

The status of the unaccusative/unergative split in the Croatian-English interlanguage*

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Abstract

By employing the two types of errors well-documented in the literature on the L2 acquisition of English unaccusatives, namely passive morphology and postverbal subjects, this study investigates the status of the unaccusative/unergative split in the Croatian-English interlanguage and the issue of UG involvement in L2 acquisition. Despite being unable to provide a full and unified account of the common response pattern obtained from native and non-native speakers, the study demonstrates that unaccusatives and unergatives are represented as distinct verb classes in the Croatian-English interlanguage and argues that such representations could not have been acquired without access to UG.

Keywords: UG, unaccusative/unergative split, passive morphology, postverbal subjects

1. Introduction: Universal Grammar in L2 acquisition

One of the central issues in generative research on second language (L2) acquisition is whether it is guided by the same innate and universal linguistic principles, known as Universal Grammar (UG), that are assumed to guide first language (L1) acquisition. To show that it is, it has to be demonstrated that certain interlanguage phenomena are UG-compatible and, crucially, that they pose a poverty-of-the-stimulus problem for L2 acquisition. More precisely, it has to be shown that the phenomena in question are underdetermined by the input, not instantiated in the L1 and not learned through explicit instruction or general learning principles (Schwartz & Sprouse 2000; White 2003).

The unaccusative/unergative distinction is particularly suitable for examining poverty-of-the-stimulus effects because it is assumed to be universal, but is covert in many languages and is never explicitly taught to L2 learners. Relying on the fact that the distinction is largely covert in English as well, this paper presents experimental evidence from Croatian-English interlanguage that L2 acquisition is indeed driven by UG.

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2. Theoretical background: the unaccusative/unergative distinction

2.1 The Unaccusative Hypothesis

The basis for the unaccusative/unergative distinction is the Unaccusative Hypothesis (Perlmutter 1978; Burzio 1986), which proposes that intransitive verbs fall into two classes, unaccusative and unergative, differing in their argument and thematic structure. Under late Government and Binding analysis, adopted in this paper, unaccusatives select for an internal argument, base-generated in the object V-Comp position and bearing the theta-role of Patient/Theme, while unergatives select for an external argument, originating in the subject Spec-VP position and associated with the theta-role of Agent. The arguments of both verb classes surface in the Spec-IP position (in English, at least) as a consequence of A-movement driven by Case assignment reasons. More precisely, the unaccusatives' argument cannot be assigned accusative Case¹, so it moves to Spec-IP to be assigned nominative Case. The same holds for the argument of passives, presumably because the passive morphology absorbs the Agent role, so the passivised verb loses its ability to assign accusative Case (Jaeggli 1986; Roberts 1986). Consequently, passive clauses have the same syntactic configuration as unaccusative clauses. Syntactic configurations of unergative, unaccusative and passive clauses in the D- and S-Structure are shown in Table 1.

Table 1. Syntactic configurations of unergative, unaccusative and passive clauses

	<i>Unergative clause</i>	<i>Unaccusative clause</i>	<i>Passive clause</i>
SS	[_{IP} Mary _i [_r [_{VP} t _i [_{V'} cried]]]]	[_{IP} Mary _i [_r [_{VP} [_{V'} fell t _i]]]]	[_{IP} her leg _i [_r was [_{VP} [_{V'} broken t _i]]]]
DS	[_{IP} e [_r [_{VP} Mary [_{V'} cried]]]]	[_{IP} e [_r [_{VP} [_{V'} fell Mary]]]]	[_{IP} e [_r was [_{VP} [_{V'} broken her leg]]]]

2.2 Manifestations in English and Croatian

The unaccusative/unergative distinction is manifested in a different and sometimes not very consistent way in different languages.

In English, unaccusatives apparently differ from unergatives in their ability to appear in resultative, *there*-insertion and locative inversion constructions, and to form adjectival participles (Levin & Rappaport-Hovav 1995). Examples (1)-(4) illustrate these constructions/forms in the order of mention.

- (1) The tin broke open.
- (2) There appeared the sun underneath the clouds.
- (3) Out of the house came two strangers.
- (4) vanished hopes

However, a closer investigation of these distributional and formal properties reveals that they do not apply to *all* and *only* unaccusatives (*ibid.*). Specifically, stative verbs and verbs of inherently directed motion, which are semantically unaccusative, do not appear in the resultative construction, whereas agentive verbs of manner of motion, clear unergatives, do, as shown in (5):

¹ This follows from Burzio's Generalisation, stating that only verbs that can theta-mark their external argument can assign case to their internal argument (Burzio 1986: 178).

L2 learners were also more tolerant of passive morphology with unaccusatives than with other verb types, as reported by Balcom (1997).

Among several accounts of passive unaccusatives that have been proposed (for an extensive review see Oshita 2000), the most influential ones are those put forward by Zobl (1989) and Oshita (1997), and by Yip (1995) and Balcom (1997). According to the former account, passive unaccusatives derive from non-target-like overt marking of A-movement, and according to the latter, they result from non-target-like lexical causativisation. More precisely, Zobl & Oshita argue that the learners overgeneralise the passive morphology to unaccusatives in order to overtly mark the argument's movement from the object to the subject position, which occurs both with passives and unaccusatives for reasons of Case assignment. Yip and Balcom, on the other hand, suggest that the learners extend the causativisation rule to non-alternating unaccusatives, i.e. those that do not participate in the causative/inchoative alternation, and subsequently passivise them. It should be noted that passive unaccusatives are considered as genuine passives only by Yip and Balcom, while, according to Zobl and Oshita, they are active forms bearing passive morphology.

Regarding post-unaccusative subjects, Zobl (1989) proposes that they result from the learners' assumption that the unaccusatives' argument directly maps from D-structure to S-structure and receives nominative Case *in situ*, as in *pro*-drop languages.

Regardless of the account of passive unaccusatives one adopts, both types of errors indicate that learners are sensitive to the object-like properties of the single argument of unaccusatives and have distinct representations of unaccusatives and unergatives in their interlanguage grammars. According to Hawkins (2001) and White (2003), this suggests that these grammars are constrained by UG. At the same time, these errors suggest that the learners have problems with acquiring language-specific mechanisms of Case-assignment, as well as the morphology associated with A-movement in English.

3. The present study

3.1 Aims, assumptions and predictions

The main aim of the present study is to determine the status of the unaccusative/unergative split in the Croatian-English interlanguage. Specifically, the study aims to establish whether unaccusatives and unergatives are represented as distinct verb classes and whether they are associated with correct argument-structure properties in interlanguage grammars of Croatian-speaking learners of English. A more ambitious aim of the study is to investigate whether the same learners are guided by UG in the process of L2 acquisition.

The learners' sensitivity to the unaccusative/unergative distinction was tested through their acceptance of sentences containing the two types of errors discussed above, namely passive morphology and postverbal subjects, with the two verb classes. On the basis of the findings of the previous studies, it was predicted that if Croatian subjects are sensitive to the argument-structure distinction between unaccusatives and unergatives and in particular to the fact that the unaccusatives' argument is an underlying object, they might either accept ungrammatical sentences with unaccusatives, but not those with unergatives, or reject ungrammatical sentences with unaccusatives less categorically than those with unergatives. Control subjects were, however, expected to reject ungrammatical sentences with both verb classes equally categorically since the two error types violate the principles of Case assignment and morphological marking of A-movement in English.

The issue of UG guidance in L2 acquisition was addressed through the learners' acceptance of passive unaccusatives and unergatives. Since passive intransitives are ungrammatical in English and are also ungrammatical in sentences with an overt subject in Croatian, the predicted learners' ability to discriminate between the two classes of intransitives in such sentences on the basis of their argument-structure properties could be regarded as a poverty-of-the stimulus effect and, in turn, as evidence for UG guidance in L2 acquisition. The predicted differential treatment of post-unaccusative and post-unergative subjects on the part of the learners would, however, not be revealing in this respect since post-unaccusative subjects represent a default option in the learners' L1 and could therefore be preferred to post-unergative subjects simply because of L1 transfer.

3.2 Participants

A total of 143 subjects, 124 Croatian and 19 English speakers, participated in the study. The Croatian speakers were secondary-school students from Rijeka (Croatia), with a mean age of 17, and the English speakers were mainly graduate students at Cambridge University, coming from different parts of the UK and aged 25 on average. All Croatian speakers had been receiving classroom tuition in English for at least seven years, consisting of two to three 45-minute lessons per week.

3.3 Materials and procedures

The experiment consisted of two paper-and-pencil tasks, an acceptability judgement task and a cloze test, completed within 45 minutes.

The cloze test contained 27 blanks, 10 of which were supposed to be filled in with passives. Passive forms were included to ensure the subjects' familiarity with the passive morphology. The acceptability judgment task consisted of 70 test sentences (40 ungrammatical and 30 grammatical) and 20 fillers. Half of the ungrammatical sentences contained inappropriate passive morphology and the other half postverbal subjects. There were no locative inversion constructions. The meaning of morphologically passive verbs was clearly active, e.g. *We were arrived at the station ten minutes earlier*, *We were danced together the whole night*. Among both grammatical and ungrammatical sentences, there was an equal number of sentences with unaccusatives and unergatives. In ungrammatical sentences, the verbs from Oshita's (2000) corpus study were used: *appear, arise, arrive, die, disappear, exist, fall, happen, occur, rise* (unaccusatives), and *cough, cry, dance, joke, laugh, shout, smile, speak, talk, walk* (unergatives). The reason for using those verbs lies in the fact that while the appearance of listed unaccusatives in the passive form has been widely documented in the L2 acquisition literature, there has been only one observed case of the passive among the listed unergatives². In addition, none of the listed unaccusatives has a transitive alternant that can be passivised in English. Each verb appeared twice, once with each error type. Verbs of similar "difficulty" were used in grammatical sentences. The judgements were expressed on a 5-rank scale ranging from -2 ("totally unacceptable") to 2 ("perfectly acceptable"). The 0 value stood for "don't know".

² This case refers to the verb "walk", which, however, also exists with the transitive meaning of accompanying someone as they walk, or taking an animal for a walk and can, therefore, be passivised. For this reason, only the responses on postverbal subjects with "walk" were taken into consideration in this study.

3.4 Results

On the basis of the scores in the cloze test, whose overall level of difficulty was taken into account, 38 Croatian speakers were classified as lower intermediates, 58 as intermediates and 28 as upper intermediates. Native speakers formed a single group. The results of the cloze test and the ensuing classification of subjects are given in Table 2.

Table 2. Cloze test scores

<i>Subject group</i>	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Range</i>
Lower intermediates (LI)	38	4.76	3.132	0-9
Intermediates (I)	58	14.07	2.376	10-18
Upper intermediates (UI)	28	21.11	1.833	19-26
Control (C)	19	26.05	1.615	21-27

According to a one-way ANOVA on the proficiency scores, the difference between groups was significant ($F(3, 139) = 415.362, p < .001$). Post-hoc comparisons (Tukey HSD) also indicated statistical differences between each group of subjects ($p < .001$).

The results of the acceptability judgement task are shown in Figures 1 and 2. Figure 1 presents mean values of acceptability judgments expressed by each subject group on each sentence type obtained by excluding the 0 responses. Figure 2 shows the percentage of target-like responses to each sentence type by each subject group, that is, the total of positive responses to grammatical sentences and the total of negative responses to ungrammatical sentences.

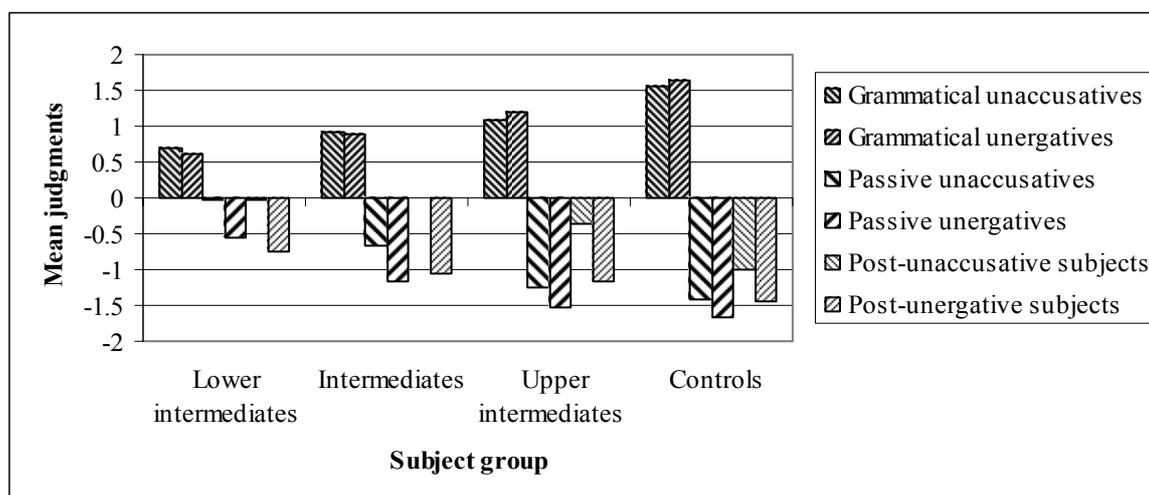


Figure 1. Mean acceptability judgments on all sentence types for all subject groups

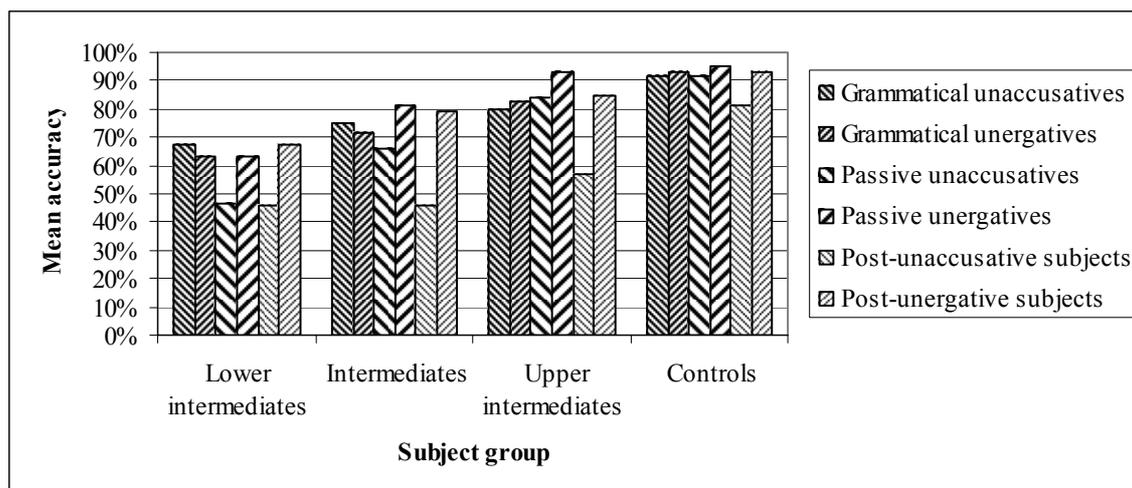


Figure 2. Accuracy rate in all sentence types for all subject groups

Both figures reveal similar tendencies that can be summarised as follows. First of all, all subject groups discriminated correctly between ungrammatical and grammatical sentences and, on the whole, accepted only grammatical sentences. Secondly, all groups rejected both types of ungrammatical sentences with unaccusatives less categorically and with lower accuracy than those with unergatives. Lastly, the learners' judgements on all sentence types became more categorical and accurate with the rise of proficiency, pointing to a developmental pattern.

Mean acceptability judgments on both grammatical and ungrammatical sentences were subjected to a mixed ANOVA with sentence type (grammatical and ungrammatical) and verb class (unaccusative and unergative) as within-subject factors, and group (lower intermediate, intermediate, upper intermediate and control) as a between-subjects factor. The analysis yielded a significant main effect of sentence type ($F(1,139) = 981.171, p < .001$) and verb class ($F(1, 139) = 116.265, p < .001$), but a non-significant main effect of group ($F(3, 139) = .072, p > .05$), suggesting that all subject groups judged grammatical and ungrammatical sentences differently, as well as the sentences with unaccusatives and those with unergatives. However, a significant two-way interaction between sentence type and verb class ($F(1, 139) = 118.418, p < .001$) indicates that the two verb classes were judged differently in grammatical and ungrammatical sentences.

In order to take into account the difference between the two types of errors considered, a separate mixed ANOVA was performed on mean acceptability judgments on ungrammatical sentences, with verb class (unaccusative and unergative) and error type (passive morphology and postverbal subjects) as within-subjects factors, and group (lower intermediate, intermediate, upper intermediate and control) as a between-subjects factor. There was a significant main effect of verb class ($F(1, 139) = 201.724, p < .001$) and of error type ($F(1, 139) = 25.543, p < .001$) and a significant verb class by error type interaction ($F(1, 139) = 26.032, p < .001$), suggesting that different verb classes and different error types were treated differently, as well as different verb classes in different types of errors. A significant main effect of group ($F(3, 139) = 22.438, p < .001$) suggests that there was also some variation between subject groups in this respect, but the fact that the difference between upper intermediates and controls fails to reach significance in a post hoc Tukey HSD test indicates that this variation was not due to the L1. All other pairwise comparisons between subject groups were significant in the test,

some at $p < .001$, and some at $p < .05$ (for lack of space numerical results of post-hoc tests are not reported in this paper).

Given that the main aim of the study was to investigate whether the subjects distinguished between unaccusative and unergative verbs in the same construction, paired sample t-tests were conducted for each subject group separately. With all subject groups the difference between the two verb classes was significant in both types of ungrammatical sentences, namely those with the passive morphology (lower intermediates: $t = 4.177$, $df = 37$, $p < .001$; intermediates: $t = 6.214$, $df = 57$, $p < .001$; upper intermediates: $t = 4.099$, $df = 27$, $p < .001$; controls: $t = 2.873$, $df = 18$, $p < .05$) and those with postverbal subjects (lower intermediates: $t = 5.919$, $df = 37$, $p < .001$; intermediates: $t = 16.129$, $df = 57$, $p < .001$; upper intermediates: $t = 7.701$, $df = 27$, $p < .001$; controls: $t = 6.917$, $df = 18$, $p < .001$), while it was not significant in grammatical sentences (lower intermediates: $t = 1.232$, $df = 37$, $p > .05$; intermediates: $t = .877$, $df = 57$, $p > .05$; upper intermediates: $t = -1.678$, $df = 27$, $p > .05$; controls: $t = -1.356$, $df = 18$, $p > .05$). This suggests that all subject groups distinguished between unaccusatives and unergatives in both type of ungrammatical sentences, but not in grammatical sentences.

In order to see whether different groups performed similarly or differently in different constructions presented in Figures 1 and 2, between-group results for each construction were calculated in a series of one-way ANOVAs. In all ANOVAs there was a significant main effect of group (grammatical unaccusatives: $F(3, 142) = 22.774$, $p < .001$; grammatical unergatives: $F(3, 142) = 26.300$, $p < .001$; passive unaccusatives: $F(3, 142) = 25.406$, $p < .001$; passive unergatives: $F(3, 142) = 18.695$, $p < .001$; post-unaccusative subjects: $F(3, 142) = 11.260$, $p < .001$; post-unergative subjects: $F(3, 142) = 4.809$, $p < .05$), pointing to a difference between groups in all constructions. In order to find out exactly which groups differed significantly in which constructions, post hoc pairwise comparisons were made (Tukey HSD). The highest number of significant differences was obtained in sentences with grammatical unergatives, in which all groups differed from each other, followed by sentences with grammatical unaccusatives, in which only intermediates and upper intermediates did not differ from each other, and by sentences with passive unaccusatives, in which all groups, apart from upper intermediates and controls differed from each other. In sentences with passive unergatives, upper intermediates did not differ from intermediates and controls, contrary to all other combinations of groups. In sentences with post-unaccusative subjects, controls differed from all other groups, and in sentences with post-unergative subjects they differed only from lower intermediates, while none of the other subject groups differed from each other in the two constructions. Since the differences between groups are distributed along the lines of the L1 background only in sentences with post-unaccusative subjects, the L1 might be identified as the underlying cause of between-group differences only in this particular construction, which is compatible with the contrastive relationship between English and Croatian (see section 2.2).

4. Discussion

With the aim of determining the status of the unaccusative/unergative split in the Croatian-English interlanguage, this study tested the subjects' acceptance of passive morphology and postverbal subjects with the verb classes on either side of this split. On the basis of previous studies and the contrastive relationship between English and Croatian, it was predicted that Croatian speakers might be more tolerant of the two error types with unaccusatives than with unergatives, while English speakers would be

equally intolerant of the errors with both verb classes. While the first prediction was borne out by the data, the second one was not. As shown by the results of the statistical analysis, both native and non-native subjects were significantly less intolerant of both types of ungrammatical sentences with unaccusatives than with unergatives.

While such results undoubtedly point to distinct representations of unaccusatives and unergatives in interlanguage grammars of Croatian speakers, the unexpected overlap of their responses with responses of English speakers does not allow us to specify what exactly has given rise to such responses. If English speakers had responded as predicted, one could have argued that Croatian speakers' greater determinacy in rejecting ungrammatical sentences with unergatives than with unaccusatives had resulted from their clear intuitions about the argument structure of unaccusatives and unergatives, but uncertainty about Case assignment and morphological marking in English, coupled with L1 influence in the case of sentences with postverbal subjects. However, due to the fact that English speakers responded in the same way as Croatian speakers, (at least part of) the reason for the response pattern obtained from Croatian speakers must lie elsewhere.

One could speculate that this reason might be related to the systematic variation in the syntactic behaviour of different semantic classes of unaccusatives and unergatives, observed by Sorace (2000) and captured by her Auxiliary Selection Hierarchy (ASH). The ASH distinguishes between seven semantic classes of intransitives on the basis of the consistency with which they exhibit typical unaccusative or unergative behaviour across and within languages, but the crucial difference is between core verbs, exhibiting consistent syntactic behaviour, and non-core verbs, exhibiting various degrees of inconsistency. See the classification of verbs used in the present study according to this distinction in Table 3.

Table 3. Classification of verbs with respect to the core/non-core distinction

<i>Verb subclass</i>	<i>Verbs from the study</i>	<i>N</i>
Core unaccusatives	arrive, fall, rise	3
Non-core unaccusatives	appear, arise, die, disappear, happen, occur, exist	7
Core unergatives	joke, shout, smile, speak, talk	5
Non-core unergatives	cough, cry, dance, laugh, walk	5

An account along the lines of the ASH might state that the greater determinacy in rejecting ungrammatical unergatives than unaccusatives, exhibited by both natives and non-natives, is (partly, at least, in the case of non-natives) a result of the fact that there were more core unergatives than core unaccusatives used in the study (i.e. five *vs* three). For this account to hold, it would have to be shown that core verbs indeed triggered more determinate and correct judgements than non-core ones in the study, especially with native speakers (cf. Montrul 2005). However, as can be seen in Table 4, which presents mean values of acceptability judgments on both types of ungrammatical sentences with core and non-core verbs for each subject group, this was largely not the case in sentences with passive morphology (the exception being the lower intermediates' and intermediates' judgments on unaccusatives) and was also not always the case in sentences with postverbal subjects, such as in the case of the upper intermediates' judgments on unaccusatives and unergatives and the controls' judgments on unergatives. In addition, a mixed ANOVA performed on the mean acceptability judgements on ungrammatical sentences with error type (passive morphology *vs* postverbal subjects), verb class (unaccusative and unergative) and verb subclass (core and non-core) as within-subject factors and group (lower intermediate, intermediate,

upper intermediate and control) as a between-subjects factor did not yield a significant main effect of verb subclass ($F(1, 139) = .034, p > .05$), suggesting that, overall, core and non-core verbs were judged in a similar way. However, a significant verb subclass by group interaction ($F(3, 139) = 6.386, p < .001$) suggests that subject groups differed somewhat in this respect. On the basis of such evidence, it can be concluded that the ASH cannot be responsible for the unexpected patterning of natives with non-natives in the acceptability-judgment task, and the question what is, remains open for the moment.

Table 4. Mean judgements on both types of ungrammatical sentences for all groups

Verb class	Verb subclass	Passive morphology				Postverbal subjects			
		LI	I	UI	C	LI	I	UI	C
Unaccusatives	Core	-0.08	-0.85	-1.15	-1.26	-0.23	-0.06	-0.10	-1.12
	Non-core	-0.01	-0.59	-1.30	-1.50	0.04	0.02	-0.50	-0.94
Unergatives	Core	-0.50	-1.13	-1.46	-1.64	-0.98	-1.20	-1.16	-1.34
	Non-core	-0.67	-1.21	-1.64	-1.72	-0.54	-0.90	-1.20	-1.53

Turning now to another aim of the study, that of investigating UG involvement in L2 acquisition, the assumption was that discriminating between passive unaccusatives and unergatives in English poses a poverty-of-the-stimulus problem to Croatian learners since instances of the passive forms of both verb classes in sentences with an overt subject, such as those used in the study, are equally ungrammatical in English and Croatian. It was argued that if the learners treated passive unaccusatives and passive unergatives in a different way in such sentences, this would provide evidence for UG guidance in L2 acquisition. As shown above, the learners indeed preferred passive unaccusatives to passive unergatives despite their non-instantiation in the relevant contexts in the L1 and the L2, similarly to the L2 learners from other linguistic backgrounds involved in previous studies.

5. Conclusion

By investigating the acceptance of the passive morphology and postverbal subjects with unaccusatives and unergatives in English by Croatian-speaking learners, this study has shown that the learners are able to distinguish between the two verb classes on the basis of their argument-structure properties. Due to the incompatibility of the passive morphology with intransitives in the constructions with an overt subject both in English and Croatian, this is regarded as a poverty-of-the-stimulus effect and is taken as evidence for UG guidance in L2 acquisition. At the same time, it remains unclear what has caused the native speakers to respond in the same way as the learners. It is hoped that replicating the study on a wider sample of native speakers and with a balanced selection of verbs from each of the semantic classes along the ASH might shed some light on this issue.

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