor weather conditions, insufficient number of learners due to illness).

The recording sessions were recorded by the EFL teacher with the author taking notes regarding the learners' speech production, the sessions thus resulting in no data loss. All the recorded samples were transcribed and checked against the tape recordings. For the purpose of this research, the author developed her own notation symbols according to the suggestions found in the transcription literature (DuBois 1991; Edwards 2001; Edwards and Lampert 1993).

### **4.3. Instrument**

Learners' speech production was elicited by a wide repertoire of task-based activities which were mostly designed following the suggestions from the research literature (Harmer 2007; Klippel 1984; Thornbury 2005; Ur 1992, 2012) whereas a smaller portion of them was tailored by the author. Oral production of grade 6 learners was elicited by means of activities such as guess the lie, problem solving activities, questions

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<sup>3</sup> For more information regarding the Croatian education system visit the website of the Croatian Ministry of Science, Education and Sport, <https://mzo.hr/hr/rubrike/obrazovanje>.

<sup>4</sup> A2 level global descriptor: "Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. Can describe in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need." (Council of Europe, 2001: 24).

and answers, stories (Appendix 1), and guessing games, whereas communicative activities applied among grade 7 learners included role-plays, discussions (Appendix 2), chain stories or, for instance, activities always starting with the same/similar type of question. Activities used to elicit speech production among grade 8 learners also included problem solving activities (Appendix 3), simulations, debates, discussions, stories and questionnaires. All the activities were tailored in compliance with the CEFR level the learners were expected to have achieved.

Since the flow of these activities was not interrupted until reaching a communicative goal, there were discrepancies regarding the length of recordings. As a result, the average length of each recording was 15 minutes (minimally 13 minutes, maximally 24 minutes).

#### 4.4 Selection and coding of the grammatical morphemes

For the purpose of this reasearch, the acquisition of 4 grammatical morphemes across grades 6, 7 and 8 was observed. These morphemes included regular (e.g. *plays*) and irregular (e.g. *has*, *does*) variants for the third person singular –s, the auxiliary verb BE (*am*, *are*, *is*) and the present progressive ING. Examples from the corpus illustrating the use of the aforementioned morphemes are as follows:

- regular variant for the third person singular –s  
A boy meets a girl in school. (grade 6)  
The boy likes girl. (grade 6)  
If somebody gives him an order, he will do errr er that. (grade 7)  
It depends. (grade 8)
- irregular variant for the third person singular –s  
Elephant *doesn't* fly. (grade 6)  
He *doesn't* need to be afraid of the world. (grade 7)  
I don't think er too er that he *has* to go. (grade 7)  
He *has*...different eyes than me. (grade 7)
- the auxiliary verb BE (*am*, *are*, *is*)  
Maybe the fact that she *is* moving out or something like that. (grade 6)  
...but when I *am* watching TV...every single thing is on English... (grade 7)  
I look around and nobody *is* looking. (grade 8)
- the present progressive ING  
I think she is *writing* maths test. (grade 6)  
I don't think they are *doing* it just for money. (grade 7)  
Old man is *crossing* the road. (grade 8)

The first step in the coding process was to identify all the suppliances in obligatory context (Brown 1973) for each morpheme under study and, in addition, to code their omitted, misformed and correct use. The frequency of obligatory, omitted, misformed and correct suppliance in the use of grammatical morphemes was coded in all the transcribed recordings for each learner across grades 6, 7 and 8. The coding sheet originally developed by Larsen-Freeman (1975) was modified and adapted for the present study (Appendix A). Here are several examples that demonstrate the coding procedures:

Example 1

- the use of *like* in *He like it* was coded as one obligatory (*likes*) and one omitted (*like*) suppliance for the regular variant of the third person singular –s

Example 2

- when the learner said...*he is run away and he is hide from police*, two obligatory (*runs, hides*) and two misformed suppliances (*is run, is hide*) were coded for the regular variant of the third person singular –s

Example 3

- in *He not see us* one obligatory (*doesn't see*) and one omitted (*not see*) suppliance for the irregular variant of the third person singular –s was coded

- in *I play trumpet and he had er...longer hair than me* the use of the irregular variant of the third person singular –s was coded as one obligatory (*has*) and one misformed suppliance (*had*)

Example 4

- the use of *sleep* in *She sleep now* was coded not only as one obligatory suppliance for both the the auxiliary verb BE (*is*) and present progressive ING (*sleeping*) but also as one omitted suppliance for both of these morphemes

Example 5

- the use of *did doing* in *What did you doing now?* was coded as one obligatory suppliance for the auxiliary verb BE (*are*) and the present progressive ING (*doing*) accompanied by one misformed suppliance for BE (*did*) and one correct suppliance for ING (*doing*)

The coding process was not always as straightforward as it might seem. Although it was conducted following the criteria suggested by Ellis and Barkhuizen (2005), some further coding decisions had to be made. These supplementary coding decisions are illustrated as follows:

- repetitions, for instance *When he come when he come to room his room*, were coded as one obligatory occasion for a morpheme, i.e. the third person singular –s
- in cases of learner self-correction, as in *My best friend live lives in Ruptine*, the occurrence of a morpheme was coded as non-suppliance on the grounds that the third person singular –s was omitted when the learner first used the verb *live*
- negative forms of the irregular variants for the third person singular –s (e.g. *doesn't, hasn't*) were included in the coding procedure
- *be going to* was coded for the auxiliary verb BE and the present progressive ING due to its frequent occurrence, although referring to future events
- when a semantically inappropriate verb was used, e.g. *disgust* for *discuss* as in *We are disgusting about it* instead of, *We are discussing about it*, such verb was also coded for its suppliance
- when an incorrect morpheme was used, for instance –ed instead of BE and ING, as in *Some people are looking what happened*, it was coded as misformed suppliance for both the auxiliary verb BE and the progressive ING; or, for example, when –s was used instead of BE + ING as in...*if she lies that would be more complicated*, it was coded as omitted suppliance for the auxiliary verb and misformed suppliance for the present progressive.

Once the coding procedure was over, the total number of coded instances referring to obligatory, omitted, misformed and correct suppliance for each morpheme was scored on a three-point scale (Dulay and Burt 1974). Namely, each occasion for a morpheme was scored as follows: no morpheme supplied = 0 (e.g. *She need\_\_to talk to parents about that.*<sup>5</sup>, *Where \_\_ your grandma live? What are you do\_\_ now? I \_\_ sitting in a class.*), misformed morpheme supplied = 1 (e.g. *My uncle living in Germany*), correct as well as obligatory morpheme supplied = 2 (e.g. *My best friend lives in Split*).

#### 4.5 Coding of error types in the use of grammatical morphemes

The suppliance of grammatical morphemes in regard to their omitted and misformed use received a code indicating the type of error. The coding of error types was conducted in all the transcripts across grades 6, 7 and 8. Appendix B contains the coding sheet used to code and categorize different error types. The following examples portray error types found in the corpus whereas their correct instances are indicated in brackets.

##### 1. Error types in the omitted suppliance of grammatical morphemes:

###### 1.1 omission of the regular variant –s

My sister get (gets) up at er...seven a.m. (grade 6)

<sup>5</sup> The examples are provided from the corpus.

- I don't know how he know (knows) our future. (grade 7)  
And er...and after some days and she need (needs) to see...(grade 8)
- 1.2 omission of the irregular variant –s
- 1.2.1 omission of DOES  
Where (does) live your grandma? (grade 6)  
He er...(does) not see us. (grade 7)
- 1.2.2 omission of HAS  
I don't think that fashion (has) affect on my life. (grade 7)
- 1.3 omission of the auxiliary verb BE  
I (am) sitting. (grade 6)  
It's not like...you...(are) getting married or something. (grade 7)
- 1.4 omission of the present progressive ING  
What is the teacher do (doing) now? (grade 6)  
They are make (making) it just because of money. (grade 7)
- 1.5 omission of both BE and ING  
What (am) I do (doing)? (grade 6)  
I see er some old lady er (is) cross (crossing) the street. (grade 7)  
I want to see...what er what expect (is expecting) me...in...high school.  
(grade 8)
2. Error types in the misformed suppliance of grammatical morphemes
- 2.1 tense error  
(–s instead of BE + ING)  
If she lies (is lying) that would be more complicated. (grade 6)  
(–ed instead of BE+ING)  
I see err very very mess up messed up er...er woman because er the dog  
pulled (is pulling) her. (grade 7)
- 2.2 BE agreement error  
About this boy who are (is) carrying some stuffs over the street... (grade 8)
- 2.3 DOES agreement error  
Do (does) your family have? (grade 6)  
Some advice that I can give to him to...that er he don't (doesn't) panick.  
(grade 8)
- 2.4 HAS agreement error  
...like a boy he have (has) to like er...a friend... (grade 6)  
He is idiot because he have (has)...some biggest problem. (grade 7)
- 2.5 HAS + regular variant –s  
He has plays (plays) with friends. (grade 6)



#### 2.6 double marking

Does your uncle lives (does...live) in Germany? (grade 6)

The girl didn't saw (didn't see) him. (grade 7)

He is worried that he doesn't crashes (doesn't crash). (grade 7)

#### 2.7 BE/DO tense error

Did (is) your mother working? (grade 6)

#### 2.8 BE/DO error + ING omission

What do (are) you do (doing)? (grade 6)

#### 2.9 ING instead of regular variant –s

My uncle living (lives) in Germany. (grade 6)

#### 2.10 BE + infinitive instead of the regular variant –s

She is get (gets) up at half past nine. (grade 6)

He is see (sees) that girl with er bike. (grade 7)

### 4.6 Data analysis

Upon the coding process, all the data were transferred to MS-Excel tables for further analysis. The data analysis procedures are addressed following the research questions.

The suppliance of grammatical morphemes was examined in terms of their obligatory, omitted, misformed and correct suppliance (Brown 1973) (RQ1). Their suppliance was identified as the sum of all coded instances with regard to the obligatory, omitted, misformed and correct use of a particular morpheme in all the transcripts across grades 6, 7 and 8.

The developmental sequences in the acquisition of these 4 morphemes across grades 6, 7 and 8 (RQ2) were established via the *group score method* (Dulay and Burt 1974) thus including even those learners who supplied the morpheme only once in the group score. The group score for a particular morpheme was obtained by computing a ratio whose denominator is the total number of all obligatory suppliances where each suppliance is assigned two points, and the numerator is the total number of the scores appointed for a particular morpheme according to the three-point scale scoring procedure (see section 4.4). The resulting quotient was multiplied by 100 and expressed as a percentage. Finally, the morphemes were ranked with regard to their decreasing group score, that is, from the highest to the lowest accuracy score. Since the suppliance of a particular morpheme in only one obligatory context does not accurately indicate the learner's degree of acquisition, the *group means method* (Dulay and Burt 1974) was additionally applied in this study as a remedy for that weakness. Therefore, those learners who provided fewer than three obligatory suppliances for a morpheme in question were excluded from the sample. Last but not least, the primary method for this reasearch was the group score method.

Errors in the speech production were analysed with regard to the omitted and misformed suppliance in the use of grammatical morphemes (RQ3). Their occurrences were calculated as the sum of all incorrect instances for each error type in all the transcripts across grades 6, 7 and 8.

## 5. Results

The following sections present the study findings. The obtained results are displayed according to the research questions.

### 5.1 Results regarding the suppliance of grammatical morphemes

This subsection addresses the first research question and starts with a general overview on the suppliance of grammatical morphemes over the 3-year observation period (Table 1). These results are further analyzed in more detail regarding the distribution of obligatory, omitted, misformed and correct suppliance across grades 6, 7 and 8 (Table 2).

total number of obligatory suppliance (OS)	966
number of non-suppliance (NS)	222 (23% of total number of obligatory suppliance)
number of misformed suppliance (MS)	100 (10% of total number of obligatory suppliance)
number of correct suppliance (CS)	644 (67% of total number of obligatory suppliance)

Table 1. Suppliance of grammatical morphemes – general overview

The longitudinal findings reveal that there were 966 obligatory instances in the suppliance of grammatical morphemes (Table 1). The number of correct suppliance was slightly more than two-thirds of the total number of obligatory suppliance (67%) when compared to the number of both omitted and misformed suppliance in the use of morphemes (23% of total number of obligatory suppliance for the omitted use, 10% of total number of obligatory suppliance for misformed use).

As the data in Table 2 show, most of obligatory suppliance in the use of grammatical morphemes occurred in grade 6 in comparison to grades 7 and 8. Croatian primary school learners provided 56% (538/966) of total number of obligatory suppliance in the use of morphemes in grade 6 whereas in grade 8 only 5% (50/966) of the total number of obligatory suppliance. It also appears that grade 6 learners accounted for 63% (140/222) of total number of non-suppliance with regard to the percentage of non-suppliance in grade 7 (69/222 or 31% of total number of non-

suppliance) and grade 8 (13/222 or 6% of total number of non-suppliance). Similar pattern of decline seems to be the hallmark of misformed suppliance which gradually decreased from 50% (50/101) of the total number of misformed suppliance in grade 6 to 44% (44/101) in grade 7 and, finally, to 6% (6/101) in grade 8. It may also be noted that 54% (347/644) of total number of correct suppliance in the use of morphemes in grade 6 falls to 41% (265/644) in grade 7 and even more drastically to just 5% (31/644) in grade 8.

morpheme	grade 6				grade 7				grade 8			
	OS (%)	NS (%)	MS (%)	CS (%)	OS (%)	NS (%)	MS (%)	CS (%)	OS (%)	NS (%)	MS (%)	CS (%)
regular variant –s	215 40%	80 57%	27 54%	108 31%	91 24%	35 51%	14 32%	42 16%	25 50%	11 85%	3 50%	11 36%
irregular variant –s	67 12%	3 2%	19 38%	45 13%	39 10%	3 4%	16 36%	20 8%	1 2%	0 0%	1 16.6%	0 0%
BE	128 24%	36 25%	2 4%	90 26%	124 33%	18 26%	7 16%	99 37%	12 24%	1 7.6%	1 16.6%	10 32%
ING	128 24%	21 15%	2 4%	104 30%	124 33%	13 19%	7 16%	104 39%	12 24%	1 7.6%	1 16.6%	10 32%
TOTAL	538 100%	140 100%	50 100%	347 100%	378 100%	69 100%	44 100%	265 100%	50 100%	13 100%	6 100%	31 100%

Table 2. Distribution of suppliance in the use of morphemes across grades 6, 7 and 8

Obligatory suppliance among grade 6 learners demonstrates most instances in the use of the regular variant for the third person –s (40%) in comparison to the obligatory suppliance of both the auxiliary verb BE and the present progressive ING which disclosed 24%. Similarly, higher obligatory suppliance in the use of the regular variant –s (50%) with regard to the obligatory suppliance of BE and ING (24% for both morphemes) occurred in grade 8. However, contrary to the instances of obligatory suppliance in grades 6 and 8, learners in grade 7 exhibited more frequent obligatory suppliance for both BE and ING morphemes (33% for both morphemes) in comparison to instances of obligatory suppliance for regular variant –s (24%).

The grammatical morpheme most frequently both omitted and misformed in grade 6 seems to be the regular variant for the third person –s. This morpheme unveiled 57% of non-suppliance accompanied by 54% of misformed suppliance. Second most frequently omitted morpheme in grade 6 was the auxiliary verb BE (25%) whereas

the irregular variant for the third person singular –s was the second most frequently misformed morpheme (38%). Furthermore, the auxiliary verb BE was by 10% more frequently omitted morpheme when compared to the omitted suppliance for ING (25% for BE, 15% for ING).

Regular variant for the third person –s was most frequently omitted morpheme in grade 7 (51%) and grade 8 (85%) when compared to other morphemes. Although the distribution of omitted suppliance in the use of both BE and ING was equal in grade 8 (8%), it is apparent that in grade 7 instances of omitted suppliance in the use of BE prevailed over those of omitted occurrence in the use of ING (26% of non-suppliance for BE, 19% of non-suppliance for ING).

Irregular and regular variants for the third person –s emerged as two morphemes most frequently misformed among grade 7 learners. Misformed suppliance in the use of irregular variant –s was by 4% higher when compared to its counterpart, i.e. the regular variant –s (36% for irregular variant, 32% for regular variant). What's more, the suppliance of both BE and ING in grades 7 and 8 with regard to their misformed use indicates similar distribution, i.e. 16% for both morphemes in grade 7 and 17% in grade 8. Regular variant –s was coded for more misformed suppliance (50%) in grade 8 when compared to irregular –s (about 17%).

The correct suppliance in the use of morphemes indicates more frequent suppliance in the use of regular variant –s when compared to irregular variant not only in grade 6 but also in grade 7. However, due to the lack of suppliance in the use of irregular variant –s in grade 8, the regular variant –s revealed the highest percentage of correct suppliance with regard to the suppliance of other morphemes. Furthermore, the suppliance in the correct use for the present progressive ING seems to be more frequent in comparison to the auxiliary verb BE in both grade 6 and 7, whereas in grade 8 it is equally distributed (32% for both morphemes). Additionally, although the frequency of correct suppliance for both BE and ING appears to enhance from grade 6 to grade 7 (for BE by 11%, for ING by 9%), it diminishes in grade 8. In contrast, the frequency of correct use in the suppliance of regular variant –s drops by 15% from grade 6 to grade 7 and, finally, increases by 4% in grade 8.

## **5.2 Results regarding developmental sequences in the acquisition of grammatical morphemes**

The results displayed in Table 3, Table 4 and Table 5 address the second research question, i.e. developmental sequences in the acquisition of grammatical morphemes with regard to the group score method and the group means method.

rank	group score method (%)	group means method (%)
1.	ING (91.01%)	ING (84.4%)
2.	BE (85.1%)	irregular variant –s (77.3%)
3	irregular variant –s (85.3%)	BE (76.6%)
4.	regular variant –s (75.1%)	regular variant –s (56.9%)

Table 3. Sequence of acquisition of morphemes in grade 6

As the results in Table 3 reveal, the highest accuracy score in grade 6 was obtained for the present progressive by both methods (91.01% score by the group score method whereas 84.4% by the group means method). Moreover, the lowest score by both methods was attained for the regular variant –s (75.1% for the group score method and 56.9% for the group means method). In addition, the use of both methods revealed a higher accuracy score for ING when compared to both regular and irregular variants for the third person singular –s.

rank	group score method (%)	group means method (%)
1.	ING (91.9%)	ING (91.4%)
2.	BE (89.9%)	irregular variant –s (88.8%)
3.	irregular variant –s (75.6%)	BE (83.3%)
4.	regular variant –s (73.0%)	regular variant –s (58.9%)

Table 4. Sequence of acquisition of morphemes in grade 7

According to the results in Table 4, it seems that learners in grade 7 exhibit the same developmental sequences in the acquisition of grammatical morphemes as in grade 6. Similarly to the previous year, the highest and the lowest accuracy scores for both methods were achieved for ING (91.9% score by the group score method, 91.4% score by the group means method) and the regular variant –s (73% score for the group score method and 58.9% for the group means method).

rank	group score method (%)
1.	BE (91.6%)
1.	ING (91.6%)
3	regular variant –s (72.0%)
4.	irregular variant –s (50.0%)

Table 5. Sequence of acquisition of morphemes in grade 8

As can be noted in Table 5, learners in grade 8 displayed the same accuracy score (91.6%) for both the auxiliary verb BE and the present progressive ING thus ranking them both the first<sup>6</sup>. Irregular variant –s was ranked the last due to its lowest accuracy score (50%). The sequences of acquisition regarding the group means method could not be obtained due to the low frequency in the suppliance of obligatory context; however, only the accuracy score to be calculated was for the regular variant of the third person singular –s (54.1%).

### 5.3 Results regarding error types in the suppliance of grammatical morphemes

This section discloses the results related to the third research question, i.e. error types found in both omitted and misformed suppliance in the use of morphemes and their distribution across grades 6, 7, and 8.

error type	Grade		
	6	7	8
omission	123 (70%)	59 (62%)	12 (71%)
misformation	52 (30%)	36 (38%)	5 (29%)
TOTAL <sub>1</sub>	175 (100%)	95 (100%)	17 (100%)
TOTAL <sub>2</sub>	287 (100%)		

Table 6. Errors in the suppliance of grammatical morphemes – general data

In view of the results regarding the number of omitted and misformed suppliance (Table 1) in comparison to the number of errors in the suppliance of omitted and misformed instances in the use of morphemes (Table 6), there seems to be a discrepancy in their overall number. Namely, even though the total number of both omitted and misformed instances in the use of morphemes was 322, there were 287 coded errors. This is due to the coding procedure according to which, for instance, *doesn't wear* as in *she doesn't wear a helmet* was coded, on the one hand, as two omitted suppliances (one for BE and the other for ING) and, on the other hand, as only one error of misformation.

According to the results in Table 6, the occurrence of errors seems to decrease over the three-year period of learning. Although there were 175 erroneous instances, i.e. 61% of total number of errors (175/287) in the use of grammatical morphemes in grade 6, their number has fallen to 95 in grade 7, which is by more than half of the total

<sup>6</sup> BE was placed the first in the table since it usually precedes ING with regard to its position in the compound tense, i.e. the Present Continuous.

number of errors (95/287 or 33%). Moreover, only 6% of the total number of errors (17/287) was coded in grade 8.

In addition, the results show that omitted suppliance prevails over the misformed instances in the use of morphemes across grades 6, 7 and 8. Grade 6 learners omitted the suppliance of morphemes by 70%, whereas the occurrence of their misformed suppliance reached 30%. Grade 7 learners demonstrated 62% of non-suppliance accompanied by 38% of misformed suppliance in their use, whereas the data for grade 8 learners unfolded 71% of non-suppliance and 29% of misformed use.

Error type		Grade		
		6	7	8
omission	regular variant –s	78 (27%)	34 (12%)	11 (4%)
	irregular variant DOES	2 (1%)	1 (0%)	0 (0%)
	irregular variant HAS	1 (0%)	1 (0%)	0 (0%)
	auxiliary BE	24 (8%)	11 (4%)	0 (0%)
	ING	10 (3%)	5 (2%)	0 (0%)
	BE + ING	8 (3%)	7 (2%)	1 (0%)
misformation	tense error	18 (6%)	15 (5%)	4 (1%)
	BE agreement error	0 (0%)	1 (0%)	0 (0%)
	DOES agreement error	6 (2%)	2 (1%)	1 (0%)
	HAS agreement error	6 (2%)	11 (4%)	0 (0%)
	HAS + regular variant –s	1 (0%)	0 (0%)	0 (0%)
	double marking	2 (1%)	1 (0%)	0 (0%)
	BE/DO tense error	2 (1%)	0 (0%)	0 (0%)
	BE/DO error + ING omission	2 (1%)	0 (0%)	0 (0%)
	ING instead of regular variant –s	1 (1%)	2 (1%)	0 (0%)
	BE + infinitive instead of the regular variant –s	14 (5%)	4 (1%)	0 (0%)

Table 7. Distribution of error types across grades 6, 7 and 8

The findings presented in Table 7 report that the most dominant error type across grades 6, 7 and 8 is the omission of the regular variant for the third person singular –s. This morpheme was omitted 27% of the total number of errors (78/287) in grade 6, whereas the amount of omitted instances in its use declined to 12% of the total number or errors (34/287) in grade 7 (34/287), i.e. to 4% of the total number or errors (11/287) in grade 8.

Auxiliary verb BE was the second most frequently omitted morpheme in grade 6 exhibiting 8% of the total number of errors (24/287). Furthermore, it can be noticed that learners in grade 6 more frequently omitted BE in comparison to the omissions of ING.

With regard to the misformed instances in the use of grammatical morphemes, it is evident that grade 6 learners mostly supplied morphological markers with inappropriate temporal reference (6% of the total number of errors or 18/287). Furthermore, there were 14 instances of misformed suppliance (14/287 or 5% of the total number of errors) in the use of the regular variant –s in grade 6.

Similarly to the results disclosed in the previous year, learners in grade 7 more frequently omitted the auxiliary verb BE (11/287, i.e. 4% of the total number of errors) compared to ING (5/287, i.e. 2% of the total number of errors). However, unlike a year ago, errors related to the use of grammatical morphemes with incorrect temporal reference seem to be the second most frequent error type thus accounting for 5% of the total number of errors (15/287). Agreement errors related to the suppliance of the irregular variant –s, i.e. *has* seem to be by 1% behind misformed morphological markers related to tense (11/287 or 4% of the total number of errors).

The results obtained for the following year unfold that grade 8 learners, apart from the previously mentioned omissions of the regular variant –s, far less misform the grammatical morphemes in terms of tense suppliance (4/287 or 1% of the total number of errors).

## 6. Discussion

The final part of this study discusses the research findings. The discussion is presented following the research questions.

### 6.1 Suppliance and distribution of grammatical morphemes

When observing the overall suppliance in the use of morphemes, it seems that the obligatory suppliance for both regular and irregular variants of –s drops in the learners' speech production across grades 6, 7 and 8. However, this decline does not apply with regard to the use of BE and ING in grades 6 and 7. On the one hand, the low number of obligatory instances in the use of morphemes may be attributed to the lack of enthusiasm among the learners in the last year of research. Furthermore, the



speech production of several learners always willing to participate may have increased not only the overall amount in the obligatory suppliance of morphological markers but also may have imposed more frequent suppliance in the use of just some of the morphemes under study in comparison to all the other morphemes.

On the other hand, it may be attributed to the type of communicative activity due to the random selection of the task-based activities across grades 6, 7 and 8. In addition, the variable length of recordings might have also affected the occurrence of grammatical morphemes in obligatory context.

When analyzing the obligatory suppliance in relation to the distribution of its correct, omitted and misformed suppliance in the use of regular variant for the third person singular *-s*, i.e. the most frequently supplied obligatory morpheme across grades 6, 7 and 8, several interesting observations have occurred. Namely, the obligatory suppliance for this morpheme in grade 6 appears to be equally distributed between the correct suppliance on the one hand and the collapsed suppliance referring to both omitted and misformed suppliance on the other hand. What's more, the correct suppliance in the use of regular variant *-s* when compared to ING seems to be equally distributed thus imposing the question which morpheme is acquired first: regular variant *-s* or ING? In other words, is it possible to determine the developmental sequences in the acquisition of morphological markers based on their correct suppliance? In order to answer these questions, developmental sequences of L2 grammar acquisition were scrutinized.

## **6.2 Developmental sequences in the acquisition of grammatical morphemes**

The developmental sequences across grades 6, 7 and 8 (Table 3, Table 4, Table 5) suggest that the first morpheme to be acquired is the present progressive ING. Although ING is ranked the first according to both methods in grades 6 and 7, this morpheme shares its position with the auxiliary verb BE in grade 8. As previously indicated, due to the low suppliance in the use of grammatical morphemes in grade 8, the sequence of acquisition was established via the group score only.

Furthermore, it can be noticed that the acquisition of the irregular variant *-s* precedes the acquisition of regular variant *-s* according to both methods in grades 6 and 7, whereas in grade 8 the ranking position between these variants is reversed. Namely, regular variant *-s* seems to be acquired earlier when compared to its irregular counterpart based on the group score method. With regard to the sequence of development in the acquisition of ING related to the acquisition of the two variants for the third person singular *-s*, it appears that the former morpheme develops prior to the development of both regular and irregular variants of *-s* according to the group score method across all grades.

It can be argued that the sequences of morphological development obtained in this study comply with the orders of acquisition found not only in cross-sectional, but more importantly, in longitudinal studies of both the acquisition of English as L1 and L2. However, the ranking orders of regular versus irregular variant –s provided by Croatian learners of English in comparison to the acquisition of these morphemes in English as L1 are reversed. Although the findings of this study correspond to the findings of L2 morpheme acquisition in terms of developmental sequences, it is important to point out that disparate features of morphological markers were analyzed. Namely, unlike morpheme order studies in L1, studies in L2 acquisition and even more recent studies made no differentiation between, for instance, contractible and uncontractible auxiliary verb BE or regular and irregular variant for the third person singular –s.

### **6.3 Error types in the suppliance of grammatical morphemes**

The findings related to different error types identified in the interlanguages of grade 6, 7 and 8 learners (Table 7) support the results obtained for the sequences of acquisition in the development of L2 grammar (Table 3, Table 4 and Table 5). Namely, grade 6 and 7 learners produced a lower portion of ING omission errors in relation to higher amount of auxiliary BE omission errors with none of these errors occurring in grade 8. It may be claimed that these results are in accordance with the ranking orders of grade 6 and 7 learners since they possibly point to earlier acquisition of ING when compared to auxiliary BE. It further seems that there are less omission errors in the production of irregular variant for the third person singular in comparison to its counterpart thus reinforcing the principle of irregular morphology preceding regular (Dietrich et al. 1995).

In terms of the misformation errors, it may be noticed that the number of errors not containing ING morphological marker is scarce or even non-existent. However, due to the complexity of misformation errors which frequently combine more morphological markers, these errors (e.g. tense errors) should be more closely analysed in future research.

## **7. Conclusions**

This longitudinal study attempted to provide more insight into the patterns of morphological development in the interlanguage of Croatian L2 primary school learners of English. The study findings pointed to several conclusions.

The suppliance of grammatical morphemes appears to be related to both the learners and the type of task-based activity. Firstly, it may be concluded that longitudinal approach to examining L2 morphological development is challenging due to the fact that the results largely depend upon the learner's inclination to participate in the study. Secondly, since the suppliance of morphemes in obligatory context declined

over the three-year learning period, it would be interesting to investigate learners' speech production outcomes when applying the same set of communicative activities across grades 6, 7 and 8.

The results regarding the ranking orders of grammatical morphemes revealed that the developmental sequences cannot be determined based on the amount of correct suppliance in the use of morphological markers. Furthermore, it may be concluded that studies investigating the patterns of morphological development have still much to offer thus requiring further research so as to attain a broader perspective into this matter specifically in terms of morpheme selection.

In addition, Croatian learners have partially confirmed the principle of tense-aspect acquisition (Dietrich et al. 1995) according to which the acquisition of irregular morphological markers, i.e. the irregular variant –s, precedes the acquisition of regular morphological markers, i.e. regular variant –s. In addition, it is highly notable that Croatian primary school learners demonstrate the preference for non-redundancy sub-principle (VanPatten 2004) since they process ING earlier when compared to both regular and irregular variants for the third person singular –s. What's more, the preference for this sub-principle across grades 6, 7 and 8 was confirmed by the lower portion of omission errors in the suppliance of ING when juxtaposed with the higher portion of errors in the non suppliance of the regular variant –s.

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**Appendix 1.** Communicative activity – grade 6**TASK:** *Love story***Step 1:** Tell a love story using the cues.

Work in pairs.

1. met a boy/girl - in love with him/her (where? / when?)
2. boy/girl not in love with him/her (why?)
3. (what did he/she do next?)  
e.g. wrote poems/sang a song/played in school team
4. the boy/girl in love with him/her (what did he/she do in the end?)

**Appendix 2.** Communicative activity – grade 7**TASK:** *Maths discussion***Step 1:** You are pupil A. Read the questions. Do not show these to pupil B.**Step 2:** Ask pupil B some or all of these questions.

1)	What do you think about when you hear the word “mathematics”?
2)	Are you good at maths at school?
3)	Do you like maths at school?
4)	What is maths useful for nowadays if we have computers and calculators?
5)	Would you like to study maths after secondary school?
6)	Why is maths so important at schools?
7)	Are people who are really good at maths very interesting?
8)	Did you have a favourite or a hated maths teacher?

**Step 1:** You are pupil B. Read the questions. Do not show these to pupil A.**Step 2:** Ask pupil A some or all of these questions.

1)	Are all intelligent people good at maths?
2)	How often do you use maths of some kind in a normal day?
3)	Are girls or boys better at maths?
4)	What do you know about the history of maths?
5)	Are there times when two plus two equals five?
6)	Are you good at maths at school?
7)	Do you like maths at school?

**Appendix 3.** Communicative activity – grade 8

**TASK:** *Problem solving*

**Step 1:** In pairs help these people with their problems.

**How can I tell him / her?**

I am madly in love with a wonderful boy / girl who is in my class. The problem is I don't know how to tell him / her. I think he / she likes me but every time I am near him / her I feel too embarrassed to say anything. What can I do about it?

**Why does she do it?**

I've got a problem with one of my friends. She is my best friend but she always copies everything I do. When I buy some new clothes, the next day she goes out and buys exactly the same ones. It is the same with music, films even my friends! It is really annoying. What can I do to stop it?

**I can't remember!**

I am worried because I have got a terrible memory. I forget people's names. I forget where I put my things. I am always late for school because I forget to set my alarm clock. I forget to write my homework and then I get a bad mark and because of that my parents are always mad at me. Help me solve this problem!

**Are these things normal?**

My girlfriend and I are always together. When I tell her that I'm going to my friend's house to watch a football game she wants to go with me. When I ask her not to come with me she gets mad because she thinks I'm cheating on her with another girl. So when we get there my friends are angry at me too for bringing my girlfriend too. Help me!

**A party**

I have some bad marks in English and my parents don't know about that. There is a parents' meeting on Friday at school and my mum is going to hear all about it. My best friend is having a party on Friday too but I don't think my mum is going to let me go to the party when she hears how bad I am at English. Help me before Friday comes!

**Appendix A.** Coding sheet

morpheme/ learner	regular variants for the third person singular -s				irregular variant for the third person singular -s				auxiliary verb BE				present progressive ING			
	OS	NS	MS	CS	OS	NS	MS	CS	OS	NS	MS	CS	OS	NS	MS	CS
L1																
L2																
L3																
L4																
L5																
L6																
L7																
L8																
L9																
L10																
L11																
L12																
L13																
L14																
L15																
L16																
L17																
L18																
L19																
L20																
<b>TOTAL</b>																

**Appendix B.** Error type counting sheet

	Error type	Total
omission	regular variant –s	
	DOES	
	HAS	
	auxiliary BE	
	ING	
	BE + ING	
misformation	tense error	
	BE agreement error	
	DOES agreement error	
	HAS agreement error	
	HAS + regular variant –s	
	double marking	
	BE/DO tense error	
	BE/DO error + ING omission	
	ING instead of regular variant –s	
	BE+ infinitive instead of the regular variant –s	