The Role of Semantic Features in Scrambling

Roksolana Mykhaylyk
Stony Brook University

1. Introduction

Previous studies have examined semantic/pragmatic correlates of word order change in a number of languages (see Thrainsson 2001 for an overview). They attested that leftward movement of a direct object affects its interpretation: scrambled position is usually associated with a specific semantic feature. This correlation has been shown to exist in L1 and L2 grammars of learners of Swedish, Dutch, Norwegian, Serbian, Russian, Ukrainian, and other languages (Josefsson 1996, Schaeffer 2000, Ilić & Deen 2004, Brun 2005, Unsworth 2005, Westergaard 2008, Mykhaylyk and Ko 2008, Anderssen et al (to appear), *inter alia*). The relevant semantic feature, however, has not been clearly defined. It has been labeled 'specificity', but could mean either 'referentiality' (Schaeffer), 'definiteness' (Brun), or 'partitivity' (Unsworth). Plausibly, these are all distinct features[1]. The earlier studies, then, raise two specific research questions: *i)* which semantic feature plays the most important role in object scrambling; and *ii)* do effects of specificity, definiteness and partitivity vary cross-linguistically?

This paper provides novel evidence teasing apart the role of semantic features in scrambling, using new experimental data from Ukrainian child language acquisition. Examination of monolingual Ukrainian language acquisition sheds light on the first question, while investigation of English-Ukrainian bilingual development addresses the second question.

37 bilingual English-Ukrainian children and 41 monolingual Ukrainian children from 2 to 6 were tested in an oral elicitation task which triggered the use of scrambled or basic structures in different semantic contexts.

The results show that both groups of children are aware of correlation of semantic features and syntactic movement: they scramble optionally, but not randomly (confirming Mykhaylyk and Ko 2008). The role of semantic features varies by language and age group, but the general pattern is clear: there is a highly significant effect of specificity-partitivity on scrambling in Ukrainian. The data also suggest that the implementation of features might differ cross-linguistically since bilingual children use less scrambling in specific-referential contexts than monolingual children.

The paper is structured as follows. First, relevant language facts from Ukrainian and English are discussed in Section 2. Hypotheses and predictions are presented in Section 2.4. Section 3 provides a detailed description of the experimental study, and in section 4, the results are summarized. The paper concludes with a discussion of the findings and their implications for language acquisition theory.

2. Background

Ukrainian and English differ in the way they employ scrambling and encode semantic features.

Ukrainian is an article-less language that uses scrambling as its chief means of encoding specificity-presuppositionality (Mykhaylyk & Ko 2008). English does not have scrambling and uses articles mainly as definiteness or indefiniteness markers, but in L1 and L2 acquisition the choice of articles might also depend on specificity and/or partitivity (Maratsos 1976, Ionin et al 2004, Ko et al 2008).

[1] See Section 2.1 for the definitions.

2.1. Semantic Features

Semantic features of definiteness and specificity have received thorough treatment in languages with articles. Since many languages (i.e., English) base their article systems on definiteness/indefiniteness distinction, definiteness has been most clearly defined. In this paper, it is assumed, then, that a DP is *definite* when a speaker presupposes the existence of a unique individual in the set denoted by NP and assumes that the hearer shares this presupposition (based on Heim 1991 and Ionin 2003).

The concept of specificity is intuitively simple if described in pragmatic terms as 'speaker's knowledge', but it appears to be more difficult to categorize it in semantic terms. Based on recent advances in linguistic theory, specificity can be defined as follows:

(1) a. *Specificity as Referentiality*: a DP is referential when a speaker intends to refer to an individual in the set denoted by NP and considers this individual to possess some noteworthy property (based on Fodor and Sag 1982 and Ionin 2003).
 b. *Specificity as Partitivity*: a DP is partitive when an individual in question is a part of a set introduced in previous discourse (Enç 1991, Diesing 1992, Ko et al 2008).

Given that definite DPs can also be specific or partitive, it seems that specificity is often used as a cover term in studies where a fine-grained distinction is irrelevant. However, in studies on acquisition of articles and/or scrambling, this broad approach to 'some specific' semantic/pragmatic effects might hide important generalizations, and therefore, it needs to be addressed and clarified.

2.2. Optional DP Scrambling

Another term that has to be clarified is 'scrambling'. For the purposes of this study, only a short scrambling of a direct object is considered. It is defined as a movement of an object from its base position to a higher pre-verbal position and schematized as a change 'SVO -> SOV'. English does not allow this type of movement, as demonstrated in (2) and (4), while Ukrainian employs it quite frequently (although no quantitative data are available to date).

The sentence in (3) can be interpreted as 'Ivan is reading a specific book' or as 'Ivan is engaged in book reading, where *book* is not specific':

(2) John   <u>reads</u>   a/the **book**.   (English)

(3) Ivan   <u>čytaje</u>   **knyžku.**   (Ukrainian)
   Ivan   reads   book
   'Ivan reads a/any/the book.'

In English, sentence (4) is ungrammatical, while in Ukrainian it can mean only "Ivan is reading a specific book' (on its most neutral prosodic realization).

(4) *John   the **book**   <u>reads.</u>   (English)

(5) Ivan   **knyžku**   <u>čytaje</u>.   (Ukrainian)
   Ivan   book   reads
   'Ivan reads **a specific/the/*any** book.'

Scrambling of full NPs is optional in Ukrainian, and the nature of this optionality is extremely complex, with several factors contributing to the word order choice. It is apparent though, that semantic/pragmatic factors are among the most influential, as they impose clearly defined constraints on object interpretation. Specifically, the optionality of scrambling in Ukrainian means that we don't

have to scramble obligatorily, but if we do, the nonspecific interpretation of a scrambled full NP is unacceptable.

2.3. Obligatory Pronominal Scrambling

Pronominal scrambling, on the other hand, is obligatory in Ukrainian. Pronouns (which are inherently referential elements) scramble in many object-shift languages (see Richards 2006 on 'weak' pronouns). In Ukrainian, too, there is a clear contrast between sentences in (6) and (7) if they are pronounced with the same neutral intonation. The sentence in (6) has the pronoun *jiji* in a pre-verbal position and is fully acceptable, while the sentence in (7) is not acceptable because the pronoun sounds odd in a post-verbal position:

(6) Ivan   **jiji**   čytav.
     Ivan   *3SgFEM*   *read*
     'Ivan has read it (the book).'

(7) #Ivan   čytav   **jiji.**
     Ivan   *read*   *3SgFEM*
     'Ivan has read it (the book).'

Personal pronouns, like *jiji*, thus, <u>must</u> scramble in contrast to the full NPs, like 'book', which <u>may</u> scramble. Pronouns remain *in situ* only under special prosodic circumstances, e.g., when the preceding verb is stressed as in (8).

(8) Ivan   ČYTAV   **jiji**.
     Ivan   *read*   *3SgFEM*
     'Ivan has READ it (the book).'

These language facts point to the existence of syntax-semantics correlation in object scrambling and pose a number of intriguing questions with regard to the nature of object movement and the type of semantic feature involved[2]. The present study concentrates mostly on child grammar and the influence of a non-scrambling language with articles on the use of scrambling, but its findings also contribute to the general issue of cross-linguistic analysis of semantic feature implementation.

2.4. Diverging predictions for Ukrainian scrambling

Assuming that children acquire semantic feature realization via UG-based mechanisms, we can extend recent advances in acquisition research to various languages exhibiting similar phenomena. In particular, since both scrambling and articles appear to be tied to the same semantic features of definiteness, specificity and partitivity in L1 and L2 learner grammar, it is reasonable to test similar hypotheses in both cases.

Previous studies on article acquisition have shown that young children grasp existence presupposition (partitivity) quite successfully (Modyanova and Wexler 2007), but have difficulty with uniqueness presupposition (definiteness) (Wexler 2003 and others). Thus, it can be hypothesized that partitivity is available in child grammar from an early age, while definiteness might be acquired later.

Further, it has been also proposed that in bilingual acquisition, one language can influence another when their syntactic systems overlap and two components of grammar (syntax & semantics-pragmatics) are involved (Hulk and Müller 2000). Since the acquisition of semantic features by bilingual English-Ukrainian children presents an apparent case of syntax-semantics interaction, and the two languages (English and Ukrainian) differ with regard to the outcome of such interaction, we can expect to find evidence for the Hulk and Müller's hypothesis, as well.

---

[2] See more on a possible syntax-semantic analysis of the phenomenon in Mykhaylyk and Ko (2008).

Therefore, based on previously proposed hypotheses, predictions for Ukrainian acquisition are formulated as follows:

(9) a. Children will know general semantic constraints on scrambling: nonspecific nonpartitive indefinite objects will not appear in a pre-verbal position.

    a. Young monolingual and bilingual children will not have difficulty scrambling in partitive contexts.

    b. Bilingual Ukrainian-English children will scramble more in specific-partitive and definite contexts than in specific-referential contexts due to English influence.

These predictions were tested with a large pool of subjects who participated in an experimental task described below.

3. Experiment

3.1. Subjects

The experiment was conducted with 37 bilingual English-Ukrainian children (2;2-6;3) and 41 monolingual Ukrainian children (2;7-6;0). Bilinguals were recruited and tested in the New York City area, while monolinguals were tested in Vinnytsia, a medium-size city in Central Ukraine.

The bilingual group consisted of 10 males and 27 females. All children were born in English-speaking countries, attended Saturday Ukrainian schools and had at least one caregiver speaking fluent Ukrainian[3]. Four age groups were analyzed separately: 7 2-year-olds (mean 2;7), 10 3-year-olds (mean 3;4), 10 4-year-olds (mean 4;3), and 10 5-year-olds (mean 5;6).

The monolingual group consisted of 22 males and 19 females. All children were native Ukrainian speakers, attended Ukrainian-speaking day care centers, but could also have various amount of exposure to Russian[4]. The children were also divided into 4 age groups: 6 2-year-olds (mean 2;10); 10 3-year-olds (mean 3;8); 11 4-year-olds (mean 4;5) and 14 5-year-olds (mean 5;8).

The adult control group consisted of 20 subjects (13 females and 7 males). They ranged in age from 18 to 61, with the mean age of 40. All of the adult participants were native speakers of Ukrainian and fluent in Russian. They were recruited and tested in the Vinnytsia region, Ukraine.

3.2. Method

The design was partially based on the Mykhaylyk & Ko (2008) experiment. Subjects participated in a short conversation with a silly puppet Tiger and the experimenter. Tiger was describing pictures presented in a folder, but at some point he would get confused, and then the experimenter would solicit help from the child. The child would describe a picture using a direct object in either scrambled or non-scrambled structure. The choice of the structure depended on one of four types of contexts. 8 verbs and 8 objects were counterbalanced in the stimuli: *pijmaty metelyka* (catch up a butterfly), *vyrizAty kvitočku* (cut out a flower), *maliuvaty kotyka* (draw a cat), *jisty pečyvo* (eat cookie), *myty tarilku* (wash a plate), *čytaty knyžečku* (read a book), za*farbovuvaty lystočok* (color a leaf), *remontuvaty mašynu* (fix a car)[5].

---

[3] Some children had exposure to other languages, such as German, Russian, or Polish, but their performance was very similar to that of other children.

[4] They are defined as 'monolingual' compared to Ukrainian-English bilinguals. However, since Ukrainian-Russian bilingualism is common in Ukraine, many of them could be considered Ukrainian-Russian bilinguals. Russian also has a free word order, and, as was shown by Avrutin & Brun (2001) and Dyakonova (2004), it is also conditioned by semantic features of specificity-definiteness. Therefore, in the present study, subjects' proficiency in Russian was not evaluated, as it is unlikely that their bilingualism would affect general results, although it could be an interesting study to pursue.

[5] All verbs were initially used in an imperfective form, which is considered to be a default one with regard to the object interpretation marking. The correlation between telicity/perfectivity of the verb and specificity of the direct object lies beyond the scope of this paper.

Stimuli consisted of four conditions: Specific-Partitive Definite, Specific-Partitive Indefinite, Specific-Referential Indefinite, and Nonspecific-Nonpartitive Indefinite. They were set in a way which allowed distinguishing different types of specificity – partitivity and referentiality. The examples are presented below:

(10) Condition 1: Specific-Definite

Exp (to the child):	Tiger wants to see pictures in a book. He does not speak well and he is a little bit silly and shy. He must be helped if he doesn't know what to say.
Exp (to Tiger):	Dyvysia, Tyhre, ščo ce?
	'Look, Tiger, what is this?'
Tiger:	Lystočok
	'A leaf'.
Exp:	A koho ty bačyš na ciomu maliunku?
	'And who do you see in this picture?'
Tiger:	Ce Vini Pux
	'It's Winnie the Pooh.'
Exp:	Ščo vin robut' z cym lystočkom?
	'What does he do with the leaf?'
Tiger:	Ja ne znaju…
	'I don't know.'
Exp (to the child):	Ty možeš dopomohty?
	'Can you help?'
CHILD:	Vin joho / (toj) lystočok rozfarbovyje.
	He him / (that) leaf colors.
	'He is coloring it / the (that) leaf.'

(11) Condition 2: Specific-Partitive

Exp:	Dyvysia, Tyhre, ščo ce?
	'Look, Tiger, what is this?'
Tiger:	Try lystočky: 1, 2, 3.
	'Three leaves: 1, 2, 3.'
Exp:	A koho ty bačyš na ciomu maliunku?
	'And who do you see in this picture?'
Tiger:	Ce Vini Pux
	'It's Winnie the Pooh.'
Exp:	'Ščo vin robut' z cymy lystočkamy?'
	'What does he do with these leaves?'
Tiger:	Ja ne znaju…
	'I don't know.'
Exp (to the child):	Ty možeš dopomohty?
	'Can you help?'
CHILD:	Vin odnoho z nyx / (odnoho) lystočka rozfarbovuje.
	He one of them / (one) leaf colors
	'He is coloring one of them / a leaf.'

(12) Condition 3: Specific-Indefinite

Exp (to the child):	Tyhr kudys' pišov, otže ty meni rozkažeš pro maliunky. Dyvysia, ščo ce?
	'Tiger left, so you will tell me about the pictures. Look, what is this?'
Tiger:	Lystočok
	'A leaf'.
Exp:	A koho ty bačyš na ciomu maliunku?
	'And who do you see in this picture?'

Tiger:	Ce Vini Pux
	'It's Winnie the Pooh.'
Exp:	'Ščo vin robut' z cym lystočkom?'
	'What does he do with the leaf?'
CHILD:	Vin <u>joho/lystočok</u> rozfarbovyje.
	He him/the leaf colors.
	'He is coloring it/the leaf.'

Tiger is coming and asking:

Os' i ja! Ščo ja propustyv?
'Here I am! What did I miss?'

CHILD:	Vini Pux (lystočka) rozfarbovuvav <u>lystočka.</u>
	Winni Pooh leaf colored leaf
	'Winni Pooh was coloring a leaf.'

(13) <u>Condition 4: Nonspecific Indefinite</u>

Exp:	Dyvysia, Tyhre, xto ce?
	'Look, Tiger, who is this?'
Tiger:	Ce Vini Pux
	'It's Winnie the Pooh.'
Exp:	I ščo vin robyt'?
	'And what is he doing?'
Tiger:	Vin dumaie, ščo zrobyty z cymy farbamy
	'He's thinking what to do with this paint set.'
Exp:	To ščo vin bude z nymy robyty?
	'So, what will he do with it?'
Tiger:	Ja ne znaiu.
	'I don't know.'
Exp (to the child):	Ty možeš dopomohty?
	'Can you help?'

| CHILD: | Vin može zafarbuvaty (jakohos') <u>lystočka.</u> [target] |
| | He can color (some) leaf |

	# Vin (jakohos') <u>lystočka</u> može zafarbuvaty. [error]
	He (some) leaf can color
	'He can color a leaf.'

Since scrambling of full NPs is optional in adult Ukrainian, children were not expected to perform above chance in any of these conditions. Instead, it was predicted that their responses would show a clear contrast between the three specific and one nonspecific conditions. Particularly, since direct objects are presented by the previous context in the Specific Definite condition (10) and in the Specific Partitive condition (11), children could use the referential pronoun 'it' or the expression 'one of them' (respectively), which <u>should</u> be placed before a verb. On the other hand, if they use a noun, then both scrambled and non-scrambled structures would be felicitous. Crucially, the Nonspecific Nonpartitive Indefinite condition (13) has only one target response: the basic word order; so children were expected not to scramble non-specific objects in such contexts.

3.3. Procedure

The experiment started with a short training session conducted with a group of children of the same age in order to familiarize them with the task, and to make sure they recognized the main characters and objects shown in the pictures: Winnie the Pooh, Piglet, Kangaroo, butterfly, flower, kitten, plate, cookie, book, car, etc. Then each subject was invited to a separate room for an individual

experiment. The full session took no longer than 15-20 minutes and consisted of 8 scenarios. Each child was assigned to one of four lists of stimuli and saw 8 pairs of pictures presented in a randomized order. The children were rewarded with a small gift for their participation. Most of them enjoyed the task, especially the interaction with the puppet. Any subject who refused to talk after a repeat of two trials was discarded from the study.

The adults were trained and tested individually and followed the same procedure.

The testing sessions were recorded using a digital recorder, and children's utterances were written down by the experimenter on a prepared score sheet. The responses were coded as scrambled (1) or non-scrambled (0) and analyzed using a statistical program SPSS.

4. Results
4.1. Child and adult group data

The group results were evaluated by finding out the rates of scrambled structures in each condition for the four child groups and the control group of adults. They are summarized in Table 1.

Table 1. Percentage of scrambling per condition and language & age group

	age group	N	mean age	definite specific	specific partitive	specific indefinite	nonspecific indefinite
Monolinguals	2 y.-olds	6	2;10	17	50	34	0
	3 y.-olds	10	3;8	35	40	25	10
	4 y.-olds	11	4;5	32	68	28	9
	5 y.-olds	14	5;8	36	79	29	7
Bilinguals	2 y.-olds	7	2;7	7	29	29	0
	3 y.-olds	10	3;4	30	65	5	5
	4 y.-olds	10	4;3	25	60	15	5
	5 y.-olds	10	5;6	35	70	15	5
Adults		20	40	52	52	18	5

Overall, the results show that all groups of subjects use scrambled structures mostly in specific contexts. The Nonspecific Indefinite Condition triggered the lowest rates of scrambling, as was predicted. Observationally, the highest rates of scrambling are exhibited in the Specific Partitive Condition (79% and 70% for monolingual and bilingual 5-year-olds, respectively).

Statistical analyses ANOVAs (with condition as a within-subject factor and age as a between-subject factor) confirm a highly significant effect of condition on child scrambling, as shown in Table 2. Statistical analyses of adult data also show the same level of significance[6].

Table 2. ANOVAs

Monolingual children	$F(3, 111) = 16.469$	$p<.0001$
Bilingual children	$F(3, 274) = 25.9$	$p<.0001$
Adults	$F(3, 159) = 13.4$	$p<.0001$

Further analysis of the results by language and age group reveal some interesting tendencies depicted in Figure 1.

---

[6] The state of adult Ukrainian grammar deserves a separate paper, so only the most relevant results are presented here and discussed below.

Figure 1. Means of scrambling per condition, age and language group
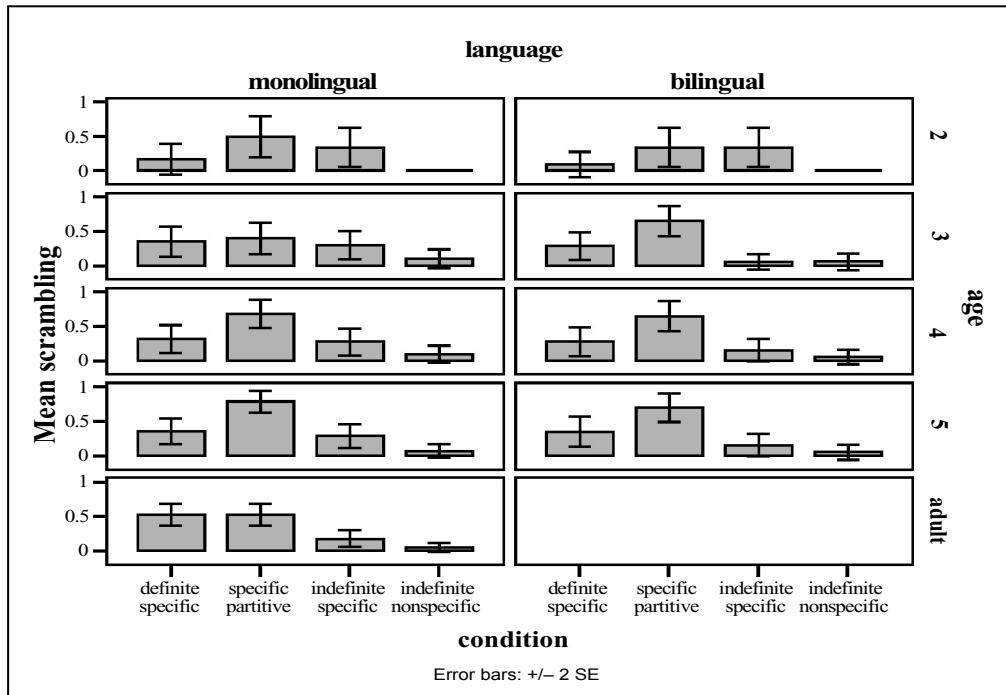
The Specific Partitive condition triggers significantly more scrambling than the Indefinite Nonspecific Nonpartitive condition in all age-language groups ($p<.0001$). The Specific Referential Indefinite condition, however, presents a different picture. On the one hand, there is no significant difference between scrambling in specific indefinite and non-specific indefinite contexts for the bilingual children ($p=0.69$), suggesting a lack of effects of specificity-referentially on scrambling. On the other hand, the L1 data show a significant difference between the same conditions ($p=.007$).

Interestingly, age is not a significant factor in scrambling ($p=0.27$). Group performance is largely similar for 2-year-olds, 5-year-olds or 40-year-olds. Therefore, the examination of the group results in terms of used syntactic patterns suggests that the children are mostly target-like from an early age.

4.2. Individual Results

Analysis of individual data reveals some variation among the subjects: some of them were often target-like, others avoided scrambling (used it no more than once), and yet others did not show any particular preference for the semantic context, as illustrated in Table 3. Crucially, the children pattern similarly to the adults in the individual data as well. In particular, only a few of them produced erroneous scrambling in nonspecific contexts, which confirms group results. The bilingual children stand out only in their preference for the basic structure; more bilinguals use mostly an SVO structure everywhere. This might be due to English influence, but there are no other prominent differences among the subjects.

Table 3. Number of subjects following particular patterns

	Bilinguals	Monolinguals	Adults
Target-like	14/37 (38%)	20/41 (49%)	8/20 (40%)
Avoided scrambling (SVO is prevailing)	13/37 (35%)	9/41 (22%)	4/20 (20%)
Made errors (SOV in nonspecific contexts)	3/37 (8%)	5/41 (12%)	2/20 (10%)
Others	7/37 (19%)	7/41 (17%)	6/20 (30%)

Further analysis of the data reveals that the main difference between the three subject groups is pronominal scrambling in definite specific contexts. First, the bilingual children use fewer pronouns than the monolingual children and adults (6% vs 11% and 17% of total items, respectively), and second, they often leave pronouns *in situ*, as shown in Figure 2.

Figure 2. Use of scrambled vs non-scrambled pronouns
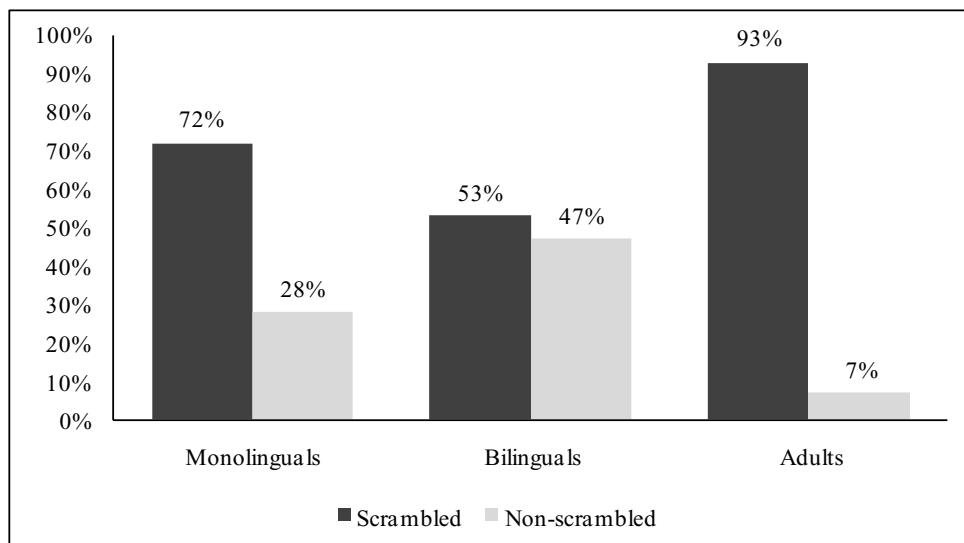
The adults almost always place pronouns in a preverbal position, while the L1 children keep them in place 28% of the time. For the bilingual children, pronominal scrambling is highly optional (47% of pronouns remain in situ), which can also be explained by English influence.

To sum up, the experimental results presented above indicate that children and adults behave similarly with regard to the scrambling rule prohibiting object movement in nonspecific indefinite contexts. Partitive contexts trigger the highest rates of scrambling in all child groups. The most prominent differences concern pronominal scrambling, which appeared to be not mandatory for the bilinguals. Furthermore, the bilinguals scramble less than the monolinguals in specific-referential contexts.

5. Discussion

The results of the experiment confirm the main predictions: children produce correct syntactic structures when provided with appropriate experimental contexts. Specifically, the obtained data show that both language groups of children are aware of the correlation of semantic features and syntactic movement: they scramble rarely in indefinite nonspecific nonpartitive contexts (Prediction (9a)). This signifies that children can distinguish between specificity-partitivity and nonspecificity nonpartitivity, reflecting their knowledge of semantic features. There were infrequent instances of erroneous scrambling, but since the group scrambling rate in the non-specific contexts was never higher than 10%, those data could be due to performance errors. This fact provides a further argument for the view that children do have knowledge of semantic features in their grammar from a very early stage (Avrutin and Brun 2001, Ilić and Deen 2004, Mykhaylyk & Ko 2008).

Next, children in most age/language groups scramble at the highest rates in the Specific Partitive condition (Prediction (9b)), but produce not as much scrambling in the Definite condition (partially confirming Prediction (9c)).

The role of specificity-referentiality varies by language group. Bilingual English-Ukrainian children treat specific-referential objects similarly to nonspecific indefinite objects and scramble them rarely. This finding suggests that this semantic feature might be not operational in bilingual grammar due to English influence.

Another interesting finding concerns pronominal scrambling. It appeared that bilingual children leave pronouns in a post-verbal position more often than monolingual children and adults. As has been demonstrated in Section 2.4, in Ukrainian, pronouns *in situ* are usually associated with particular sentence prosody. It is also known, that children in general are very susceptible to prosodic variations (see Baltaxe (1984); Hirsch-Pasek et al., (1987), Nederstigt (2001), *inter alia*), so it is likely that they might prefer a change in prosody over movement of pronoun. Moreover, bilingual children living in a predominantly English speaking environment might see prosodic shift as one of the best means of marking change in the sentence interpretation. It can be further conjectured, then, that what underlies scrambling is an obligatory grammatical process, which may be expressed in one of two ways, e.g. by movement or prosodic change. Since in English, pronouns are not scrambled and normally movement is not an alternative, children acquiring English and Ukrainian might prefer prosody over movement in Ukrainian as well.

This research also revealed some interesting issues which were not predicted, and thus there is a need for further investigation. Particularly, it is puzzling why even older bilingual children do not scramble more in definite contexts, if definiteness is important in English. Also, a follow-up study on syntax-prosody interface could present direct evidence for the role of prosody in optional object scrambling and explain the difference in pronominal placement by children vs adults. It is expected that this complex approach to scrambling will contribute to general issues in acquisition study and language theory. Particularly, such research will show that acquisition at the syntax-semantics interface can be better understood as feature acquisition. In language theory, it brings us close to the solution of the 'optionality puzzle' in scrambling.

6. Conclusion

This paper presented the experimental data from Ukrainian which provide evidence that partitivity is in fact the 'easiest' feature for young children (see studies on English articles acquisition by Maratsos, Wexler and others). The data also suggest that the implementation of features might differ cross-linguistically. In particular, bilingual input might influence child grammar development by suppressing some featural realizations. Notably, even the youngest children are able to establish a syntax-semantics correlation if scrambling is conditioned by partitivity (confirming Avrutin & Brun 2001 and Ilić & Deen 2004, but see the data on child Dutch by Schaeffer 2000).

References

Anderssen, M., K. Bentzen, Y. Rodina, and M. Westergaard. (to appear) The Acquisition of Apparent Optionality: Word Order in Subject and Object Shift Constructions in Norwegian. In *Optionality in the input*, eds. M. Anderssen, K. Bentzen, and M. Westergaard. Springer.

Avrutin, S. and D. Brun. 2001. The Expression of Specificity in a Language without Determiners: Evidence from Child Russian. In *Proceedings of BUCLD 25*, 70-81. Somerville: Cascadilla Press.

Baltaxe, C. 1984. Use of Contrastive Stress in Normal, Aphasic, and Autistic Children. *Journal of Speech and Hearing Research*, *27*: 97-105.

Baron-Cohen, S., A. M. Leslie, and U. Frith. 1985. Does the Autistic Child Have a "Theory of Mind"? *Cognition* 21(1): 37-46.

Brun, D. 2005. What Children Definitely Know about Definiteness: Evidence from Russian. In *Formal Approaches to Slavic Linguistics 13: The South Carolina Meeting,* eds. S. Franks, F.Y. Gladney, and M. Tasseva-Kurktchieva, 68-79. Ann Arbor: Michigan Slavic Publications.

Diesing, M. 1992. *Indefinites.* Cambridge, MA: MIT Press.

Dyakonova, M. 2004. Information Structure Development: Evidence from Acquisition of Word Order in Russian and English. In *Nordlyd: Tromsø Working Papers* 32, 1.

Enç, M. 1991. The Semantics of Specificity. *Linguistic Inquiry* 22: 1-25.

Fodor, J. and I. Sag. 1982. Referential and Quantificational Indefinites. *Linguistics and Philosophy* 5: 355-398.

Heim, I. 1991. On the Projection Problem for Presuppositions. In *Pragmatics*, ed. S. Davis, 397-405. Oxford: Oxford University Press.

Hirsch-Pasek, K., Kemler-Nelson, D., Jusczyk, P., Wright-Cassiday, K., Dross, B., & Kennedy, L. J. 1978. Clauses as Perceptual Units for Prelingual Infants. *Cognition*, *26*: 269-86.

Hulk, A., and N. Müller. 2000. Bilingual first language acquisition at the interface between syntax and pragmatics. *Bilingualism: Language and Cognition, 3:* 227–244.

Ilić, T. and K. U. Deen. 2004. Object Raising and Cliticization in Serbo-Croatian Child Language. In *Proceedings to the 2003 GALA Conference*. Utrecht, Netherlands: LOT.

Ionin, T, H. Ko and K. Wexler. 2004. Article Semantics in L2 Acquisition: The Role of Specificity. *Language Acquisition* 12, 1: 3-69.

Ionin, T. 2003. *Article semantics in second language acquisition*, Doctoral dissertation, MIT. Distributed by MITWPL.

Josefsson, G. 1996. The Acquisition of Object Shift in Swedish Child Language. In *Children's Language* 9, eds. C.E. Johnson and J.H.V. Gilbert, 153-165, Mahwah, NJ: Lawrence Erlbaum.

Ko, H, T. Ionin, and K. Wexler. 2007. Adult L2-learners Lack *the* Maximality Presupposition, too. In *The Proceedings of the Inaugural Conference on GALANA,* University of Connecticut Occasional Papers in Linguistics 4: 171-182.

Ko, H., A, Perovic, T. Ionin, and K. Wexler. 2008. Semantic Universals and Variation in L2 Article Choice. In *Proceedings of GASLA 2007*, eds, R. Slabakova, J. Rothman, P. Kempchinsky, and E. Gavruseva. Somerville: Cascadilla Press.

Maratsos, M. 1976. *The Use of Definite and Indefinite Reference in Young Children,* Cambridge: Cambridge University Press.

Modyanova, N., and K. Wexler. 2007. Semantic and Pragmatic Language Development: Children Know 'That' Better. In *Proceedings of the 2nd GALANA,* eds A. Belikova, L. Meroni, and M. Umeda, 297-308, Somerville: Cascadilla Press.

Mykhaylyk, R. and H. Ko. 2008. Acquisition of Object Scrambling by Bilingual Ukrainian Children: The Role of Specificity. In *Proceedings of GASLA 2007*, eds. R. Slabakova, J. Rothman, P. Kempchinsky, and E. Gavruseva. Somerville: Cascadilla Press.

Nederstigt, U. 2001. The Acquisition of Additive 'Focus Particles' in German, in A. H.-J. Do, L. Domínguez & A. Johansen, eds., *Proceedings of BUCLD 25,* 554-565, Somerville: Cascadilla Press.

Richards, M. 2006. Weak Pronouns, Object Shift and Multiple Spell-out: Evidence for Phases at the PF-interface. In *Minimalist Essays,* ed. C. Boeckx, 160-181, Amsterdam/New York: John Benjamins.

Schaeffer, J. 2000. *The Acquisition of Direct Object Scrambling and Clitic Placement.* Amsterdam/Philadelphia: John Benjamins.

Thrainsson, H. 2001. Object Shift and Scrambling. In *The Handbook of Contemporary Syntactic Theory*, ed. M. Baltin and C. Collins. Blackwell Publishing.

Unsworth, S. 2005. *Child L1, Child L2 and Adult L2 Acquisition: Differences and Similarities. A Study on the Acquisition of Direct Object Scrambling in Dutch.* Doctoral dissertation, Utrecht University.

Westergaard, M. R. 2008. Verb Movement and Subject Placement in the Acquisition of Word Order: Pragmatics or Structural Economy? In *First Language Acquisition of Morphology and Syntax: Perspectives Across Languages and Learners*, eds. P. Guijarro-Fuentes, P.Larranaga, and J. Clibbens. Amsterdam: John Benjamins.

Wexler, K. 2003. Cues Don't Explain Learning: Maximal Trouble in the Determiner System. Paper presented at *CUNY Sentence Processing Conference*, March, 2003, MIT [To appear in the Proceedings, edited by Ted Gibson and Neal Pearlmutter].

Proceedings of the 10th Generative Approaches to Second Language Acquisition Conference (GASLA 2009)

edited by Melissa Bowles, Tania Ionin, Silvina Montrul, and Annie Tremblay

Web access and citation information

This entire proceedings can also be viewed on the web at www.lingref.com. Each paper has a unique document # which can be added to citations to facilitate access. The document # should not replace the full citation.

This paper can be cited as:

Mykhaylyk, Roksolana. 2009. The Role of Semantic Features in Scrambling. In *Proceedings of the 10th Generative Approaches to Second Language Acquisition Conference (GASLA 2009)*, ed. Melissa Bowles et al., 157-167. Somerville, MA: Cascadilla Proceedings Project.

or:

Mykhaylyk, Roksolana. 2009. The Role of Semantic Features in Scrambling. In *Proceedings of the 10th Generative Approaches to Second Language Acquisition Conference (GASLA 2009)*, ed. Melissa Bowles et al., 157-167. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #2266.