

# What About Grammar? Comprehension and Production at the Initial Stage of L2 Acquisition

Mila Tasseva-Kurktchieva  
University of South Carolina

In the last decade the focus of generative SLA research on the acquisition of morpho-syntactic features has shifted from investigation of production of overt L2 morphology as a measure of grammatical competence to comprehension of L2 morphology (Lardiere, 1998a, b, 2000, White, 2002, White et al., 2003). The underlying assumption is that L2 comprehension and production are in asymmetric relationship with comprehension (analyzed as competence) always preceding and surpassing production. It is precisely this assumption that stands behind the very few studies that draw conclusions based on both processing modes. This paper revisits the asymmetric relationship between comprehension and production by examining the L2 acquisition of the noun phrase in Bulgarian by speakers of English. We show that in comprehension mode learners understand number agreement more than gender agreement while in production mode the same learners show reverse results. We propose an explanation in which processing for comprehension and processing for production involve reordering of the grammatical modules. While in comprehension morpho-semantics takes the lead and syntax is engaged with its most basic grammatical functions, in production morpho-syntax takes the lead leaving semantics in a secondary position.

## 1. Introduction

For years language acquisition research has operated on the assumption that the relationship between comprehension and production is an asymmetric one. Starting with the earliest theories of first and second language acquisition it was assumed that comprehension has to and always does precede production. The motivation behind this assumption is purely cognitive, after all, before learners try a new task they need to understand what they are doing. However, in the last thirty or so years there have been some papers and conference presentations leading to the opposing conclusion, that maybe at least in some cases language production can precede language comprehension (see for example (Keenan and MacWhinney, 1987, Ruder and Finch, 1987, Grimshaw and Rosen, 1990, Bloom et al., 1994, Smolensky, 1996, De Villiers et al., 2006, Hendricks and Spenader, 2006) or the papers presented at the Lisbon Workshop on Production vs. Comprehension in the Acquisition of Syntax, Universidade Nova de Lisboa, June 6-7, 2005).

We are then faced with a legitimate question: How do we explain the reversed asymmetry? Two general approaches have been taken so far. Some studies dismiss either the comprehension (Bloom et al., 1994) or the production (Grimshaw and Rosen, 1990) data. Grimshaw and Rosen (1990) for example claim that children do not always obey Principle B in comprehension. Similarly, (Bloom et al., 1994) suggest that the comprehension experiment they used did not test children's competence adequately. While this kind of "methodological flaws" explanation very often is plausible, the issue of the reversed asymmetry seems to grab more attention lately. This in turn spawns theoretical hypotheses. Here we face the milestone question: Do we want to force a disjoint grammar explanation for the phenomenon (Chapman and Miller, 1975, Chapman, 1978, Ruder and Finch, 1987) or do we look into the possibility of one grammar processing differently in the two modes (Keenan and MacWhinney, 1987, Smolensky, 1996)?

If we take the dissociative approach, one theoretical stem argues for independence of the two modes, whereby production is not dependent on comprehension (Ruder & Finch 1987). The other theoretical view argues for primacy of production over comprehension. The later studies rely greatly on experimental data gathered in heavily manipulated conditions. Here one approach impedes severely normal comprehension

and shows that comprehension without contextual support is inferior to production (Chapman and Miller, 1975, Chapman, 1978). The other approach takes the reverse path—the researchers show the superiority of production by making the production task extremely easy (Rice, 1980). Contrary to that, the associative approaches start with the assumption that both comprehension and production are handled by the same grammar. The focal point then shifts to ‘Why do they develop independently?’ Keenan and McWhinney (1987) for example propose that production and comprehension are separate processes which are not only intimately related but also involve the same basic procedures: development of a function (the abstract concept in comprehension or the intention to communicate in production), of a form, and of the mapping between form and function. In both comprehension and production modes, the function and its form develop before the relevant mapping between them. The reversed asymmetry between comprehension and production then arises from the separate and not necessarily dependent development of reception and expression mappings. However, nothing tells us when or why the development of the expression mappings is not dependent on the reception mappings or is not simultaneous with them. Smolensky (1996) offers in a way similar “separate but related” approach rooted in OT. In his view comprehension and production are separate results of computational processes that work on different input. In the case of production, the input is the underlying form. On the contrary, in comprehension the input is the adult surface form which enters the competition with other adult surface forms (but not with the underlying form as it is not available from the input). Thus, the computation in both modes produces different results. Nevertheless, nothing in principle says which underlying forms in particular will be generated and will pass through the computation producing surface forms that diverge from the target language norm.

This paper aims at further investigation of the issue of the reversed asymmetry between comprehension and production. We use the results from two experiments, an oral picture interpretation task and an oral elicited production task which focused on the initial state L2 acquisition of gender and number agreement in Bulgarian DP, to show that it is not only possible to account for the problematic data but we can also predict when and why production will precede comprehension.

## 2. The DPs

Both the native (English) and the target (Bulgarian) language in this study have a fully developed DP structure with overt determiners. In both languages the modifiers to the head noun surface in prenominal position, both languages distinguish between singular and plural. However, the two noun phrases also show dissimilarities<sup>1</sup>. In Bulgarian, all nouns come from the lexicon with assigned gender and all modifiers of the head noun agree in gender and number with the head noun<sup>2</sup> (1). In addition, Bulgarian is among the world languages that show morpho-phonological cues for gender assignment.

(1)	<b>Singular</b>		<b>Plural</b>
	a. bjal- $\emptyset$	avtomobil- $\emptyset$	d. bel- <b>i</b>
	white <sub>MascSg</sub>	car <sub>MascSg</sub>	white <sub>MascPl</sub>
	‘a white car’		‘white cars’
	b. bjal- <b>a</b>	kâšt- <b>a</b>	e. bel- <b>i</b>
	white <sub>FemSg</sub>	house <sub>FemSg</sub>	white <sub>FemPl</sub>
	‘a white house’		house <sub>FemPl</sub>
			‘white houses’
	c. bjal- <b>o</b>	cvet- <b>e</b>	f. bel- <b>i</b>
	white <sub>NeutSg</sub>	flower <sub>NeutSg</sub>	white <sub>NeutPl</sub>
	‘a white flower’		flower <sub>NeutPl</sub>
			‘white flowers’
(2)	a. star- $\emptyset$	djad- <b>o</b>	d. star- <b>i</b>
	old <sub>MASC SG</sub>	grandfather <sub>MASC SG</sub>	old <sub>MASC PL</sub>
	‘an old grandfather’		grandfather <sub>MASC PL</sub>
			‘old grandfathers’

<sup>1</sup> For space limitations only the relevant to this study features will be discussed here. For full discussion of the syntactic structures see Tasseva-Kurktchieva (2006).

<sup>2</sup> There are exceptions to this rule: the possessive clitics and some quantifiers do not agree in gender and number with the head noun (Tasseva-Kurktchieva, 2007).

b. xladna- <b>a</b>	nošt- $\emptyset$	e. xladn- <b>i</b>	nošt- <b>i</b>
cool <sub>FEMSG</sub>	night <sub>FEMSG</sub>	cool <sub>FEMPL</sub>	night <sub>FEMPL</sub>
‘a cool night’		‘cool nights’	
c. mlad- $\emptyset$	bašt- <b>a</b>	f. mlad- <b>i</b>	bašt- <b>i</b>
young <sub>MASC SG</sub>	father <sub>MASC SG</sub>	young <sub>MASC PL</sub>	father <sub>MASC PL</sub>
‘a young father’		‘young fathers’	

In the canonical case, masculine is marked by a consonant or zero inflectional morphology (1a), feminine is marked by *-a* or *-ja* (1b), and neuter is marked by *-o* or *-e* (1c) in the singular. The gender marking on both the noun and its modifiers are replaced by the plural morphology in the plural (1d-f). The canonical inflectional morpheme for masculine and feminine plural is *-i*, and for neuter is *-a/-ja*. There also are numerous non-canonical cases some of which are more productive than others. For example, a semantically masculine noun such as *djado* ‘grandfather’ (2a) has a neuter marking but triggers masculine gender agreement within the DP. The same is true for the semantically masculine noun with feminine ending *bašta* ‘father’ (2c), as well as for the feminine noun *nošt* ‘night’ which has the canonical masculine ending but triggers feminine gender agreement (2b). Note, however, that in all non-canonical cases both the gender paradigm in singular and the number paradigm in plural of the adjectives are leveled and they only take the canonical inflections.

The main difference in the syntactic structure of the DPs in the native and target language of our subjects is the (non)existence of a Gen(der)P projection between the lowest lexical NP and the higher functional Num(ber)P (Tasseva-Kurktchieva, 2006). For similar proposals on the noun phrase structure of Romance languages see (Piccolo, 1991, Bernstein, 1993, Ritter, 1993, Bernstein, 1997). As we will see in the following section, we can use the lexical (on the noun) or syntactic (on the nominal modifiers) realization of this feature as a predictor of its importance to processing for comprehension or production respectively.

### 3. The Prototypical Features

We begin with an assumption which has its roots in the early work by (Schwartz and Sprouse, 1994, 1996, White, 1996, Lardiere, 1998a, 2000, White, 2003) and many others in the past two decades—that first and second language acquisition are more similar to than different from one another in the sense that both involve access to UG and its full inventory of functional projections from the onset of language acquisition. My second assumption is that grammatical transfer from the first to the second language plays a significant but not crucial role in L2 acquisition. Since transfer in this view does not play a crucial role, there must be another explanation as to what governs the acquisition of the functional layer in a second language. Unlike the early accounts of L1 transfer where a crucial factor was the resetting the parameter from weak to strong (Schwartz and Sprouse, 1994, Sprouse and Schwartz, 1998) or more recent explanations in which the main factor is the *uninterpretability* of the feature (Hawkins and Chan, 1997, Hawkins, 2005), we suggest that a more fundamental feature distinction can accommodate both the restructuring of the interlanguage grammar and the reversed asymmetry between comprehension and production—the distinction between intrinsic and extrinsic features.

In a way, the feature distinction that stands behind the current approach is more prototypical than the previous feature dichotomies such as interpretable–uninterpretable, head–dependent, structural–inherent case features, and strong–weak features. The *intrinsic* features are an inseparable part of both the lexical conceptual structure and the morpho-phonological form of any vocabulary item. They are “unpredictable, idiosyncratic grammatical properties of lexical items” (van de Craats et al., 2000). Examples of such features are the gender marking on the noun in Slavic, Romance and Germanic, the possessive clitics in languages that have them, and the verbal aspect in Slavic and Arabic. [Gender], for example, is an occurrence of intrinsic features on the noun in Bulgarian. On the morphological level, the noun cannot surface without the gender marker. On the lexical–conceptual level gender is arbitrary, unpredictable and idiosyncratic for all inanimate nouns. It does not bring about new information to the concept denoted by the noun but rather restricts some of the grammatical functions this noun can represent.

On the other hand, the *extrinsic* features are those that can be predicted from other properties of the lexical entry, that bring semantic content to their carrier, and that are morphologically more stable (i.e.,

grammaticalized). Thus, [number] is an extrinsic feature derived from the categorical status of the lexical item, e.g. [+N, -V] on nouns. The same feature also makes the semantically notable distinction between a single entity and multiple occurrences of the same entity. Following the same logic, [gender] is an intrinsic feature on the noun but an extrinsic feature on the adjective. The adjective does not come from the lexicon with the gender and number features in its lexical conceptual structure. Those features are added later on by virtue of it being a [+N, +V] category that needs to come into a syntactic agreement with the head noun. In a way the [gender] feature on the adjective also has a semantic charge as it distinguishes for example the property of being of a red color relevant to a feminine object rather than to a masculine or neuter object. In addition, extrinsic features are morphologically more stable than the intrinsic ones (recall the discussion of (1)-(2) above).

The intrinsic and extrinsic features interact differently with the different modules of grammar and thus play different role in the production and comprehension modes. The intrinsic features are crucial to the morphological and syntactic level. The lexical items cannot enter the syntactic derivation without the appropriate intrinsic features as those come with the lexical item. Conversely, semantics and pragmatics take the primary role in the comprehension mode. This invokes saliency of grammatical features as a crucial factor in comprehension. Intrinsic features are not salient by default as they are arbitrary and unpredictable. However, extrinsic features are salient as they add grammatical and semantic content and have a more or less stable morphological form. Because of the extrinsic nature of the feature [number] for example, the learner will notice the lexical carrier of this feature much more than any of the intrinsic features. To the contrary, because of the intrinsic nature of the feature [gender], the learner will be forced to utilize it in production mode to fulfill the requirements of the relevant functional categories.

This approach gives us the ability to predict when and why production will precede comprehension. Because the intrinsic features are crucial to the morpho-syntactic level but the extrinsic features are crucial to the semantic-pragmatic level, the intrinsic features (in our case [gender]) will be produced more than the extrinsic features (in the case of this study [number]). To the contrary, the extrinsic feature [number] will be comprehended at a higher rate than the intrinsic feature [gender].

## **4. Data Collection and Procedures**

### *4.1. The Subjects*

The subjects in this study were US Peace Corps volunteers—in-training in Bulgaria at that time of data collection. All of them were native speakers of American English. All of them were exposed to an intensive 11 week long language training based on the Communicative Approach. At Peace Corps-Bulgaria the Communicative Approach is enforced in its strongest form. No translation or grammatical instruction is used in the classroom. In addition, the participants lived in groups of 4-6 people in small towns, with Bulgarian host families who did not speak English. AT the time of the first testing the subjects were exposed to about 250 Bulgarian vocabulary items in the classroom. The study involved 31 subjects, 16 female and 15 male. Out of those 31 participants, 30 subjects, 16 female and 14 male, completed all four tests during the Test 1. One male subject started the session but in the middle of the first task decided that he would not like to continue. His tests were discarded altogether. Test 2 involved 26 subjects, 14 female and 12 male, who completed all four tests. One of the male subjects completed only the Test 2 due to illness during the Test 1. Overall, 25 subjects, 14 female and 11 male, completed both tasks during both test sessions.

### *4.2. The Tasks*

The subjects were tested twice—at the end of the fourth week of language training, as well as at the end of the Pre-Service training (after 11 weeks of exposure to the target language). Exactly the same test tools in exactly the same order (Picture Interpretation task followed by Elicited Production task) were used during both tests. For the tasks we used a pool of concrete nouns with a canonical gender marker and a pool of descriptive adjectives. All nouns and adjectives in the vocabulary pool were among the words presented and used in the classroom. No head nouns were repeated within tasks but the same head nouns were used in both tasks. The testing tool included a Picture Interpretation task following (White et al., 2003) and an Elicited Production task that targeted the comprehension and production of gender and number agreement

in the TL. The participants were provided with a vocabulary list which included all head nouns in singular as well as all descriptive adjectives in their masculine singular form which is the default dictionary form.

The Picture Interpretation task included 30 picture-sentence pairs (15 targeted gender agreement, 15 targeted number agreement) using the N-drop phenomenon. The sentences were counterbalanced in a 3 (genders) x 2 (numbers) design. Each statement was accompanied by 3 pictures that represented possible definite object DPs. The subjects heard the statement while looking at the three pictures. They had to choose the one picture that would fill the gap of the omitted direct object and name the picture by its number.

The Elicited Production task used the exact same head nouns as the Picture Interpretation Task. It included 30 statements followed by a question (15 targeted gender agreement and 15 targeted number agreement). The sentences were counterbalanced in a 3 (genders) x 2 (numbers) design. Each statement was followed by a question which forced the subjects to make a choice between two similar definite object DPs. Each statement was accompanied by two pictures depicting the same direct object DP in different modifications (e.g., red towels vs. blue towels). To ensure that knowledge of the vocabulary is not an interfering condition the questions were asked in English. In Addition, each pair of pictures had the head noun written in Bulgarian in the top right corner of the image. Neither task was timed and the participants were aware that they could respond to the Elicited Production task with just the object DP rather than a full sentence.

## 5. Results and Discussion

We used standard coding procedures for the Picture Interpretation task—1 point was given to each correct answer and 0 points were given to each incorrect answer. However, the Elicited Production task posed more coding problems. As noted in the literature, language production doesn't necessarily reflect grammatical knowledge. For example, the Missing Surface Inflection Hypothesis (Prévost and White, 1999, 2000) suggests that although the L2 grammar is fully capable of handling the syntactic structure of the target language in both comprehension and production, it is the mapping between morphological form and syntactic structure that suffers from some impairment. If this were the case, then we need to ensure that any attempt to mark gender or number on the modifiers of the noun is taken into account. Thus, the data for the Elicited Production Task was coded twice—as *correct* gender/number agreement, and as *attempts* at gender/number agreement. Under the former, a score of 1 was given only to the cases which exemplified target-like gender/number agreement. Under the latter, any attempt to mark overtly neuter or feminine gender on the adjective modifying a neuter or feminine head noun was given 1 point. As masculine is the default gender in Bulgarian, only the correct masculine agreement on the modifiers and the head noun was given a score of 1 for either *correct* or *attempts*. In addition, in plural any attempt to mark plurality (e.g., with a morphologically incorrect plural marker in Bulgarian (3a), English (3b) or another language (3c) on the modifiers of the noun was given 1 for attempt and 0 points for correct.

- (3) a. novi legli (novi legla)  
       new<sub>PL</sub> bed<sub>PL</sub>  
       'new beds'
- b. golemisestras (golemi sestri)  
       big<sub>PL</sub> sister<sub>PL</sub>  
       'big sisters'
- c. sinen čaš... čaš.. en... čašen (sini čaši)  
       blue<sub>PL</sub> glass glass<sub>PL</sub> glass<sub>PL</sub>  
       'blue glasses'

The results from the Picture Interpretation Task (Figure 1) show that the subjects understand number agreement in slightly above 70% of the cases but understand gender agreement in only about 45% of the cases. T-tests run on the means for gender and number on Test 1 and Test 2 separately revealed significant differences ( $t = 11.096$ ,  $df = 29$ ,  $p < .0001$  for Test 1; and  $t = 5.609$ ,  $df = 25$ ,  $p < .0001$  for Test 2) with comprehension of number agreement consistently surpassing comprehension of gender agreement. We

conclude that the participants understood number agreement better than the gender agreement, in both Test 1 and Test 2.

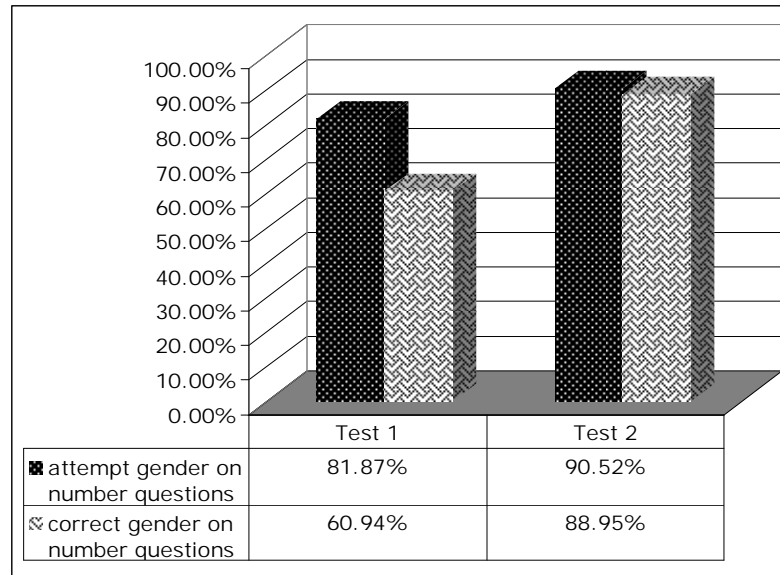


Figure 1. Results from the Picture Interpretation Task, Test 1 and Test 2.

In addition, a T-test on the means for gender (Test 1 vs. Test 2) and number (Test 1 vs. Test 2) revealed that there is no significant improvement between tests on either feature ( $t = 1.641$ ,  $df = 24$ ,  $p < .1$  for gender, and  $t = .243$ ,  $df = 24$ ,  $p < .8$  for number). The results are also confirmed by non-parametric Spearman's *rho* correlation tests ( $r = .075$ ,  $p < .722$  for the first test, and  $r = .086$ ,  $p < .681$  for the second test). In fact, both the standard variation and the range have increased between the two tests, showing greater uncertainty in the recognition of the grammatical features under investigation.

The results from the comprehension task parallel those in White et al. (2003). Note here that the design of the task was borrowed from White et al.'s study, so the learners of L2 Spanish in White et al. and of L2 Bulgarian in this study were tested using the same instrument. In White et al.'s study the native speakers of both English and French consistently perform better on the understanding of number agreement than on the understanding of gender agreement in L2 Spanish. Recall also that Spanish does not lose the gender agreement in the plural. The authors show that the discrepancy is the most obvious (and statistically significant) for the least advanced L1 English and L1 French learners. Even more so, the L1 English group in their study shows a larger distance between the results for number agreement and gender agreement. This picture changes over proficiency levels with the higher levels being virtually non-distinguishable from the native speaker controls. Unfortunately, White et al. (2003) do not present production data and full comparison between their study and the current one is not possible. Nevertheless, taking the results from our study, we conclude that the subjects behaved as we expected them with respect to the comprehension task. Based on the prototypical distinction between intrinsic and extrinsic features and their interactions with the modules of grammar we predicted that the extrinsic feature number will be comprehended at a higher and more stable rate than the intrinsic feature gender. This in fact is the case; thus, we conclude that the first part of our hypothesis was confirmed.

The Elicited Production task revealed that the subjects of our study produced gender agreement at much higher and more stable rate than number agreement. Consider Figure 2 which shows the group means (in percentage) for the *attempts* and *correct* answers on gender and number agreement for both tests.

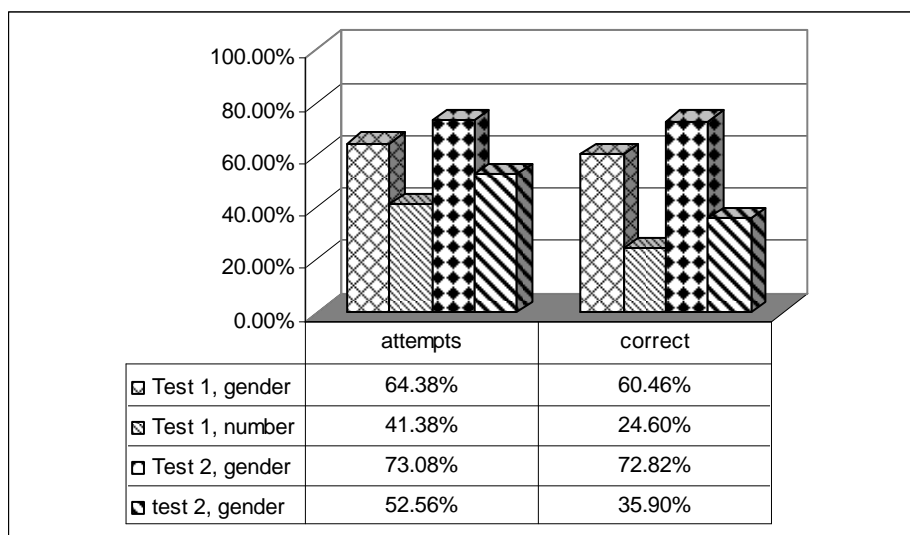


Figure 2. Results from the Elicited Production Task, Test 1 and Test 2.

In this case the subjects produced *correct* gender agreement in about 60% of the cases in Test 1 (73% of the cases in Test 2) but they only produced *correct* number agreement in 25% of the cases in Test 1 (36% of the cases in Test 2). The picture is exactly the same if look at the *attempts* on gender and number agreement. For gender, the participants attempted to produce target-like agreement in 64% of the cases in Test 1 (73% of the cases in Test 2) but for number they attempted to produce agreement in only 41% of the cases in Test 1 (53% of the cases in Test 2). Again, the difference between the production of gender and number agreement is statistically significant within tests ( $t = 3.533$ ,  $df = 28$ ,  $p < .001$  for Test 1, and  $t = 2.309$ ,  $df = 28$ ,  $p < .05$  for Test 2) showing that gender agreement consistently outperforms number agreement in production mode. Unlike the production task, the comprehension task shows that there is statistically significant improvement between tests on both features (for number:  $t = 2.666$ ,  $df = 23$ ,  $p < .01$  attempts,  $t = 2.692$ ,  $df = 23$ ,  $p < .01$  correct; for gender:  $t = 2.66$ ,  $df = 23$ ,  $p < .01$  attempts,  $t = 3.908$ ,  $df = 23$ ,  $p < .01$  correct).

Additionally, as Figure 2 shows (and the statistics of difference confirm), the margin of difference between attempted and correct production of gender agreement is much lower than the relevant numbers for number agreement. For example, compare columns 1 and 5 as well as 3 and 7 above which show the attempted and correct production of gender agreement for tests 1 and 2 respectively. To see if there is a developmental pattern between the two tests, additional T-tests were run on the differences between correct answers and attempts for each of the grammatical features under consideration. A statistically significant distinction was found for the answers on gender agreement ( $t = 3.205$ ,  $p < .01$ ) but not for number agreement ( $t = .417$ ,  $p < .68$ ). In other words, the gap between the uncertainty in the production of the morpho-phonological form and the target-like production is not only smaller on both tests for gender than for number, but also it is closing faster. During Test 2 96.68% of all produced gender agreement was target-like, showing that the acquisition of morphology goes hand in hand with the acquisition of syntax. In conclusion, once again we see evidence that the gender category is more robustly represented and more stable in the production data.

Even more interesting is the fact that the subjects of this study produced gender agreement in the cases where they failed to produce number agreement (Figure 3). Recall that 15 questions in the production task targeted number agreement. Recall also that in Bulgarian nouns together with their modifiers lose the gender distinction in the plural. In other words, the fact that the subjects in our study failed to produce number agreement in the questions targeting number is not a reflex of the fact that the number morpheme is stacked on the gender morpheme. Rather, something forces the learners to produce the gender agreement in the cases where they fail to produce the number agreement.

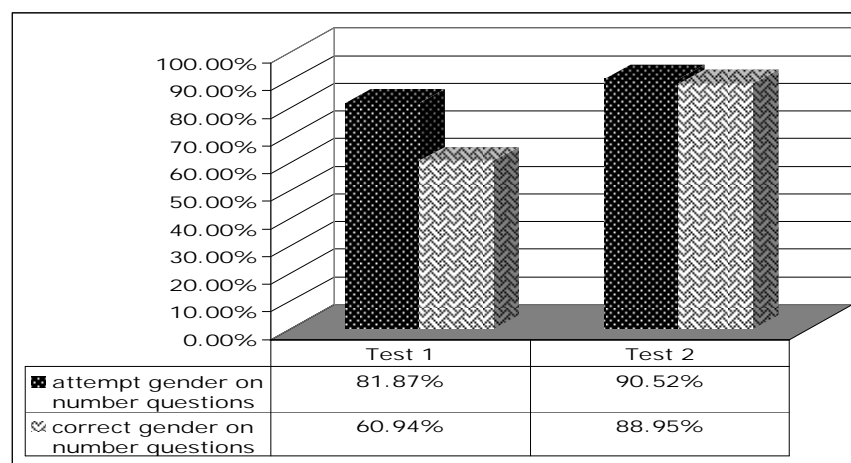


Figure 3. *Attempts* and *correct* gender agreement on test items targeting production of number agreement.

All in all, the data from this study support a view of L2 acquisition under which the L2 learner has access to UG. The participants in this study, after only 4 weeks of exposure to the target language, were able to utilize in native-like style their knowledge of the syntactic structure of the second language. The functional categories under investigation were available to the learners as indicated by the very high percentage of comprehension and production of both gender and number. Thus, we conclude that adult L2 acquisition is more similar than distant from child L1 acquisition.

Furthermore, the relatively high correct scores on both the comprehension and production task also speak to the fact that the early interlanguage is handled by one and the same grammar for comprehension and production. If comprehension and production were developing independently, with no real connection between them, then we would expect one to surpass the other regardless of the grammatical feature under investigation. That was not the case in our study. We found that although there was a reversed asymmetry related to the acquisition of gender and number agreement in Bulgarian, both categories were present at a stable rate in both comprehension and production modes.

Finally, the results from this study support the initial hypothesis, namely that beginner L2 learners will comprehend the extrinsic features which relate to the pragmatic-semantic module more than the intrinsic features which relay properties of the morpho-syntactic module. We also hypothesized, and the results confirmed, that the learners will be forced to produce the intrinsic features as they are the backbone of the morpho-syntactic module but not so much the extrinsic features which in production add non-crucial semantic content.

## References

- Bernstein, Judy. 1993. Topics in the syntax of nominal structure across Romance, CUNY.
- Bernstein, Judy. 1997. Demonstratives and reinforcers in Romance and Germanic languages. *Lingua* 102:87-113.
- Bloom, P., Barss, A., Nicol, J., and Conway, L. 1994. Children's knowledge of binding and coreference: Evidence from spontaneous speech. *Language* 70:53-71.
- Chapman, R., and Miller, J. 1975. Word order in early two and three word utterances: Does production precede comprehension? *Journal of Speech and Hearing Research* 18:355-371.
- Chapman, R. 1978. Comprehension strategies in children. In *Speech and language in the laboratory, school, and clinic*, eds. J. F. Kavanagh and W. Strange, 308-317. Cambridge, MA: M.I.T. Press.
- De Villiers, Jill, Cahillane, Jacqueline, and Altreuter, Emily. 2006. What can production reveal about Principle B? Paper presented at *Generative Approaches to Language Acquisition (GALANA) 2004*, University of Hawai'i at Manoa.
- Grimshaw, Jane, and Rosen, S. T. 1990. Knowledge and obedience: The developmental status of the binding theory. *Linguistic Inquiry* 21:187-222.
- Hawkins, Roger, and Chan, Cecilia Yuet-hung. 1997. The partial availability of Universal Grammar in second language acquisition: The 'failed functional features hypothesis'. *Second Language Research* 13:187-226.



- Hawkins, Roger. 2005. Revisiting *wh*-movement: The availability of uninterpretable [wh] feature in interlanguage grammars. In *Proceedings of the 7th Generative Approaches to Second Language Acquisition Conference (GASLA 2004)*, eds. Laurent Deydtspotter, Rex Sprouse and Audrey Liljestrand, 124-137. Somerville, MA: Cascadilla Proceedings Project.
- Hendricks, Petra, and Spenader, Jennifer. 2006. When production precedes comprehension: An optimization approach to the acquisition of pronouns. *Language Acquisition* 13:319-348.
- Keenan, Janice M., and MacWhinney, Brian. 1987. Understanding the relationship between comprehension and production. In *Psycholinguistic Models of Production*, eds. Hans W. Dechert and Manfred Raupach, 149-155. Norwood, NJ: Ablex Publishing Co.
- Lardiere, Donna. 1998a. Dissociating syntax from morphology in a divergent L2 end-state grammar. *Second Language Research* 14:359-375.
- Lardiere, Donna. 1998b. Case and tense in the 'fossilized' steady state. *Second Language Research* 14:1-26.
- Lardiere, Donna. 2000. Mapping features to forms in second language acquisition. In *Second language acquisition and linguistic theory*, ed. J. Archibald, 102-129. Oxford: Blackwell.
- Picallo, M. Carme. 1991. Nominals and nominalizations in Catalan. *Probus* 3:279-316.
- Prévost, Philippe, and White, Lydia. 1999. Finiteness and variability in SLA: More evidence for missing surface inflection. *BUCLD 23 Proceedings*:575-586.
- Prévost, Philippe, and White, Lydia. 2000. Missing surface inflection or impairment in second language acquisition? Evidence from tense and agreement [Apr]. *Second Language Research* 16:103-133.
- Ritter, Elizabeth. 1993. Where's gender? *Linguistic Inquiry* 24:795-803.
- Ruder, Kenneth F., and Finch, Amy. 1987. Toward a cognitive-based model of language production. In *Psycholinguistic models of production*, eds. Hans W. Dechert and Manfred Raupach, 109-138. Westport, CT: Ablex Publishing Co.
- Schwartz, Bonnie, and Sprouse, Rex. 1994. Word order and nominative case in non-native language acquisition: A longitudinal study of (L1 Turkish) German interlanguage. In *Language acquisition studies in generative grammar*, eds. Teun Hoekstra and Bonnie Schwartz, 317-367. Amsterdam: John Benjamins Publishing Co.
- Schwartz, Bonnie, and Sprouse, Rex. 1996. L2 cognitive state and the full transfer/full access model. *Second Language Research* 12:40-72.
- Smolensky, Paul. 1996. On the comprehension/production dilemma in child language. *Linguistic Inquiry* 27:720-731.
- Sprouse, Rex, and Schwartz, Bonnie. 1998. In defense of full transfer in German-English and French-English interlanguage: Comparative L2 acquisition research. *BUCLD 22 Proceedings*:727-736.
- Tasseva-Kurktchieva, Mila. 2006. Continuity Hypotheses Revisited: English L2 Acquisition of Bulgarian Noun Phrases, Linguistics, University of South Carolina: Ph.D. dissertation.
- Tasseva-Kurktchieva, Mila. 2007. On the extended noun phrase of Bulgarian. Ms.
- van de Craats, Ineke, Corver, Norbert, and van Hout, Roeland. 2000. Conservation of grammatical knowledge: On the acquisition of possessive noun phrases by Turkish and Moroccan learners of Dutch. *Linguistics* 38:221-314.
- White, Lydia. 1996. Clitics in L2 French. In *Generative perspectives on language acquisition*, ed. Harald Clahsen, 335-368. Amsterdam: Benjamins.
- White, Lydia. 2002. Morphological variability in endstate L2 grammars: The question of L1 influence. *BUCLD 26 Proceedings* 26:758-768.
- White, Lydia. 2003. *Second Language Acquisition and Universal Grammar*. Cambridge: Cambridge University Press.
- White, Lydia, Valenzuela, Elena, Kozłowska Macgregor, Martyna, and Leung, Yan Kit Ingrid. 2003. Gender agreement in L2 Spanish: Evidence against Failed Features [Mar]. *McGill Working Papers in Linguistics / Cahiers linguistiques de McGill* 17:153-182.