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The relationship between structure complexity and foreign language linguistic knowledge

This article reports on a study which analysed the role of the complexity of linguistic structures in foreign language learners' linguistic knowledge in terms of both explicit and implicit knowledge. Since it has been proposed that different structure characteristics might be a factor influencing explicit and implicit knowledge development, the complexity of the present study target structures was varied. Implicit knowledge was measured by means of an oral elicited imitation test, and explicit knowledge by means of an untimed grammaticality judgement test and a metalinguistic test. All tests were administered to a sample of 206 participants, Bosnian EFL learners. 100 participants were learners finishing primary school (aged 14-15) and 106 were learners finishing secondary school (aged 18-19). The results indicate that the level of explicit and implicit knowledge varies depending on the structure characteristics. However, the results also suggest that there are differences in the difficulty of grammatical structures in terms of explicit and implicit knowledge development. Structures that are easy in terms of implicit knowledge might be difficult in terms of explicit knowledge and vice versa.

Keywords: foreign language; explicit knowledge; implicit knowledge; simple structures; complex structures.

1. Introduction

Many studies in the field of second language acquisition (Andrews 2007; Kupferborg and Olsthain 1990; Lyster 1994; Reber 1993; Robinson 1996; Williams and Evans 1998) have indicated that the choice of target structures affects the level of

explicit and implicit knowledge[1] and the relationship between them. Language structures have been termed simple or complex, but there has been no agreement on the choice of features which make a structure either simple or complex. Some considered structure saliency, i.e. the extent to which some language structure is noticeable, a crucial feature. Others (Ellis 1999; Ellis 2009b; Hulstijn and deGraaff 1994; Krashen 1982; Reber 1993; Westney 1994, cited in Doughty and Williams 1998) considered the complexity of pedagogical rules underlying language structures as a relevant feature in labelling a structure as simple or complex. Hulstijn and deGraaff (1994) considered the following two factors as important: the scope of the rule (the number of cases covered by the rule) and reliability (the extent to which the rule holds true). However, since different features affecting structure complexity were taken into account, there have been contradictory proposals as to whether particular structure is amenable to either explicit or implicit learning.

Those researchers who considered structure saliency important when labelling structures simple or complex (Ellis 1997; Ellis et al. 2009; Harley 1993, 1994; Hulstijan and deGraff 1994; Pica 1985) hold the view that learners will notice those salient features only by being exposed to them, but they need some help in noticing those less salient forms. However, if the complexity of rule explanation is taken into account when defining structure complexity, suggestions are contradictory. While some scholars (Ellis 1999; Ellis 2009b; Krashen 1982; Reber 1993; Westney 1994, cited in Doughty and Williams 1998) advise explicit learning for simple rules, and implicit learning for complex rules, since learners would be confused by the complex explanations underlying the structure formation[2], empirical studies (DeKeyser 1995; Robinson 1996, 1997) showed better results of explicit learning

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[1] Implicit and explicit knowledge as different types of linguistic knowledge have been studied by many researchers (e.g. Ammar 2008; Carroll and Swain 1993; Day and Shapson 1991; Ellis et al. 2006; Lightbown and Spada 1994; Lyster 1994; Spada and Lightbown 1993; White et al. 1991). Implicit linguistic knowledge is associated with low if any level of awareness, no metalinguistic knowledge, no intention, but also fast and easy access. On the other hand explicit knowledge implies conscious processes, high levels of awareness, metalinguistic knowledge, intention and slow and difficult access. Although it is believed that implicit knowledge enables learners to communicate spontaneously, researchers have also been interested in explicit knowledge: first because explicit focusing of learners' attention to language forms in formal language learning contexts, intended to replace the exposure to language input, generates the development of explicit knowledge; and second because it is thought that explicit knowledge leads to the development of implicit knowledge.

[2] According to this view third person –s is a formally simple rule. However, explicit instruction is advised for its acquisition (cf. Ellis 1990, and Mathews et al. 1989 who categorised it as complex).

for simple structures, although no advantage of implicit learning has been noticed for complex rules.

A suggestion that reconciles these different ideas is offered by Ellis (2009b) who posited that different characteristics make a certain grammatical structure difficult or easy for explicit and implicit knowledge development. The more frequent the grammatical feature in the input and the more salient it is, the easier it is implicitly acquired. Other factors affecting the difficulty of structures for implicit knowledge development are functional value, regularity and processability. Structures that realise a single function and are not meaning redundant are easier to be implicitly learned than those realising multiple functions and being mostly meaning redundant. Regular features, i.e. those with large scope and high reliability are easier to acquire implicitly than those with small scope and low reliability. For implicit acquisition a hierarchical order of processing procedures is also important, and it is impossible for a learner to master some features if he/she did not master the features that depend on them. The difficulty to learn structures explicitly also depends on the complexity of the structural regularity and complexity of the accompanying rule explanation.

Although Ellis (2009b) recognises that the abovementioned characteristics of linguistic structures are not the definite criteria for predicting their difficulty, he claims that they at least influence their learning complexity. The present study sets out to verify his claims.

2. The present study

The aim of the present study is to measure foreign language learners' explicit and implicit knowledge of structures of different complexity. Two specific research questions are addressed:

Is the foreign language learners' language characterised by a predominance of explicit over implicit knowledge?
Does the level of implicit/explicit knowledge vary with regard to target structure complexity?

2.1. *Methodology*

2.1.1. *Participants*

Participants in this study were 206 learners from Zenica and Zavidovići (Bosnia and Herzegovina) at the end of two educational cycles: primary and secondary

school. The first group included 100 learners finishing eight-year long primary school (aged 14-15). At the time of testing they had been learning English for 5 years. The second group of learners (aged 18-19) were 106 learners finishing four-year long secondary school: 72 were grammar school students with three classes of English a week, and 34 were vocational school students with two or three English classes per week depending on their specialisation field.

2.1.2. *Instruments*

A battery of four tests was designed to provide measures of learners' linguistic knowledge in terms of explicit and implicit knowledge (Table 1). An Oral Elicited Imitation Test (OEIT) was used to measure learners' implicit knowledge. It is believed to measure implicit knowledge because learners are encouraged to rely on feel rather than on rule, they are time pressured to do it, and their attention is focused on content and not on form.

The OEIT consisted of 24 sentences (six sentences per target structure, three grammatically correct and three incorrect). The average length of sentences of 11.46 syllables is long enough to prevent rote repeating, and not too long to make the repetition impossible. The OIET was described to participants as a questionnaire in which they would be asked to give their opinion about a range of topics[3]. Participants listened to one statement at a time and were told to decide whether they agree or disagree with it by circling their choice on the test sheet, and then repeat the statement. Their responses were analysed by identifying obligatory occasions for the use of each target structure. Participants' failure to repeat a sentence at all or the repetition of a sentence changing it so that there is no obligatory context for the use of the target structure was coded as avoidance. Each correctly imitated sentence was scored 1, while each sentence which participants could not imitate or imitated without using the target structure was scored 0. Scores were expressed as percentage correct.

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[3] To prevent rote repetition and focus participants' attention to meaning rather than forms a belief questionnaire was used in this study (cf. Ellis R. 2005, Bowles 2011).

Table 1. Instruments and types of linguistic knowledge they measure.

Implicit knowledge	Explicit knowledge		
	Explicit Knowledge Test (EKT)		
	Analysed explicit knowledge	Metalinguistic explicit knowledge	
Oral Elicited Imitation test (OEIT)	Grammaticality Judgement Test (GJT)	Metalinguistic Test (MLT)	
		Rule explanation part (MLTre)	Rule recognition part (MLTrr)

Participants' explicit knowledge was measured by the Explicit Knowledge Test (EKT), consisting of three parts: correcting the error (The Grammaticality Judgement Test - GJT), formulating the rules (The Metalinguistic Test, rule explanation part - MLTre) and recognising the violated rule (The Metalinguistic Test, rule recognition part - MLTrr) (Table 1). All three tests measure participants' explicit knowledge, but the GJT measured analysed explicit knowledge and the MLTre and MLTrr measured metalinguistic explicit knowledge. In the context of this study, analysed explicit knowledge is defined as conscious awareness of how an underlying rule works, whereas metalinguistic knowledge is defined as the knowledge of technical or semi-technical terms used to describe a certain rule (Ellis, *passim*).
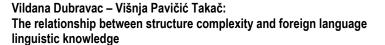
2.1.3. *Target structures*

Indefinite article, modal verbs,[4] plural –s and adverb placement[5] were selected as target structures. They were carefully chosen to present structures of different complexity regarding explicit and implicit knowledge development. Following Robinson (1996), the notion of structure complexity was conceived of as encompassing two dimensions: the complexity of the structure the rule attempts to explain, and the complexity of the explanation.

Complexity of the structural regularity and complexity of the accompanying rule explanation (Robinson 1996) are the features considered to affect explicit knowledge development. Participants were expected to show higher explicit knowledge

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[4] The present study deals with the use of modal verbs in relation to other verbs, and not with the rules regarding the use of specific modals.

[5] These structures were also among 17 target structures in Ellis's study (2005, 2009b).

of indefinite article, plural –*s* and modal verbs because the pedagogical rules[6] underlying these structures are not too complex and do not involve a lot of meta-language. On the other hand, learners were expected to demonstrate lower level of explicit knowledge of adverb placement, which can be attributed to the lack of adequate pedagogical rules connected with this structure.

The features such as saliency, frequency and functional regularity define structure complexity in terms of implicit knowledge development (Ellis 2009b). Thus, learners were expected to demonstrate higher implicit knowledge of modal verbs and adverb placement, and lower levels of knowledge of plural –s, and especially of indefinite article. All target structures are very frequent in the language input. However, indefinite article is not perceptually salient, it realises several discourse functions, applies only to countable nouns and is difficult to process because often the whole sentence has to be considered. Modal verbs and plural –s are very frequent and regular structures, although plural –s is not as salient and can be redundant in specific contexts (Ellis 2009b). In addition to being very frequent in the input, adverbs are salient, especially those used in the initial or end position. However, the same adverbs can function differently, sometimes as adverbs of frequency and other times as adverbs of degree (e.g. *hardly*), which might affect their positioning in a sentence. The rules regarding their position are by no means regular, and not rarely are they related to single items.

In addition to features mentioned by Ellis (2009b), overgeneralisation of L2 rules and L1 negative transfer are analysed in relation to explicit and implicit knowledge development, since L1-L2 relation has been thought to affect the learning difficulty of some structures (Brown, 2000; Harley, 1994; Lightbown and Spada, 1993).

2.2. *Results*

Table 2 shows that all the Cronbach alpha coefficients exceed .70, indicating satisfactory internal consistency of all tests. The coefficients varied between .79 and .95, and were higher for those tests consisting of more items. A somewhat lower coefficient for MLTrr may be attributed to the fact that this task allowed guessing, since it was designed as a multiple choice task.

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[6] Pedagogical rule is "a metalinguistic description of the explicit cognitive procedure which the learner has to follow in order to correctly produce the target structure" (Housen et al. 2005: 239).

Table 2. Reliability measures for tests

Test	Items	Participants	Reliability
OEIT	24	206	α =.86
EKT	48	206	α =.95
GJT	24	206	α =.92
MLT	24	206	α =.91
MLTre	12	206	α =.91
MLTrr	12	206	α =.79

The means of the percentage accuracy scores on tests were calculated. Descriptive statistics for all measures are summarised in Table 3. Participants' average level of performance falls short of perfection. The MLT (M=37.99%) proved more challenging than the GJT (M=57.65%) or the OEIT (M=42.99%), while the MLTre (M=30.31%) seemed to be the most difficult. The mean score on the test measuring implicit knowledge was lower than the score on the tests measuring explicit knowledge. However, paired samples t-test showed that the difference was not statistically significant (t(205)=-1.564, p>.05). The same test indicated that participants' performance on the OEIT compared to their performance on individual tests measuring explicit knowledge was significantly different. Compared to the scores on the other tests, participants demonstrated considerable knowledge on the GJT. However, large standard deviation on this test indicates a large dispersion of test scores.

Table 3. Accuracy scores for all measures (n= 206).

Test	M	SD	min	max
OEIT	42.72	22.98	0.00	95.83
EKT	44.54	23.31	0.00	93.06
GJT	57.65	28.38	0.00	100.00
MLT	37.99	22.85	0.00	89.58
MLTre	30.31	24.19	0.00	86.11
MLTrr	61.00	24.42	0.00	100.00

Table 4 shows the mean scores and standard deviations for each target structure (indefinite article, modal verbs, plural –s and adverb placement) and for each test. Participants demonstrated greater knowledge of indefinite article on the OEIT (M=48.14%) than on all other tests measuring explicit knowledge (M=44.44%). Paired samples t-test confirmed the difference is statistically significant (t(205)=2.251, p=.025). Similar results were obtained for modal verbs, although the

difference between scores on the OEIT and EKT was not statistically significant (t(205)=.822, p>.05). However, participants demonstrated significantly greater knowledge of plural –*s* and adverb placement on the EKT than on the OEIT (Table 5). Furthermore, the mean score for plural -*s* was higher on the MLT (M=44.86%) than on the OEIT.

Table 4. Descriptive statistics for target structures (n=206).

		Indefinite article	Modal verbs	Plural -*s*	Adverb placement
OEIT	M	48.14	48.06	40.78	33.90
	SD	30.00	29.75	30.81	16.74
	min	0.00	0.00	0.00	0.00
	max	100.00	100.00	100.00	100.00
EKT	M	44.44	46.52	48.60	38.60
	SD	22.52	24.72	33.43	20.97
	min	0.00	0.00	0.00	0.00
	max	100.00	100.00	100.00	83.33
GJT	M	53.64	60.36	56.07	60.52
	SD	30.95	29.73	37.21	32.17
	min	0.00	0.00	0.00	0.00
	max	100.00	100.00	100.00	100.00
MLT	M	39.85	39.60	44.86	27.63
	SD	22.42	26.80	34.54	19.10
	min	0.00	0.00	0.00	0.00
	max	100.00	100.00	100.00	75.00
MLTre	M	21.00	30.37	42.23	20.66
	SD	17.80	29.02	36.85	20.87
	min	0.00	0.00	0.00	0.00
	max	75.00	100.00	100.00	88.89
MLTrr	M	75.41	67.31	52.75	48.54
	SD	29.80	32.25	39.38	24.32
	min	0.00	0.00	0.00	0.00
	max	100.00	100.00	100.00	100.00

The analyses of mean scores for different structures on the OEIT shows that participants displayed the greatest knowledge of indefinite article and modals and the lowest level of knowledge of adverb placement. On the EKT participants demonstrated the greatest knowledge of plural –s and modal verbs, while adverb placement was again the most difficult. Compared to the other tests, the scores on the GJT were relatively high, with the means for modal verbs and adverb placement being the highest. Generally, participants demonstrated low level of knowledge on the MLT, especially on the MLTre. The highest mean score on the MLT was the mean score for noun plural (M=44.86%), while the lowest mean score was for adverb placement. The mean scores on the MLTre were much lower than those on the MLTrr, the greatest difference being between the MLTre and MLTrr means for indefinite article.

Table 5. Paired samples t-test for the differences in participants' performance on implicit and explicit knowledge tests' parts containing different target structures.

Pairs of tests	t-value	df	p
OEITar-EKTar	2.251	205	.025
OEITar-GJTar	-3.085	205	.002
OEITar-MLTar	4.420	205	.000
OEITar-MLTrear	14.425	205	.000
OEITar-MLTrrar	-12.197	205	.000
OEITmod-EKTmod	.822	205	.412
OEITmod-GJTmod	-6.191	205	.000
OEITmod-MLTmod	4.003	205	.000
OEITmod-MLTremod	7.924	205	.000
OEITmod-MLTrrmod	-7.699	205	.000
OEITpl-s-EKTpl-s	-4.195	205	.000
OEITpl-s-GJTpl-s	-7.353	205	.000
OEITpl-s-MLTpl-s	-2.027	205	.044
OEITpl-s-MLTrepl-s	-.685	205	.494
OEITpl-s-MLTrrpl-s	-4.587	205	.000
OEITap-EKTap	-3.527	205	.001
OEITap-GJTap	-13.517	205	.000
OEITap-MLTap	4.678	205	.000
OEITap-MLTreap	9.164	205	.000
OEITap-MLTrrap	-8.383	205	.000

(Note: ar- indefinite article; mod-modals; pl –s: plural –s; ap- adverb placement)

To investigate why participants found some target structures more difficult than the others, the mean scores for each test sentence were calculated (see Appendix). Different use of the same target structures evidently affects participants' performance. Although the same sentences were used in different tests, participants' performance varied across tests, indicating that these tests in fact measured different kinds of knowledge.

Paired samples t-test showed that participants performed significantly differently on all tasks measuring explicit and implicit knowledge of articles and adverb placement (Table 5). As for the other two target structures, participants performed significantly differently on most tasks, except on the OEIT and MLTre tasks including noun plural (t(205)=-.685, p>.05) and the OEIT and the EKT tasks including modal verbs (t(205)=-.822, p>.05).

2.3. *Discussion*

Table 3 reveals that participants did not show a high level of knowledge on any of the measures (mean scores range from 30.31% to 61.00%). However, they performed slightly better on the tests measuring explicit knowledge (M=44.54%) than on the test measuring implicit knowledge (M=42.90%), although the difference was not statistically significant and the variation among participants was large on both tests. Participants found the task of formulating the violated rule the most difficult, which is consistent with Sorace's (1985: 245) claim that "the ability to make rules explicit is a relatively late achievement, even in a formal classroom environment where students receive a great amount of metalinguistic information."

Participants achieved the highest mean score on the test which included recognition of violated rules. This implies that they have some knowledge about the violated rules although they found those rules difficult to verbalise. They also found error correction much easier than rule formulation, as indicated by a relatively high mean score on the test requiring correction of the underlined incorrect part of the sentence (M=57.65%). It appears that the failure to verbalise grammar rules does not always imply learners' inability to correct incorrect sentences instantiating the rules in question. Participants' analysed knowledge seems to be much greater than their metalinguistic knowledge. Although participants were asked to use L1 only if they could not explain the rule in L2, they mainly used L1 to explain English rules, rarely used technical terms, or misused metalinguistic terms (Figure 1). Obviously, participants had been exposed to some metalanguage. However, only few of them used it successfully in formulating rules. Some participants seem to have noticed language patterns and deduced the rules on their own (5a).

The main aim was to explore the influence of the target structure complexity on the level of implicit and explicit knowledge. Therefore, different structures were taken into account. It has been hypothesised, that participants would show greater explicit knowledge of indefinite article, plural –s and modal verbs and lower explicit knowledge of adverb placement. On the other side, they were expected to show greater implicit knowledge of adverb placement and modals, but lower implicit knowledge of plural –s and indefinite article. These hypotheses were partly accepted, as evidenced by data in Table 4.

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(1) learners explaining why *a elephant* is ungrammatical:

        (1a) "*... we need an because it starts with a* samoglasnik."

        (1b) "ispred imena *elephant* stavljamo pomoćni glagol *an*"

        (1c) "*...we use an in front of words which start with* a, e, i, o, u."

(2) learner explaining why *many photo* is ungrammatical:

        "*We need –s on photo because we have more than one.*"

(3) learner explaining why *I like a lot sport* is ungrammatical:

        (3a) "*We must first define what we like and after that how much we like it.*"

        (3b) "...glagol ide prije prijedloga"

(4) learner explaining why *such good cook* is ungrammatical:

        "nedostaje prijedlog *a*"

(5) learners explaining why *don't should learn* is ungrammatical:

        (5a) "Ne mogu se naći te dvije riječi jedna do druge."

        (5b) "*... to can't stand after modal verbs.*"

(6) learner explaining why phrase *difficult quite* is ungrammatical):.

        "quite expresses a degree and it has to go in front"

Figure 1. Examples of rule formulations by participants.

Surprisingly, participants showed significantly greater implicit (M=48.14%) than explicit knowledge (M=44.44%) of the indefinite article. A closer analysis of the results on the explicit knowledge tests reveals that although participants showed the greatest knowledge of indefinite article on the MLTrr (M=75.41%) they showed much lower level of knowledge of this structure on both the GJT (M=53.64%) and the MLTre (M=21.00%). This may be attributed to the choice of sentences in the tests. Participants had probably come across those sentences many times, and did not need to take the whole sentence into account to apply the target structure (like in the phrase *to be in a hurry*). Participants showed higher explicit and metalinguistic knowledge of the rules highlighted during formal instruction,

and higher implicit knowledge of the rules not usually presented as selected rules of thumb. They showed higher implicit knowledge of fixed expressions such as *to be in a hurry*, with 55.3% of correct answers on the OEIT and only 35.4% of correct answers on the GJT. The learners showed the lowest level of metalinguistic knowledge of the rule for using indefinite article after the expression *such* for emphasis, which is one of the rarely taught rules.

However, participants showed better explicit knowledge of the rule for the use of *a/an* and the rule for the use of indefinite article before words denoting someone's profession: 44.7% supplied *an* correctly on the OEIT, and 85% used it supplied correctly on the GJT. 49.5% used the indefinite article before a noun denoting profession, and 68.9% did it correctly on the GJT. Furthermore, participants showed the best metalinguistic knowledge of the two rules.

The expectations that participants would demonstrate high level of explicit and implicit knowledge of modals were fulfilled. Participants showed approximately the same level of explicit (M=46.52%) and implicit knowledge (M=48.06%) of this structure, with implicit knowledge being somewhat, but not statistically significantly higher. These results are in accordance with the ones reported by Ellis (2009b). As for participants' metalinguistic knowledge of modals, it was considerably higher (M=39.60%) than their metalinguistic knowledge of other structures. L1 influence and overgeneneralisation of L2 rules proved to be important factors in participants' knowledge of this structure.

On the OEIT only 27.7% of participants corrected the erroneous use of *to infinitive* following a modal verb (e.g. *should to give*). This may be due to the fact that modals in participants' L1 are followed by infinitives or more usually by subordinate clauses beginning with conjunction *da* (Riđanović 2012). Therefore, participants insert *to* as a word corresponding to *da* in their mother tongue. Participants also showed the lowest metalinguistic knowledge of this rule. Following L1 rules might also be the reason why most participants supplied *will* in front of *might* for future time reference, which can be explained by the fact that modals in Bosnian conjugate like other lexical verbs in different tenses (Riđanović 2012).

Overgeneralisation of L2 rules might explain why participants added –s to modal verbs in the third person singular of the Present Simple Tense, and formed negative statements with a modal verb using *don't* in front of it. On the OEIT, only 16% of participants produced correct negative statement using modal verb *should*. However, participants showed much greater explicit and especially high metalinguistic knowledge of this rule. The fourth lowest score on the test measuring implicit knowledge was achieved for the sentence in which participants should not

have added *–s* to the modal verb *can* in the third person singular of the Present Simple Tense. Only 27.7% of participants corrected this mistake. Again, the results on the tests measuring analysed explicit and metalinguistic knowledge were much better, indicating that different structure features affect implicit and explicit knowledge.

Participants showed significantly higher explicit knowledge of plural *–s* (M=48.60%) than implicit knowledge of the same structure (M=40.78%). These results are in line with Ellis's (2009b) findings. Of the four target structures, participants showed the greatest metalinguistic knowledge of this one (M=44.86%), possibly because noun plural is usually taught presenting a few rules of thumb, and does not involve a lot of metalanguage. The achieved lower level of implicit knowledge, however, may be attributed to the fact that, although frequent and rather regular feature in language input, plural *–s* is not that salient and is functionally complex. There was some but not considerable variation in the results obtained for individual sentences. The scores obtained on the GJT for each structure were higher than the scores obtained on the OEIT, and there was minor variation in scores for different sentences on the metalinguistic tests.

As for adverbs, variation in scores for individual sentences was great. Participants' implicit knowledge of adverb placement was expected to be greater than their explicit knowledge, since the rules for adverb placement are so complex that very often they are not taught. Although participants demonstrated the lowest level of both explicit and implicit knowledge of this structure, they achieved a better score on the tests measuring explicit knowledge (M=38.60%) than on the OEIT (M=33.90%). The variation in scores for different sentences obtained on the OEIT was considerable and ranged from 4.4% to 86.9% correct answers.

Participants showed the greatest implicit knowledge of the placement of adverbs of time, and the lowest implicit knowledge of restrictions on placement of adverbs of manner. Again, L1 transfer might have influenced these results, as placement of adverbs in participants' L1 is much more flexible. For example, 80.1% of participants considered *enough loudly acceptable since in Bosnian it is. Interestingly, although *difficult quite is incorrect in both Bosnian and in English, 92.7% of participants accepted it as correct. This, however, may have happened because participants did not understand the word *quite*.

Variation in scores for individual sentences on the GJT was much smaller, although again the highest scores were obtained for the sentences involving adverbs of time. The fact that the rules for adverb placement are not taught is evident from the results on the MLTre: only 2% of participants were able to provide a complete

violated rule. This discrepancy can be explained by participants' lack of metalinguistic knowledge: they were much more successful in recognising the rules not containing much metalanguage.

3. Conclusions

This study was primarily concerned with the relationship between linguistic structures of different complexity and foreign language learners' linguistic knowledge. It analysed learners' knowledge in terms of both explicit and implicit knowledge, following the efforts of others (e.g. Bowles 2011; Ellis 2004, 2005, 2009a, 2009b; Erlam 2009; Loewen 2009) who pointed out that whenever learners' language is considered it should be analysed in terms of these different types of linguistic knowledge.

The results revealed that structure characteristics are a significant factor influencing the level of implicit and explicit knowledge. The findings support the claim (Ellis 2009b) that different features should be taken into consideration when discussing complexity in terms of explicit and implicit knowledge development. Features like structures' frequency, saliency and functional regularity affect implicit knowledge development, while the availability of rules of thumb, i.e. the complexity of the rule explanation underlying the use of the structure affects explicit knowledge development. In addition to these, other factors have to be taken into consideration. Thus, negative L1 transfer and overgeneralisation of L2 rules seem to affect both explicit and implicit knowledge although learners cross these hurdles more successfully on untimed tests and when they focus on language forms.

The present study is not without its limitations. First, participants' explicit knowledge was measured by three different tests, whereas their implicit knowledge was measured only by one, mainly because implicit knowledge is much more difficult to measure than explicit. However, we feel that application of multiple measures of implicit knowledge, including oral tests, would yield more reliable results. Furthermore, the results may have been influenced by absence of effort or by participants' fatigue induced by the complex testing. A third possible limitation is lack of information available about the ways in which the present study target structures are taught in formal contexts in Bosnia and Herzegovina. Although an earlier questionnaire-based study (Dubravac 2011) showed that English in Bosnia and Herzegovina is taught explicitly, and that learners learn through communication and learning L2 rules, a study based on a systematic classroom observation would reveal much more information. Further research is needed to investigate in more de-

tail the ways in which learners at different levels acquire English as a foreign language.

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Oᴅɴᴏѕ ɪᴢᴍᴇᴆᴜ ᴋᴏᴍᴘʟᴇᴋѕɴᴏѕᴛɪ ѕᴛʀᴜᴋᴛᴜʀᴀ ɪ ᴊᴇᴢɪᴄ̌ɴᴏɢᴀ ᴢɴᴀɴᴊᴀ ѕᴛʀᴀɴᴏɢᴀ ᴊᴇᴢɪᴋᴀ

Ovaj članak izvješćuje o istraživanju uloge kompleksnosti jezičnih struktura u razvoju eksplicitnoga i implicitnoga znanja stranoga jezika. S obzirom na nalaze ranijih istraživanja da različita obilježja struktura predstavljaju važan čimbenik pri razvoju eksplicitnoga i implicitnoga znanja, kompleksnost ciljnih struktura u ovom je istraživanju različita. Implicitno je znanje mjereno usmenim testom imitacije, a eksplicitno vremenski neograničenim testom prosudbe gramatičke točnosti rečenica i testom metalingvističkoga znanja. Istraživanje je provedeno na uzorku od 206 ispitanika, bosanskih učenika engleskoga kao stranoga jezika. Sto ispitanika jesu učenici koji završavaju osnovnu školu (starosti 14-15 godina), a 106 učenici koji završavaju srednju školu (18-19 godina). Rezultati pokazuju da razina eksplicitnoga i implicitnoga znanja varira ovisno o kompleksnosti ciljnih struktura. Međutim rezultati također pokazuju da, ovisno o tome analizira li se razvoj eksplicitnoga ili implicitnoga znanja, postoje razlike u težini struktura. Strukture koje su jednostavne u smislu razvoja eksplicitnoga znanja mogu biti teške za razvoj implicitnoga znanja i obrnuto.

Ključne riječi: strani jezik; eksplicitno znanje; implicitno znanje; jednostavne strukture; kompleksne strukture.

Appendix

The percentage accuracy on different tests obtained for sentences containing target structures[7]

The percentage accuracy on different tests obtained for sentences containing indefinite article

Sentence	OEIT		GJT		MLTre				MLTrr	
	0	1	0	1	0	1	2	3	0	1
1. I'm in a hurry every morning.	44.7	55.3	64.6	35.4					0	
2. If I went to a Zoo I would like to see an elephant.	55.3	44.7	15	85	36.4	18.4	27.2	18	20.9	79.1
3. I would like to be a teacher in ten years.	50.5	49.5	31.1	68.9	40.8	41.3	9.2	8.7	14.1	85.9
4. Every child needs a responsible mother.	44.7	55.3	46.6	53.4						
5. My family is a very interesting family.	59.7	40.3	67	33						
6. I think my mum is such a good cook.	56.3	43.7	53.9	46.1	68	26.7	3.4	1.9	38.8	61.2

[7] Each sentence is presented in its correct form, although in the present study instruments the target structures were sometimes used incorrectly or another structure was used in a context that obligatorily requires the use of one of the target structures. Each table shows the percentage of learners who scored 0 (in the case of unanswered items or those being inadequately imitated/corrected) or 1 point (in the case of adequately imitated/corrected sentences) on the OEIT, the GJT, who scored 0 (in the case of an incorrect choice) or 1 point (in the case of a correct choice) on the MLTrr, as well as the percentage of learners who scored 0 (in the case of describing a rule unsatisfactorily or leaving it unanswered), 1 (in the case of showing a vague idea about the rule but offering mostly unsatisfactory explanation in English or partially described a rule using Bosnian), 2 (in the case of partially describing a rule in English or fully describing it in Bosnian) or 3 points (if a learner fully described the rule using English) on the MLTre while performing on tasks including the same target structure.

The percentage accuracy on different tests obtained for sentences containing modal verbs

Sentence	OEIT		GJT		ML.Tre				ML.Trr	
	0	1	0	1	0	1	2	3	0	1
1. I must drink a cup of tea to wake up.	33.5	66.5	41.7	58.3						
2. I might move to another city next year.	52.9	47.1	69.9	30.1						
3. My parents should give me more money.	72.3	27.7	34.5	65.5	64.1	17	12.1	6.8	40.3	59.7
4. My mom can dance very nice as well as my dad.	42.2	57.8	24.3	75.7	41.7	15.5	29.1.	13.6	30.1	69.9
5. I could watch TV for ten hours if my parents allowed it.	27.2	72.8	30.1	69.9						
6. I shouldn't learn any more than I learn now.	84	16	38.3	61.7	52.4	12.1	21.4	14.1	27.7	72.3

The percentage accuracy on different tests obtained for sentences containing plural –s

Sentence	OEIT		GJT		MLTre				MLTrr	
	0	1	0	1	0	1	2	3	0	1
1. I can eat as many as twenty cakes a day.	47.1	52.9	55.3	44.7						
2. My friends don't like all fast and expensive cars.	62.1	37.9	47.1	52.9						
3. I have a lot of photos of my friends.	63.6	36.4	29.6	70.4	41.3	6.8	30.1	21.8	42.2	57.8
4. My dad makes many delicious cakes every night.	68.4	31.6	44.7	55.3	46.1	4.9	25.2	23.8	52.9	47.1
5. I really find all school subjects very interesting.	68.4	31.6	41.7	55.3	47.1	6.3	25.2	21.4	46.6	53.4
6. There are always some books and pencils on my desk.	45.6	54.4	41.7	58.3						

The percentage accuracy on different tests obtained for sentences containing adverb placement

Sentence	OEIT		GJT		MLTre				MLTrr	
	0	1	0	1	0	1	2	3	0	1
1. I always get up at half past six.	13.1	86.9	20.4	79.6						
2. My parents usually get up very early.	20.9	79.1	20.4	79.6						
3. I think I speak English very well.	95.6	4.4	37.9	62.1	49.5	37.4	11.2	1.9	94.2	5.8
4. Teachers always speak loudly enough to be heard.	80.1	19.9	61.2	38.8						
5. I don't like school very much but I like sport a lot.	94.2	5.8	50.5	49.5	53.9	31.6	13.6	1	35.4	64.6
6. It is quite difficult to be an excellent student.	92.7	7.3	46.6	53.4	57.3	28.2	13.1	1.5	24.8	75.2