

V-Raising and Grammar Competition in Korean: Evidence from Negation and Quantifier Scope

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In a head-final language, V-raising is hard to detect since there is no evidence from the string to support a raising analysis. If the language has a cliticlike negation that associates with the verb in syntax, then scope facts concerning negation and a quantified object NP could provide evidence regarding the height of the verb. Even so, such facts are rare, especially in the input to children, and so we might expect that not all speakers exposed to a head-final language acquire the same grammar as far as V-raising is concerned. Here, we present evidence supporting this expectation. Using experimental data concerning the scope of quantified NPs and negation in Korean, elicited from both adults and 4-year-old children, we show that there are two populations of Korean speakers: one with V-raising and one without.

Keywords: V-raising, negation, quantifier, scope, grammar competition, poverty of the stimulus, head-final language, Korean

1 Introduction

The argument from the poverty of the stimulus has maintained a central place in the development of generative grammar at least since Chomsky 1965. The argument runs like this. There is a piece of grammatical knowledge *G* that can be attributed to adult speakers of a language. Examination of the input to the child shows that the ambient language (i.e., the language of the community that the learner is exposed to) does not uniquely determine *G*. That is, the primary linguistic data that the child is exposed to are compatible with a range of hypotheses that includes (but does not require) *G*. Given that adults know *G* and that *G* represents only one point in a range of hypotheses compatible with experience, it follows that *G* must be determined innately. In other words, all

Previous versions of this article have been presented at the 38th regional meeting of the Chicago Linguistic Society; the 13th Japanese/Korean Linguistics Conference; the Linguistic Society of America workshop “UG Principles and Input Data” at the University of Michigan, East Lansing, in 2003; the University of Calgary linguistics colloquium in 2003; the University of British Columbia linguistics colloquium in 2004; and the workshop “Construction of Meaning” at Stanford University in 2005. We have benefited at various stages from the critical comments and questions of the audiences at these presentations. We also thank the two anonymous *LI* reviewers for their helpful comments, and Mee-Sook Kim for assistance with stimulus design and data collection in the initial stage of the research reported here. Our work was supported in part by SSHRC Standard Research Grant 410-2003-0544 to Han and NSF grant BCS-0418309 to Lidz.

Table 1

Judgments: Subject-oriented adverbial QP

	Suh 1989, H.-H. Park 1998		Kim 2000a	
	'all>neg'	'neg>all'	'all>neg'	'neg>all'
Short neg	yes	no	yes	yes
Long neg	yes	yes	yes	yes

(47) *Subject-oriented adverbial QP*

- a. Ta an o-ass-ta.
all NEG come-PST-DECL
'All didn't come.' (short negation)
- b. Ta o-ci ani ha-yess-ta.
all come-CI NEG do-PST-DECL
'All didn't come.' (long negation)

Second, using examples with an object-oriented adverbial QP as in (48), Cho (1975) reports that while sentences with long negation are ambiguous between the 'two>neg' and 'neg>two' readings, sentences with short negation have only the 'two>neg' reading. But Song (1982) reports that sentences with long and short negation are ambiguous between the 'two>neg' and 'neg>two' readings. These judgments are summarized in table 2.

(48) *Object-oriented adverbial QP*

- a. John-i sakwa-lul twu kay an mek-ess-ta.
John-NOM apple-ACC two piece NEG eat-PST-DECL
'John didn't eat two apples.' (short negation)
- b. John-i sakwa-lul twu kay mek-ci ani ha-yess-ta.
John-NOM apple-ACC two piece eat-CI NEG do-PST-DECL
'John didn't eat two apples.' (long negation)

Third, using examples with a universal quantifier in object position as in (49), Hagstrom (2000) and Suh (1989) report that whereas sentences with short negation have only the 'every>neg' reading, sentences with long negation have both the 'every>neg' and 'neg>every' read-

Table 2

Judgments: Object-oriented adverbial QP

	Cho 1975		Song 1982	
	'two>neg'	'neg>two'	'two>neg'	'neg>two'
Short neg	yes	no	yes	yes
Long neg	yes	yes	yes	yes

Table 3

Judgments: Universal quantifier in object position

	Suh 1989, Hagstrom 2000		Baek 1998, Kim 2000a	
	‘every>neg’	‘neg>every’	‘every>neg’	‘neg>every’
Short neg	yes	no	yes	yes
Long neg	yes	yes	yes	yes

ings. But Baek (1998) and Kim (2000a) report that sentences with either short or long negation allow both the ‘every>neg’ and ‘neg>every’ readings. Their judgments are summarized in table 3.

(49) *Universal quantifier in object position*

- a. John-i motun chayk-ul an ilk-ess ta.
 John-NOM every book-ACC NEG read-PST-DECL
 ‘John didn’t read every book.’ (short negation)
- b. John-i motun chayk-ul ilk-ci ani ha-yess-ta.
 John-NOM every book-ACC read-CI NEG do-PST-DECL
 ‘John didn’t read every book.’ (long negation)

Finally, using examples with a universal quantifier in subject position as in (50), Hagstrom (2000) reports that sentences with long negation are ambiguous between ‘every>neg’ and ‘neg>every’ readings, but sentences with short negation have only the ‘every>neg’ reading. Baek (1998) and Kim (2000a) report that sentences with short negation as well as those with long negation are ambiguous. Yet another pattern is reported by Suh (1989): namely, that both sentences with short negation and sentences with long negation can have only the ‘every>neg’ reading. These judgments are summarized in table 4.

(50) *Universal quantifier in subject position*

- a. Motun salam-i yeki-e an o-ass-ta.
 every person-NOM here-to NEG come-PST-DECL
 ‘Every person didn’t come here.’ (short negation)
- b. Motun salam-i yeki-e o-ci ani ha-yess-ta.
 every person-NOM here-to come-CI NEG do-PST-DECL
 ‘Every person didn’t come here.’ (long negation)

Table 4

Judgments: Universal quantifier in subject position

	Hagstrom 2000		Baek 1998, Kim 2000a		Suh 1989	
	‘every>neg’	‘neg>every’	‘every>neg’	‘neg>every’	‘every>neg’	‘neg>every’
Short neg	yes	no	yes	yes	yes	no
Long neg	yes	yes	yes	yes	yes	no

Given the conflicting scope judgments found in the literature on Korean, one would be hard pressed to draw any firm conclusions about V-raising. Why is there such disagreement on these facts? One possibility is that the disagreement arises from a methodological problem: perhaps some speakers are better able than others to imagine the contexts that make certain readings available; or perhaps some speakers are influenced by their knowledge of logic or of other languages in making grammaticality judgments. Another possibility is that the variation reflects a genuine fact about Korean speakers' grammars: specifically, it is possible that different speakers have different grammars with respect to V-movement, leading in turn to different scope judgments in sentences involving the relevant scope interactions. In the next section, we address this issue by controlling the context of presentation so as to yield what we believe are judgments that clearly illustrate speakers' grammars.

4 Experimental Investigations

So far, we have shown that even though scope interactions between negation and quantified argument NPs should provide a clear test for V-raising, conflicting scope judgments reported in the literature make it impossible for us to draw any firm conclusions. Conceivably, this disagreement in judgments was caused by the method used to elicit judgments from the native speakers; that is, insufficient discourse context may have limited the availability of possible readings for some speakers. To avoid this problem, we obtained scope judgments from speakers of Korean using the truth-value judgment task (TVJT) (Crain and Thornton 1998). Because this method reduces the role of performance factors in accessing speakers' intuitions and holds discourse context constant (Crain and Thornton 1998), experimentation using this method should provide data that accurately reflect the participants' grammars.

The TVJT involves two experimenters. One experimenter acts out short scenarios in front of the participant using small toys and props. The other experimenter plays the role of a puppet (e.g., Mickey Mouse) who watches the scenario alongside the participant. At the end of the story, the puppet makes a statement about what he thinks happened in the story. The participant's task is to determine whether the puppet told the truth or not.

For instance, to test how speakers of English would interpret a negative sentence with a quantified subject such as *Every horse didn't jump over the fence*, an experimenter enacts a scenario in which two toy horses jump over a toy fence, but a third toy horse does not. In this situation, *Every horse didn't jump over the fence* is true on the interpretation where negation takes scope over the subject QP ('not>every') but false if the subject QP is interpreted outside the scope of negation ('every>not'). A detailed context for this scenario is given in (51), and a screen shot of the resulting scenario is shown in figure 1.

(51) *Example context*

One day three horses were playing in the field and they decided to jump over some stuff. There was a house and a fence in the yard. They decided that the house was too high to jump over and so they decided to try jumping over the fence. Two of them were very excited about jumping over the fence but the third wasn't sure whether he

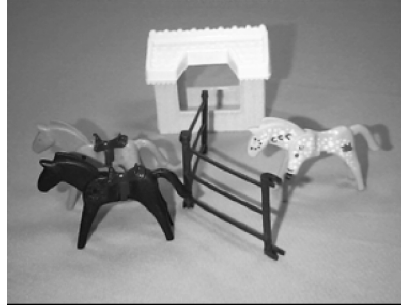


Figure 1

Screen shot of a scenario

could. The first one jumped over the fence. “Hey, that was fun,” he said. “You try it.” Then the second horse also jumped over the fence. The third one came up to fence and considered jumping but he said that he had hurt his foot the day before and so decided not to jump.

Another experimenter holds a Mickey Mouse puppet, acting as if he is watching the enacted scenario. Mickey, who is asked to describe what happened, then makes the following statement:

(52) *Puppet statement*

Hmm. That was an interesting story about horses playing in the field. I can tell you something about the story. *Every horse didn't jump over the fence.* Am I right?

The participant's task is to determine whether Mickey's statement is true or false. If a participant judges the statement to be true, then we can conclude that the participant's grammar makes available the reading on which negation takes scope over the quantified NP. If a participant judges the statement to be false, then we can conclude that the participant's grammar makes only the narrow scope reading of negation available and does not generate the other reading. An important part of the reasoning behind this method is that participants will always assent when the experimenter says at least one thing that is true (Crain and Thornton 1998). In other words, the method relies on listeners' giving speakers the benefit of the doubt. Hence, if anything that the speaker says is true, then participants respond by saying that the speaker did in fact speak truthfully. Thus, when we present a statement that is true on one reading but false on another and the participant rejects the statement as false, we conclude that the other reading is not available.

The TVJT method provides rich discourse contexts, eliminating the role of performance factors and controlling for discourse factors in participants' responses. The method has been shown to work in several languages (e.g., Lidz and Musolino 2002, Papafragou and Musolino 2003) and to work both with adults and with children as young as 4 (Crain and McKee 1986, Crain and Thornton 1998, Lidz and Musolino 2002).

Table 5

Design of experiment with adults

$2 \times 2 \times 2$ design:	negation type (short vs. long)	×	QP position (subject vs. object)	×	scope (neg>∀ vs. ∀>neg)
Grammatical function	Scope		Short negation		Long negation
Subject QP	neg>∀		$n = 20$		$n = 20$
	∀>neg		$n = 20$		$n = 20$
Object QP	neg>∀		$n = 20$		$n = 20$
	∀>neg		$n = 20$		$n = 20$

(53) *Subject QPs*

- a. Motun mal-i wultali-lul num-ci ani ha-yess-ta.
 every horse-NOM fence-ACC jump.OVER-CI NEG do-PST-DECL
 ‘Every horse didn’t jump over the fence.’ (long negation)
- b. Motun mal-i wultali-lul an num-ess-ta.
 every horse-NOM fence-ACC NEG jump.OVER-PST-DECL
 ‘Every horse didn’t jump over the fence.’ (short negation)

(54) *Object QPs*

- a. Khwukhi Monste-ka motun khwukhi-lul mek-ci ani ha-yess-ta.
 Cookie Monster-NOM every cookie-ACC eat-CI NEG do-PST-DECL
 ‘Cookie Monster didn’t eat every cookie.’ (long negation)
- b. Khwukhi Monste-ka motun khwukhi-lul an mek-ess-ta.
 Cookie Monster-NOM every cookie-ACC NEG eat-PST-DECL
 ‘Cookie Monster didn’t eat every cookie.’ (short negation)

In the scenario that tests the neg>∀ reading on the basis of (53a) and (53b), three horses are playing together. Two horses jump over the fence, but the third one doesn’t. At the end of the story, Mickey Mouse says in Korean, “I know what happened,” and states either (53a) or (53b), depending on what condition is being tested. In the scenario that tests the ∀>neg reading, none of the horses jump over the fence. Mickey Mouse then describes the situation using either (53a) or (53b).¹⁵

In the scenario that tests the neg>∀ reading on the basis of (54a) and (54b), Cookie Monster is given three cookies but only eats two of them (i.e., not all of them). Mickey Mouse then

¹⁵ The experimenter was instructed to say the test sentence in a way that made it true, thus controlling for any potentially contaminating effects of prosody. For adult participants, all the test sentences were presented in prerecorded video clips, as a further measure to keep the effects of intonation, if any, constant. In light of the findings reported by McMahon, Lidz, and Pierrehumbert (2004), however, we do not think it likely that the results obtained from our experiments were influenced by any prosodic factors. These authors show that in English, speakers do not reliably produce intonational or prosodic cues to scopal interpretation in the kinds of sentences similar in form to our test sentences, suggesting that intonation is not a factor in guiding either children’s or adults’ behavior in tasks similar to the ones in our experiments.

Table 6
Mean percentage acceptances by condition: Adults

Grammatical function	Scope	Short negation	Long negation
Subject QP	neg>∀	4	19
	∀>neg	100	100
Object QP	neg>∀	37	46
	∀>neg	98	98

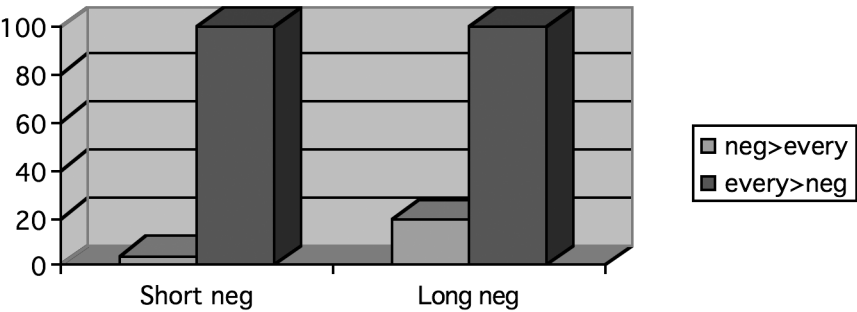


Figure 2
Mean percentage acceptances in subject condition: Adults

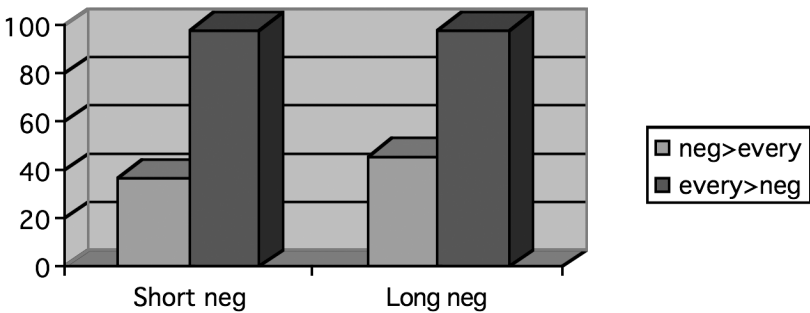


Figure 3
Mean percentage acceptances in object condition: Adults

were on a subject QP. Importantly, whereas the acceptance rate on the $\text{neg}>\forall$ reading was higher in object conditions than in subject conditions, over 50% of the participants still did not accept this interpretation in object conditions.¹⁶

¹⁶ Participants were near perfect on filler items, indicating that they had no difficulty with the task or with negation or universal quantification in isolation.

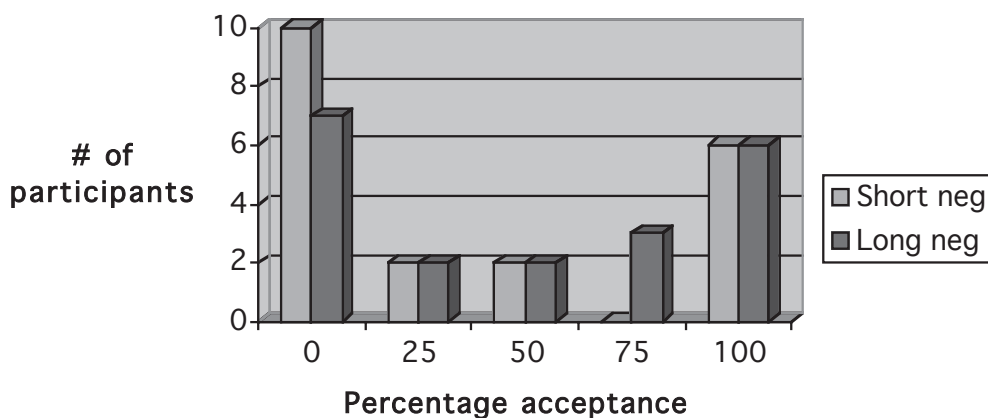


Figure 4

Number of participants accepting $\text{neg} > \text{V}$ in object condition: Adults

This last result is of particular interest. Figure 4 divides the participants into groups based on their rate of acceptance of the sentences presented in the $\text{neg} > \text{V}$ context in object conditions. As the figure shows, most participants either accepted all of these items or rejected all of them, indicating that our population is divided into two groups: speakers who accept wide scope negation relative to an object QP and those who do not.

4.1.6 Discussion Recall our predictions stated in (46), repeated here.

(55) *Predictions*

- a. Subject QPs will take scope over Neg, regardless of negation type.¹⁷
- b. In the case of short negation,
 - i. if there is V-raising, then $\text{Neg} + \text{V}$ will occur in IP and so Neg will take scope over object QPs;
 - ii. if there is no V-raising, then $\text{Neg} + \text{V}$ will occur inside VP and object QPs will take scope over Neg.

Prediction (55a) is borne out by our findings. Participants uniformly accepted the $\text{V} > \text{neg}$ reading for subject QPs, regardless of negation type. Importantly, our data indicate that any variability found among linguists regarding the interpretation of subject QPs with respect to negation in

¹⁷ A reviewer asks how we can explain the conflicting judgments reported in the literature for the examples in (47) and (50), given the prediction in (55a). The conflicting judgments reported for (47) can still receive a structural explanation. The examples in (47) contain a floating adverbial quantifier *ta* 'all' and a pro subject. For these examples, then, a structure is available in which *ta* is low in the structure, as in *People did not all come*, corresponding to the $\text{neg} > \text{V}$ reading, and one is available in which *ta* is high in the structure, as in *All people did not come*, corresponding to the $\text{V} > \text{neg}$ reading. The TVJT experiments that we conducted here to sort out speakers' judgments suggest that the conflicting judgments reported in the literature for (50) are not reliable. As discussed in section 3, there may be many reasons why speakers give unreliable judgments, including a lack of sufficient discourse context and the influence of speakers' knowledge of logic or of other languages.

Table 7

Design of experiment with children

2×2 design:	negation type (short vs. long)	\times	scope (neg> \forall vs. \forall >neg)
Grammatical function	Scope		
Object QP	neg> \forall	$n = 15$	$n = 15$
	\forall >neg	$n = 15$	$n = 15$

each condition testing for the neg> \forall or the \forall >neg reading in sentences containing an object QP and long or short negation. Fifteen children were randomly assigned to each condition. The design is summarized in table 7.

4.2.3 Materials The test materials were identical to those in experiment 1 with the exception that the subject QP condition was excluded from the design.

4.2.4 Procedure Children were tested individually in a quiet room away from the class, and all the scenarios were acted out in front of them by an experimenter using small toys and props. As with adults, children were introduced to the task with two practice trials followed by four test and four filler trials in pseudorandom order. The children's responses were recorded on a score sheet by the experimenter. The experimenter also asked the children why they answered that Mickey was right or wrong, and recorded their responses.

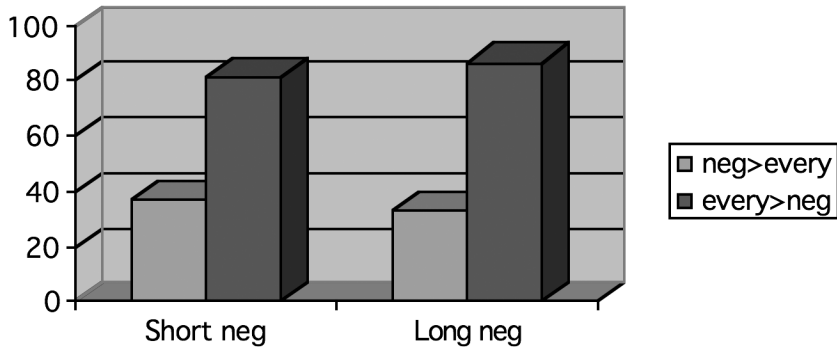
4.2.5 Results The mean percentages of acceptances by condition for object QPs are summarized in table 8, and the graphical representation is given in figure 5.

Just like adults, children were more likely to accept the \forall >neg reading than the neg> \forall reading, regardless of negation type ($F(1, 56) = 20.09, p < .0001$). In the \forall >neg condition, children's rate of acceptance was 81.67% with short negation and 86.67% with long negation, whereas in the neg> \forall condition, their acceptance rate was 36.67% and 33.33% with short and long negation, respectively. Further, like adults, between one-third and one-half of the children accepted the neg> \forall reading with object QPs.²¹

Table 8Mean percentage acceptances by condition for object QPs:
Children

Scope	Short negation	Long negation
neg> \forall	36.67	33.33
\forall >neg	81.67	86.67

²¹ Like adults, child participants were near perfect on filler items, indicating that they had no difficulty with the task or with negation or universal quantification in isolation.

**Figure 5**

Mean percentage acceptances in object condition: Children

Like the adults', children's scores were bimodally distributed. That is, each child generally gave the same answer on all trials. Thus, the 36.67% acceptance rate for the $\text{neg} > \mathbf{V}$ reading in short negation derives from 36.67% of the children accepting the $\text{neg} > \mathbf{V}$ reading and not from each child accepting it 36.67% of the time. That is, in the short negation condition, 9 children never accepted the $\text{neg} > \mathbf{V}$ reading, 1 child accepted it 50% of the time, and 5 children always accepted it. This finding supports our hypothesis that there are two grammars of Korean active in the population of Korean speakers: one grammar with V-raising and one without.

5 General Discussion

The results of our experiments with adults and children indicate that scope interactions between negation and quantified NPs are informative about the grammar of V-movement in Korean. More specifically, these data suggest that there are two grammars of Korean V-movement active in the population of Korean speakers. A remaining question is whether we can find other ways in which the two populations of Korean speakers differ. It is not obvious what that difference would be, though. If such independent evidence were readily available, then we would not expect to find a split in the population when it comes to parameter setting for verb placement. We have argued that the existence of two populations follows from the poverty of the stimulus. Even though the range of possible V-movement grammars is restricted by Universal Grammar, the data that learners of Korean are exposed to is equally consistent with either of two grammars. Given that there is no basis on which to make a choice between a V-raising grammar and an I-lowering grammar, Korean learners must choose at random. This results in roughly half the population acquiring one grammar and roughly half acquiring the other. This conclusion supports claims from the diachronic syntax literature (Kroch 1989, Pintzuk 1991, Santorini 1992, Taylor 1994) that even given the restricted hypothesis space determined by Universal Grammar, insufficient input can lead to distinct grammars in a single population. The general model under consideration here is one in which all language acquisition involves grammar competition (Kroch 1989, Roeper 1999, 2002,

Pair-list readings in Korean–Japanese, Chinese–Japanese and English–Japanese interlanguage

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In English and Chinese, questions with *awh*-object and a universally quantified subject (e.g. *What did everyone buy?*) allow an individual answer (*Everyone bought apples.*) and a pair-list answer (*Sam bought apples, Jo bought bananas, Sally bought ...*). By contrast, the pair-list answer is reportedly unavailable in Japanese and Korean. This article documents an experimental investigation of the interpretation of such questions in non-native Japanese by learners whose first languages (L1s) are Korean, Chinese or English. The results show that, regardless of L1, only a minority of advanced second language (L2) Japanese learners demonstrate knowledge of the absence of pair-list readings in Japanese. In English–Japanese and Chinese–Japanese interlanguage, L1 transfer readily accounts for this finding: the L1 grammar, which allows pair-list readings, may obstruct acquisition of the more restrictive Japanese grammar. But in Korean–Japanese interlanguage, L1 transfer predicts rejection of pair-list answers. However, in a Korean version of the experimental task, a native Korean control group robustly accepts pair-list readings, *contra* expectations. A proposal to account for this finding is put forward, under which the Korean–Japanese interlanguage data become compatible with an L1-transfer-based model of L2 acquisition. Moreover, the native-like rejection of pair-list readings by some advanced learners of all three L1 backgrounds is argued to imply that UG constraints operate at the L2 syntax–semantics interface.

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					Individual answer	Pair-list answer
a. Japanese:	Nani-o	daremo-ga	katta	no?	✓	✗
	what-Acc	everyone-Nom	bought	Q		
b. Korean:	Mwues-ul	nwukwuna-ka	sass	ni?	✓	✗
	what-Acc	everyone-Nom	bought	Q		
c. Chinese:	Meigeren	dou	maile	shenme?	✓	✓
	everyone	all	bought	what		
d. English:	What did everyone buy?				✓	✓

Two proposed explanations of these facts – Aoun and Li's (1993) syntactic analysis and Saito's (1999) semantic analysis – are outlined briefly, below.

1 Aoun and Li, 1993

Aoun and Li propose that interactions between *wh*-words and quantifiers are governed by a universal scope principle, as follows⁴

- 5) Scope Principle (Aoun and Li, 1993: 88): An operator A may have scope over an operator B iff A c-commands B or an A'-element co-indexed with B.

For English *Wh*-object/QP-subject questions such as (6a), the LF representation in (6b) is proposed to account for both individual and pair-list readings:

- 6) a. What did everyone buy?
 b. $[_{CP} \text{ what}_j [_C, \text{ did } [_{IP} \text{ everyone}_i [_{IP} x_i [_{VP} t_j [_{VP} \text{ buy } x_j]]]]]]$

In (6b), *what* originates as the argument of *buy*, and undergoes *wh*-movement to CP, leaving an intermediate trace adjoined to VP (following Chomsky, 1986). The subject QP *everyone* in Spec,IP undergoes Quantifier Raising (following May, 1977; 1985) to adjoin to IP. The Scope Principle (5) allows for the individual interpretation by virtue of *what* in CP c-commanding *everyone* in IP, and the pair-list interpretation

⁴ Aoun and Li's (1993) account of *Wh*-object/QP-subject question interpretation is part of a comprehensive investigation of a variety of quantifier interactions in English, Chinese and Japanese, set within the Government and Binding/Barriers frameworks of syntax (Chomsky, 1981; 1986). The brief outline here presents only those elements that are relevant to the concerns at hand, and does not do justice to the depth and argumentation of the account as a whole.

the grounds that 12 was the lowest score obtained by a member of the native Japanese control group for the cloze test. (This control group comprised 30 Japanese high school and university students in Japan, with a mean age of 20; range: 18–31.) Details of the resulting six learner groups are presented in Table 1.⁹ A one-way ANOVA performed on the proficiency test scores shows that the overall effect of group is significant ($F(5,83) = 39.22, p < .001$). *Post hoc* Tamhane's tests confirm that:

- within each L1 group, the intermediate group's cloze test scores differed significantly from the advanced group's scores ($p \leq .01$); and
- there were no significant differences between the scores of the three intermediate groups ($p = 1$) or the three advanced groups ($p \geq .2$).

In addition to the L2 groups, four control groups participated in the study: 18 native Japanese speakers ('JJ') completed the Japanese version of the experimental task, 26 native Korean speakers ('KK') completed a Korean version, 14 native Chinese speakers ('CC') completed a Chinese version, and 21 native English speakers ('EE') completed an English version. All the control participants were

Table 1 L2 participants

Group	<i>n</i>	Mean age (range)	Mean years living in Japan (range)	Mean cloze test scores (SD) (range)
EJ int	22	21 (19–30)	0;8 (0;0–1;6)	7.18 (2.11) (3–11)
EJ adv	12	22 (21–23)	1;2 (1;0–2;2)	14.25 (1.96) (12–18)
CJ int	7	25 (21–34)	1;6 (0;9–3;9)	6.86 (3.72) (3–11)
CJ adv	10	26 (21–33)	2;11 (0;9–4;9)	14.70 (2.58) (12–20)
KJ int	23	28 (22–51)	0;6 (0;0–3;6)	6.78 (2.7) (1–11)
KJ adv	15	24 (21–31)	1;4 (0;0–2;9)	18.00 (4.93) (12–29)

Notes: EJ: Students of Japanese at UK universities, resident in UK at time of testing; CJ: Students at Japanese universities, resident in Japan at time of testing; KJ: Students at universities in Japan or Korea; KJ int: 3 in Japan at time of testing, 20 in Korea; KJ adv: 10 in Japan; 5 in Korea

⁹ Some of the scores in the intermediate groups are very low (1 out of 42 in the KJ int group). However, such low scores do not necessarily indicate failure to understand the text, because the exact-word scoring method is very strict: even answers that are syntactically and semantically appropriate are marked wrong if they do not match the word from the original text. Therefore, no participants were excluded on the basis of their cloze test scores. Some were excluded on the basis of their responses to distractor items in the experimental task, as reported in Section V.

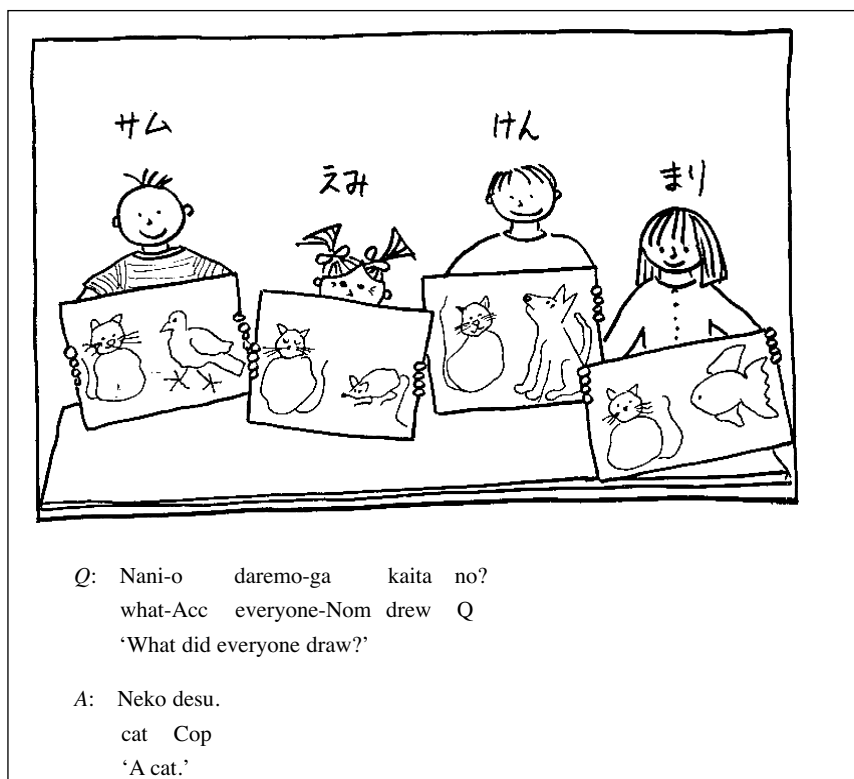
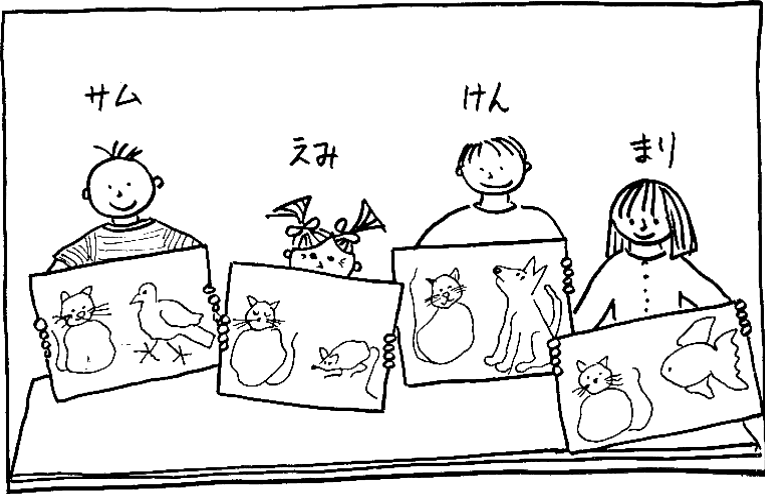


Figure 1 Individual answer test item

picture. At the same time, the question and answer were presented aurally, using a tape recording by a native speaker of the language of the test. For all four languages, the native speakers who recorded the questions and answers were linguists who understood the purpose of the recording, and who took care to use appropriate stress and intonation in order to avoid creating a stress-based bias towards any particular answer type.

The picture and the question and answer were viewed together for 15 seconds before proceeding to the next test item. Participants were asked to indicate how possible they found each answer in the context of the question and the picture, using a scale on their answer sheets, as illustrated in (18):¹¹

¹¹ Japanese text was used on the answer sheets for the participants who took the test in Japan.



Q: Nani-o daremo-ga kaita no?
what-Acc everyone-Nom drew Q
‘What did everyone draw?’

A: Samu-kun-wa neko to tori-o, Emi-tyan-wa neko to nezumi-o,
Sam-kun-Top cat and bird-Acc, Emi-tyan-Top cat and mouse-Acc,

Ken-kun-wa neko to inu-o, Mari-tyan-wa neko to kingyo-o
Ken-kun-Top cat and dog-Acc, Mari-tyan-Top cat and goldfish-Acc

kaita.
drew

‘Sam drew a cat and a bird, Emi drew a cat and a mouse, Ken drew a cat and a dog, and Mari drew a cat and a goldfish.’

Figure 2 Pair-list answer test item

18) (Is the answer possible?)

	No, definitely not			Yes, perfectly	Can't decide
1	-2	-1	+1	+2	×
2	-2	-1	+1	+2	×

The pictures and sentences did not appear on the answer sheet.

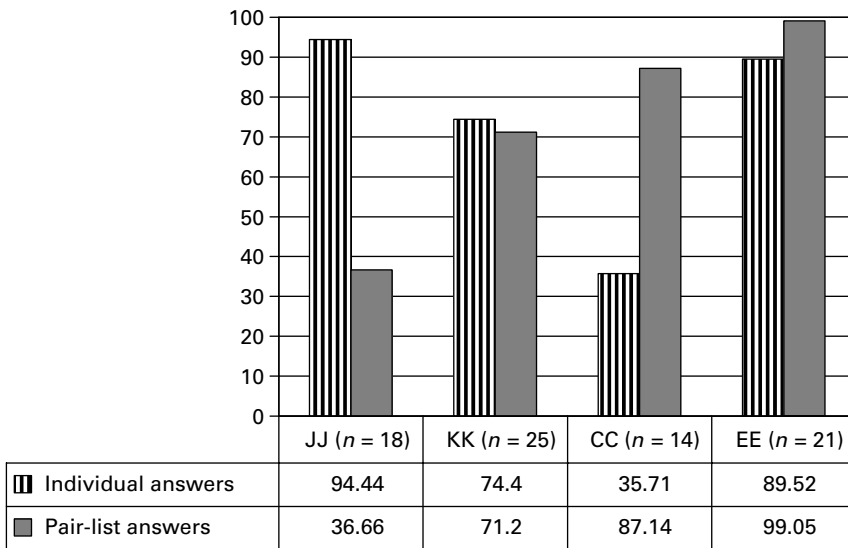


Figure 3 Rates (percentages) of acceptance of individual and pair-list answers, by the native control groups

Indeed, both groups have high rates of acceptance of pair-list answers: 87.14% in the Chinese control group; 99.05% in the English control group. However, only the English group also accepts individual answers (acceptance rate = 89.52%). In the native Chinese group, the acceptance rate for individual answers is low, at 35.71%. Wilcoxon tests show that, in fact, both the Chinese and the English control groups have significantly higher rates of acceptance for pair-list answers than for individual answers, although for the Chinese group this difference is large ($p = .002$), whereas it is very small in the English group ($p = .04$).

It might have been expected that all the acceptance rates for the native control groups would either be close to 100%, showing unanimous acceptance of an answer type, or close to 0% showing unanimous rejection of an answer type. In fact, four of the group results testify to some within-group variation: the 36.66% acceptance of pair-list readings in native Japanese, the 74.4% acceptance of individual answers and 71.2% acceptance of pair-list answers in native Korean, and the 35.71% acceptance of individual answers in native Chinese. More information about this within-group variation is found by examining the consistency of individual response patterns. Table 2 presents

three groups, and the native Chinese group's low acceptance of individual answers is quite distinct from the high acceptance of individual answers by the other three groups. Moreover, the individual participants show a high level of consistency: only a minority fall into the 'inconsistency' columns in Table 2, yet if the test design had led to confusion, it might have been expected that participants would answer randomly, with very little individual consistency. Therefore, it will be assumed that the results are valid. Further discussion of the native control data is presented in Section VI.

2 L2 data

The results for the L2 Japanese groups are shown in Figure 4. The data in Figure 4 reveal similarities across the three L1s. None of the three intermediate groups appears to distinguish between individual and pair-list answers: acceptance rates are 73.64% for individual answers compared with 75.45% for pair-list answers in the intermediate KJ group, 60% compared with 68.57% in the intermediate CJ group, and 86.6% compared with 85.71% in the intermediate EJ group.

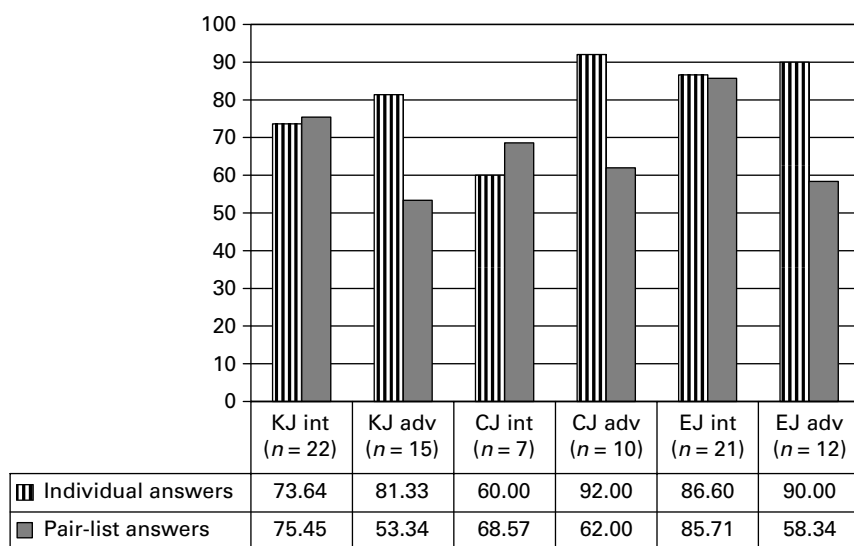


Figure 4 Rates (percentages) of acceptance of individual and pair-list answers, by the L2 groups

Article Semantics in L2 Acquisition: The Role of Specificity

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1. INTRODUCTION

Studies of second-language (L2) acquisition have often addressed the issue of parameter-setting among L2 learners. Much work has been done on the setting of syntactic parameters in L2 acquisition—e.g., the verb-raising parameter (see White (1990/1991), among others), the V2-parameter (see Robertson and Sorace (1999), among others), and the Governing Category Parameter (GCP) (see Finer and Broselow (1986), among others). A major question addressed by these studies concerns L2 learners' ability to acquire parameter values that are not present in their first language (L1). In this article, we examine L2 learners' ability to acquire a new value for a *semantic* parameter—the Article Choice Parameter.

To do this, we first establish the settings of this parameter. Examining the behavior of articles in English and Samoan, we argue that there is parametric variation in the lexical specifications of articles: We propose that articles cross-linguistically can encode the feature [+definite] or the feature [+specific]. We then investigate the role that these features play in the acquisition of English articles by adult speakers of article-less languages, Russian and Korean. We present elicitation and production data to show that L2 learners have access to both settings of the Article Choice Parameter. We show that access to the feature [+specific] cannot be accounted for by either L1 transfer or L2 input and argue that our findings present evidence for direct access to universal semantic distinctions in L2 acquisition.

1.1. Article Misuse in L2 English

There have been a number of studies concerning article choice in L2 English (see Huebner (1983), Leung (2001), Master (1987), Murphy (1997), Parrish (1987),

1.2. Organization of This Article

This article is organized as follows. In section 2, we outline the theoretical background necessary for our proposal and provide the lexical specifications of the features [+definite] and [+specific]. This section also provides evidence for the cross-linguistic significance of the feature [+specific]. Section 3 lays out our proposal for articles in L2 acquisition in terms of parameter-setting. In section 4, we report a forced-choice elicitation study that provides support for our predictions. Section 5 briefly summarizes the results of a production task that was administered as a supplement to the elicitation task. Section 6, the concluding section, rules out an alternative explanation of our findings and discusses implications for both L1 and L2 acquisition.

2. THEORETICAL BACKGROUND: DEFINITENESS AND SPECIFICITY

Articles cross-linguistically can encode different semantic features. In this study, we are particularly concerned with the *definiteness* and *specificity* features. Although the term *specificity* has received multiple definitions in the literature, we use it throughout this article in a very precise sense, *specificity as speaker intent to refer* (cf. Fodor and Sag (1982)). The exact definition of this concept is provided in the next section.

2.1. Definiteness and Specificity: The Definitions

The features [+definite] and [+specific] are both discourse related: They are related to the knowledge/mind state of the speaker and/or the hearer in the discourse. This is shown by the informal definitions in (3): the feature [+definite] reflects the state of knowledge of *both* speaker and hearer, whereas the feature [+specific] reflects the state of knowledge of *the speaker* only. In section 2.2, we illustrate these definitions with examples from English.

(3) Definiteness and Specificity: Informal definitions

If a Determiner Phrase (DP) of the form [D NP] is . . .

- a. [+definite], then the speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP.
- b. [+specific], then the speaker intends to refer to a unique individual in the set denoted by the NP and considers this individual to possess some noteworthy property.

The formal definitions on which we build our analysis are given in (4). We are adopting the standard Fregean analysis of definites and the standard quantifi-

singular *le/l*=ART indicates that the noun phrase refers to one particular entity regardless of whether it is definite or indefinite” (p. 259).

Consider (11). In (11a), the speaker is beginning to tell a story, introducing new characters who will be important later on in the story. Here, *le* is used in a [–definite, +specific] context.⁵ In (11b), the story continues. The characters have been previously mentioned and are still noteworthy, so the context is [+definite, +specific], and *the* is used in the English translation. In Samoan, however, definiteness does not play a role in article choice: All that matters is that the narrator intends to refer to a particular individual, so *le* is used. This indicates that *le* is marking the [+specific] feature, regardless of whether the context satisfies the conditions on definiteness.

(11) a. [–definite, +specific]

‘O *le* ulugāli’i, fānau l=a lā tama ‘o *le*
PRES ART couple give birth ART=Poss3.du. child PRES ART
teine ‘o Sina.
girl PRES Sina

“There was a couple who had a child, a girl called Sina.”

(Mosel and Hovdhaugen (1992, 259, ex. 6.37))

b. [+definite, +specific]

Māsani ‘o *le* tamāloa e usua’i=ina lava ia. . .
used PRES ART man GENR get up early=ES EMPH 3sg
'ae nonofo ‘o *le* fafine ma l=a=na tama i
but.stay(pl.) PRES ART woman and ART=POSS=3.sg child LD
le fale.
ART house

ART house

“It was the man’s practice to get up early and . . . while the woman stayed at home with her child.”

(Mosel and Hovdhaugen (1992, 259, ex. 6.38))

Consider next the use of *se*: “the nonspecific singular article *se/s*=ART(nsp. sg.) expresses the fact that the noun phrase does not refer to a particular, specified item, but to any member of the conceptual category denoted by the nucleus of the noun phrase and its adjuncts” (Mosel and Hovdhaugen (1992, 261)). This use of *se* is illustrated in (12a), where there is no particular coconut under discussion. It is also used in (12b), which is about “a certain lady whose identity has not been

⁵To clarify, we assume that *contexts* are always specified as [±definite] and [±specific], regardless of whether the language has a morphological item marking definiteness or specificity. Thus, even though specificity is not marked with definites in English, definite contexts may still satisfy the conditions on specificity (see section 2.2.3). Similarly, although Samoan does not mark definiteness, the conditions on definiteness (i.e., presuppositions of existence and uniqueness) may still be satisfied by a given context. The cross-linguistic variation lies in whether definiteness or specificity features receive morphological expression.

recognized by the speaker or is not of any interest to him” (Mosel and Hovdhaugen (1992, 261)); because the identity of the lady is irrelevant, this is arguably a case of *se* used in a [–definite, –specific] context.

- (12) a. [–definite, –specific]
 ‘Au=mai se niu!
 take=DIR ART(nsp.sg.) coconut
 “Bring me a coconut [no matter which one]!”
- b. [–definite, –specific]
 Sa fesili mai se tamaitai po=o ai l=o
 PAST ask DIR ART(nsp.sg.) lady Q-PRES who ART=Poss
 ma tama.
 1.exc.du father
 “A lady asked us who our father was.”
 (Mosel and Hovdhaugen (1992, 261, ex. 6.46, 6.50))

Most of Mosel and Hovdhaugen’s discussion on the use of *se* concerns indefinite contexts. However, Mosel and Hovdhaugen also have examples of use of *se* with possessive DPs, given in (13).

- (13) a. [+definite, –specific]
 Alu i se tou aiga e moe. Pe se
 go LD ART(nsp.sg.) 2.pl. family GENR sleep. Q ART(nsp.sg.)
 tama a ai!
 boy POSS who
 “Go to your family—whoever that may be—and sleep! [I wonder]
 whose boy you might be!” [said to a boy who is selling necklaces at
 night in front of a hotel]
- b. [+definite, –specific]
 Tapagai lava ulavale l=o=u pua’a
 [term of abuse] EMPH troublesome ART=Poss=2.sg. pig
 po=’o ai s=o=u tamā.
 Q=PRES who ART(nsp.sg.) father
 “Oh you filthy little bastard, you pig, whoever is your father.”
 (Mosel and Hovdhaugen (1992, 262, ex. 6.53, 6.54))

The possessives *your family* and *your father* are obligatorily definite in English. To express the meaning that *se* contributes to the possessive phrases in (13), Mosel and Hovdhaugen inserted phrases like *whoever that is* in the translation. This recalls [–specific] definites in English (cf. (9b)) and suggests that the contexts in (13) are [+definite, –specific]. The examples in (12) and (13) taken together suggest that *se* is used in [–specific] contexts, regardless of whether the conditions on definiteness have been met.

On the basis of the fairly limited data available, it is impossible to develop a full theory of article semantics in Samoan. However, a preliminary generalization can be made: Samoan is an example of a language that uses one article (*le*) in [+specific] environments and a different article (*se*) in [–specific] environments; definiteness is irrelevant for Samoan articles.

2.4. The Article Choice Parameter

The preceding discussion of articles in English and Samoan leads us to propose a parameter governing article choice. We give this parameter in (14).⁶ Standard English (without referential *this*) has the first setting of this parameter: It marks *the* as [+definite], uses *a* in [–definite] contexts, and does not mark any article for specificity. Samoan has the second setting: It marks *le* as [+specific], uses *se* in [–specific] contexts, and does not mark any article for definiteness.

(14) The Article Choice Parameter (for two-article languages)

A language that has two articles distinguishes them as follows:

The Definiteness Setting: Articles are distinguished on the basis of definiteness.

The Specificity Setting: Articles are distinguished on the basis of specificity.

The Article Choice Parameter thus predicts two possible patterns of article choice in two-article languages cross-linguistically: article grouping by definiteness, as in (standard) English, and article grouping by specificity, as in Samoan. These two possibilities are represented pictorially in Table 1. Other options of article grouping are available for languages that have three or more articles. For instance, colloquial English has three articles: *the* is [+definite], referential *this* is [+specific], and *a* encodes neither definiteness nor specificity (see footnote 4 as well as Ionin (2003a, chap. 2) for why referential *this* does not occur in [+definite] contexts).

In this article, we are particularly concerned with English as a two-article language. It is highly unlikely that L2 learners receive enough exposure to referential

⁶We adopt the name for this parameter from Matthewson and Schaeffer (2000); however, they give the Article Choice Parameter different specifications, namely, *speaker beliefs* (which roughly corresponds to *wide-scope*) and *common ground* (which corresponds to definiteness). We do not claim that definiteness and specificity are the only properties that can be expressed by articles cross-linguistically; however, they are the only *discourse-related* features that underlie article choice. Articles in some languages can also be subject to various grammatical restrictions (see, e.g., Matthewson (1998; 1999) on articles in Salish and their relationship to scope and choice-function readings). Our concern here is with how L2 English learners distinguish between the discourse-related features of definiteness and specificity, in the absence of any grammatical restrictions on English articles. For more discussion of how discourse-related features and grammatical restrictions may interact, see Ionin (2003a, chap. 2).

3.3. The Fluctuation Hypothesis for L2 Acquisition

Two important points emerge from the previous discussion. First, as Finer and Broselow (1986) originally showed, L2 learners show evidence of accessing parameter-settings that are instantiated in neither their L1 nor their L2. Second, in some domains, L2 learners show optional adherence to parameter-settings: Their behavior suggests that they sometimes adopt one setting of the parameter and sometimes another. Both findings are consistent with the view that L2 learners have full access to UG (for different views of the Full Access position for L2 acquisition, see Schwartz and Sprouse (1994; 1996) and Epstein, Flynn, and Martohardjono (1996), among others). We propose a single hypothesis that captures both of these findings, and we call it the Fluctuation Hypothesis (FH):

(15) The Fluctuation Hypothesis

- a. L2 learners have full access to UG principles and parameter-settings.
- b. L2 learners fluctuate between different parameter-settings until the input leads them to set the parameter to the appropriate value.

Under the FH, the state of L2 grammar is UG-constrained. L2 learners' errors are predicted to be nonrandom but to reflect possible UG parameter-settings. The FH states that errors in L2 data stem from the learners fluctuating between two or more parameter-settings, some of which are not appropriate for the target language.

3.3.1. *The FH and L1 Transfer*

We can pose a logical question at this point: Which parameter-settings do the L2 learners fluctuate between? In those cases where the learners' L1 instantiates a particular parameter-setting, it is possible that the fluctuation will be between only the L1 and L2 settings. This has been found to be the case in such domains as VP-headedness (Vainikka and Young-Scholten (1996)) and the V2 phenomenon (Robertson and Sorace (1999)). However, studies of such domains as verb-raising (e.g., Eubank et al. (1997)) and reflexive-binding (e.g., Finer and Broselow (1986)) have found L2 learners accessing settings that come from neither the L1 nor the L2 (even though their L1 instantiated a particular setting). The interaction between L1 transfer and fluctuation (i.e., what determines whether the L1 setting is given preference over the other settings) is a very interesting issue for further study. In our study, however, we are concerned with the predictions of the FH in those cases where the learners' L1 does not instantiate *any* setting of the relevant parameter.

We propose that, in these cases, L2 learners may adopt parameter-settings that are instantiated in *neither* the L1 *nor* the L2 but that may be instantiated in some third language. In the absence of L1 transfer, L2 learners should have no initial

TABLE 4
Characteristics of L2 Learners

	<i>L1 Russian Participants</i>	<i>L1 Korean Participants</i>
Number	30 (18 female, 12 male)	40 (22 female, 18 male)
Age range	19;2–56;7 (<i>M</i> = 38, median = 35)	19;11–40;0 (<i>M</i> = 31, median = 31)
Age of first exposure to English (in years)	8–53 (<i>M</i> = 14, median = 11)	9–14 (<i>M</i> = 12, median = 12)
Age at arrival in the United States (start of intensive exposure to English)	19;1–55;10 (<i>M</i> = 36, median = 33)	16;0–35;1 (<i>M</i> = 28, median = 29)
Time in the United States	<0;1–10;4 (<i>M</i> = 1;9, median = 1;2)	0;1–8;7 (<i>M</i> = 2;6, median = 1;8)

languages spoken in the former U.S.S.R. Details on individual participants' language background are given in Appendix A. All of the Korean-speaking participants spoke Korean as their first and primary language.

4.1.2. Recruitment Procedure

The L1 Russian participants included immigrants, international students, and foreign workers. All of them resided in the greater Boston area at the time of the study and were recruited through advertisement in the Russian community. The L1 Korean participants were primarily international students and their spouses, as well as foreign workers and their spouses. All of them resided in Gainesville, Florida, at the time of the study and were recruited through advertisement and by word of mouth.

4.1.3. Control Participants

The forced-choice elicitation task described in the next section was also administered to 14 adult L1 English controls.¹⁴ All of the control participants resided in the Boston area. Most (but not all) were students at MIT.

4.2. Tasks

The L2 learners completed three tasks: a forced-choice elicitation task, a written production task, and the written portion of the Michigan test of L2 proficiency. The control participants completed the forced-choice task only.

The Michigan test is a standard test of L2 proficiency; only the written portion, consisting of 30 multiple-choice items, was used. The test comes with a standardized scale that places L2 learners as beginner, intermediate, or advanced.

¹⁴An additional participant was excluded from the control group because he was a native speaker of Chinese rather than English. Interestingly, although highly fluent in English, this participant made some errors of *the* overuse.

- (17) [+definite, +specific]: Wide scope
 Conversation between two police officers
 Police Officer Clark: I haven't seen you in a long time. You must be very busy.
 Police Officer Smith: Yes. Did you hear about Miss Sarah Andrews, a famous lawyer who was murdered several weeks ago? *We are trying to find (a, the, —) murderer of Miss Andrews—his name is Roger Williams, and he is a well-known criminal.*
- (18) [+definite, +specific]: No scope interactions, explicit speaker knowledge
 Kathy: My daughter Jeannie loves that new comic strip about Super Mouse.
 Elise: Well, she is in luck! *Tomorrow, I'm having lunch with (a, the, —) creator of this comic strip—he is an old friend of mine.* So I can get his autograph for Jeannie!

Two more definite contexts, (19) and (20), contained [–specific] definites. The difference between the two contexts again is scope—in (19), the definite has narrow scope with respect to the intensional verb, whereas in (20), there are no scope interactions. Both context types involved denial of speaker knowledge of the referent.

- (19) [+definite, –specific]: Narrow scope
 Conversation between a police officer and a reporter
 Reporter: Several days ago, Mr. James Peterson, a famous politician, was murdered! Are you investigating his murder?
 Police officer: Yes. *We are trying to find (a, the, —) murderer of Mr. Peterson—but we still don't know who he is.*
- (20) [+definite, –specific]: No scope interactions, denial of speaker knowledge
 Bill: I'm looking for Erik. Is he home?
 Rick: Yes, but he's on the phone. It's an important business matter. *He is talking to (a, the, —) owner of his company!* I don't know who that person is—but I know that this conversation is important to Erik.

Four indefinite contexts served as counterparts to the four definite contexts just described. Two contexts, exemplified in (21) and (22), contained [+specific] indefinites; in (21), the indefinite takes wide scope over an intensional verb, whereas in (22), there are no scope interactions. The felicity conditions on the use of [+specific] DPs are met in both cases.

- (21) [–definite, +specific]: Wide scope
 Phone conversation
 Jeweler: Hello, this is Robertson's Jewelry. What can I do for you, ma'am? Are you looking for some new jewelry?

Client: Not quite—I heard that you also buy back people’s old jewelry.

Jeweler: That is correct.

Client: *In that case, I would like to sell you (a, the, —) beautiful silver necklace. It is very valuable—it has been in my family for 100 years!*

- (22) [–definite, +specific]: No scope interactions, explicit speaker knowledge

Meeting on a street

Roberta: Hi, William! It’s nice to see you again. I didn’t know that you were in Boston.

William: I am here for a week. *I am visiting (a, the, —) friend from college—his name is Sam Brown, and he lives in Cambridge now.*

The two indefinite contexts exemplified in (23) and (24) contain [–specific] indefinites. The context in (23) contains a narrow-scope indefinite, and the context in (24) contains a denial of speaker knowledge.

- (23) [–definite, –specific]: Narrow scope

In a school

Student: I am new in this school. This is my first day.

Teacher: Welcome! Are you going to be at the school party tonight?

Student: Yes. I’d like to get to know my classmates. *I am hoping to find (a, the, —) new good friend!* I don’t like being all alone.

- (24) [–definite, –specific]: No scope interactions, denial of speaker knowledge

Chris: I need to find your roommate Jonathan right away.

Clara: He is not here—he went to New York.

Chris: Really? In what part of New York is he staying?

Clara: I don’t really know. *He is staying with (a, the, —) friend—but he didn’t tell me who that is.* He didn’t leave me any phone number or address.

These eight contexts allowed us to test the predictions in Table 3 concerning the role of specificity with both definites and indefinites, as shown in Table 5.

4.2.3. Additional Item Types

In addition to the main item types, we tested L2 learners on simple first-mention indefinites that include no scope interactions and no explicit statement or denial of knowledge (25), as well as on previous-mention definites (26).

First-mention indefinites in contexts such as (25) are [–specific]: The exact identity of a particular member of the set (in this case, a particular puppy) is completely irrelevant for the discourse. Use of referential *this* would in fact be infelicitous in such contexts: As no further mention of the referent is made, the

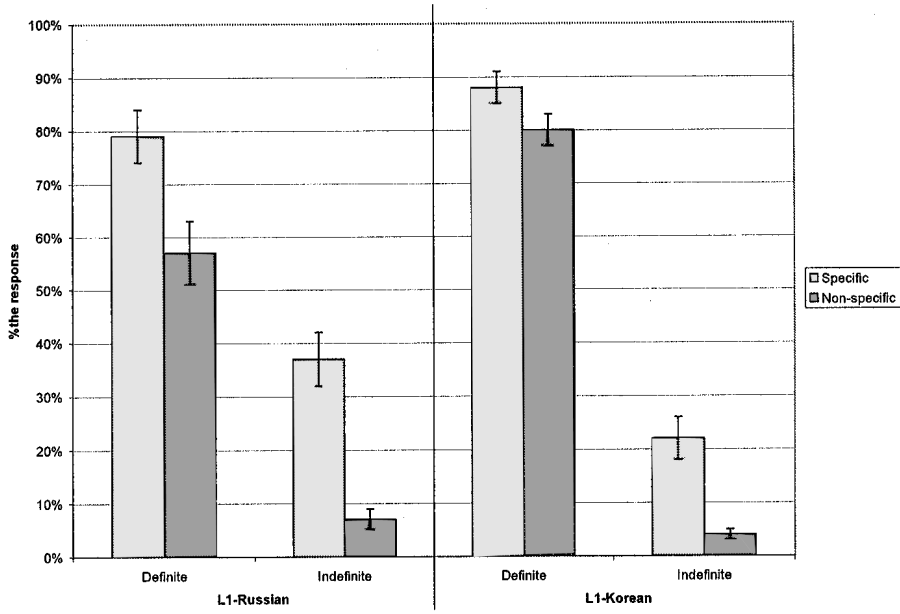


FIGURE 1 Use of *the* by category.

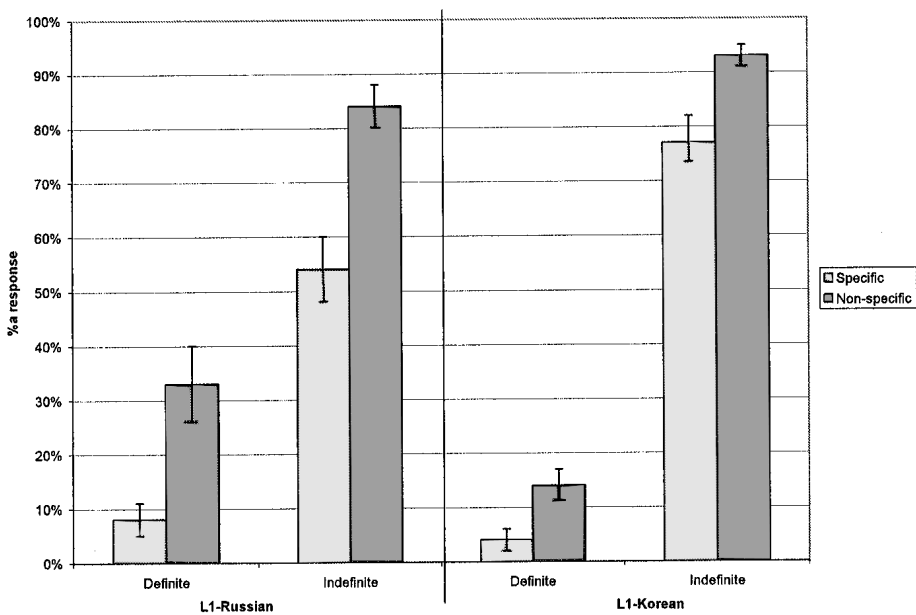


FIGURE 2 Use of *a* by category.

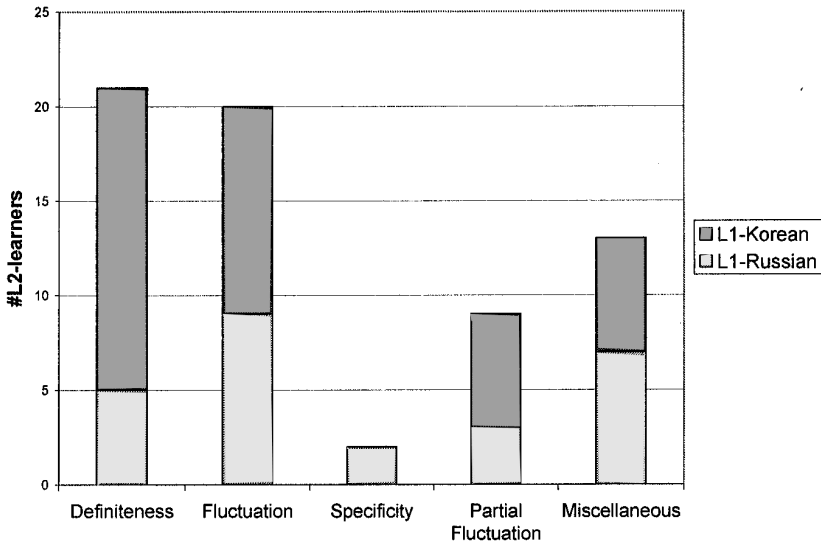


FIGURE 3 Number of L2 learners showing each pattern.

two learners adopted the specificity pattern, and relatively few learners (9) adopted the unexpected partial fluctuation pattern.³⁰

4.5.4. Individual Results: Beginner Learners

As far as individual results of beginner learners are concerned, one beginner learner exhibited the specificity pattern; two learners exhibited a pattern resembling fluctuation but with high use of *the* across all categories, including [–specific] indefinites; one learner exhibited the partial fluctuation pattern; and one showed completely random behavior. Thus, we again see that beginner learners resemble intermediate/advanced L2 learners but with more noise in the data.

³⁰Although as many as 13 L2 learners (including a relatively large proportion of the L1 Russian speakers) exhibit the miscellaneous patterns, which may be deemed problematic for our hypothesis, article choice for 9 of these L2 learners is far from random. Five learners in the miscellaneous pattern exhibit behavior somewhat similar to the definiteness pattern. These learners use *the* much more with definites than with indefinites. Their errors involve higher *the* use on one of the [–specific] categories than on the corresponding [+specific] category. Three learners in the miscellaneous pattern show clear evidence of fluctuation. Their error is in either using *the* too much with [–specific] indefinites or not using it enough with [+specific] definites. One learner has 100% *the* use across all categories except [–specific] indefinites and high *the* use on this category as well.

Only four L2 learners (two L1 Russian and two L1 Korean) show random or nearly random behavior, as follows. Three learners use *the* more with definites than with indefinites, but their use of *the* is unexpectedly low with [+specific] definites and unexpectedly high with [–specific] definites. And one learner almost never uses *the* at all.

TABLE 24
Predictions for Article Choice in L2 English Production Data (Singular Contexts)

	+definite (Target: the)	–definite (Target: a)
+specific	Correct use of <i>the</i>	Overuse of <i>the</i>
–specific	Overuse of <i>a</i>	Correct use of <i>a</i>

The predictions for the production data were the same as for the elicitation data and are repeated in Table 24. In this article, we report the predictions and results for singular contexts only.³³ For a complete report of singular, plural, and mass contexts in production, see Ionin (2003a, chap. 7).

5.1. Methods of Production Data Collection

The L2 learners who took part in the elicitation study were also given a written production task.

5.1.1. The Production Task

In the production task, the learners were asked to provide written answers to five English questions. These questions are given in (33). The L2 learners were instructed to use between three and five sentences to answer each question.

- (33) a. Talk about some valuable object that you own or owned in the past: either (1) talk about something that you received as a gift, and tell about how you received it, or (2) talk about something valuable that you lost and tell about how you lost it.
- b. Talk about the day when you first arrived in the U.S. Describe your experiences of that day—what you did, where you went, to whom you talked, etc.
- c. Describe your room—talk about what objects you have in your room and describe them.
- d. Talk about what you did on one of your recent vacations (for example, winter vacation, Thanksgiving weekend, or summer vacation). Talk about where you went and what you did.
- e. Imagine that you get \$1,000 as a gift and you have to spend it right away (you can't put it in the bank). Talk about how you would spend this money.

³³The same predictions in principle would hold for plural and mass nouns, except that instead of *a*, no article or use of *some* would be expected. See Ionin (2003a, chap. 7) for evidence that L2 learners showed similar patterns across singular, plural, and mass contexts.

TABLE 25
Article Use in Singular Definite Contexts

Article Used	No. of Tokens (% of Total)	
	L1 Russian	L1 Korean
<i>the</i> (target article)	68 (75%)	116 (81%)
<i>a</i>	1 (1%)	8 (6%)
Nothing	22 (24%)	19 (13%)

Some examples of appropriate *the* use in contexts that were [+definite, +specific] are given in (34). The target DP is underlined.³⁸

- (34) a. We live in *half-basement* room. It's small, but enough for us. In the room we have full-size bed, a large dresser and smaller dresser, and 2 tables—one is for my husband and the other is mine.
b. It was already too cold to swim, but still quite nice to enjoy the sun.
c. I visited the New York city [*sic*] with my wife by my car during the winter vacation. I've just heard the fame of the great city.

The only definite DPs that can be unambiguously classified as [–specific] are those that either (i) involve an explicit denial of speaker knowledge or (ii) take narrow scope with respect to an operator. There were no instances of type (i) definites in the data. There were only seven instances of narrow-scope definites (type (ii)): L1 Russian speakers had two instances of *the* use with narrow-scope definites, whereas L1 Korean speakers had four instances of *the* use and a single instance of *a* overuse with narrow-scope definites. The instance of *a* overuse is given in (35), where the speaker is not discussing any collection in the actual world. The other instances of *a* overuse in the data occurred in contexts that could not be unambiguously classified as [–specific].

- (35) I have a daughter, 15 month old. I keep several toys for her in my mind. So, if I got \$1,000, I will buy her those toys. But unfortunately, \$1,000 is not enough to buy many toys. For example, a Brio wooden train costs almost half of \$1,000. It is very tough to raise a kid with a full collection that he needs.

Thus, there is almost no overuse of *a* and no obvious link between overuse of *a* and lack of specificity in the production of definite DPs. Because there are so few instances of [+definite, –specific] contexts in the data, the hypothesis that overuse of *a* is tied to lack of specificity cannot be tested.

³⁸In all of the examples in this section, the original L2 learners' written data are reported, complete with misspellings and grammatical errors.

TABLE 26
Article Use Across Singular Indefinite Contexts: Target: *a*

Article Used by L2 Learners	Wide Scope: May Be [+specific]	In there/have Constructions: Most Likely [-specific]	Narrow Scope: Must Be [-specific]
L1 Russian			
<i>the</i>	13 (28%)	3 (3%)	2 (8%)
<i>a</i> (target article)	17 (37%)	40 (35%)	18 (75%)
Null	16 (35%)	72 (63%)	4 (17%)
L1 Korean			
<i>the</i>	8 (13%)	0 (0%)	4 (6%)
<i>a</i> (target article)	37 (62%)	84 (63%)	35 (53%)
Null	15 (25%)	49 (37%)	27 (41%)

- (38) a. There are a mirror, a desk, a computer and a bed something like that.
b. My room has a bed, a desk, and book shelves.

In summary, we looked at three types of indefinites: potentially [+specific] wide-scope indefinites, most likely [-specific] indefinites in *there/have* constructions, and obligatorily [-specific] narrow-scope indefinites. The results for both L1 groups are summarized in Table 26. As this table shows, most cases of *the* overuse occurred in wide-scope (potentially [+specific]) environments. Some of these cases of *the* overuse are exemplified in (39) (see also examples (1) and (2)). In these cases, the speaker is most likely intending to refer to a particular individual. All of these contexts are indefinite (there is no previous mention of the referent of the underlined DP); L1 English coders consistently put *a* in these contexts.

- (39) a. My husband met us in airport and drove us to our new home. Then we went to our neighbours house for the small party.
b. When I was a boy, I found a mine (I mean, an armour, from the World War Two). I liked this kind of things, so I kept it initially in the secret place in our yard and then at home.
c. On Thanksgiving week-end we went to NY for the first time. We took the room in the New-Yorker Hotel and went outside to see the town.

An anonymous reviewer suggested that indefinites in *there* and *have* constructions do not need to be separated from narrow-scope indefinites, as they take narrow scope themselves: Under many analyses, *there* and *have* constructions involve existential closure of the indefinite at the VP level (see Diesing (1992), among others). Crucially, however, our concern is with narrow scope *with respect to an intensional operator*. Indefinites that scope under an intensional operator can never be [+specific], as shown by (ii), with referential *this*. On the other hand, (i) shows that indefinites in *there/have* constructions can be [+specific], hence the decision to treat narrow-scope indefinites and indefinites in *there/have* constructions as separate categories.

- (ii) I want to read this book about frogs.

Semantic evidence for functional categories in interlanguage grammars

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This study investigates how semantic properties of functional categories are acquired by second language (L2) learners in an instructional setting. The following properties of the functional category (FC) of AspectP are under investigation:

- 1) English simple present tense cannot denote an ongoing event;
- 2) progressive morphology is needed for an ongoing interpretation; and
- 3) English bare verbal forms denote closed, or completed, events.

All three properties are not instantiated in Bulgarian. Only the first two properties are explicitly taught in English classrooms in Bulgaria, while the third is not. A Truth Value Judgement Task, a guided composition task and a proficiency test were administered to 112 Bulgarian learners of English and 24 native speaker controls. Results indicate that L2 learners at all proficiency levels are aware of the English aspectual contrasts. These findings suggest that L2 learners are able to acquire interpretable formal features not transferable from their native language. Furthermore, they are able to acquire properties of the grammar that are not explicitly taught in language classrooms.

I Introduction

In recent years, the question of whether Universal Grammar (UG) is available in second language (L2) acquisition has been approached from the perspective of the acquisition of functional categories (FCs) and the formal features associated with them. With respect to the accessibility of formal features of FCs not instantiated in the native language (L1), researchers appear to be divided into two basic positions. There are those who argue that full functional representations (including feature strength and semantic import) are in principle attainable by adult learners (Schwartz and Sprouse, 1994, 1996; Gavrusseva and Lardiere, 1996; Grondin and White, 1996; Epstein *et al.*, 1996; Haznedar and Schwartz, 1997; Lardiere, 1998a; 1998b; 2000; Duffield and White, 1999; Prévost and White, 2000a; 2000b; Hawkins, 2001). The apparent variability in the L2 learners' overt morphology production is attributed, generally speaking, to

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category that relates situations to some reference time, usually the moment of speech (Comrie, 1976). Linguists refer to this property as temporal anchoring. Aspect is concerned with temporality in a different way: it refers to the internal temporal structure of a situation as described by verbs and phrases (Comrie, 1976; Chung and Timberlake, 1985; Smith, 1991; 1997). Aspect is the property that makes it possible for a sentence to denote a complete or an incomplete event. It can be encoded in the lexical classes of verbs, usually called 'lexical aspect', or it can be grammaticalized and marked by inflectional morphology on the verb, such as perfective or progressive morphemes. The latter is what Smith (1991; 1997) terms 'viewpoint aspect'.

Lexical aspect – also called *Aktionsart* (from German 'kinds of action'), situation aspect (Smith, 1991; 1997) or VP aspect (Travis, 1991; Tenny, 1994; Schmitt, 1996; Slabakova, 1997; 2001; Zagana, 1999, among many others) – is a semantic property that depends on the meaning of the verb and properties of its internal argument. Vendler's (1967) four different aspectual categories, as shown in (1), are widely used in the literature to differentiate lexical classes of verbs:

- | | |
|------------------|---|
| 1) states: | <i>know, be, love</i> |
| activities: | <i>run, bake cake, drink beer</i> |
| accomplishments: | <i>run a mile, bake two cakes, drink the bottle of beer</i> |
| achievements: | <i>realize, die, find a wallet</i> |

States, such as *know, be, love* have no internal structure whatsoever. Activities are homogeneous processes going on in time without an inherent endpoint. Accomplishments involve a process going on in time and an inherent culmination point after which the event can no longer continue. Finally, achievements have an inherent culminating point, but the process leading to that point is instantaneous. Activities, accomplishments and achievements are known as dynamic, or eventive, classes because they have a process component (Verkuyl, 1993).

Aspect is also expressed morphosyntactically on the verb, by perfective and imperfective tense morphemes to indicate 'different ways of viewing the internal temporal constituency of a situation' (Comrie, 1976:3). This 'viewpoint aspect' (Smith, 1991; 1997) is also referred to as grammatical aspect, since it is expressed by inflectional morphemes, or sentential (IP) aspect (Schmitt, 1996), since it has scope over the whole sentence. The distinction is illustrated with an accomplishment predicate in the past simple and past progressive tenses:

- 2) a. Tim built a gazebo.
b. Tim was building a gazebo.

2 *English viewpoint aspect and a possible explanation*

Languages vary not only in the strength of functional features, but also in semantic features encoded by the morphosyntax, whether temporal anchoring, aspect, mood, etc. Thus, English differs from German, Romance and Slavic with respect to the semantics of the present tense. It is well known that the English simple tense cannot denote ongoing events.

- | | | |
|---------|-----------------------------------|----------------|
| 3) a. * | She eats an apple right now. | #ongoing event |
| b. | She is eating an apple right now. | ongoing event |
| c. | She eats an apple (every day). | habitual event |

With stative predicates, however, the ongoing reading of the English present is possible.

- | | | |
|-------|---------------------------|----------------------|
| 4) a. | Mike is lazy. | characteristic state |
| b. | Mike is being lazy today. | temporary state |

Furthermore, the English bare infinitive denotes not only the processual part of an event but includes the completion of that event. English accomplishment and achievement predicates in the infinitive (without any aspectual morphology) have only complete events in their denotations.

- | | | |
|-------|---------------------------------|------------------------|
| 5) a. | I saw Mary cross the street. | completion entailed |
| b. | I saw Mary crossing the street. | no completion entailed |

In trying to explain the relationship between the facts illustrated in (3a) and (5a), many researchers have noticed that English verbal morphology is impoverished (Bennett and Partee, 1972; Landman, 1992; Roberts, 1993; Giorgi and Pianesi, 1997; Zucchi, 1999). Of particular interest is Giorgi and Pianesi's recent proposal. English verbs, they argue, are 'naked' forms that can express several verbal values, such as the bare infinitive, the first and second person singular, and the first, second and third person plural. Many English words are even categorially ambiguous in that they can either identify an 'object' or an 'action', such as *cry*, *play*, *drive* and many others. Giorgi and Pianesi (1997) propose that verbs are disambiguated in English by being marked in the lexicon with the aspectual feature [+perf], standing for 'perfective'. English eventive verbs acquire categorial features by being associated with the

aspectual marker [+perf]. In other words, English (eventive) verbs are inherently perfective and include both the process part of the event and its endpoint. Thus, children acquiring English can distinguish verbal forms from nominals, whose feature specification bundle will exclude the feature [+perf]. In Romance, Slavic and Germanic languages other than English, on the other hand, all verbal forms have to be inflected for person, number and tense. Thus, nouns and verbs cannot have the same forms, unlike English, in which zero-derivation abounds. The Bulgarian verb, for example, is associated with typical verbal features as [+V, person, number], and it is recognizable and learnable as a verb because of these features. Nominal inflections are distinguishable from verbal ones. Bulgarian verbs are therefore not associated with a [+perf] feature.

Giorgi and Pianesi further argue that the speech event, which constitutes the reference point for the present tense, is punctual, or instantaneous. Since a perfective predicate entails the closure of the denoted event, it cannot be simultaneous with the punctual speech event. Hence, no ongoing or progressive interpretation is possible for a perfective event in the present. Giorgi and Pianesi (1997: 163) formulate the following constraint:

- 6) The Punctuality Constraint: A closed event cannot be simultaneous with a punctual event.

This impossibility accounts for the crosslinguistic differences observed in the interpretation of the present tense. In languages where the verb denotes a closed event (e.g., English), the present tense cannot have an ongoing interpretation. In languages where the verb has no such restriction (e.g., German, Italian, Spanish, Bulgarian) the present tense can be used to describe an ongoing event simultaneous with the speech event.

The logical question that arises is: How are the habitual and the progressive interpretations in English at all possible if eventive verbs always denote closed events (associated with a feature entailing topological closure)? How are stative verbs associated with verbal categorial features if they are not marked [+perf] in the lexicon? In the case of the present tense habitual interpretation of eventive predicates, Giorgi and Pianesi propose that the present simple tense is characterized by a quantificational feature associated with a generic operator (hypothesized by Chierchia, 1995), which gives it its habitual interpretation. Habitual events (e.g., *John eats an apple for breakfast every day*) are in fact a series of closed events, each consisting of *eat an apple completely*, in an open-ended interval. Thus, the generic operator contributed by the

The [+perf] feature is lexical, hence, it is present in all English dynamic verbs and is related to their categorial specification. The [+progr] feature is encoded in the *-ing* progressive affix and combines with the perfective feature without any conflict, as explained above. The same is true of the generic operator and quantificational feature of statives (encoded lexically) and habituais (encoded in the present tense affix). However, when [+progr] and [+gen] (generic) are not available in the feature bundle of a verbal form, leaving it anchored to the present speech event, the conflict between lexical perfectivity (closure) and the punctual nature of the speech event cannot be resolved. Hence, the ongoing interpretation of the present simple tense is unavailable in English. Notice that all interpretations attributed to English verbal forms result from various (possible and impossible) combinations of lexical and functional semantic features, checked in the functional category AspP.

3 The native contrast

Unlike English, Bulgarian has no present progressive tense and the present simple tense is ambiguous between a habitual and an ongoing event or state. This is true of eventive verbs as in (8) and of stative verbs as in (9) below. The example in (9c) is a (rare) case of deadjectival verb formation with a stative meaning, also expressed with the present tense.

- | | | |
|-------|--------------------------------------|----------------------|
| 8) a. | Maria sega jade jab lka. | simultaneous event |
| | Maria now eat-PRES apple | |
| | 'Mary is eating an apple right now.' | |
| b. | Maria jade jab lka vseki den. | habitual activity |
| | Maria eat-PRES apple every day | |
| | 'Mary eats an apple every day.' | |
| 9) a. | Maria e m rzeliva. | characteristic state |
| | Maria is-PRES lazy | |
| | 'Mary is lazy.' | |
| b. | Maria v momenta e m rzeliva. | temporary state |
| | Maria at this moment is-PRES lazy | |
| | 'Mary is being lazy.' | |
| c. | Maria sega m rzeluva. | temporary state |
| | Maria now be ² lazy-PRES | |
| | 'Mary is being lazy.' | |

Bulgarian verbs do not need to be marked [+perf] in the lexicon. Consequently, Bulgarian equivalents to bare infinitives do not entail completion of the event.

Hyams (2001b) describes two stages in Adam's acquisition of the Punctuality Constraint in English. One is around age 2;3 to 3;1, when the child's bare verbal forms overwhelmingly refer to ongoing events (see Table 1), while his finite forms (present tense with third person singular *-s* counted only) refer to habitual events. Such a stage is also attested in the Nina (age 2;4–2;9) and Naomi's (age 2;1–3;3) CHILDES files; see Table 2. A later stage in Adam's speech comes at 3;2 to 3;5, when the habitual interpretation on both bare and finite forms increases dramatically (see Table 3).

As Tables 1–3 show, there is a clear aspectual difference in the usage of bare verbal forms and finite forms. At ages 2–3 children seem to know that English finite forms should be interpreted to denote habitual events. Still, it has to be explained why the Punctuality Constraint does not include bare forms, as it obviously does in adult grammars; see example (5a). The answer to this question, according to Hyams (2001b), lies at the interface between morphosyntax and semantics. She proposes that, at an early stage in the child's grammar, the bare form is a pure *realis* form (part of the mood opposition *realis–irrealis*). It is temporally unanchored

Table 1 Ongoing vs. habitual interpretation of bare eventive verbs for Adam (2;3 to 3;1)

Ongoing interpretation	43	(91%)
Habitual interpretation	4	(8%)
Total	47	

Source: from Ud Deen, 1997, cited in Hyams, 2001b.

Table 2 Ongoing vs. habitual interpretation of bare and finite (*-s*) eventive verbs for Nina (2;4 to 2;9) and Naomi (2;1 to 3;3)

	Bare form	Finite (<i>-s</i>) form
Ongoing interpretation	24 (83%)	3 (12%)
Habitual interpretation	5 (17%)	26 (88%)
Total	29	29

Source: Madsen and Gilkerson, 1999.

Table 3 Ongoing vs. habitual interpretation of bare and finite (*-s*) eventive verbs for Adam (3;2 to 3;5)

	Bare form	Finite (<i>-s</i>) form
Ongoing interpretation	5 (20%)	2 (3%)
Habitual interpretation	20 (80%)	55 (97%)
Total	25	57

Source: Torrence, 2000.

Based on the results of this test, learners were divided into low intermediate, high intermediate and advanced groups.

The second task of the study was an Elicited Production Task. Participants had to write short compositions describing two pictures (see Appendix 1), designed to elicit present simple and progressive morphology. Lexical items and expressions to use in the compositions were supplied on the test sheet. The first phrase of the composition was also provided. It was expected that in the first part of the composition, describing what Tony does every day, learners will use present simple morphology. The second picture shows what Tony is doing on his day off, so as to elicit present progressive morphology.

Finally, a Truth Value Judgement Task (TVJT; Crain and Thornton, 1998) with written stories was used. Sixty story-sentence combinations, arranged in quadruples (see example below), were judged by the participants. The Bulgarian native speakers saw the story in Bulgarian and the sentence in English, to ascertain that they understood the context. Further examples of each condition are given in Appendix 2.

14) Example of a test quadruple:

Whenever I decide to go to the seaside, my car breaks down. This happened last year, and the previous one, too. It is such a pain to start fixing the car in the middle of the trip. But I don't like calling for road assistance, I am a self-help guy. Will I be unlucky this year, too?

I am fixing my own car. True ☒ False

Whenever I decide to go to the seaside, my car breaks down. This happened last year, and the previous one, too. It is such a pain to start fixing the car in the middle of the trip. But I don't like calling for road assistance, I am a self-help guy. Will I be unlucky this year, too?

I fix my own car. ☒ True False

Tony is a good mechanic. However, he rarely gets the chance to show his skills. His mother's car broke down yesterday. He has decided to fix it before school this morning. Look, he is almost late for school.

Tony is fixing his mother's car. ☒ True False

Tony is a good mechanic. However, he rarely gets the chance to show his skills. His mother's car broke down yesterday. He has decided to fix it before school this morning. Look, he is almost late for school.

Tony fixes his mother's car. True ☒ False

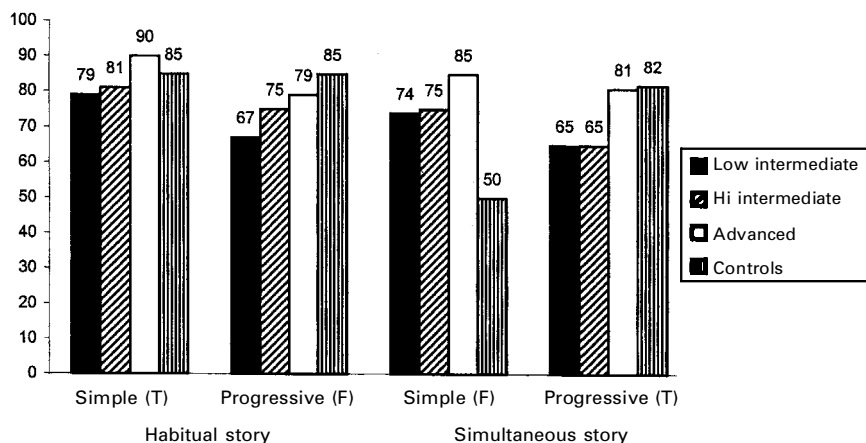


Figure 3 Mean accuracy on simple vs. progressive eventive sentences (percentage)

called 'reportive present' or 'commentator's present'. This reading can be found in stage directions, in radio and television sports commentaries, and the like, where an observer describes a sequence of events simultaneous with the speech time. The native speakers participating in this experiment are clearly accessing this restricted reading in half of their answers, because the context stories strongly resemble reportive discourse.⁷ Note also that none of the learner groups are aware of this reading.

Figure 4 presents the mean accuracy (in percentage) on stative sentences. In this condition, participants were judging whether sentences like *Mary is lazy* vs. *Mary is being lazy* map felicitously to habitual or simultaneous stories. There were significant effects of story ($F(1, 134) = 70.3, p < .0001$) and group ($F(3, 134) = 3.18, p = .0026$). However, *post hoc* Tukey HSD comparisons show that the group effect is only due to the significant contrast between the low intermediate and the advanced groups' accuracy. In other words, even if different among themselves, all learner groups are not less accurate than the natives. Furthermore, there was no effect of aspect ($F(1, 134) = 1.34, p = .25$), suggesting that learners are equally accurate in recognizing the meaning of simple and progressive morphology.

Figure 5 presents the mean accuracy on bare verbs versus *-ing* forms combined with incomplete or complete event context. The

⁷To the best of my knowledge, this meaning of the present simple tense is still awaiting its semantic and syntactic analysis.

most significant findings are reflected in the first and third groups of columns. Advanced learners are even more accurate than native speakers in their knowledge that an English bare verb denotes a complete event, and consequently is incompatible with an incomplete event story (see first group of columns). Even more importantly, all learner groups are quite accurate in attributing a complete interpretation to the bare verb, a property that cannot transfer from the L1, as example (10) indicates. Note also that both native speakers and advanced learners prefer to combine complete

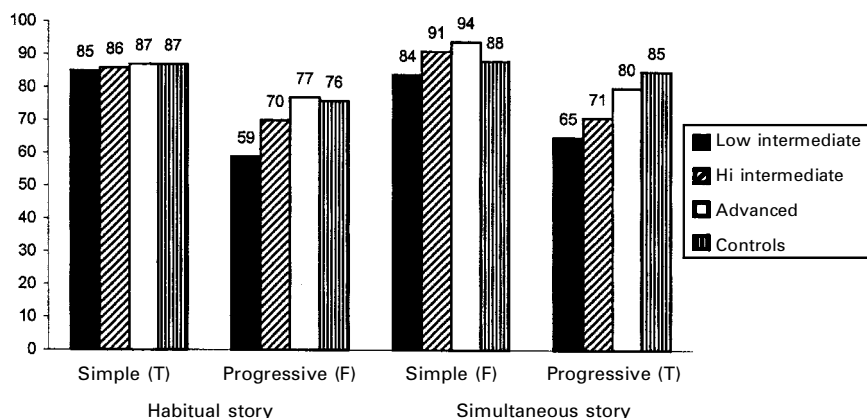


Figure 4 Mean accuracy on simple vs. progressive stative sentences (percentage)

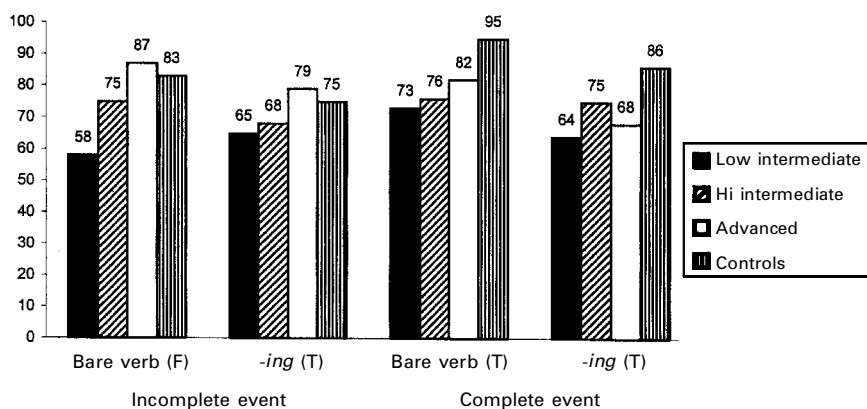


Figure 5 Mean accuracy on bare verbs vs. -ing form on perceptual reports (percentage)

Learnability in the second language acquisition of semantics: a bidirectional study of a semantic parameter

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The study investigates the relationship between input, UG (Universal Grammar) parameter values, and the native language in the acquisition of a purely semantic property that is superficially unrelated to its syntactic trigger, The Bare Noun/Proper Name parameter (Longobardi, 1991; 1994; 1996; 2001; 2005). On the one hand, English and Italian bare nouns have identical syntactic form and distribution, but differ in available interpretations. On the other hand, proper names display cross-linguistic constant meaning but variable word order. Variation in this respect can be accounted for by a parameter that is set to one value in English and another one in Italian. A bidirectional study of the two properties was conducted. Individual results calculated with the native speaker accuracy as the cut-off point for successful acquisition indicate that parametric restructuring is attested in both learning directions. In the English → Italian direction, the lack of one native interpretation in the target language (a contracting of the grammar) is achieved in the absence of negative evidence, in a Poverty of the Stimulus situation. In both directions, the semantic property is acquired based on input and/or positive evidence for the syntactic side of the parameter.

I Introduction

A recent conceptual paper, Schwartz and Sprouse (2000; see also Dekydtspotter *et al.*, 1997), argues that the Poverty of the Stimulus (POS) approach is the only indisputable way to prove that UG (Universal Grammar) is actively engaged in second language acquisition (L2A) and that L2A and first language acquisition (L1A) are not fundamentally

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morphology and word order, that is, where L1–L2 differences are overt and visible. The added interest of the BN/PN parameter, then, is that of the two related properties, one is visible and the other is not.

In Section II, we look at the data in Italian and English. Next, a syntactic account of the parametric difference is given. Section IV lays out the learning tasks and research hypotheses, while Section V describes the experimental study and its results. Finally, in Section VI the findings and their implications are discussed.

II The data

1 Semantic contrasts

In English, the subject bare plural NP has both a generic (Gen) and an existential meaning (Ex), while in Italian it has only the existential meaning.

- | | | |
|----|--|---------|
| 3) | White elephants will undergo the Final Judgment tomorrow at 5. | Ex/Gen |
| 4) | Elefanti di colore bianco passeranno il Giudizio Universale domani alle 5. | Ex/#Gen |
| | elephants of color white undergo-FUT the Final Judgment tomorrow at 5 | |
| | 'White elephants will undergo the Final Judgment tomorrow at 5.' | |

A pertinent paraphrase of the Italian sentence in (4) would be: 'There are **some** white elephants that will appear at the Final Judgment tomorrow at 5.' The English sentence in (3) has the same reading but also the reading 'All white elephants (as a species) will undergo the Final Judgment tomorrow at 5.'

The second semantic contrast has to do with anaphoric binding:

- | | | |
|----|---|-------------|
| 5) | Large cats think very highly of themselves. | Distr/Kind |
| 6) | Gatti di grossa taglia hanno un'alta opinione di se stessi. | Distr/#Kind |
| | cats of large dimensions have a high opinion of self | |
| | 'Large cats think very highly of themselves.' | |

The distributive (Distr) reading of (5) says that each individual large cat has a high opinion of itself only, although they may not think highly of the species in general. The kind (Kind) reading of the same sentence is that every large cat has a high opinion of all large cats as a species, although they may not have a high opinion of individuals within the species, including their personal selves. The distributive reading is available in Italian, but the kind reading is not.

The two purely semantic contrasts are related to the same underlying property, or happen to be two manifestations of that property.

2 Syntactic side of the parameter

The word order contrast parametrically related to the semantic contrasts above is exemplified with proper names modified by adjectives. In English, such names follow the adjective (7), while in Italian the names can precede the adjective as in (8):

- 7) Ancient Rome/*Rome ancient was destroyed by the barbarians.
- 8) Roma antica/*Antica Roma fu distrutta dai barbari.
Rome ancient/ancient Rome was destroyed by barbarians
'Ancient Rome was destroyed by the barbarians.'

As it turns out, these native judgments are not universal, but are probably subject to some dialectal variation (for more discussion, see Section VI).

III The analysis

The parameter unifies the syntactic and semantic behavior of PNs and BNs.¹ Let's look at some of their properties (following Longobardi, 2001; 2005).

¹Apart from the BN/PN parameter whose acquisition I have chosen to investigate experimentally, a similar range of data is described by another theoretical proposal, The Nominal Mapping Parameter of Chierchia (1998; see also the related proposal by Vergnaud and Zubizarreta, 1992). That parameter sets up a typology of NP denotations using the features [\pm predicate], [\pm argument] where predicates are restrictors of quantifiers and arguments are names of kinds. These features constrain how the syntactic category N is mapped onto its interpretations. A language that chooses [$-\text{pred}$, $+\text{arg}$] features is Chinese, where every lexical noun is a mass noun. Languages that choose [$+\text{pred}$, $+\text{arg}$] are the Germanic languages including English. These allow bare (plural and mass) nominals to be arguments, i.e. to refer to kinds. Finally, Romance languages including Italian choose the [$+\text{pred}$, $-\text{arg}$] value, hence bare nominals are disallowed as arguments (Chierchia, 1998: 400). Chierchia makes the following strong prediction about (first) language acquisition, grounded in the Subset Principle as a learnability guide (Chierchia, 1998: pp. 400–401). So that the child would only use positive evidence for grammar restructuring, she will start with the maximally 'conservative' value, which is the Chinese one. The second setting would be the Romance, the Germanic one will be last. The expectation, then, is that Romance-learning children will converge on the adult value faster than Germanic-learning children, who have to sort out more options. Note that Chierchia also invokes the Subset Principle in the operation of the Nominal Mapping Parameter and has English as the superset language of Italian, just as Longobardi's parameter does. In Vergnaud and Zubizarreta (1992), it is the meaning of definite articles (whether or not a definite article is required for a generic interpretation) that is parameterized. If a language can use definite plurals to refer to kinds, it cannot use bare plurals and mass nouns to do so. I do not attempt to choose between these competing theoretical analyses, in the realization that all parameters describe the same semantic data, namely, the number of interpretations of bare nominals in each language. While Longobardi's parameter relates these interpretations to the syntactic behavior of proper names, Chierchia's parameter relates it to intrinsic features that languages choose to encode in their nominals. I chose to investigate Longobardi's parameter because it makes the most interesting predictions from the point of view of second language acquisition. Chierchia's Nominal Mapping Parameter is also eminently testable, and I leave this to further research.

- (9) Ho incontrato **Maria/te**
I met Maria/you.

Proper names as in (9):

- have singular and count reading;
- denote definite (unique in the discourse) and specific entities, i.e. they denote objects (constants);
- have a free distribution;
- widest possible scope (no operator can take them within their scope);
- rigid designators in the sense of Kripke (1980) (they denote the same entity in all conceivable worlds);
- raise N-to-D if the latter does not contain an overt determiner in Italian while they do not raise N-to-D in English (see below).

- 10) a. Bevo sempre **vino**.
'I always drink wine.'
b. Ho mangiato **patate**.
'I ate potatoes.'

Bare plural and mass nouns as in (10), on the other hand:

- have plural or mass reading;
- indefinite interpretation;
- narrowest possible scope;
- non-rigid designation;
- never raise N-to-D.

It is not true that Italian BNs cannot have generic interpretation at all. Two strategies are available for a nominal expression to obtain a generic reading in natural language. The expression can either refer to kinds directly, in which case it exhibits referential genericity; or it can be an indefinite, a variable existentially or generically bound by an independently provided operator (called quantificational genericity, since the nominal expression generalizes over objects; Krifka, 1987). Since Italian BNs are indefinites, hence subject only to quantificational genericity, they can be generic in habitual reading sentences, or in the scope of adverbs like *always* or *often*.² English BNs, on the other hand, are

²Some examples from Longobardi, 2001, his (6b–c):

- | | | |
|------|---|---------|
| (i) | Elefanti di colore bianco possono creare grande curiosità.
White-colored elephants may raise a lot of curiosity | Gen/?Ex |
| (ii) | Elefanti di colore bianco hanno creato sempre/spesso in passato grande curiosità.
White-colored elephants always/often raised a lot of curiosity in the past | Gen/?Ex |

with the maximally restrictive subset grammar. In our second language learning situation and looking only at available interpretations, the Subset Principle predicts that it will be easier for Italian natives to acquire the English interpretations, because they can rely on positive evidence in the input. At the same time, it will be more difficult for the English natives learning Italian to achieve the target L2 grammar, because they will have to acquire the unavailability of one native interpretation without any positive evidence (Figure 1).

For the English learners of Italian, the acquisition process constitutes a contraction of the grammar, since they are learning the unavailability of a target interpretation which is available in their native grammar. Keeping learnability considerations like the Subset Principle in mind, we would predict that English \rightarrow Italian is the difficult direction of semantic acquisition. There is no positive evidence in the input as to the unavailability of the missing interpretation, and negative evidence is not reliably given to learners (see survey of Italian instructors). Our first prediction is, then, that the POS will nevertheless be overcome by parametric restructuring. In other words, knowledge of Proper name–Adjective word order will bring about knowledge that one of the native interpretations is missing.

Second, for the Italian learners of English, the acquisition process involves an extension of the grammar: they are adding one meaning

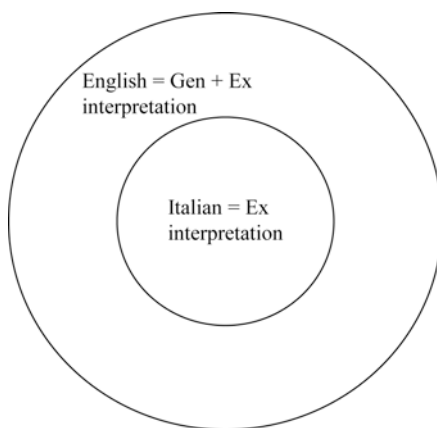


Figure 1 Subset–superset relationship between Italian and English grammars for the semantic side of the BN/PN parameter

blank. There were 40 blank spaces, which the participants had to fill in with one word only.

The TVJT (Crain and McKee, 1985; Crain and Thornton, 1998) consisted of pairs of stories and test sentences. Each test sentence appeared twice, once under a story supporting an existential interpretation of the nominal (*some white elephants*) and a second time under a story supporting a generic interpretation (*all white elephants*). There were eight story-sentence pairs in the Bare Noun Interpretation Condition and the same number in the Anaphoric Binding Condition. Sixteen fillers were also included, eight eliciting a True answer and eight eliciting a False. The stories and the sentences were in the target language. Examples of two story-sentence pairs:

Existential (\exists) story:

In a story that I read, God summons all the animal species to appear in front of him for the Final Judgment. He is going to judge them in groups. Elephants will be divided in two groups: brown elephants and white elephants. Some white ones will see God at 4, other white ones will face him at 5. The brown ones will write a petition.

At 5, the Creator is going to see white-colored elephants. True False

Generic (\forall) story:

In a story that I heard somewhere, some animals ask for God's help. He is to decide who is right. A number of white elephants are arguing with some brown elephants about whose color is better. God is going to see them separately: the white ones at 5 and the brown ones at 6.

At 5, the Creator is going to see white-colored elephants. True False

Distributive reading story:

Cats are strange animals. The large ones think that they are smart and handsome. At the same time, they consider all other large cats to be very ugly. Is this because they feel threatened by the members of their own species? I wonder. . .

Large cats have a very high opinion of themselves. True False

Kind reading story:

I don't like small cats, but I adore large ones. The thing I like most about them is this: they think that every large cat in the world is smart and handsome. They just like each other very much. What a happy group of animals!

Large cats have a very high opinion of themselves. True False

I will explain briefly how the stories were constructed and how they should be read, as well as a design difference between the English L2 test and the Italian L2 test. In general, the stories are fanciful and sometimes employ magic realism to illustrate how whole species, or some members of the species, were affected in a specific event. In the 'Existential story', the story has it that God is going to see *some* white elephants at 5, but

Table 2 Accuracy of interpretation in Truth Value Judgment Task in the acquisition of English (percentages)

Groups	Bare Noun interpretation		Anaphoric binding		Fillers	
	Generic reading	Existential reading	Kind reading	Distributive reading	True	False
English natives (<i>n</i> = 24)	91	75	80	88	95	98
Advanced (<i>n</i> = 40)	87	48*	83	93	99	93
High intermediate (<i>n</i> = 36)	88	55*	83	85	90	98

Note: The percentages marked with an asterisk are not different from chance at $p < .05$.

There was no main effect for condition ($F(1, 75) = 1.11, p = .29$), an effect for group ($F(1, 75) = 6.83, p = .002$), and a significant condition by group interaction ($F(2, 75) = 4.07, p = .047$).

In the Bare Noun Interpretation Condition, there were no statistical differences between the advanced group, the intermediate group and the controls in accuracy of performance ($F(2, 75) = 2.13, p = .13$). Importantly, all the learners and the controls were equally accurate in accepting the available interpretation and in rejecting the unavailable one ($F(1, 75) = 1.63, p = .20$). There was no interaction between accepting/rejecting the test sentence and group ($F(2, 75) = .55, p = .57$). The natives and the advanced group were different from chance in both accepting and rejecting; the intermediate group was different from chance only on the existential reading, the one they accepted, but not different from chance on the one they had to reject.

In the Anaphoric Binding Condition, the two learner groups' accuracy is not different, but they differ significantly from the natives ($F(1, 75) = 7.9, p = .001$). Again, all the groups were equally accurate in accepting the available interpretation and in rejecting the unavailable one ($F(1, 75) = 3.53, p = .064$). There was no interaction between accepting/rejecting the test sentence and group ($F(2, 75) = .78, p = .46$). The intermediate group is different from chance in accepting the available interpretation, but is at chance when rejecting the unavailable one (Table 3).

Table 3 Accuracy of interpretation in Truth Value Judgment Task in the acquisition of Italian (percentages)

Groups	Bare Noun interpretation		Anaphoric binding		Fillers	
	Generic reading	Existential reading	Kind reading	Distributive reading	True	False
Italian natives ($n = 28$)	67	68	72.3	88.4	86	99
Advanced ($n = 24$)	66	76	65.0	67.4	83	85
Intermediate ($n = 27$)	59*	64	62.0*	65.7	79	88

Note: The percentages marked with an asterisk are not different from chance at $p < .05$.

d Accuracy on the GJT in the Italian → English direction: The two learner groups and the controls are at ceiling in their knowledge that N-to-D movement and N-over-AP movement are not permitted in English. There are neither group nor condition effects in the data, as illustrated in Table 4.

Table 4 Accuracy on Grammaticality Judgment Task in the acquisition of English (percentages)

Groups	*N-to-D in proper names		*N-over-AP movement	
	Grammatical	Ungrammatical	Grammatical	Ungrammatical
Controls ($n = 24$)	97	96	100	98
Advanced ($n = 40$)	96	96	99	100
High intermediate ($n = 36$)	96	98	99	99

Table 5 Accuracy on Grammaticality Judgment Task in the acquisition of Italian (percentages)

Groups	N-to-D in proper names		N-over-AP movement	
	Grammatical	Ungrammatical	Grammatical	Ungrammatical
Natives ($n = 28$)	78.6	93	99	95
Advanced ($n = 24$)	75	80	90	70.4
Intermediate ($n = 27$)	80	71	90	66.1