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On clitic comprehension in child Romanian

Cross-linguistic investigation of the interpretation of pronominal clitics reveals an asymmetry between the acquisition of Accusative clitics (AC) in simple clauses ([1], [2], [3], [4]), and their vulnerability in ECM(-like) constructions (ECMlc). In the latter, children allow erroneous coreference of ACs with the matrix subject until age 6 or 7. No difficulty has been observed with reflexive clitics (RC) in any of the two constructions.

The aim of the present study is to contribute to the picture of clitic comprehension in simple clauses and in ECM with data from child Romanian. In Romanian, the equivalent of ECM with verbs of perception contains an embedded gerund (illustrated in 1), a surface structure compatible with two analyses: (i) the matrix verb takes a (non-phasal, T-defective) gerund argument; the AC is the argument of the embedded verb and receives case within the gerund small clause from the matrix verb (as shown in 2) (the argument analysis); (ii) the AC is the argument of the matrix verb and the gerund is a CP adjunct (the adjunct analysis) (as shown in 3) ([5]). We focus on two issues: (i) is the clitic interpretation problem in ECMlc also found in Romanian?; (ii) if it is, does it reflect a delay in the acquisition of clitic interpretation or a delay in the acquisition of ECM-like configurations?

We used a picture selection task with 32 test sentences across 4 conditions: (i)-(ii) ACs and RCs in simple sentences; (iii)-(iv) ACs and RCs in ECMlc (see 4-7). For the ECMlc condition with an AC, the scenario was strongly biased towards the argument analysis of the gerund clause. The participants saw two pictures in a power point presentation[1] and heard an introductory sentence followed by the test sentence. They were asked to point to the picture which matched the sentence they had heard. A group of 24 4-year-old (mean age 4;5) and a group of 24 5-year-old (mean age 5;9) Romanian-speaking children took part in the study[2]. A control group of 11 adults (20 - 41 years) was also tested.

The adults' responses were at ceiling. The results of the children (summarized in Table 1) were in line with what was reported for other clitic languages: lack of problems with RCs and ACs in simple clauses. The statistical analysis (one-way ANOVA) reveals a significant effect of condition in both age groups. The only configuration which triggered a significant number of non-adult-like responses, even from the 5-year-olds, was the ECMlc with ACs. The test sentences with an ECMlc with a RC were also more difficult to comprehend, but only for the 4-year-olds.

One possible account of our findings is rooted in the ambiguity of the Romanian gerund construction with verbs of perception. The children randomly chose between the argument analysis (in this case they interpreted the AC as disjoint from the matrix subject) and the adjunct analysis (in this case they interpreted the AC as an argument of the matrix verb). What seems erroneous coreference of the AC with the matrix subject is actually the licit interpretation of the latter as the antecedent of the subject of the gerund (supported by children's answers to clarification questions when their picture choice was not adult-like). We argue that our data indicate absence of clitic interpretation problems in ECMlc in Romanian. Children behaved in a non-adult-like manner only in opting for the adjunct analysis of the gerund in spite of the argument bias in the task, i.e. they avoided the ECMlc with case-marking across clausal boundaries ([6]). What may be actually delayed is the acquisition of ECMlc; at age 5, Romanian children still interpret T-defective domains as phases. This is in line with the absence of ECM in longitudinal data ([7]), with the lower number of correct responses to the ECMlc with a RC in our study, as well as with previous studies which showed that the acquisition of complex predicates which require transparent clausal boundaries and argument reorganization is delayed ([8], [9]).

[1] The power point was based on materials designed within COST Action A33.

[2] Data collection is still under way. We present here only the results for the 4- and 5-year-old groups.

(1) Maria o vede uitîndu- se pe fereastră.
Maria CL sees look-GER-REFL on window
'Maria sees her looking out of the window.'

(2) Maria vede [$_{SC}$ o [uitîndu- se pe fereastră]] (+ clitic climbing)
Maria sees CL look-GER-REFL on window

(3) Maria$_i$ o$_j$ vede [$_{CP}$ PRO$_{i/*j}$ uitîndu- se pe fereastră].
Maria CL sees look-GER-REFL on window

(4) Clovnul îl pictează.
clown.the CL paints
'The clown is painting him.'

(5) Clovnul se pictează.
clown.the REFL paints
'The clown is painting himself.'

(6) Vrăjitoarea o vede dansînd.
witch-the CL sees dance-GER
'The witch sees her dance/dancing.'

(7) Vrăjitoarea se vede dansînd.
witch-the REFL sees dance-GER
'The witch sees herself dance/dancing.'

Table 1. Correct responses per condition

Group	AC in simple clause	RC in simple clause	ECMlc with RC	ECMlc with AC
4-year-olds n=24	94.27% (181/192)	95.3% (183/192)	85.4% (164/192)	54.17% (104/192)
5-year-olds n=24	100%	98.43% (189/192)	95.8% (184/192)	76.04% (146/192)

References:[1] McKee, C. 1992. A comparison of pronouns and anaphors in Italian and English acquisition. *Language Acquisition* 2: 21-54; [2] Baauw, S., Escobar, M., Philip, W. 1997. A delay of principle B effect in Spanish speaking children: The role of lexical feature acquisition. In A. Sorace et al. (eds.) *Proceedings of GALA 97 Conference on Language Acquisition*, 16-21. University of Edinburgh; [3] Varlokosta, S. 2000. Lack of clitic pronoun distinctions in the acquisition of principle B in child Greek. *Proceedings of BUCLD 24*, 738-748. Sommerville, MA: Cascadilla Press; [4] Baauw, S., Zuckerman, S., Ruigendijk, E., Avrutin, S. 2011. Principle B delays as a processing problem: Evidence from task effects. In A. Grimm et al. (eds.) *Production-Comprehension Asymmetries in Child Language*, 247-272. Berlin: de Gruyter. [5] Alboiu, G., Hill, V., 2013. On Romanian perception verbs and evidential syntax. *Revue Roumaine de Linguistique* LVIII (3): 275-298; [6] Roeper, T., de Villiers, J. 1992. Ordered decisions in the acquisition of *wh*-questions. In H. Goodluck et al. (eds.) *Theoretical Issues in Language Development*. Hillsdale, NJ: Erlbaum; [7] Guasti, M.T. 1993. Verb syntax in Italian child grammar: Finite and non-finite verbs. *Language Acquisition* 3: 1-40; [8] Jakubowicz, C. 1984. On markedness and binding principles. In C. Jones, P. Sells (eds.) *Proceedings of NELS 14*, 154-182. [9] Santos, A.L., Gonçalves, A., Duarte, I., Hyams, N. 2013. Aspects of the acquisition of object-control and ECM-type verbs in EP. Paper presented at Gala 2013, Oldenburg, 5-7 September.

Discourse topics and the comprehension of relative and passive clauses in French

Children's selective difficulties with movement structures such as object relatives (ORs) and passives have been explained in terms of intervention effects. These effects arise in ORs when the object and the subject share a (lexical) +N feature and in passives when the logical subject intervenes on the chain created by passive movement. Such effects in ORs, for example, can be modulated by featural mismatches in argumental or Phi features between the two DPs [1-3], but these have a selective impact cross-linguistically depending on whether a feature is syntactically 'active' in a given language, i.e. functioning as an attractor for movement by belonging to the feature set of the clausal inflectional head [3]. The question that arises is whether a mismatch in a feature that is neither argumental, nor quantificational in nature [4], such as +Top(ic), impacts OR comprehension. The presence of a +Top feature on the moved argument distinguishing it from the intervener has been argued to improve children's comprehension of verbal passives in English [5], while establishing the OR subject as the discourse topic has been shown to reduce the difficulty associated with the processing of ORs in adults [6].

Two studies with typically developing French speaking children explored whether the presence of a discourse-related feature, namely +Top, on the moved argument can modulate intervention effects associated with OR and with passive comprehension in children. These two structures involve different types of movement; while the moved element in object relatives targets a non-argumental (or A-bar) position, the moved constituent in passives targets an argument (or A) position. Study 1 examined SR and OR comprehension in 70 children (age range 5;0 to 7;8) using a character-selection task. Study 2 investigated the comprehension of active sentences, long passives and short passives in 55 children (age range 4;0 to 5;8) using a picture-selection task. The Topic condition was a between-subject variable in each study. We maintained the same visual stimuli and test sentences across conditions, varying only the way in which the sentences were introduced (Examples 1-3). There was no preceding context for the NoTopic condition, while a short context introduced the test sentences in the Topic condition. This introduction served the purpose of establishing the head of the relative or the passive subject as the discourse topic and thus triggering the presence of a distinctive +Top feature on the moved argument. Crucially, the preceding context in the Topic_Patient condition also associated the character established as the discourse topic to the role of Patient and hence gave further indication as to what argument role should be associated with the head noun in the case of ORs and the passive subject in the case of passive sentences.

The data for each study (Figures 1 and 2) were fitted to a GLMM, with Sentence Type (SR vs OR, Active vs LongPassives vs ShortPassives) and Topic (NoTopic vs Topic vs Topic_Patient) as fixed predictors. The results reveal a significant effect of Structure Type in both studies: ORs yield lower accuracy scores than SRs ($p<.001$); long passives yield lower accuracy scores than short passives ($p<.001$), while there is no difference in comprehension between short passives and active sentences ($p=0.31$). The +Top feature on the moved element does not significantly affect response performance, neither in ORs, nor in passives ($p>.05$). Our findings show that the presence of a +Top on the head noun in ORs and on the subject in passive sentences does not modulate children's comprehension, not even in instances when the context associated the moved element to the role of Patient. This follows from the featural intervention account, as children seem to be sensitive to the presence of an overlap in argumental features, here +N, on the moved object and the intervener. This difficulty can only be alleviated when the two elements are distinguished by 'active' argumental features associated with N [2-3], not by criterial features such as +R(el) or +Q as shown in other work [1], nor by +Top, as revealed in the current study.

Example 1. <u>No Topic</u>

a. Montre-moi la princesse que la grenouille arrose. (OR)
'Show me the princess that the frog is splashing.'

b. Montre-moi l'image où la petite fille est embrassée par la mère. (LongPassive)
'Shoe me the image where the little girl is kissed by the mother.'

Example 2. <u>Topic</u>

a. *Voilà deux princesses. Les princesses aiment beaucoup l'eau. Voyons ce qui se passe avec les princesses. Tu dois faire attention et me montrer qu'une seule. Écoute-bien :*
'Here are two princesses. The princesses like water a lot. Let's see what's happening to the princesses. You have to pay attention and show me only one. Listen carefully:'
Montre-moi la princesse que la grenouille arrose. (OR)

b. *Regarde, ici c'est la petite fille toute seule. Je vais te raconter quelque chose sur elle. Je sais qu'elle aime beaucoup les bisous, la petite fille!*
'Look, here is the little girl all alone. I'm going to tell you something about her. I know that she likes kisses a lot, the little girl!'
Montre-moi l'image où la petite fille est embrassée par la mère. (LongPassive)

Example 3. <u>Topic Patient</u>

a. *Voilà deux princesses. Quelque chose va arriver à l'une d'entre elles. Tu dois faire attention et me montrer qu'une seule. Écoute-bien :*
'Here are two princesses. Something is going to happen to one of them. You have to pay attention and show me only one. Listen carefully:'
Montre-moi la princesse que la grenouille arrose. (OR)

b. *Ici on voit la petite fille toute seule, et vu qu'elle est toute seule il ne lui arrive rien. Mais voyons si sur l'image suivante il arrive quelque chose à la petite fille.*
'Here we see the little girl all alone, and since she's all alone nothing is happening to her. But let's see if in the following images something is happening to the little girl.
Montre-moi l'image où la petite fille est embrassée. (ShortPassive)

Figure 1. Comprehension of relative clauses

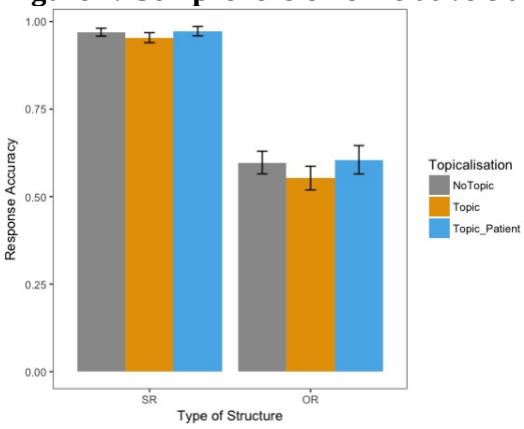
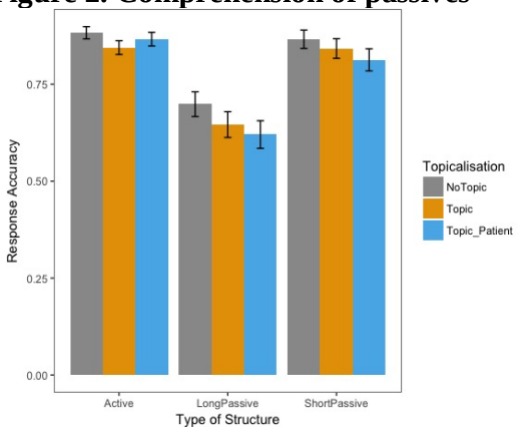


Figure 2. Comprehension of passives



References: [1] Friedmann et al. 2009. Relativized relatives: Types of intervention in the acquisition of A-bar dependencies. *Lingua.* 119: 67-88; [2] Adani et al. 2010. Grammatical feature dissimilarities make RCs easier: a comprehension study with Italian children. *Lingua* 120, 2148–2166. [3] Belletti et al. 2012. Does gender make a difference? Comparing the effect of gender on children's comprehension of relative clauses in Hebrew and Italian. *Lingua*. 122: 1053-1069; [4] Rizzi, L. 2004. Locality and Left Periphery. In *Structures and Beyond. The Cartography of Syntactic Structure Volume 3*, Belletti (ed), 223-251. Oxford: OUP; [5] Synder and Hyams. 2015. Minimality effects in children's passives. In *Structures, Strategies and Beyond: Essays in Honour of Adriana Belletti (Linguistik Aktuell/Linguistics Today, 223)*, Di Domenico et al. (eds.), 343-368. Amsterdam/Philadelphia: John Benjamins.; [6] Mak et al. 2008. Discourse structure and relative clause processing. *Memory & Cognition* 31. 170-181.

The comprehension of multiple wh-questions in Romanian: a case of intervention effects?

Featural intervention accounts [1-3] link children's comprehension difficulties with object *which*-questions vs. object *who*-questions to intervention effects, arising in *which*-questions when both the fronted wh-object and the intervening subject are lexically-restricted (i.e. contain a +NP specification). In a self-paced listening study, we tested the predictions of such accounts on children's processing of multiple *who*- and *which*-questions (MWHs) in Romanian, a language with obligatory multiple wh-movement. Wh-objects in Romanian are case-marked and *which*-objects are doubled by a clitic. Romanian also exhibits strict ordering constraints in *who*, but not *which*-questions: fronting a *which*-object over a *which*-subject (1d) is grammatical, while fronting a *who*-object over a *who*-subject (1b) is not. The aims of the study were twofold: (i) examine how children process MWHs in Romanian and (ii) uncover the source of difficulty in the comprehension of *who* vs. *which* MWHs.

Thirty-two monolingual Romanian children ranging in age from 6;11 to 9;8 (mean age 8;3, SD = 11) participated in a study with WhType (*cine* 'who' vs. *care* 'which') and WhOrder (*Subject-Object* vs. *Object-Subject*) as within-subject factors. Participants listened segment-by-segment to forty embedded questions with two extracted *wh*-phrases (1). At the end of each sentence, a picture (Fig 1) appeared on the screen and participants had to answer the question by identifying the correct actions and characters.

1. Paddington wants to know ...

(a)cine	**/pe cine**	/fugărește		/... (***who-SO***)
who	/ACC.who	/chases		/...
(b)pe cine	**/cine**	/fugărește		/... (***who-OS***)
ACC who	/who	/chases		/...
(c)care urs	**/pe care supererou$_j$**	/îl$_j$	/fugărește	/... (***which-SO***)
which bear	/ACC.which superhero$_j$	/him$_j$	/chases	/...
(d)pe care urs$_j$	**/care supererou**	/îl$_j$	/fugărește	/... (***which-OS***)
ACC which bear$_j$	/which superhero	/him$_j$	/chases	/...

While featural intervention accounts predict *SO* to be easier than *OS* questions, they also predict that children should have difficulties with both *who-OS* (1b) and *which-OS* (1d), since in both cases the moved wh-object and the intervening subject share the same featural specification and featural similarity between the two *wh*-words is a crucial factor in triggering intervention effects. An LMER by segment of residual reaction times (RTs) for correct responses only (Fig 2) revealed (i) a slowdown in RTs for *who*- vs. *which*-phrases ($p<0.001$); (ii) longer RTs associated with the clitic region in *which*-MWH ($p<0.001$); (iii) faster RTs for subject vs. object wh-words. For accuracy (Fig 3), a GLMM showed an effect of WhType (children were less accurate with *which*- vs. *who*-MWH, $p<0.001$), and an interaction of WhType and WhOrder ($p<0.01$): while children comprehended both *who-SO* (1a) and *who-OS* (1b) equally well, *which-OS* (1d) yielded less accurate responses than *which-SO* (1c).

Our findings indicate a speed-accuracy trade-off. Children are more accurate with *who*-MWH than *which*-MWH, but they slow down when they process *who*- as compared to *which*-phrases. In *which*-questions children show an intervention effect only in accuracy and a slowdown at the retrieval region (i.e. the clitic), due to difficulties in processing the clitic. This may be linked to the lower accuracy rates obtained for *which*-MWH vs *who*-MWH. The difference in accuracy between *who*- and *which*-MWH, coupled with the intervention effect arising in *which-OS* (1d) questions supports previous findings for single wh-questions [1-5]. The lack of an intervention effect in terms of RTs may indicate that this effect occurs at a later stage, after children have heard the whole sentence and when they interpret its meaning. We will discuss the implications of these findings for featural intervention accounts [1-3] of children's selective difficulties with movement configurations.

Fig 1. Example of image associated with a target sentence

Fig 2. Residual RTs (ms) by segment for multiple *who* and *which* questions

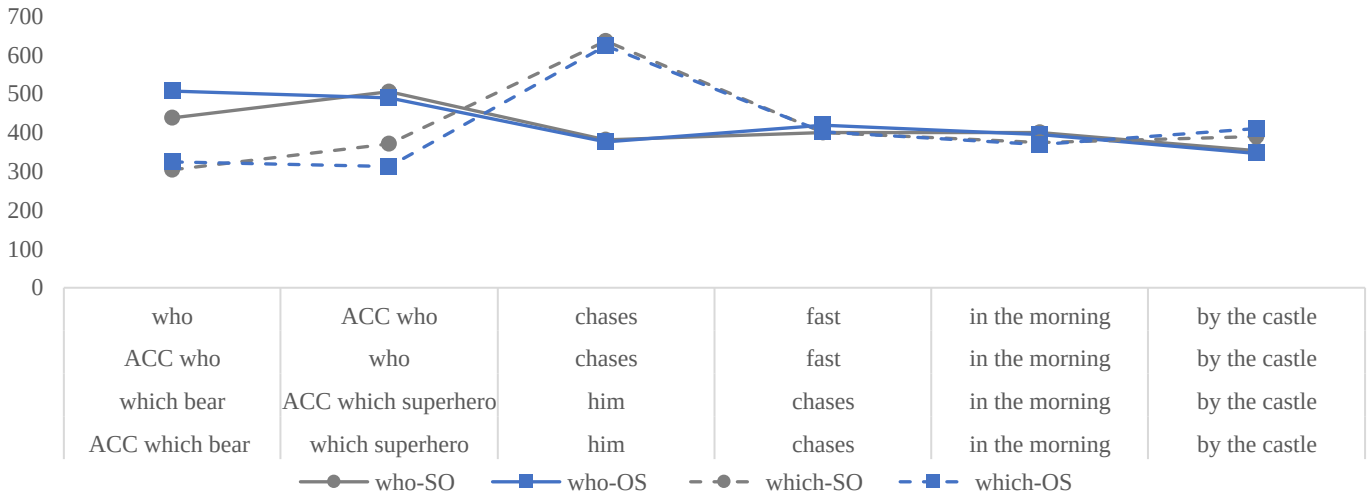
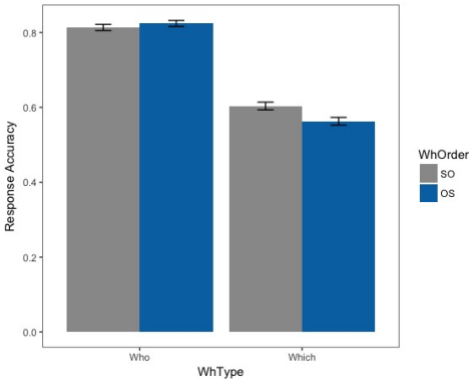


Fig 3. Overall response accuracy for *who* and *which* multiple wh-questions



References: [1] Friedmann, N., Belletti, A., Rizzi, L. 2009. Relativized relatives: Types of intervention in the acquisition of A-bar dependencies. *Lingua.* 119: 67-88; [2] Belletti, A., Friedmann, N., Brunato, D., Rizzi, L. 2012. Does gender make a difference? Comparing the effect of gender on children's comprehension of relative clauses in Hebrew and Italian. *Lingua*. 122: 1053-1069; [3] Friedmann, N., Rizzi, L., Belletti, A. 2017. No Case for Case in locality: Case does not help interpretation when intervention blocks A-bar chains. *Glossa: A Journal of General Linguistics*. 2(1): 33, 1-18. [4] De Vincenzi, M., Arduino, L. S., Ciccarelli, L., Job, R. 1999. Parsing strategies in children: comprehension of interrogative sentences. In S. Bagnara (Ed.), *Proceedings of European Conference on Cognitive Science*. (pp. 301–308). Rome: Instituto di Psicologia del CNR. [5] Goodluck, H. (2005). D(iscourse)-linking and question formation: comprehension effects in children and Broca's aphasics. In A. M. Di Sciullo (Ed.), UG and external systems: language, brain and computation (185-192). Amsterdam: John Benjamins Publishing Company.

Testing children's knowledge of restrictions in a partial null-subject language

1. Introduction

This study investigates if 4- to 7-year-old children acquiring Brazilian Portuguese (BP) as their native language know in which contexts null impersonals are allowed. In BP, a partial null-subject language, 3rd person null subjects in main clauses can only have the generic reading (1). However, there are restrictions on the type of structures in which impersonal null subjects are allowed, which also vary cross-linguistically (Alexiadou & Carvalho, 2017). The present study investigated children's knowledge of some of these restrictions.

To characterize the restrictions, we adopt the results of Bertolino's (2017) online survey with 165 native speakers of BP (adults). On a scale of 0 to 5, she found that structures with only a fronted locative (Adv) had an average of 2.9 in acceptability, compared to structures with a fronted locative and a deontic modal (Adv+Deo), with an acceptability of 3.9. The use of a 'se' pronoun is also acceptable in both contexts. On the other hand, when there is no adverbial or modal (NoAdv), neither the null subject nor 'se' was considered acceptable: in other words, NoAdv structures were judged was ungrammatical.

Bertolino (2019) showed that 4-year-olds acquiring BP already know that they are acquiring a partial null-subject language, consistently rejecting the referential reading of the subject in (1) that would be allowed in a consistent null-subject language. The present study investigates children's responses to sentences with a null subject vs. a 'se' pronoun in the contexts described above (Adv, Adv+Deo and NoAdv (see (3)).

2. Predictions

Given the previous results from Bertolino (2019), we predicted that adults would judge an impersonal sentence without an adverb (NoAdv) as ungrammatical, whether it had 'se' or a null subject (indicated by 'neither' in (3)); Adv structures would be accepted only with a 'se' (indicated by 'se' in (3)); and structures with both an adverb and a deontic modal (Adv+Deo) would be accepted with either the null subject or 'se' (indicated by 'both' in (3)). These predictions also align with our theoretical assumptions: NoAdv would be ungrammatical because 'se' has the tendency to appear as an enclitic when there is no fronted adverb (Martins, 2003); in the Adv condition, 'se' is the only element that can satisfy EPP: the fronted adverb can check EPP only when it is licensed by a modal (Bertolino, 2017); in the condition Adv+Deo, null subjects are allowed, since the modal licenses the PP and it checks EPP ('se' is not necessary to check EPP) (Bertolino, 2017).

As for children, they need to have two kinds of knowledge to perform adult-like: (a) knowledge of 'se' as an impersonal pronoun, and (b) knowledge of where the null subject is allowed.

3. Method

The experiment consisted of a *Who said it better? Task*. In the experiment (2), the participants watched a sequence of Power Point animations; at the end of the story, one of the characters used a sentence with a 'se' pronoun and the other one produced a comparable sentence with a null subject. The participants had to judge which one said the sentence in "the best way". There were always four choices: Elmo could be right, Cookie Monster could be right, both of them, or neither of them. Four conditions were investigated (3). The test consisted of three test sentences, four training items and three fillers; it took approximately 15 minutes. 15 adults were tested, as were 40 children, with 10 in each 4- to 7-year-old age group. No child had to be excluded from the final results based on performance with fillers.

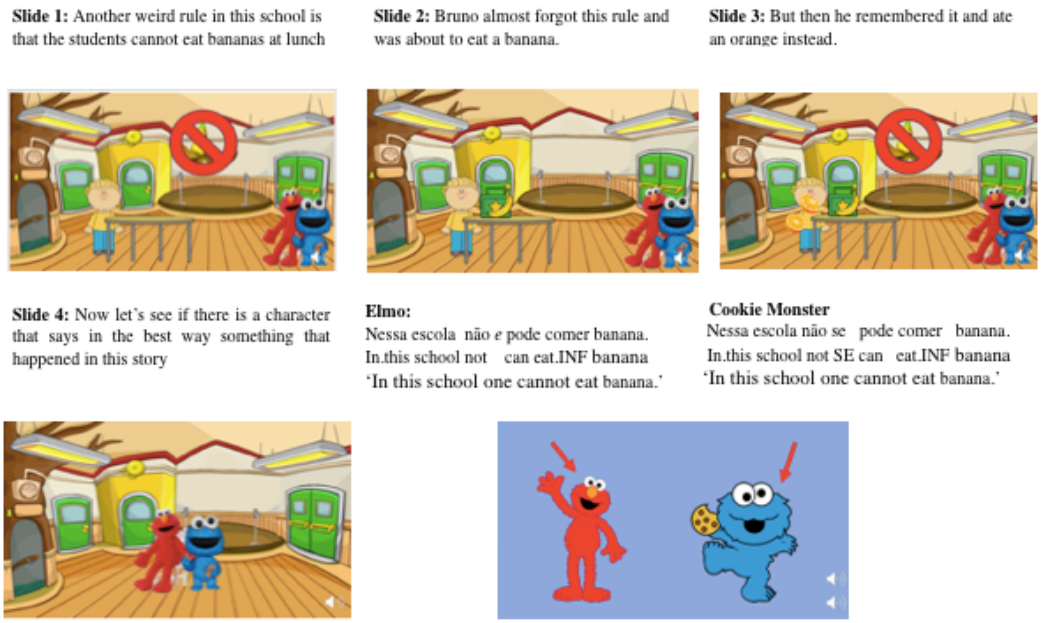
4. Results and Discussion

Adults overall performed as expected (see Figure 2 and statistics in (4)).

7- and 6-year-old participants behaved adult-like, but 4- and 5-year-olds showed lower accuracy for all conditions (results and statistics in (4)). Inspection of error pattern reveals that younger children choose the null-subject instead of the option 'both' in the condition Adv+Deo and this fact can be accounted by assuming that they do not know impersonal 'se'. In No+Adv, most younger children did not choose the option 'neither' and overaccepted the null-subject. For the condition 'Adv', younger children failed to choose 'se' and overaccepted the null-subject: we can account for the data assuming that children chose the null-subject as the only possible answer, since they do not know impersonal 'se' and are reluctant in accepting 'neither'(as seen in the condition No+Adv). Although 4- and 5-year-olds already know that the null subject must be impersonal (Bertolino 2019), their delay in the acquisition of impersonal 'se' and their refusal to accept the option 'neither' caused their non-adult performance in the experiment.

(1) Nessa escola e tem que PRO brincar dentro da sala de aula.
In.this school has that play.INF inside of.the room of class
'In this school one has to play in the classroom.

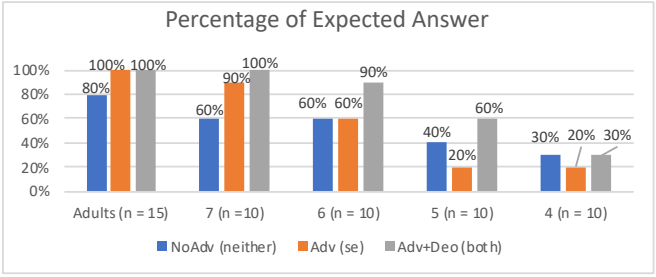
(2) *Figure 1*: *Example of a story used in the experiment*



(3) *Table 1: Structures tested and test-sentences*

Conditions	**Test-sentences**
No fronted adverb (NoADV) **Expected answer: 'neither'**	(Se) come almoço. (SE) eat:3SG lunch 'One eats lunch.'
Fronted adverb (ADV) **Expected answer: 'se'**	Nessa escola (se) traz brinquedo. In.this school (SE) bring:3SG toy 'In this school one brings toy.'
Fronted adverb and deontic modal (ADVD) **Expected answer: 'both'**	Nessa escola não (se) pode comer banana. In.this school not (SE) can eat.INF banana 'In this school one cannot eat banana.'

(4) *Figure 2: Percentage of expected answers*



No significant difference between adults and 7-years-old: Kruskal-Wallis test ($H = 0.55$, $p = 0.457$). 4-year-olds and 5-year-olds exhibited worse performance than 7-year-olds which were taken as the baseline in all conditions (for both groups: GLM, z-value = -2.720, $p < 0.01$). 6-year-olds were statistically identical to 7-year-olds (GLM, z-value = -1.450, $p = 0.147$).

Young children's use of prosody and contextual cues in disambiguating wh-specific/indefinite question: The case of Korean

It is known that both children and adults use prosodic information to interpret ambiguous sentences (Choi & Mazuka, 2003; Zhou, Yi, Crain, & Zhan, 2012; Choi, 2009; Jun & Oh, 1996). The "Wh" words in Korean have two lexical functions- *Wh-specific* and *indefinite* question. Previous studies on adult show speakers of Korean differentiate wh-phrases using prosody (accentual phrasing and boundary tones; e.g., Jun & Oh, 1996). However, young children's use of prosody (accentual phrasing and boundary tones) in disambiguating wh-question has not been studied before. Also, no previous studies attempted to examine the difference in children's response when the wh-question is presented with either "matched" or "mismatched" contextual information.

Research Goal:

The goal of the study was to investigate young Korean children' use of prosodic and contextual cues in interpreting ambiguous wh-questions with the following questions: (1) to what extent can young children provide accurate answers to the ambiguous questions according to its prosody (accentual phrasing and boundary tones; e.g., Jun & Oh, 1996)? (2) is young children's accuracy in disambiguating the questions according to its prosody depend on the contextual information?

Methods:

This study was a within-subject design. Participants were 43 monolingual standard Korean speaking children aged 3;0 to 3;11 ($M_{age\ in\ month}$ = 42.18; SD = 3.40; Range= 36.06 - 47.04). Twenty-two (51.2%) were girls, and 21 (48.8%) were boys. All children were presented with five filler questions and eight auditory-picture paired stimuli for wh-specific and indefinite questions. The recording of each prosody form was done based on Jun's tone-syllable association model (Jun, 1998). The information contained in the picture stimuli either "matched" or "mismatched" the content of the question. The picture-auditory stimuli pairs were counterbalanced, and the presentation order was randomized in four different ways. Total of 13 slides (8 study questions & 5 fillers) were presented on the screen. For each slide, the children were allowed to hear the question as many times as they needed, but they had to provide an answer to the question to move on to the next slide. Children's verbal and gestures responses (i.e., nodding, pointing) to each slide were recorded.

Results and interpretation:

Children gave four different forms of answers: correct, wrong, partial, and combination. Based on the mixed-effect logistic regression model (Baayen, Davidson, & Bates, 2008), it was found that children were better at giving out the correct answer for the wh-specific question than the indefinite question. Meanwhile, the accuracy of children's answer dropped dramatically for the mismatched picture stimuli when the question was asked in the form of wh-specific but not in the form of the indefinite question. The results demonstrate that three-year-old children are still in the stage of developing the use of prosodic information in disambiguating the wh- phrases. Moreover, the findings also imply that children's default reading of wh-phrases is the wh-specific question, not the indefinite question. Also, other cues such as the contextual information can also affect children's ability in using the prosodic cue when responding to the ambiguous questions.

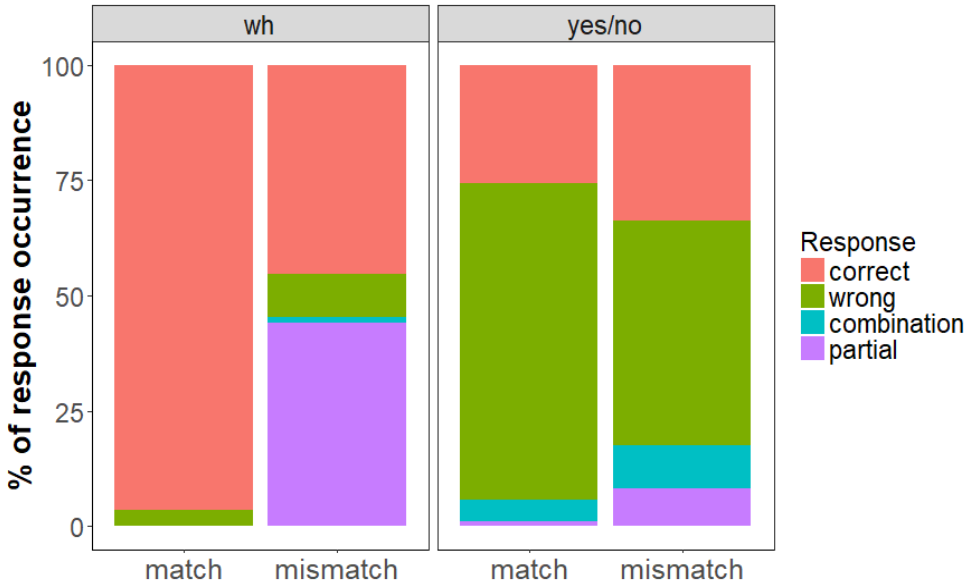


Figure 1. The frequency of each response category (Correct, Wrong, Combination, and Partial) for each question form (wh-specific/match, wh-specific/mismatch, indefinite/match, indefinite/mismatch)

Picture 1. Experimental Setting. The laptop and the doll were used in the experiment. The speaker was placed under the puppy doll.

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Overt subject pronouns in a null-subject second language

It is by now a well- established finding that near-native L2 speakers of a null-subject language with a non-null-subject first language (nN-N L2ers) over-use overt subject pronouns in their second language when compared to native speakers. Some authors (Sorace 2006, Belletti, Bennati and Sorace 2007 a. o.) suggest that this is due to the fact that overt pronouns are used by nN-N L2ers also in case of topic continuity. But also L2 speakers of a null-subject second language with a null-subject first language (N-N L2ers) over-use overt subject pronouns (Bini 1993 for Spanish L1-Italian L2, Di Domenico and Baroncini 2019 for Greek L1-Italian L2). The question we investigate in this work is when overt pronouns are over-used by N-N L2ers. To this end, we collected the narrative productions of a group of group of native speakers of Italian (*N*=10) and of a group of L2 speakers of Italian (with a near-nativeness mean score of 8.9/10) with Greek as an L1 (*N*=10). The choice of this language combination is motivated by the finding that Greek native speakers and Italian native speakers do not significantly differ in the choice of referring expressions (Di Domenico and Baroncini 2019), contrary to what appears for Spanish and Italian (Filiaci, Sorace and Carreiras 2013).

Procedure: Subjects had to watch a short movie containing no linguistic material and then tell the story. They were tested individually in a quiet room and the interviewer did not interact with them during the narration. Their productions were recorded and then transcribed, deriving what we call the 'General Total'. From the General Total we extracted the sentences in which a true choice between a subject pronoun (null or overt) or a subject lexical DP is possible, i.e. finite and copular sentences, non-subject relatives, non-subject clefts. We also excluded first mentions of Discourse Referents (always lexical) and sentences referring to the narrator, or narrator+ interviewer (always pronominal), deriving the Reference Total. Within the Reference Total, we found that L2ers significantly use more overt pronouns than controls (χ^2= 11.3923 with Yates correction, significant at p≤ .05, .01, .005). We then divided the productions into four main segments. In Segment 1, the same Discourse Referent (DR) is referred to (no topic shift); in Segment 2, two masculine singular DRs are referred to (topic shift); in Segment 3 a masculine singular and a feminine singular DR are referred to (topic shift + gender difference); in Segment 4 a masculine singular and a masculine plural DR are referred to (topic shift + number difference).

Results: Though no within- group significance emerges comparing the different segments, overt pronouns are more used in Segment 3 and Segment 4, but not in Segment 2, in both groups, as shown in Figure 1. A between-group significance emerges in Segment 3 (χ^2= 3.8614 with Yates correction, significant at p≤ .05) and Segment 4 (χ^2= 5.4125 with Yates correction, significant at p≤ .05) but not in Segment 1 (χ^2= 0,4673 with Yates correction, n.s.) and Segment 2 (χ^2= 1.8457 with Yates correction, n.s.).

Discussion and conclusions: Our results show that L2ers do not differ from controls when topic maintenance (Segment1) and topic shift only (Segment 2) are involved, suggesting that they have correctly set the properties of null and overt pronouns in their L2 in this respect. They significantly over-use overt pronouns with respect to controls only when they have to disambiguate between a masculine/feminine (Segment 3) or a singular/plural (Segment 4) referent. Overt pronouns (but not null ones) display phi-features, and are hence more informative: in particular, they have a disambiguating function when two DRs differing in gender or in number are referred to. Our results thus interestingly suggest that there is a difference in the specific contexts of over-use of overt pronouns when nN-N L2ers (as in the studies referred to above) and N-N L2ers are involved. An interesting result is also that overt pronouns do not appear to be particularly used in case of topic shift by native speakers, as the comparison between Segment 1 and Segment 2 shows. In the latter context, as shown in Figure 2, lexical DPs appear to be more used: lexical DPs are significantly more used in Segment 2 than in Segment 1 by native speakers (χ^2= 4.3459 with Yates correction, significant at p≤ .05) , though this difference does not reach statistical significance in the case of L2ers (χ^2= 2.8222 with Yates correction, n.s.).

Figure1

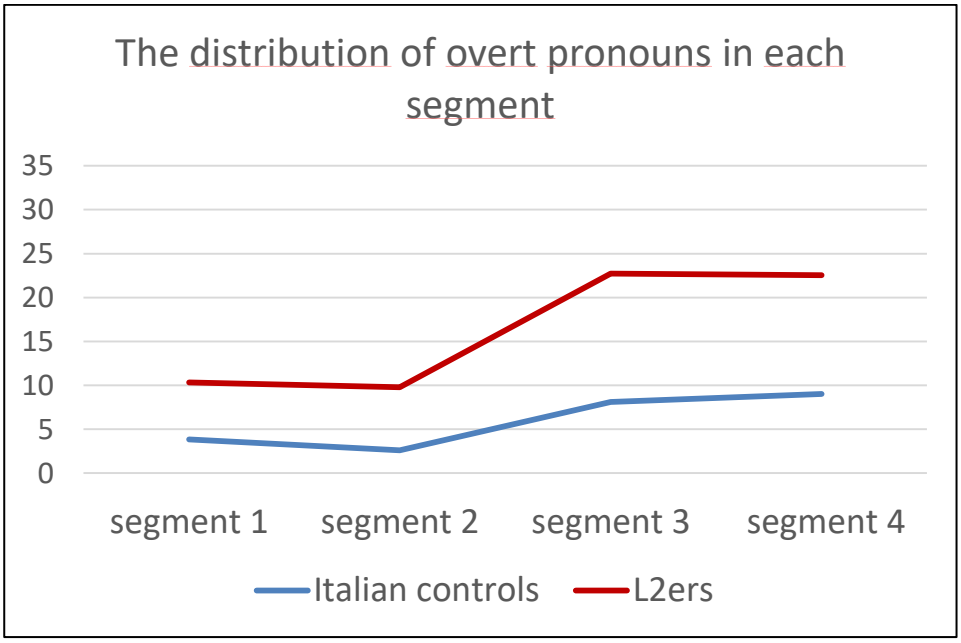
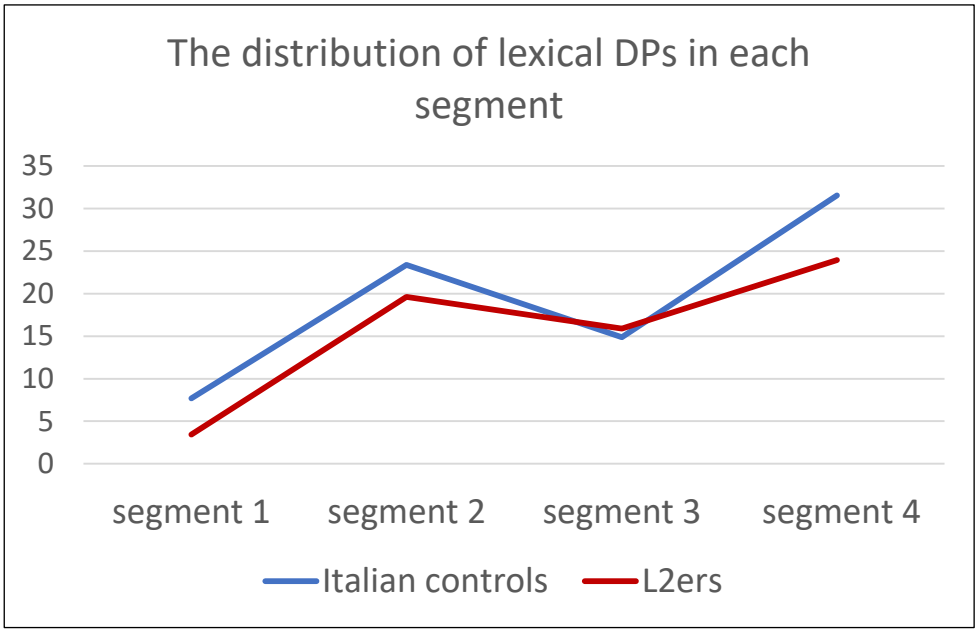


Figure 2



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SLI in ISL

Syntactic SLI (specific language impairment) is a developmental deficit that selectively impairs syntax. In many languages, a robust clinical marker for syntactic SLI is a deficit in sentences derived by Wh movement in which one full DP crosses another full DP, such as object relatives and object *which* questions (Adams, 1990; Cipriani et al., 1998; Delage et al., 2008; Friedmann & Novogrodsky, 2004, 2007, 2011; Friedmann et al., 2015; Håkansson, & Hansson, 2000; Hamann, 2005; Hamann & Tuller, 2015; Jakubowicz, 2011; Jakubowicz, & Tuller, 2008; Levy & Friedmann, 2009; Marinellie, 2004; Novogrodsky & Friedmann, 2006; Stavrakaki, 2001; van der Lely, 1997; van der Lely & Harris, 1990). Whereas some studies have already explored SLI in sign language (e.g., Marshall et al., 2006, 2013, 2015; Mason et al., 2010; Morgan et al., 2007; Woll & Morgan, 2012), the current study is the first in-depth examination of the syntactic impairment in syntactic SLI in sign language. We examined the comprehension, production, and repetition of sentences derived by Wh-movement in which a full DP crosses another full DP (henceforth "crossing movement").

To assess syntax in individuals with language impairments who communicate in Israeli Sign Language (ISL), we developed a new battery of syntactic tests. We focused on assessing syntactic structures that involve syntactic movement and compared them to structures without movement or with movement that does not includes crossing. We examined four main structures with "crossing movement": subject *who* questions with reduplication of the wh-element, subject *which* questions, subject pseudo-cleft, and object topicalization. ISL is an SVO language, where topicalization involves leftward movement (to TopicP in the beginning of the sentence), and wh-elements move rightward, to the end of the sentence (see Figure 1).

Tests: 1) Wh-question comprehension: the test included 80 sentences in 5 conditions: subject *who* with reduplication, subject *who* without reduplication, object *who*, subject *which*, object *which*. Both comprehension tasks were sentence-picture matching tasks in which the participant watched a video of a signed sentence, and selected the matching figure in a picture that included a figure matching the sentence and a figure with reversed roles.

2) Pseudocleft comprehension: the test included 52 sentences of 4 pseudocleft structures: subject, object, subject with constructed action, and object with CA.

3) Sentence repetition: 90 sentences of various movement structures, including topicalization, Wh-questions, and pseudo-cleft structures. The participant watched a video of the signed sentence, counted to three, and then repeated the sentence.

Participants: The participant with SLI, Sali, was a congenitally deaf 40-year-old woman. She was a native signer of ISL who communicated mainly in ISL and never used hearing aids. Her performance was compared with that of 21 signers of ISL – 16 native signers and 5 late signers.

Results: Sali showed significantly impaired performance compared to typical ISL signers (Crawford & Howell, 1998, t-test) on all the tested movement structures (see Figures 2 and 3). Her comprehension of subject *which* questions, which involve crossing movement, was significantly poorer than that of the controls (and significantly poorer than her comprehension of object *which* questions). Her comprehension of subject *who* questions with reduplication was significantly poorer than the controls' (and significantly poorer than her comprehension of subject *who* questions without reduplication). She found it difficult to understand subject pseudo-cleft sentences with constructed action, which involve crossing movement. In the sentence repetition task she showed significantly more structural errors compared to the controls and produced significantly more ungrammatical utterances. She could not repeat any object topicalization sentence. These findings shows that just like in spoken languages, syntactic SLI in sign language causes movement impairment. This further supports the claim that same brain mechanisms are responsible for signed and spoken languages.

Subject cleft with CA Subject question-reduplication Subject *which* question Object topicalization

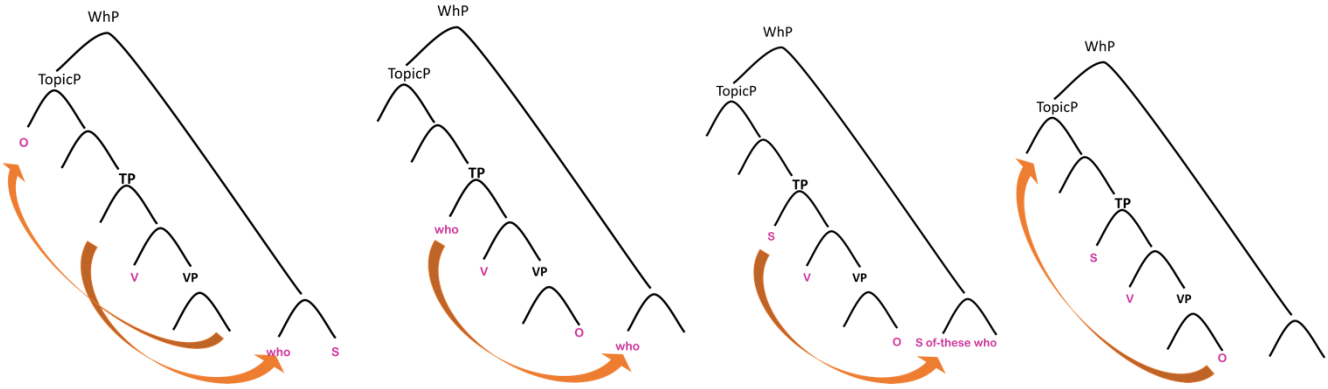

Figure 1. Syntactic structures of sentences in ISL that involve a movement of a DP across another DP.

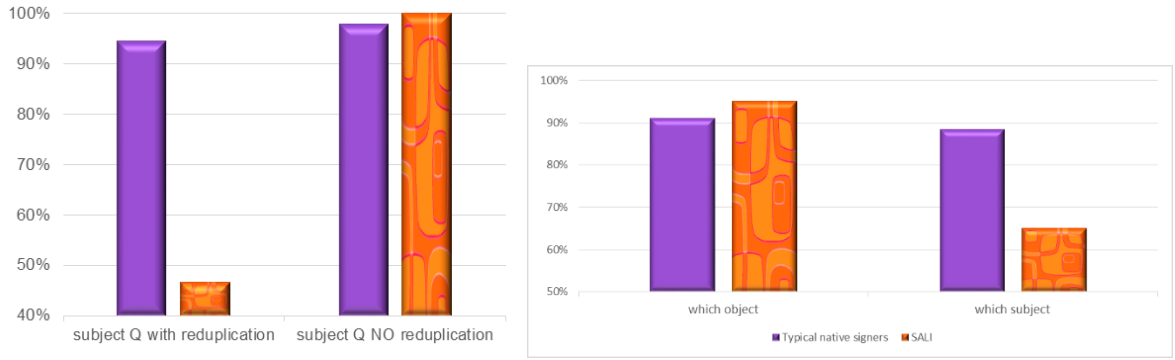

Figure 2. Sali showed significantly poorer performance compared to controls in the comprehension of Wh questions that involve crossing movement.

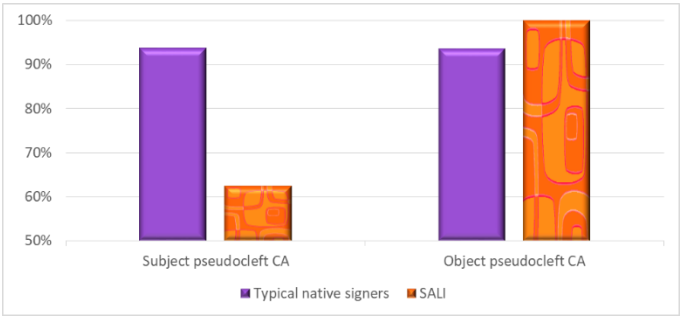

Figure 3. Sali showed significantly poorer performance compared to controls in the comprehension of subject pseudocleft.

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Child Language and Logic: A View from Elided Conjunction in Japanese

Introduction: Connectives such as 'and' and 'or' have different scope relations with negation across languages. In some languages like English, these connectives can take scope under negation (1), while in other languages like Japanese, they must take scope over negation (2, 3) (Szabolcsi 2002). However, such cross-linguistic differences are not observed in child languages (Goro 2007; Crain et al. 2013; Geçkin et al. 2016, 2017). Four- to five-year-old children initially assign the (not > or) interpretation to negated disjunctions, and the (and > not) interpretation to negated conjunctions regardless of interpretations assigned in their target languages (see Table 1). This study will show that Japanese children can access the *(not > and)* interpretation like adults when the negated conjunction undergoes ellipsis. This finding supports the Semantic Subset Principle (Crain, Ni, and Conway 1994) and strengthens the idea that all human languages (including child languages) conform to the laws of logic (Crain 2012).

Parametric Approach to Connectives: According to Goro (2007), the cross-linguistic difference in scope relation between connectives and negation comes from a ±PPI value of the lexical parameter for disjunction and conjunction (cf. Szabolcsi 2002). In languages like Japanese, both disjunction and conjunction are +PPI so that they must take scope over negation as in (2, 3), while both connectives in English are -PPI and can take scope under negation as in (1). Turkish has a different value for conjunction and disjunction: conjunction is +PPI and disjunction -PPI (Geçkin et al. 2016).

Semantic Subset Principle: Children initially prefer the (not > or) and (and > not) interpretations across languages. Their consistent performance can be attributed to the Semantic Subset Principle (SSP) (Crain, Ni, and Conway 1994; Goro 2007; Crain 2012). As shown in Table 2, the truth conditions of the (or > not) reading constitute a superset of the truth conditions of the ⟪not > or⟫ reading (hereafter, ⟪ ⟫ is used for subset readings). In contrast, the truth conditions of the (not > and) reading constitute a superset of the truth conditions of the ⟪and > not⟫ reading. The SSP states that children initially adopt the parameter value that generates the subset truth condition, that is, -PPI for disjunction (i.e. ⟪not > or⟫) and +PPI for conjunction (i.e. ⟪and > not⟫).

Alternative and Predictions: Alternatively, children might just have difficulty with the 'not both' interpretation (i.e. (or > not), (not > and)) regardless of the SSP. If so, children would always refuse to access that interpretation. In fact, this is consistent with findings that children's scope assignments of disjunction are not affected by changes in structure such as displacement and case-drop (Gao et al. 2018; Geçkin et al. 2016). A key prediction by the SSP is that children *can* access the superset readings when the -PPI property of disjunction is overwritten or the +PPI property of conjunction is canceled by other linguistic factors. The current study tests this prediction with Japanese +PPI conjunction. It is known that polarity sensitivities of NPIs and PPIs are canceled under ellipsis (4a, 5a) (Sag 1976; Johnson 2001). The +PPI property of Japanese conjunction *-mo-mo* can also be canceled under ellipsis (6b, cf. 3; Funakoshi 2013).

Research Question: The current study investigates whether children can access the superset interpretation of conjunction (i.e. not > and) when it undergoes ellipsis.

Experiment: We tested overt (3) and elided conjunction (6b) with 13 adults and 23 children (age 4;11-6;4, Mean 5;7). We also tested control items (7b) to see whether children know ellipsis or not. Since Japanese is a *pro*-drop language, (7b) is ambiguous between a *pro* reading and an ellipsis reading. In this experiment, a puppet was asked a question (6a/7a) after a story (6c/7c). The participant's task was to judge whether puppet's answer (3,6b/7b) matched the story. There were three trials for each item.

In (7c), the puppet answer (7b) to (7a) was true under the ellipsis reading, whereas it was false under the *pro* reading. The children's overall acceptance rate was 76.8%. The adults completely accepted the control items. We excluded five children from the analysis of the target trials below since they preferred the *pro* reading to the ellipsis reading two times or more.

Table 3 summarizes the results of the target trials (3, 6b). In (6c), (3) is false and (6b) true. The 18 children *rejected* (3) at 83.3%, while they *accepted* (6b) at 75.9%. This contrast is significant by Wilcoxon Signed-Rank Test ($Z=3.28$, $n_{s/r}=15$, two-tailed $p=.0001$). The adults completely rejected (3) and accepted (6b). This result supports the SSP: children can access the superset reading (not > and) like adults when the +PPI property of conjunction is canceled.

Implication: Our study also shows that children's conjunction is a logical connective, which follows one of de Morgan's laws (i.e.$\neg(p \wedge q) = \neg p \vee \neg q$) when it is deleted. This parallel between logic and language shows that child languages adhere to the laws of logic (Crain 2012).

(1) a. John did not eat the pepper or the carrot. (not > or)/ (or > not)
b. John did not eat a pepper and a carrot. (not > and)/ (and > not)
(not > or)/(and > not): John ate neither the pepper nor the carrot.
(or > not)/(not > and): It is not the case that John ate both the pepper and the carrot.

(2) *John-wa ninjin ka piiman-o tabe-nak-atta.*
John-TOP carrot or pepper-ACC eat-NEG-PAST
'John didn't eat the carrot or the pepper.' *(not > or)/ (or > not)

(3) *Zou-wa ninjin-mo piiman-mo tabe-nak-atta.*
elephant-TOP carrot-also pepper-also eat-NEG-PAST
'The elephant didn't eat the carrot and the pepper.' *(not > and)/ (and > not)

Table 1: Scope assignments of connectives in simple negative sentence

	Adult		Child (age 4-5)	
	English(-type)	Japanese(-type)	English	Japanese
Disjunction	not > or / or >not	*not > or / or >not	not > or	
Conjunction	not > and / and > not	*not > and / and > not	and > not	

Table 2: Truth conditions of the scope relations between negation and 'Pepper or/and Carrot'

scope \ John ate:	only P	only C	both P & C	neither P nor C
(or > not): superset	**T**	**T**	F	**T**
((not > or)): subset	F	F	F	**T**
(not > and): superset	**T**	**T**	F	**T**
((and > not)): subset	F	F	F	**T**

(4) a. John didn't see anyone, but Mary did ~~see anyone~~.
b. *John didn't see anyone, but Mary did see anyone.

(5) a. John saw someone, but Mary didn't ~~see someone~~. (not > some/ *some > not)
b. John saw someone, but Mary didn't see someone. (*not > some/ some > not)

(6) a. Q: *Zoo-wa piiman-mo ninjin-mo tabe-ta kana?*
elephant-TOP pepper-also carrot-also eat-PAST Q
'Did the elephant eat the pepper and the carrot?'
b. A: *Zoo-wa* _____ *tabe-nak-atta yo.* (cf. 3)
elephant-TOP eat-NEG-PAST PRT
lit. 'The elephant didn't eat ___.' ((and > not))/ ^{OK}(not > and)
c. Story: a rabbit eats the carrot and the pepper, while an elephant eats only the carrot.

(7) a. Q: *Usagi-wa mit-tu-no ringo-o tabe-ta kana?*
rabbit-TOP 3-CL-GEN apple-ACC eat-PAST Q
'Did the rabbit eat three apples?'
b. A: *Usagi*-wa _____ *tabe-nak-atta yo.*
rabit- TOP eat-NEG-PAST PRT
lit. 'The rabbit didn't eat.'
pro: 'the rabbit didn't eat them.' (FALSE in 7c)
Ellipsis: 'the rabbit didn't eat three apples.' (TRUE in 7c)
c. Story: a monkey eats three apples, while a rabbit eats two.

Table 3: Result of overt conjunction and elided conjunction in negative sentences.

	Correct answer	18 Children	13 Adults
Overt Conjunction (3)	Reject	83.3% reject	100% reject
Elided Conjunction (6b)	Accept	75.9% accept	100% accept

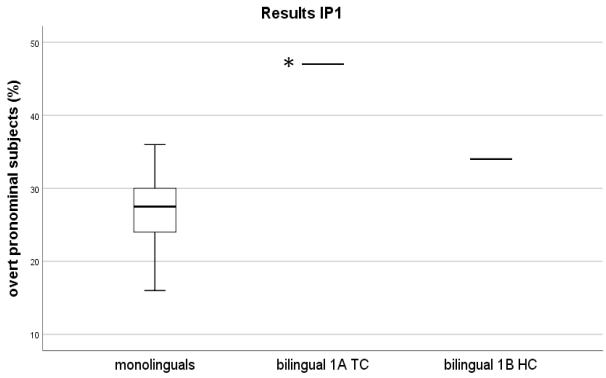
On the Nature of Late L1 Attrition: Behavioral and Online Data of an L1 Bulgarian-L2 German Speaker

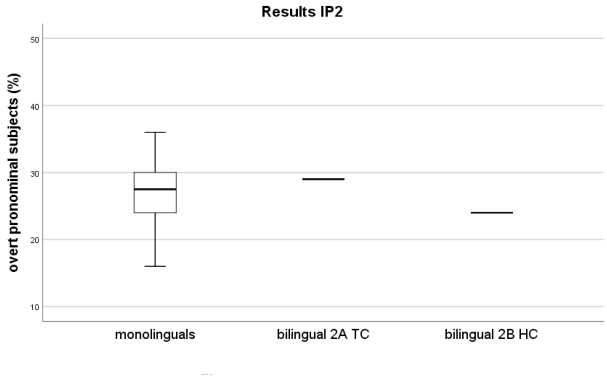
This longitudinal case study of an L1-Bulgarian/near-native L2-German speaker (long-term German resident) investigates late/post-puberty L1-attrition at the syntax-discourse interface by studying the use of pronominal subjects in a pro-drop (L1)/non-pro-drop but semi-null subject and topic-drop (L2) constellation, which has not been studied in attrition research so far. Being a semi-null subject and a topic-drop language, German generally allows more null subjects than English (Haegeman 2013, Trutkowski 2011, Roberts & Holmberg 2010). The alternation of overt and null subjects in pro-drop languages depends on the discourse notions topic and focus and is thus subject to interface conditions, not purely grammatically-driven with null subjects being the preferred option in non-focal and topic-continuity contexts. Interface syntax has been claimed problematic in cases of similar language combinations and the grammatical phenomenon in question, where attriters overused overt pronominal subjects (OS) in topic-continuity contexts in comparison to non-attrited speakers (e.g. Sorace 2005 for Italian-English, Gürel 2004 for Turkish-English, Tsimpli 2007 for Greek-English, Greek-Swedish and Greek-German speakers). However, recent studies indicate that post-puberty/late attrition is temporary since L1 knowledge of the kind can be reactivated after short re-exposure to L1 (Chamorro, Sorace & Sturt 2016, Genevska-Hanke 2017). Ghamorro et al. tested L1-Spanish L2-English speakers on their knowledge of overt vs. null subjects in an offline judgment and an online eye-tracking tasks. Genevska-Hanke (2017) used spontaneous speech production to test the use of overt vs. null subjects for the language combination L1 Bulgarian-L2 German. The results of both studies show attrition effects only before reexposure to massive L1 input.

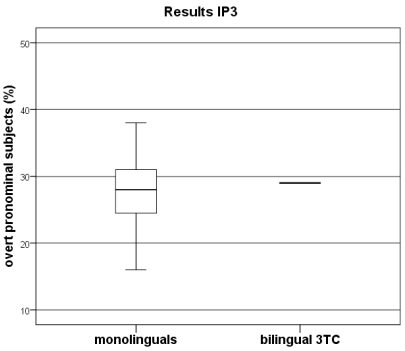
We analyzed five recordings of spontaneous speech (125 utterances each, see the graphs given below). Only the recording in the target country (TC) at investigation point (IP) 1 showed an OS rate (47%) significantly higher than those of non-attrited controls presumably because L1 exposure in the TC is limited ($p = .004$, Crawford & Garthwaite 2002). After a three-week re-exposure to L1 in the home country (HC) attrition effects disappeared and the rate (34%) fell within the normally-distributed monolingual range (16%-36%). These results at IP1 after twelve years abroad were compared to results obtained five and eight years later at two further IPs (2 and 3), for which all rates, TC and HC were monolingual-like, presumably due to increase of L1 use in Germany before IP2. At a forth IP one year later, a reaction-time experiment was run with the bilingual and a control group of non-attrited monolinguals. The test conditions included null and overt subjects in topic continuity contexts that differ in their acceptability.

The findings suggest that late/post-puberty L1 attrition is temporary for the domain of subject use in question and also support assumptions on the stability of fully-developed L1s (Schmid & Köpke 2007).

The temporariness of late attrition can possibly be attributed to different patterns of L1 access and processing under pervasive L2 influence. Thus language background in relation to language mode/activation is a major factor in late L1-attrition, which underlines the psycholinguistic nature of the phenomenon (Paradis 2007, Grosjean 2013, Köpke & Genevska-Hanke 2018).







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Maturation or Continuity: Evidence from the acquisition of Serbian *se*-verbs

The results of the cross-linguistic research on the acquisition of verbs with different argument structure are not conclusive. Whereas some researchers have claimed that children's knowledge of verbs needs a certain amount of time to mature and to become native-like (which is in contrast with Pinker's (1984, 1989) ideas), others have argued that children possess early knowledge of argument structure. While the former approach supports the Maturation Hypothesis (Borer & Wexler 1987; Babyonyshev et al. 2001), the latter supports the Continuity Hypothesis (Snyder, Hyams & Crisma 1995; Lorusso, Caprin & Guasti 2005; Costa & Friedmann 2012).

The aim of the present research was to test the production of *se*-verbs in Serbian at different stages of language acquisition. The verbs which were tested were true reflexive (e.g. *kupati se* 'wash oneself'), lexicalized reflexive (e.g. *vrteti se* 'spin') and anti-causative *se*-verbs (e.g. *otvoriti se* 'open'). None of the tested types is syntactically simple, because they do not involve a canonical linking of semantic roles and syntactic functions (agent-subject and patient-object). However, it was expected that true reflexive verbs would be acquired before anti-causative verbs, since they are syntactically less complex. True reflexive verbs take two theta roles which are mapped onto the subject, whereas anti-causative verbs involve a complex syntactic process of derivation from a transitive verb including the elimination of the external +cause theta role (following Reinhart and Siloni 2003, 2005). Furthermore, we wanted to compare the production of morpho-syntactically derived (true) and lexicalized forms of reflexive verbs, because we wanted to see whether children would have difficulty producing lexicalized reflexive verbs, which are unaccusative and involve A-movement.

A total of sixty subjects belonging to three age groups (31-42, 43-55, 56-68 months-twenty participants in each group) took part in the research. The data collection technique was a structured interview with a verb elicitation task. The children were asked to name the activities presented in the pictures. The number of tested verbs was the same for each verb type (six per group). The production of verbs across age groups presented in table 1 shows that children had no difficulty producing true or lexicalized reflexive *se*-verbs even at the earliest tested age. Therefore, the results speak against the maturation of A-chains and in favor of the Continuity Hypothesis, which proposes that children are sensitive to syntactic differences from the earliest age. However, the production of anti-causative verbs, which also involves movement to an argument position, was quite low in the youngest tested group and increased steadily. Non-target answers in this verb group suggest that children prefer coming up with implicit agents or using transitive variants of these verbs. This phenomenon has already been noted in previous research (Roeper 1987; Bowerman 1991; Verrips 2000; Ilić 2015). Since lexicalized reflexive verbs are produced successfully from the earliest age, the author believes that the lower production of anti-causative verbs should not be attributed to the problem with A-chains, but rather to the process of detransitivisation and deletion of +cause theta role.

Key words: verb production, argument structure, *se*-verbs, maturation, continuity

Table 1 – Verb production across groups

Verb type	Group 1	Group 2	Group 3
True reflexive	78%	91%	92%
Lexicalized reflexive	83%	98%	99%
Anti-causative	42%	66%	77%

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Verb-Echo Answers in Child Japanese

Introduction: Japanese yes/no questions can be answered by echoing the finite verb of the questions alone as in (1). There are at least two types of analysis with respect to the verb-echo answers (VEAs): the *pro*-drop analysis and the TP ellipsis analysis (e.g., [1][2]). Yet, only the TP ellipsis analysis can appropriately explain the interpretive difference between (2) and (3, A2); while negation cannot take scope over the existential subject, *dareka* 'someone,' in (2), it can in the VEA in (3, A2). In the acquisition literature, little is known regarding VEAs in child Japanese. The current study aims to examine whether Japanese-acquiring children can comprehend affirmative/negative VEAs to questions as in (1) and (3) in an adult-like way. Based on the experimental results, we claim that children's VEAs are derived through TP ellipsis following string-vacuous movement, not through *pro*-drop.

VEAs and existential indefinite pronouns: [1] reports on the (un)availability of VEAs in many different languages and attempts to reveal how VEAs are derived in syntax. His rationale is that if a VEA is possible as a response to the question with an indefinite subject, the response cannot be derived by *pro*-drop, because an indefinite pronoun cannot be deleted by the usual rule allowed in *pro*-drop languages. The question in (3) has an indefinite subject and VEAs are perfectly acceptable, showing that Japanese VEAs are not derived by *pro*-drop. [2] proposes that Japanese VEAs are derived through string-vacuous V-(Neg-)T-C movement in overt syntax, followed by TP ellipsis at PF. [2] also claims that this analysis nicely explains why negation can take scope over the existential subject in (3, A2), but not in (2); in (3, A2), the VEA is derived by TP ellipsis after the negated verb has moved to C, whereas the subject stays in Spec, TP, which makes the negation structurally higher than the subject (see *Figure*).

A question related to acquisition arises as to whether children can correctly interpret VEAs, especially the one in (3, A2). To our knowledge, although some studies ([3][4]) have revealed that 5-year-olds correctly interpret Japanese indefinite pronouns in the sentence with negation, little has been reported on children's comprehension of VEAs in Japanese.

Experiment: We tested 20 Japanese-speaking children aged 4;8-6;6 (mean=5;6). Each child sat next to a puppet in front of a monitor showing pictures, while the experimenter on the back of the monitor was unable to see them. The child was asked to listen to conversations between the experimenter and the puppet about the pictures, such as in (4) (*Definite VEAs*) and (5) (*Indefinite VEAs*) and judge if the puppet's responses are congruous to the pictures. We also tested if the children can correctly interpret declarative sentences with existential indefinite pronouns as in (6) where the pronoun takes scope over negation (*Control*).

All the 20 children correctly interpreted affirmative/negative definite VEAs as in (4) 100% of the time (120/120), showing that they know the basic function of VEAs. Of the 20 children, 15 children perfectly showed the adult-like performance on the Control condition (90/90), which indicates that these children have acquired the indefinite pronoun *dareka* 'someone' (the remaining 5 children (mean=5;2); 23% (7/30)). Of the 15 children, 12 children (4;8-6;6, mean=5;8) correctly interpreted affirmative VEAs as in (5) 100% (72/72) of the time for the indefinite VEAs condition. More importantly, they correctly accepted negative VEAs as in (5) given the picture where nobody is sitting 100% (36/36) of the time, and correctly rejected them given the picture where there is somebody who is not sitting but the other two are sitting 98.6% (71/72), which proves that they could correctly access *not* > *some* reading for VEAs to the questions with indefinite subjects. The other 3 children (5;5, 5;6, 6;0) persistently interpreted VEAs as in (5) isomorphically.

Discussion & Conclusion: The present study revealed that the participants aged 4-6 who had acquired the existential indefinite pronoun *dareka* 'someone' gave adult-like non-isomorphic interpretations to negative VEAs. The results provide evidence that Japanese-acquiring children's VEAs are derived through string-vacuous verb raising and TP ellipsis.

Examples

(1) Q: Takashi-ga daigaku-ni ki-ta no?
-NOM university-DAT come-PST Q
'Did Takashi come to the university?'
A: Ki-ta yo. / Ko-nakat-ta yo.
come-PST PRT come-NEG-PST PRT
'Came.' (=Yes.) 'Didn't come.' (=No.)

(2) Dareka-ga daigaku-ni ko-nakat-ta.
someone-NOM university-DAT come-NEG-PST
'Someone didn't come to the university.' **(*not > some, some > not)**

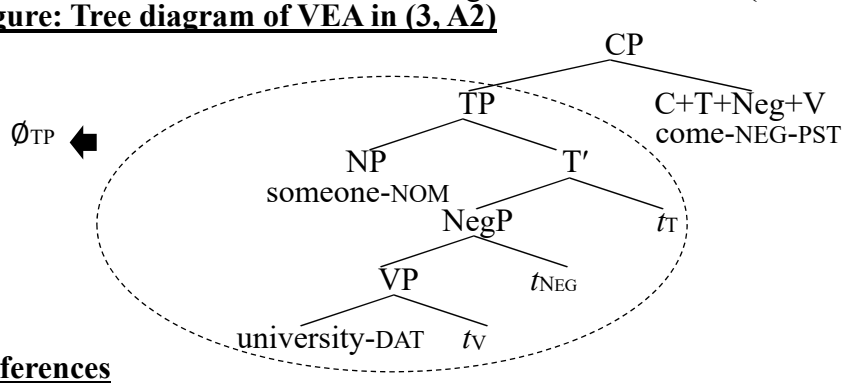
(3) Q: Dareka-ga daigaku-ni ki-ta no?
someone-NOM university-DAT come-PST Q
'Did anyone come to the university?'
A1: Ki-ta yo. / A2: Ko-nakat-ta yo.
come-PST PRT come- NEG-PST PRT
'Came.' 'Didn't come.' (='Nobody came.')
(not > some, *some > not)

(4) ***Definite VEAs Condition*** (VEAs to questions w/ a definite subject)
Experimenter: Neko-ga suwatteru no?
the cat-NOM sitting Q
'Is the cat sitting?'
Puppet: Suwatteru yo. / Suwatte-nai yo.
sitting PRT sitting-NEG PRT
'(The cat is) sitting.' 'Not sitting.' ('The cat isn't sitting.')

(5) ***Indefinite VEAs Condition*** (VEAs to questions w/ an indefinite subject)
Experimenter: Dareka-ga suwatteru no?
someone-NOM sitting Q
'Is someone sitting?'
Puppet: Suwatteru yo. / Suwatte-nai yo.
sitting PRT sitting-NEG PRT
'(Someone is) sitting.' 'Not sitting.' ('Nobody is sitting.')
(not > some, *some > not)

(6) ***Control Condition***
Puppet: Dareka-ga suwatte-nai yo.
someone-NOM sitting-NEG PRT
'Someone is not sitting.' **(*not > some, some > not)**

Figure: Tree diagram of VEA in (3, A2)



(Sato & Hayashi 2018)

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The production of variable number agreement by children acquiring Brazilian Portuguese in an online model of syntactic computation

This paper presents an online model for variable number agreement production in Brazilian Portuguese (BP) based on experimental results carried out with preschoolers and 6th graders [1]. In BP, number agreement within the DP and in subject-verb agreement can be: (a) redundant (standard variety) and (b) non-redundant – number is obligatorily expressed in a prenominal element, mainly D, but optional in all other agreeing elements. The level of variation is constrained by speakers' socioeconomic status (SES), including schooling [2]. An elicited production experiment carried out with preschoolers and 6th graders showed that SES, schooling and academic performance influence the rates of standard variety (redundant agreement) production. In this paper, these results are revisited by presenting a cluster analysis (K-means). The data was grouped into 2 clusters: redundant and non-redundant agreement. The analysis (fig. 1) shows that the social groups are divided into possibilities of redundancy in number agreement. A particular comparison is focused on: despite the age difference, 6th graders from a low SES with fair academic performance present similar variable production to preschoolers from a low SES. To verify any possibility of impairment in the 6th graders' group (n = 21; age range: 14;5 – 11;11; mean age: 13;6), two tests of linguistic abilities concerning number agreement morphology in the nominal domain were carried out – given that the DP is the *locus* of number marking in BP. A picture selection task, aimed to verify: (i) if participants were able to rely on D as the main or unique source of morphological information concerning grammatical number in BP; (ii) the extent to which redundancy in the morphophonological expression of number in the DP facilitates children's identification of the referent of a plural DP (iii) the extent to which children are able to extract number information from nouns (with regular and irregular plural forms). To verify (i), number invariant nouns were contrasted; to verify (ii), DPs with plural invariant nouns were compared with DPs with plural variant nouns (controlled for intrinsic gender) with and without adjectives; further, plural DPs with intrinsic gender were contrasted with plural DPs with optional gender with and without adjectives; finally, to verify (iii) bare nouns with regular plural forms were contrasted with irregular ones. The results of 2-tailed t-tests for (i) and (iii) and one-way ANOVA for (ii) did not show any significant effect, revealing that these 6th graders do not present any impairment concerning the ability to extract relevant grammatical information pertaining to number in the DP. Hence, variation in number agreement is restricted to production, it is not a syntactic phenomenon. It is suggested that number is encoded in prenominal elements. Thus, two phases are assumed within the DP [3]: (a) a functional phase, including D and Num and other possible functional categories in between them and (b) a lexical phase, with N and possibly Adj. The on line model of syntactic computation in sentence production presented here, conceived in the light of the Minimalist Program [4], is a development of [5]. It proposes a single syntactic computation for both varieties, with the functional category Num specified for plural and *Agree* as feature sharing [6]. It assumes left-to-right, top-down syntactic encoding in which phases are incrementally transferred [7]: first the functional phase containing Num specified for plural is transferred – and is necessarily morphophonologically marked; the subsequent phase allows variation to be manifested during the morphophonological encoding [8]. The model illustrates that variation resides in the morphophonological encoding, when either a morphophonological specified feature (+redundant) for number marking or an underspecified one (±redundant - with no fixed value [9]) can be accessed (figure 2). Schooling may result in gradual specification towards the standard variety (+redundant). Hence, varieties may co-exist (+redundant and ±redundant) and, gradually, speakers of BP are able to control the encoding of a particular variety pre-syntactically, which may result in the inhibition of the access to the ±redundant feature during the morphophonological encoding.

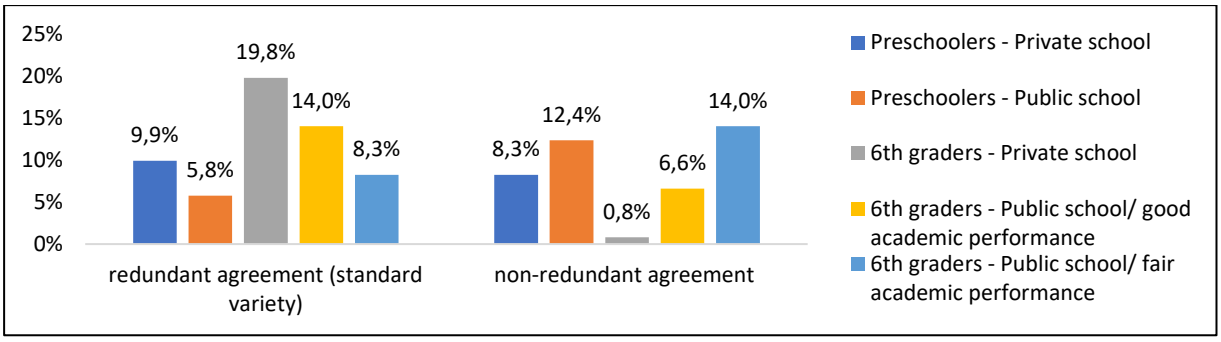

Figure 1: Distribution of social groups within clusters of standard and non-standard varieties

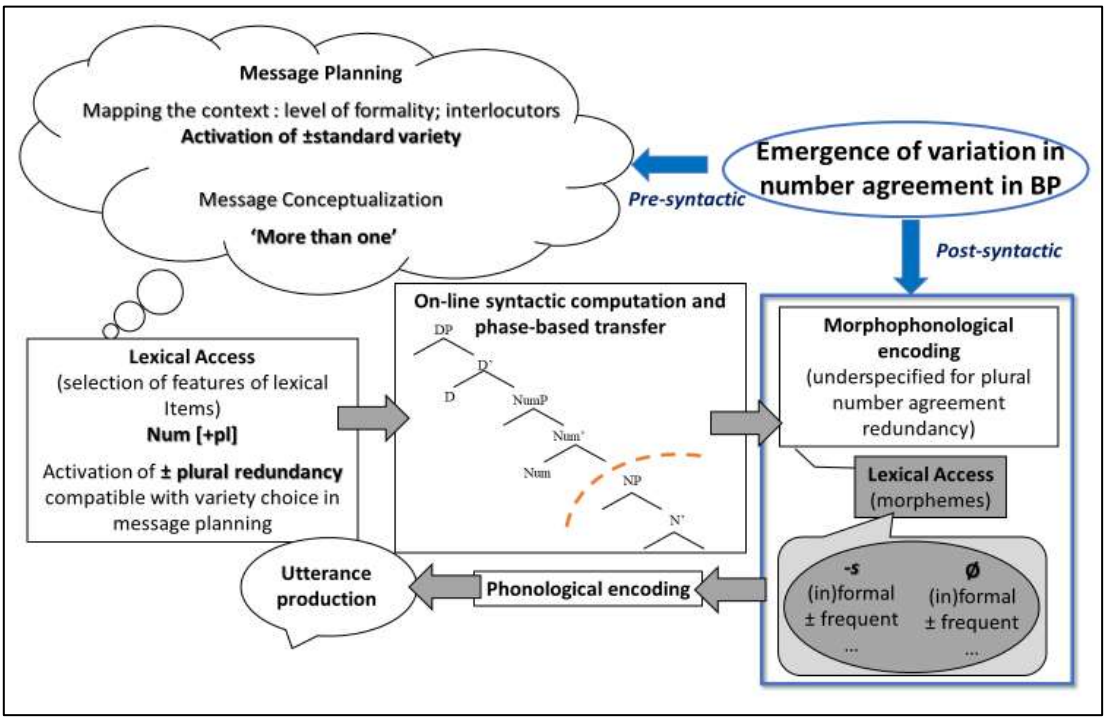

Figure 2: Emergence of variation in language production in BP

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Does L1 Transfer Explain Everything in L2 Acquisition?

If there is one idea that commands consensus in second language acquisition (L2A) theory, it is that the native language wields a decisive influence at the initial stages of acquisition. This popular position has been advocated by the Full Transfer Full Access Hypothesis (FTFA, Schwartz & Sprouse 1994, 1996) and before that by White (1985). However, whether crosslinguistic influence, or L1 transfer, works similarly within different parts of the grammar (e.g., morphology, syntax, semantics) has not been investigated widely and within the same participants.

In this experimental study, we set out to look at transfer from the native language with an array of linguistic properties across three linguistic modules: inflectional morphology, syntax, and the syntax–semantics interface (see Table 1). Our participants include two groups of Russian and Norwegian learners of L2 English of the same age (11-12-year-olds) and comparable beginner proficiency in the L2. We chose properties where either Russian or Norwegian works similarly as English and therefore offer a possibility of transfer.

The prediction is that the L2-learner groups will be better at the constructions where their native language offers facilitation, compared to those without. Comparing across rows in Table 1 tests for L1 transfer; comparing across columns is indicative of module- and construction-specific difficulties. It is likely that additional factors such as instruction, complexity, potential need of feature reassembly, and others, may have an influence on accuracy.

To test this prediction, we created an acceptability judgment task with an equal number of grammatical and ungrammatical sentences in seven conditions. Context was added to the test sentences as needed. Presentation of test items was written (projected on a screen) as well as aural (recorded by a native speaker). We tested Russian (N=80; mean age 12.4) and Norwegian (N=86; mean age 12.1) learners of L2 English.

Figure 1 summarizes accuracy results. We conducted a mixed-effects model predicting accuracy as an interaction of condition and group. Participants and items were included as random effects. The groups are not significantly different from each other in overall accuracy, but there are contrasts in accuracy within individual conditions. As L1 transfer predicts, Russians significantly outperform Norwegians in agreement, genericity and adverb placement in the present tense. Norwegians are significantly better than Russians on definiteness and position of the pronominal direct object. Comparing the conditions within each group, for the Russian learners, definiteness is significantly harder than all other conditions except for adverb placement in the past tense; genericity and adverb placement in the past tense are significantly harder than copula, V2 in non-subject-initial declaratives (topicalization), position of pronominal direct objects, agreement and adverb placement in the present tense. In the Norwegian group, agreement and genericity are harder than all other conditions; adverb placement in the present tense is significantly harder than copula and definiteness.

These results partially confirm our predictions, but also highlight the need to integrate other factors into the explanation of crosslinguistic influence. We will discuss these findings in light of theories of the L2 initial state.

Figure 1: Mean accuracy by group and condition

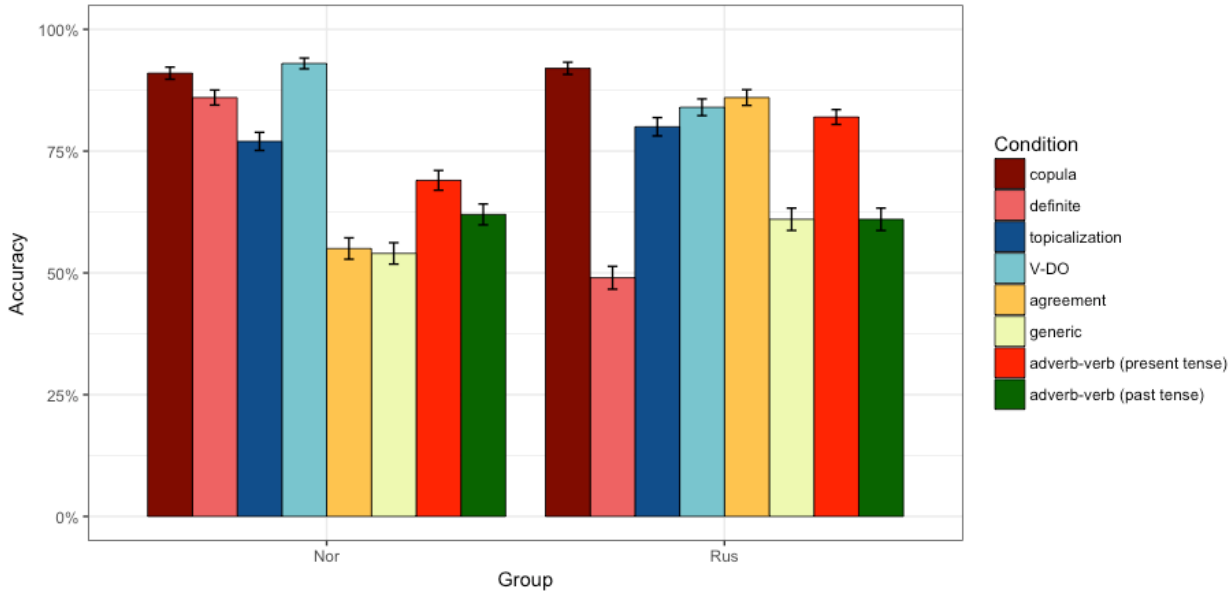

Table 1: Experimental conditions and examples of test items

	ENG = RUS ≠ NOR	**ENG = NOR ≠ RUS**
SYN-SEM INTERFACE	**Genericity** *Life can be difficult.*	**Definiteness** *Susan thought that her dog was lazy. The dog slept a lot.*
MORPHOLOGY	**Subject-verb agreement** *Ruth walks to church every Sunday.*	**Obligatory copula** *Lisa is a nice person*.
SYNTAX	**V2 in non-subject-initial declaratives** *Last Monday the teachers walked to school.*	**V-DO$_{pro}$ word order** *Lisa felt very sick. Johnny took her to a hospital.*
	Adverbs before verbs in the present tense *We usually eat eggs for breakfast.*	
	Adverbs before verbs in the past tense *Emma always drank milk.*	

Sonority vs. Markedness: Simplification pattern(s) of Plateau Clusters in Child Greek

The present study focus on the acquisition of a special group of plateau clusters in Greek child speech, that of *voiced fricatives* [vð], [ɣð], [vɣ], which are of equal sonority according to the language-specific sonority scale in (1).

1) *Sonority scale for Modern Greek* (Kappa, 1995)

Stops	< voiceless Fricatives	< voiced Fricatives	< s	< z	< Nasals	< Liquids	< Vowels
/ p, t, k	< f, θ, x	< v, ð, ɣ	< s	< z	< m, n	< l, r	<Vowels /

(< : less sonorant than…)

For the puposes of the study we examine naturalistic data from six, typically developing, children acquiring Greek as L1 (ages 2;00,13 – 2;11.25, 3 boys and 3 girls); the data are obtained from children's spontaneous conversational speech. All children are in the intermediate developmental phase, i.e. segments with a marked *Manner of Articulation* (MoA) such as (un)voiced fricatives occur faithfully in their system as single onsets in (un)stressed word initial/-medial position and furthermore, all children exhibit in their grammar the following common properties: (i) the word-internal Coda is not yet acquired, (ii) the word-final Coda is realized due to the progress of morphological development (Kappa 2002), (iii) not systematic realization of word-initial tautosyllabic [OBSTRUENT+SONORANT] clusters, (iv) the antisonority, non-rising clusters [FRICATIVE+STOP], namely /ft/, /xt/, /st/, /sp/, sk/, are reduced to the less sonorous STOP [t] in (un)stressed word-initial/-medial position (cf. Kappa, 2011). The data in (2-4) also show that the children can not accommodate yet plateau clusters of voiced fricatives, either word-initially (i.e. in a perceptually strong position) or word-medially, thus reduction is the only solution (percentage 100%). In the data of plateau clusters in (2-4) SONORITY plays no role in the cluster reduction due to the equal sonority of C_1 and C_2 and CONTIGUITY, which guides the reduction of plateau clusters [STOP+STOP] in child Hebrew (e.g. Bloch 2011), seems to be irrelevant in the latter Greek child data which exhibit an unified reduction strategy, regardless of their target (un)stressed word-initial/-medial position. Specifically, all children favor the faithful realization of the more marked *Place of Articulation* (PoA), namely, in the case of clusters [$C_{1\text{-LAB}}$+$C_{2\text{-COR}}$] (2) and [$C_{1\text{-DOR}}$+$C_{2\text{-COR}}$] (3) the preservation of the PoA features LABIAL and DORSAL respectively are preferred to the CORONAL one, as in other languages too, e.g. in Dutch (e.g. Fikkert, 1994) or in English (e.g. Pater & Barlow, 2003). Our data also show that in the case of the input cluster [$C_{1\text{-LAB}}$+$C_{2\text{-DOR}}$] it is realized faithfully the DORSAL PoA (DOR > LAB). The dominance relations among the PoA features in (2-4), i.e. DOR > LAB, DOR > COR and LAB > COR imply the *relative hierarchical strength of Place features* in (5) which accounts for the selection of either C_1 or C_2 and results in a unified account of all children's outputs in (2-4).

5) POA STRENGTH HIERARCHY: DORSAL > LABIAL > CORONAL (> : stronger than)

<u>In sum:</u> Our Greek data show clear evidence that when the children can not license prosodically in their system any extrasyllabic consonants, they employ different patterns for the simplification of anti-sonority clusters. We claim that (i) in the case of anti-sonority, non-rising clusters with *different MoA*, **SONORITY** decides for the realization of the unmarked MoA, e.g. [ft, xt, st] →[t] etc. i.e. the reduction to the less sonorous consonant (STOP) *or stronger head-Onset* (Goad & Rose 2004 and references therein) which conforms to the widely attested crosslinguistic pattern. (ii) In the case of the voiced fricatives [vð, ɣð, vɣ] (anti-sonority) plateau clusters *with the same marked MoA,* Sonority and Contiguity are irrelevant to the selection/preservation of either C_1 or C_2. The selection is **PoA-based,** i.e. the preservation/faithful realization of the consonant with the stronger (more marked) PoA.

DATA

Target (adult like)	Child's output	Child:Age	Gloss
2) **[$C_{1\text{-LAB}}$+$C_{2\text{-COR}}$]** → **$C_{1\text{-LABIAL}}$ (LAB > COR)**			
Word initial			
a) vðéla	véla	VAR: 2;10.21	'leech'FEM.NOM.SG
Word medial			
b) ravði	laví	LUK:2;09.24	'cane' NEU.NOM.SG
c) ravði	raví	MA:2;11.18	'cane'
d) ravðistikó	ivistikó	VAR: 2;11.18	'special cane/stick'
3) [**$C_{1\text{-DOR}}$+$C_{2\text{-COR}}$**] → **$C_{1\text{-DORSAL}}$ (DOR > COR)**			
Word initial			
ɣðíno	ɟíno	AL: 2;04.16	'(I) undress (sb)'
		/ DE : 2;11.18/ MA: 2;11.25	
ɣðit-ós/í	ɟit-ós/-í	AL:2;04.16/ST:2;05.18/MA:2;11.18	
		'undressed/naked'MASC/FEM.NOM.SG	
Word medial			
míɣðala	míɣala	DE:2 ;11.18	'almonds'
4) **[$C_{1\text{-LAB}}$+$C_{2\text{-DOR}}$]** → **$C_{2\text{-DORSAL}}$ (DOR > LAB)**			
Word initial			
a) vjéni	jéni	GE: 2;01.24	'(s)he comes out'
b) vɣázi	ɣázi	NEF:2;08.30/	'take out' PRS.3SG
		VAL:2;08.28/2 ;09.12	
c) vɣánune	ɣánume	LUK: 2;09.17	'take out' FUT.3PL
d) vɣázo	ɣázo	DE:2 ;11.18	'(I) take out'
Word medial			
e) évɣale	íɣale	AL:2;04.25	'(s)he took out'
		JAN: 2;05.12/ LUK: 2;06.24	
f) avɣó / avɣá	aɣó / aɣá	LUK: 2;02.00	'egg/eggs'
		JAN:2;05.26/ST:2;06.15/VAR:2;08.28/VAL:2;08.28	

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Online reflexive anaphora resolution in L1 and L2 Italian

The retrieval of pronoun antecedents, including those of reflexive pronouns, plays a central role in language processing. The rules governing the interpretation of reflexives are captured by the Condition A of Chomsky's (1981) Binding Theory: reflexive anaphors must be bound within their binding domain, i.e., they need to be linked to a local c-commanding noun phrase that matches the reflexive in gender, person and number.

In L2 acquisition studies, a lot of attention has been paid to establishing whether non-native speakers can acquire the locality and c-command requirements in the target language. Offline tasks mostly reveal native-like responses, pointing to complete acquisition; however, online tasks have detected differences between native and non-native speakers. Specifically, despite being target-like in the final interpretation of reflexives, non-native speakers initially also take into account candidate antecedents that are not allowed by Condition A, but have a prominent structural and discourse role; this has in particular been shown in eye-tracking studies on L2 English, for German- and Japanese-speaking learners (Felser & Cunnings, 2012; Felser, Sato, & Bertenshaw, 2009).

Looking at an additional language, we studied online reflexive anaphora resolution in Italian. A control group of 96 native speakers and an experimental group of 88 L1 Croatian/Bosnian/Serbian highly proficient non-native speakers of Italian took part in a self-paced reading task implemented in Linger (https://tedlab.mit.edu/~dr/Linger/). The participants read 36 test sentences, distributed across four experimental conditions (see Table 1) in a Latin square design. All sentences included two candidate antecedents for the reflexive pronoun *se stesso/stessa* 'himself/herself', but the second antecedent was locally bound, and it was thus the only choice allowed by the Binding Theory. The four conditions were intersections between two variables, (1) syntactic structure (c-command vs. no c-command between the inaccessible antecedent and the reflexive pronoun), and (2) gender (mis)match between the inaccessible antecedent and the reflexive pronoun. All sentences were followed by a comprehension question that targeted the pronoun antecedent (see Example 1). Additional 84 sentences were included as fillers.

The results showed non-native speakers' offline interpretation of reflexive pronouns to be native-like (see Figure 1). A mixed ANOVA was conducted on the reading times for the reflexive (see Figure 2) and post-reflexive region (see Figure 3), with subject group as a between-subject factor, and with syntactic structure and gender (mis)match as within-subject factors. A significant main effect was detected for the subject group for both regions, showing that non-native speakers' reading was slower overall. A main effect of syntactic structure was found for the reflexive region, indicating that the interpretation was slower, in both groups, for structurally prominent (c-commanding) candidate antecedents. This can be interpreted as a possible indication of both natives' and non-natives' inclination to initially consider inappropriate (non-local) antecedents and thus (temporarily) violate the locality requirement of Condition A. Such results point to non-native speakers' native-like sensitivity to structural cues during online processing.

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Table 1. Examples of experimental sentences

(a) C-command Inaccessible Match *Barbara ha intuito che …* 'Barbara guessed that'	*… Mirella aveva descritto* ***se stessa*** *nel romanzo sulla crisi di mezza età.* 'that Mirella had described herself in the novel on midlife crisis.'
(b) C-command Inaccessible Mismatch *Valerio ha intuito che …* 'Valerio guessed that'	
(c) No C-command Inaccessible Match *A Barbara era chiaro che …* 'It was clear to Barbara that'	
(d) No C-command Inaccessible Mismatch *A Valerio era chiaro che …* 'It was clear to Valerio that'	

Example 1. Comprehension questions

Chi aveva descritto se stesso nel romanzo sulla crisi di mezza età?

('Who had described herself in the novel on midlife crisis?')

a. Barbara b. Mirella

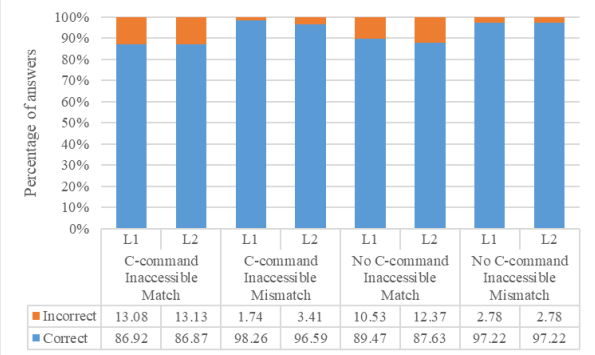

Figure 1. Comprehension questions results

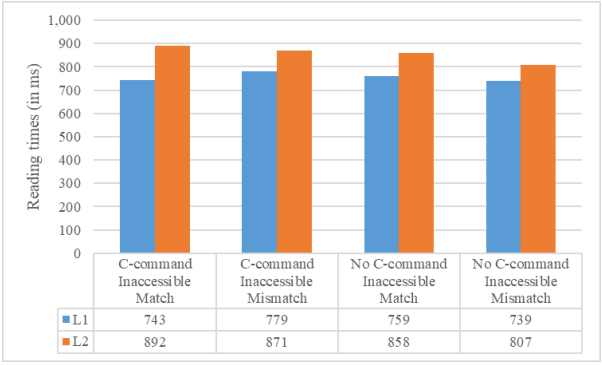

Figure 2. Reading times in the reflexive region

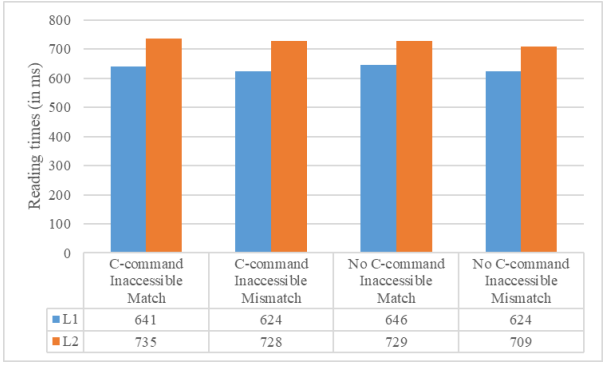

Figure 3. Reading times in the post-reflexive region

The emergence of (reduced and full) clefts in French L1

I. BACKGROUND. The linguistic literature on cleft sentences in adult French (1) is very extensive. As for the *emergence* of clefts in French L1, however, we only know (i) that they appear around age 2 [Labelle 1990, De Cat 2002, Belletti 2005, Canut 2014]; (ii) that it is inside the cleft construction that the first relative clauses appear [at least with children of age 3+, see Labelle 1980, 1990, 1991], and (iii) that children of age 4+ produce subject clefts more easily than object clefts [Hupet & Tilmant 1989]. These observations confirm research on the acquisition of clefts in other languages [Santos 2006; Pivi, Del Puppo, Cardinaletti 2016; Lobo et al., 2016]. There is however no data on and analysis of (i) the syntactic development of clefts in early French L1 (ages 2-4), and (ii) the semantic and discourse (i.e. information structure, henceforth IS) properties of early clefts. **II. METHODOLOGY.** We provide new data on the development of syntax, semantics and IS in French L1 acquisition of clefts, on the basis of a set of 295 clefts produced by children from 2 corpora of spontaneous speech production: (i) the transversal corpus TCOF (subcorpus of ATILF 2018: fortnightly recordings of 15 children from age 2-4) and (ii) the longitudinal corpus Lyon corpus (Demuth & Tremblay, 2008, 3 children, recorded from age 1-3). **III. RESULTS: SYNTAX. 3.1.** The **developmental path of clefts** is the following (with only some months between the first occurrence of each type): (i) REDUCED CLEFTS (2) of the type *c'est X* → (ii) CLEFT TRIALS, with first stages of a cleft relative clause (CRC) (3a-c) → (iii) ADULT-LIKE CLEFTS, with a complete CRC (4). "Cleft trials" have not before been mentioned in linguistic literature on the acquisition of clefts. We will show that, only at age 2, reduced clefts are more frequent than the other types. **3.2.** The **first instances of cleft relative clauses** are also the first instances of relative clauses in the corpus; it is inside the cleft construction that relative clauses emerge. This confirms previous research showing that relative clauses emerge in contexts with a "light" main verb (Diessel & Tomasello 2005). **3.3. Object clefts** appear quite early (age 2), in all syntactic types of clefts identified in 3.1. and with both a contrastive (5a) and a non-contrastive meaning (5b-c). As expected from previous research, they appear later and are much less frequently than subject clefts (see references in Aravind et al., 2018 ; Lobo et al., 2016). Our data nevertheless show that, given the right discourse context, children are able to produce object clefts (confirming the comprehension experiment on English kids in Aravind et al., 2018). It follows that there is no Relativized Minimality effect in object clefts produced by children (Friedmann et al. 2009) and that the low frequency of object clefts is an effect of general word order patterns, not of the syntax of clefts. **3.4.** Very young children perform **complex syntactic operations** (see Haegeman et al. 2013) **on the clefted element**, such as *wh*-movement (6) and Clitic Left Dislocation (7). This indicates (i) that the clefted element is not in the left periphery, but in a low, clause-internal position (as shown for adults by Haegeman et al. 2014; Belletti 2013) and (ii) that the left periphery is acquired at the same time as the rest of the clause (confirming Manetti & Belletti 2017/2018). **IV. RESULTS: SEMANTICS & INFORMATION STRUCTURE. 4.1.** We will first show that all discourse interpretations of adult *c'est*-clefts (corrective / contrastive / new information focus, doubly contrastive clefts, cohesive clefts) occur in our French L1 corpora, in all syntactic types of clefts defined in 3.1. We will conclude from this that children seem to have access to all discourse features adult clefts are endowed with, even before full (adult-like) syntax is acquired. **4.2.** We will then show that, in our corpora, the only instances of clefts with a non-adult-like discourse use are instances of *c'est* clefts with an additive particle (*aussi* 'also') (8). This confirms experiments with older children, showing that they do not master exhaustivity at age 6 [Tieu and Kriz 2017]. We will conclude that in French in any case, children do not acquire the exhaustive feature when acquiring the syntactic position of the clefted element.

Examples

(1) - *Qui a mangé le gâteau ? – C'est Jean qui l'a fait.*
'Who ate the cake? It's John who did it.'

(2) Reduced cleft (in answer to questions (2a) or not (2b), see Belletti 2007)
a. Mother : *qui c'est qu'a accroché l(e) ballon d(e)ssus ?*
'Who is it that attached the balloon up there ?'
Child (age 2;07): *C'est Chloé.* 'It's Chloé'
b. [context : they're playing a game]
Mother : *non laisse la avancer.* 'No let her move forward'
Child (age 2;9): *non, c'est moi.* 'No, it's me'

(3) Cleft trial
a. c'est + X + verb (phrase) *C'est Marie fait.* 'It's Marie does' (age 2;0.8)
b. c'est + X_i + $subject_i$ + verb (phrase)
c'est Maéva elle a apporté ça. 'It's Maéva she took that' (age 2;4)
c. c'est + X_i + $subject_z$ + verb (phrase) (age 2;10)
c'est à la crèche aussi il a régurgité. 'It's in the kindergarten too he vomited'

(4) Adult-like clefts
C'est moi qu'est fatiguée toute seule 'It's me who is tired alone' (2;6)

(5) Object clefts
a. Adult : *alors il va voir son grand-père et sa grand-maman singe et ?*
'so he will go and visit his grandfather and his grandmother monkey and ?'
Valentin (age 2): *Non c'est sa mamie.* (TCOF) 'No it's his mamie'
b. Adult: *qu'est-ce qu'on montre ?* 'What do we show ?'
Marie (age 2 ;5): *C'est ça c'est ça on montre* 'It's that it's that we show'
c. Marie (age 2;9) : *C'est lequel que j'ai fait?* 'It's which one that I made ?'

(6) Wh-moved clefted element
Qui c'est t_{qui} *a mis scotch?* 'Who is it put tape?' (Marie, 2;02, Lyon)

(7) CLLD'ed clefted element
le $papa_x$ *c'est* lui_x *qui* lui_y *a dit non*. 'The father, it's he who said no to him' (Marie, 2 ;9)

(8) CHI: *oh regardes il crache*. 'Oh look, he is vomitting.'
CHI: *c'est [///]› à la crèche* ***aussi*** *il a régurgité*. (Marie 2;11)
'It's in the kindergarten too he has vomited'

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The acquisition of Hungarian recursive PPs

The current study claims that Hungarian children can interpret recursive PPs from the age of 4, while they start to produce them around the age of 7.

Chomsky-Hauser-Fitch (2002) state that recursion is the core property of the narrow faculty of language (FLN) that can differentiate human communication from the communicational methods of animals. If so, recursion should be part of the language competence of young children as well. International studies shed light on how the acquisition of recursive structures goes on. Roeper (2011) and Hollebrandse–Roeper (2014) say that children start with a conjunctive interpretation of embedded structures, such as sentence (1). They found that young children tend to give conjunctive interpretation to recursive sentences, but later this interpretation turns into a correct, embedded one, like sentence (2).

10 4-year-olds, 14 5-year-olds, 13 6-year-olds, 18 7-year-olds and 14 8-year-olds participated in the experiment, which had two parts; a comprehension part and a production part, each of them with 8 test sentences. In the experiment we applied a double decker where the participants had to place the figures of animals according to the sentences of the experimenter (see figure 1 and 2 below).

In the case of the production part there were some animals already sitting on the bus, but there were also others which had to be taken there. Their places were marked by the foods they usually eat. The participants had to feed the animals and also make them occupy their places on the bus according to the foods they eat. Then the experimenter asked the participants to tell her where they put the given animal.

As for the results we found that the 64% of 4-year-olds, 74% of 5-year-olds, 77% of 6-year-olds, 87% of 7-year-olds and 96% of 8-year-olds interpreted recursive PPs correctly. As for the production part, below 7 years there were a little sign of recursive descriptions (only 3% of 4-year-olds, 12% of 5-year-olds, and 1% of 6-year-olds), although the 47% of 7-year-olds and 65% of 8-year olds ($p<0,05$*) responded with recursive PPs. We found that in the case of the production part of the 7-year-olds 65% of them gave recursive answers when we started with the comprehension part, so they heard recursive sentences before the production part. But only 19% of them gave recursive answers when we started with the production part. 8-year-old children gave more recursive answers when we started with the comprehension part as well, but the difference is not significant.

We claim that young children (even 4-year-olds) can also interpret recursive PPs correctly, but the production of the first recursive structures happens only after 7 years. We have not found any evidence of the conjunctive interpretation of recursive PPs at an early age.

(1) *There is a zebra next to the elephant (and) above the bear*.
(2) *The zebra is next to the elephant that is above the bear*.
(3) *Tedd a bocit az egér fölötti cica elé!*
put the cow the mouse above cat before
'Put the cow before the cat above the mouse.'

Figure 1: comprehension part

Figure 2: production part

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Children's Understanding of Non-culminating Accomplishments in Mandarin Chinese

It has been long observed that accomplishment predicates in Mandarin Chinese do not obligatorily impose an event culmination interpretation (Tai 1984; Smith 1997; Lin 2000; Soh and Kuo 2005; Zhang 2018; among others). In (1), the accomplishment predicate *xie-yi-feng-xin* 'write a letter', when co-occurring with the perfective aspect marker *le*, is compatible with the continuation that denotes an incomplete event. This non-culminating reading may, however, be blocked as in cases where the predicate is a resultative-verb compound [V-R], shown in (2). Mandarin-acquiring children must therefore grasp the meaning distinction between [V-*le*] predicates, which are flexible in receiving either a culmination or a non-culminating reading, and [V-R-*le*] predicates, which are only compatible with a culmination reading.

Previous acquisition studies have shown that Mandarin-speaking children started to use resultative-verb compounds early and productively in their naturalistic speech (Chen 2008; Deng 2010). In terms of comprehension, a recent cross-linguistic study reported that children correctly accepted the "zero-result" reading on sentences containing a monomorphemic verb, as in (3), early at age three; but could only reliably rule out the same reading on the corresponding sentences containing a [V-R], as in (4), until the age of five (van Hout et al. 2017). As a non-culminating event can be partially realized instead of having no realization at all, whether children have fully understood the meaning of non-culminating accomplishments remains to be further ascertained.

The present study examines children's understanding of the completive subtype of [V-R] compound, in which the second verb is marked by the completive complement *wán* 'finish', which signals a full completion of an event. Using a video verification task, we tested 76 Mandarin-speaking children aged 4;4-6;8, with half of the participants assigned to the test condition receiving [V-*wán*-*le*] sentences, as in (5), and the other half assigned to the control condition receiving [V-*le*] sentences, as in (6). The participants were asked to judge the test sentences upon watching short animated video clips depicting either an "incomplete" or a "completed" event. Four of the test trials presented an "incomplete" situation, in which the event described by the verbal predicate was partly performed on some members of the object set, and another four test trials presented a "completed" situation, in which the event described by the verbal predicate was completely performed on all members of the object set. Participants also received training and filler trials.

Our results show that Mandarin-speaking children strongly accepted both the "incomplete" reading and the "complete" reading on the [V-*le*] sentences, with the "incomplete" reading accepted 91.7% of the time by the four- and five-year-olds and 88.8% by the six-year-olds, and the "completed" reading accepted 93.1% by the four- and five-year-olds and 93.8% by the six-year-olds. On the other hand, children predominantly favored the "completed" reading over the "incomplete" reading on the [V-*wán*-*le*] sentences, with the "completed" reading accepted 95.8% by the four- and five-year-olds and 100% by the six-year-olds, but the "incomplete" reading accepted only 8.3% by the four- and five-year-olds and 17.5% by the six-year-olds. Taken together, the findings clearly demonstrate that Mandarin-speaking preschoolers were well aware of the entailment properties of the non-culminating accomplishments in Mandarin Chinese early from the age of four, knowing that a [V-*le*] predicate does not necessarily entail event completion but a [V-*wán*-*le*] predicate must do.

Example sentences

(1) *Ta xie le yi-feng xin, keshi mei xie wan.*
s/he write PERF one-CL letter but not.have write finish
'S/he wrote a letter, but (s/he) didn't finish writing it.'

(2) *Ta xie-hao le yi-feng xin, *keshi mei xie wan.*
s/he write-good PERF one-CL letter but not.have write finish
'S/he completed writing a letter, but (s/he) didn't finish writing it.'

(3) *Xiaochou qiao le na ge bolibei ma?*
clown hit PERF that CL glass Q-SFP
'Did the clown break the glass?'/'Has the clown broken the glass?'

(4) *Xiaochou qiao-sui le na ge bolibei ma?*
clown hit.break PERF that CL glass Q-SFP
'Did the clown break the glass?'/'Has the clown broken the glass?'

(5) *Xiaomao zhai wan le huaduo.*
little.cat pick finish PERF flower
'Little cat finished picking (the) flower(s).'

(6) *Xiaomao zhai le huaduo.*
little.cat pick PERF flower
'Little cat picked (the) flower(s).'

Sample visual stimuli

(a) An "incomplete" event (b) A "completed" event

Fig 1. Last frames of the animated video clips depicting (a) an "incomplete" event and (b) a "complete" event presented at the end of the flower-picking story

Results

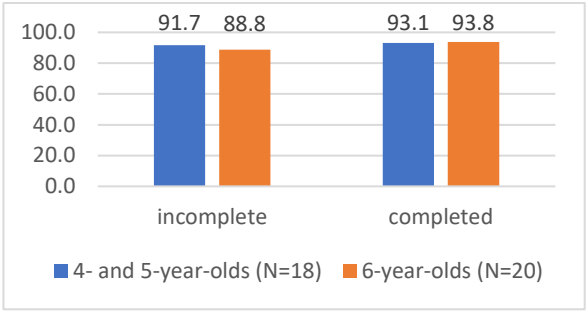

Fig 2. Acceptance % of the incomplete and completed readings on [V-*le*] sentences

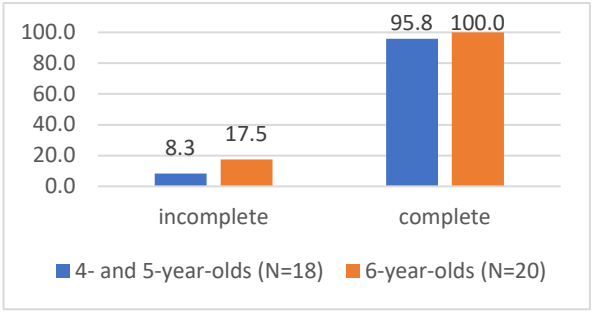

Fig 3. Acceptance % of the incomplete and completed readings on [V-*wán-le*] sentences

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[1] Chen, J. 2008. "The Acquisition of Verb Compounding in Mandarin." Doctoral dissertation, Max Planck Institute for Psycholinguistics and Free University Amsterdam. [2] Lin, J.-W. 2000. "On the Temporal Meaning of the Verbal *-le* in Chinese." *Language and Linguistics* 1 (2): 109-133. [3] Smith, C. S. 1997. *The Parameter of Aspect*. Springer. [4] Soh, H. L., and J. Y.-C. Kuo. 2005. "Perfective Aspect and Accomplishment: Situations in Mandarin Chinese." In *Perspectives on Aspect*, ed. H. Verkuyl, H. de Swart and A. van Hout, 199-216. The Netherlands: Springer. [5] Tai, J. H.-Y. 1984. "Verbs and Times in Chinese: Vendler's Four Categories." In *Papers from the Parasession on Lexical Semantics*, ed. D. Testen, V. Mishra and J. Drogo, 289-296. Chicago Linguistic Society. [6] van Hout, A., M. J. Arche, H. Demirdache, et al. 2017. "Agent Control and the Acquisition of Event Culmination in Basque, Dutch, English, Spanish, and Mandarin." In *BUCLD 41*, ed. M. LaMendola and J. Scott, 323-332. Somerville, MA: Cascadilla Press. [7] Zhang, A. 2018. "On Non-culminating Accomplishments in Mandarin." Doctoral dissertation, The University of Chicago.

Sluicing in Child Mandarin: Effects of Lexical Ambiguity

Sluicing is an elliptical structure in which only a *wh*-phrase is overtly pronounced in an embedded CP. English sluices are argued to derive from *wh*-movement followed by TP-ellipsis [5] (as in (1)). Mateu et al. (2017) found that English-speaking children aged 3;0-6;11 perform significantly better on subject sluicing than on object sluicing (a ***subject advantage***). This finding is consistent with the movement-ellipsis analysis and supports the ***Intervention Hypothesis*** [3] viz., children have difficulty with A'-dependencies that cross another potential A'-moving element (e.g., 'John' in 1b). However, the derivation of Mandarin sluices is not a settled issue, and competing analyses make different predictions for acquisition.

Mandarin sluices with argument *wh*-remnants (e.g., *shei* 'who') require the presence of *shi,* a form that is ambiguous between a copula and a focus marker. This has led syntacticians to two competing analyses (as shown in (2)): The ***pseudo-sluicing*** analysis posits a silent *pro* as subject of the copula *shi* and involves neither movement nor ellipsis. The ***movement-ellipsis*** analysis derives sluices by focus movement, triggered by the focus marker *shi*, and TP ellipsis, parallel to the English *wh*-movement and TP ellipsis derivation. This analysis thus predicts that Mandarin-speaking children will show the same subject advantage as English-speaking children. By contrast, the pseudo-sluicing analysis, which posits no movement, predicts no intervention effects, hence no subject advantage in Mandarin-speaking children's comprehension of sluices.

Fifty-six native Mandarin-speaking children aged 3;0-6;11 (M = 5;7) were tested using a yes-no question task crossing Position (subject vs. object extraction) and Type (sluices vs. full *wh*-questions). Participants were shown pictures in which three characters performed the same action (e.g., *push* in Fig.1), and were asked to answer a question as in (3). A 'no' response in this case would mean the child interpreted *who* as referring to the partially hidden character in Fig. 1. If the child answered 'yes', s/he was then asked to point out who.

A mixed-effects logistic regression modelled the dependency of correct responses to Position and Type, with Verb and Subject as random effects. Children performed significantly better on full *wh*-question controls than on sluices ($p < 0.001$). For the full *wh*-question controls, our results show no subject advantage in any age group (p = 0.87, 0.93, 0.55, 0.14 for performance on subject vs. object full *wh*-questions in each age group). By contrast, Position effects in the comprehension of sluices vary by age (Fig. 2): The two younger age groups performed equally poorly on subject and object sluices (p = 0.67 and 0.10 for 3- and 4-year olds), while the two older groups show a significant subject advantage (p = 0.03 and 0.02 for 5- and 6-year olds).

In contrast to English-speaking children, who show a subject advantage from ages 3 to 5 and become adult-like by age 6 (viz. no S/O asymmetry in offline tasks) [4], Mandarin-speaking children exhibit a 'delay' in that the subject advantage is observed only in 5- and 6-year olds but not in the younger age groups. We believe that this cross-linguistic difference is due to the copula/focus marker lexical ambiguity of *shi* in Mandarin sluices, an issue that does not arise in English sluices. We propose that Mandarin-speaking children initially (mis-)analyze *shi* as a copula (as in (2a)), hence provide a simpler, pseudo-sluicing derivation, and only later (age 5-6) fully acquire the focus properties of *shi*. At that point, the movement-ellipsis derivation becomes available, and a subject advantage emerges as an effect of intervention [3].

A follow-up CHILDES corpus study (N = 457, ages 0;8-6;11) shows that, Mandarin-speaking children only produce copula *shi* prior to age 4;3, and produce focus marker *shi* very infrequently thereafter (only 10/6235 tokens of *shi* are focus markers), supporting our hypothesis of delayed acquisition of the focus marker *shi* and the (adultlike) movement-ellipsis derivation.

Figure 1. Test image for 'push'.

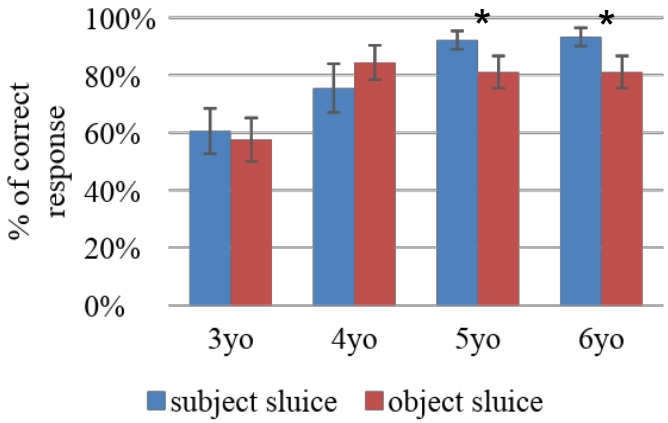


Figure 2. Comprehension results by age and sluice type.

(1) a. Subject sluicing: Someone pushed John, but I don't know [$_{CP}$ who$_i$ [$_{TP}$ ~~t_i pushed John~~]]

b. Object sluicing: John pushed someone, but I don't know [$_{CP}$ who$_i$ [$_{TP}$ ~~John pushed t_i~~]]
intervener

(2) a. **The pseudo-sluicing analysis**[1] (no movement or ellipsis):
mouren$_i$ tui-le Lisi dan wo bu zhidao pro$_i$ **(shi) shei*
someone pushed Lisi but I not know be who
'Someone$_i$ pushed Lisi but I don't know who (*pro*$_i$ is).'

b. **The movement-ellipsis analysis**[2][6] (focus-movement followed by TP-ellipsis):
*mouren tui-le Lisi dan wo bu zhidao *(shi) [$_{FocP}$ shei$_i$ [$_{Foc}$ ~~[$_{TP}$ t_i tui-le Lisi]~~]]*
someone pushed Lisi but I not know FM who < pushed Lisi >
'Someone pushed Lisi but I don't know who (pushed Lisi).' (FM = focus marker)

(3) *wo neng kanjian yige ren zai tui lvseyifu-de nanhai…*
I can see one person PROG push green.clothes-DE boy
'I can see that someone is pushing the boy in green…'

a. Sluiced wh-question: *…ni neng kanjian shi shei ma?*
you can see be who Q
'…can you see who?' (Q = question particle)

b. Full wh-question: *…ni neng kanjian shei zai tui lvseyifu-de nanhai ma?*
you can see who PROG push green.clothes-DE boy Q
'…can you see who is pushing the boy in green?'

Selected References. [1] Adams, P. W. (2004). The structure of sluicing in Mandarin Chinese. In *Penn Working Papers in Linguistics,* 10.1: 1-16. University of Pennsylvania. **[2]** Chiu, L. L. (2007). A Focus-movement account on Chinese multiple sluicing. *Nanzan Linguistics: Special Issue*, *1*, 23-31. **[3]** Friedmann, N., A. Belletti, & L. Rizzi. (2009). Relativized relatives: Types of intervention in the acquisition of A-bar dependencies. *Lingua* 119. 67-88. **[4]** Mateu, V., N. Hyams & L. Winans (2017). Intervention effects in early grammar: Evidence from sluicing. Talk presented at BUCLD 42. **[5]** Merchant, J. (2001). *The syntax of silence: sluicing, islands, and the theory of ellipsis.* Oxford: Oxford University Press. **[6]** Wang, C. A. A., & Wu, H. H. I. (2006). Sluicing and focus movement in wh-in-situ languages. *University of Pennsylvania Working Papers in Linguistics*, *12*(1), 30.

Input effects and cross-linguistic reinforcement in early trilingual development of Mandarin, Cantonese and English (2;02-2;11)

Whether language input plays a determining or only triggering role in language acquisition is an important topic in language acquisition research. Trilingual development is an ideal testing ground to investigate the role of input in language acquisition, as the three-way split input presents a revealing window where input-induced delay or divergence from the monolingual target, if any, can be observed in a short period of time (Unsworth, 2013, 2016; Paradis & Grüter, 2014).

This study investigates input effects and cross-linguistic reinforcement in Mandarin *jiu*, Cantonese *zau6* and English *just* in early trilingual grammar. *Jiu*, *zau6* and *just* form close cross-linguistic equivalents in the sense that they, under highly complex and very often language-specific licensing conditions, can express overlapping quantificational meanings including scalar focus, emphatic assertion, restrictive focus, and temporal relations (Lai, 1999; Hole, 2004; Zhang & Lee, 2013; Lee, 1987, 1991). Studies with Mandarin/Cantonese/English monolingual children have shown that quantificational structures as such emerge very early before the age of 3 yet do not reach adult-like level until school age (Lee, 2012; Crain, 2017). For a Mandarin-Cantonese-English trilingual child, if language input forms a one-to-one linear relationship with language development, reduction in the amount of input in each of the languages compared to monolingual children will necessarily lead to delay or divergence in the development of that language across structures. However, if cross-linguistic mutual reinforcement (primarily positive transfer between languages) contributes to mitigating the reduction of input in each language, then for the trilingual child, reduction in the input in each language will not necessarily lead to overall delay or divergence in that language.

We tested these predictions through longitudinal speech data of a Hong Kong child Leo (2;02-2;11) and his main input providers in the Leo Corpus, drawing on direct comparisons with matched monolingual and bilingual baselines in CHILDES. By the age of 3, Leo's accumulated input in Mandarin, Cantonese and English amounts to 56%, 25% and 19% of his total input. As shown in Table 1, we found that i) despite reduced input in each language, Leo produced *jiu*, *zau6* and *just* significantly more frequently than his monolingual and bilingual peers, as well as his input providers across languages, demonstrating heightened sensitivity to this structure; and ii) whilst his high production rates with *jiu* and *zau6* are potentially brought about by higher frequency rates in his Mandarin and Cantonese input, his high production rate with *just* is not attributable to the frequency of *just* in his English input (which is lower than the corresponding monolingual input), pointing to a role of cross-linguistic reinforcement in the trilingual child's early mastery of *just*. Qualitative analysis shows that Leo's spontaneous use of *jiu*, *zau6* and *just* is largely target-like, instantiating a wide range of quantificational meanings, as illustrated in (1) and (2). Non-target-like patterns, on the other hand, are UG-sanctioned and likely to be induced by cross-linguistic interactions as well as non-adult-like representation of semantic scales and logical sets in young children.

Our findings show that trilingual children's development does not hinge on having access to the critical mass of input typically necessary for monolingual children of each language to reach the developmental milestones of a given structure; input information of a similar structure from the other language(s) will transfer across languages and fill in the gaps. We also discuss the conditions of cross-linguistic reinforcement in multilingual acquisition, and propose predictor variables for future studies based on a larger sample of trilingual children and a wider range of grammatical structures.

Table 1: Production rates of Mandarin *jiu*, Cantonese *zau6* and English *just* in the trilingual child Leo, his monolingual (M/L) and bilingual (B/L) peers and their adult interlocutors from 2;02 to 2;11. (Monolingual and bilingual baselines: Tong in Tong Corpus (Deng & Yip, 2018), ccc, ckt, hhc and mhz in Hong Kong Cantonese Child Language Corpus (CANCORP, Lee et al., 1996), Matt and Roman in Weist Corpus (Weist & Zevenbergen, 2008), and Darren and Kasen in Hong Kong Bilingual Child Language Corpus (HKBCLC, Yip & Matthews, 2007).)

	Mandarin ***jiu***		**Cantonese** ***zau6***			**English** ***just***		
Children	Leo	M/L	Leo	M/L	B/L	Leo	M/L	B/L
Total utterances	2306	4195	2712	27996	4091	2584	7226	4482
Target words	181	89	178	9	2	64	31	9
Percentage	7.84%	2.12%	6.56%	.03%	.05%	2.48%	.43%	.20%
Adult input								
Total utterances	5885	8320	5623	51443	8751	5767	4807	5058
Target words	289	197	315	255	140	55	95	39
Percentage	4.91%	2.37%	5.60%	.50%	1.60%	.95%	1.98%	.77%

Note. Sources of adult input data. **Mandarin**: Leo's grandmother and father in Leo Corpus, Tong's mother in Tong Corpus; **Cantonese**: Leo's mother in Leo Corpus, investigators in CANCORP; **English**: Leo's mother, domestic helper and investigator in Leo Corpus, Matt's mother in Weist Corpus, and investigators in HKBCLC.

(1) Mandarin *jiu* as a scalar adverb at 2;07 (Preceding context: Leo and his father are recruiting crew members for an expedition around the North Pole and discussing the candidates for the role of vice-captain.)

Leo:	San	ge	fu	duizhang	jiu	keyi	le.
	three	CL	vice	captain	JIU	can	SFP

(As few as) three vice-captains will do.

(2) English *just* as a depreciatory adverb at 2;10 (Preceding context: Leo is holding a light bus and his mother a school bus. They pretend that the two buses are meeting for the first time.)
Mother: Okay. See? I'm a school bus. What are you?
Leo: I'm a … I'm just a bus.

Selected references:

Hole, D. (2004). Focus and background marking in Mandarin Chinese: System and theory behind *cai*, *jiu*, *dou* and *ye*. Routledge.

Lee, D. (1987). The semantics of *just*. *Journal of Pragmatics*, 11(3), 377-398.

Lee, T. H. T. (2012). Quantificational structures in three-year-old Chinese-speaking children. In D. Xu (ed.) Plurality and Classifiers across Languages in China. Walter de Gruyter. 243-280.

Paradis, J., & Grüter, T. (2014). Introduction to "Input and experience in bilingual development". In J. Paradis & T. Grüter (eds.) Input and experience in bilingual development, John Benjamins, 1-14.

Unsworth, S. (2013). Current issues in multilingual first language acquisition. *Annual Review of Applied Linguistics*, 33, 21-50.

Where and how much passive do young children hear?
An investigation from adult spontaneous production and fairy tales in Italian.

A large body of cross-linguistic research has investigated the acquisition of passives showing that full mastery of the passive is attained around age 5-6. Previous studies on Italian have shown that children comprehend periphrastic passives with actional verbs by age 5 but full comprehension of psychological passives is delayed (Volpato et al. 2016). As for the elicited production, pre-school and school-age children tend to avoid the use of passives in favor of other structures that topicalize the patient, e.g. clitic pronouns or Clitic Left dislocations (Del Puppo and Pivi 2015; Belletti and Manetti 2018). However, when production was investigated through syntactic priming tasks 3- and 4-year-olds were able to produce long verbal passive (Manetti and Belletti 2015) in line with cross-linguistic evidence (see Messenger et al. 2012 for English). Moreover, indirect findings from the acquisition of object relatives showed that Italian children made use of Passive Object relatives (1a) from age 3-4. Overall, when children produced passives they preferred the use of *si*-causative passives (1a, 3a, Belletti and Manetti 2018, Contemori and Belletti 2014) and *venire* passives (2b) (Volpato et al. 2016). Interestingly, the preference for *si*-causative passives only emerged in children but not in adults. Belletti (2017 and references cited there) discussed the privileged status of causative passives in the acquisition of Italian in terms of the type of syntactic derivation of the causative structure involving the operation that moves a chunk of the verb phrase (*smuggling,* Collins 2005); and by analyzing the LIP corpus (De Mauro 1993) she showed that children's preference for *si*-causatives cannot be directly linked to the higher frequency in the input given that *si*-causative passive is rare in Italian, compared to copular/*venire* passives.

In our study we further investigated the use of passives in Italian, by looking at how much and what type of passive is present in adults' child-directed speech; moreover, in relation to the *si*-causative passive, we also focused on active causatives (*fare a/fare da*) in order to have a more comprehensive picture of the presence of causative structures in adult speech. We first analyzed the use of copular (2a), *venire* (2b), *si*-causative passives (3a) and active causative structures (3b) in child-directed spontaneous production of three corpora, Calambrone, Roma and Tonelli in CHILDES (MacWhinney 2000). Then, we controlled for the occurrence of passives and causatives in a written corpus which may constitute a different source of input for young children (i.e. during storytelling by adults). The corpus included a set of thirteen fairy tales (Le più belle fiabe*,* Giunti 2016, and two further tales; 24.853 words).

The preliminary results of the analysis show that passive is rare in child-directed speech: adults only used 32 passives (=0.014 % of the total number of words), with a prevalence of copular/*venire* passive (Figure 1). In the written corpus, passive is more frequent than in the spontaneous production corpora (n=64, 0.26%), and the most frequent passive is the copular one, followed by the reduced passive (which is completely absent in the adult spontaneous speech). As for the causative structures, in adult speech active causatives emerged more often than passives (Table 1). These data confirm that, in both types of corpora *si*-causative is not the most frequent type of the Italian passives, which overall are very rare in the input. In child-directed speech, active causatives instead are more present compared to passives. On the one hand, these data confirm that, in line with the previous findings and conclusions mentioned above, children's preference for *si*-causative passive in production tasks cannot be directly related to its higher frequency in the input; on the other, they suggest that the relatively higher presence of active causatives in adults' child directed speech may play a role (possibly in combination with reflexive *si*; see references above) in favoring children's early access to *si*-causative passives robustly found in the experimental tasks.

(1) a. Il bambino che *si fa* abbracciare dalla mamma.
The kid that makes-himself (Cl) hug by the mother.

(2) a. Il bambino *è* abbracciato dalla mamma.
The kid is hugged by the mother.
b. Il bambino *viene* abbracciato dalla mamma.
The kid comes hugged by the mother.

(3) a. Il bambino *si fa* abbracciare dalla mamma.
The kid makes-himself (Cl) hug by the mother.
b. La mamma fa pettinare il bambino (alla/dalla nonna).
The mother makes comb the kid (to/by the mother).

Figure 1: Types of Passives in CHILDES and in fairy tales[1]:

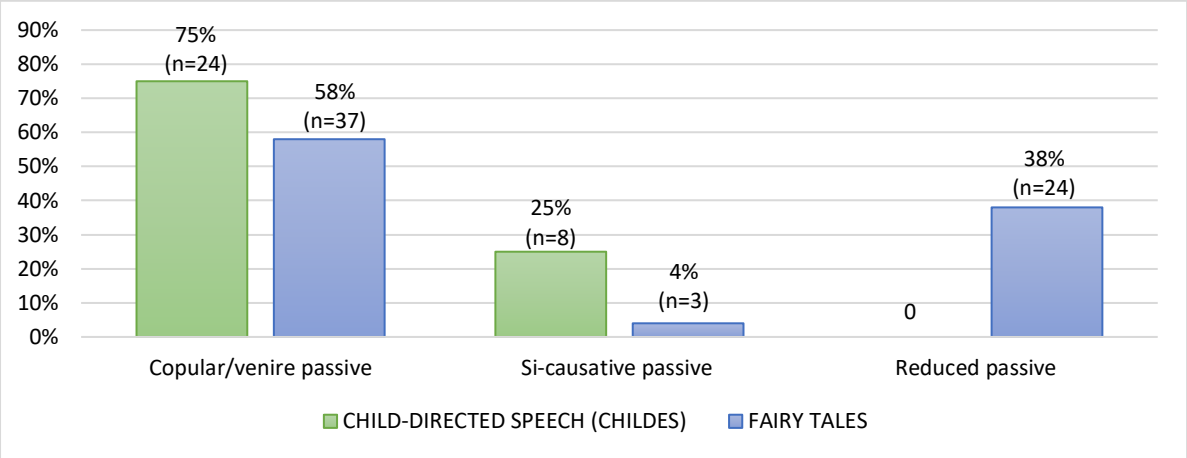


Table 1: Passives and active causatives in CHILDES:

	Child-directed speech (CHILDES)	% over the total number of words
Passives (Copular/*venire*, *si*-causative)	32 (4%)	0.014%
Active causative structures	742 (96%)	0.32%

Some selected references:

Belletti, A. (2017) Internal Grammar and Children's Grammatical Creativity against Poor Inputs. *Front. Psychol*. 8:2074. doi: 10.3389/fpsyg.2017.02074.

Belletti, A., and Manetti, C. (2018). Topics and passives in Italian-speaking children and adults. *Language acquisition, 26 (2)*.

De Mauro, T. (1993). Il Lessico di frequenza dell'italiano parlato: LIP. In AA.VV. 1993.

Del Puppo, Giorgia & Pivi, M. (2015). Un compito di produzione elicitata per la valutazione dell'italiano parlato: le frasi passive e le frasi attive con pronome clitico. *Studi italiani di linguistica teorica e applicata XLIV (3),* 437-448.

Volpato, F., Verin, L., and Cardinaletti, A. (2016). The comprehension and production of verbal passives by Italian preschool-age children. *Applied Psycholinguistics 37(4)*, 901-931.

[1] The analyses are still ongoing, and the proportions given in this abstract (=over the total number of words) will be converted to have the occurrences over the total number of utterances.

Effects of structural similarity on learner sensitivity to gender cues: The case of Russian-Hebrew bilingual children

The present study investigates the role of cross-linguistic influence in Russian-Hebrew bilingualism which presents an interesting test case, since Russian and Hebrew, despite being typologically different, show a number of structural similarities in terms of frequency and transparency of gender cues as well as parallels in nominal gender marking. The research question for this study is whether structural similarity between two typologically different languages can lead to increased awareness of morpho-phonological gender cues.

Russian makes a masculine-feminine-neuter distinction, while Hebrew distinguishes between masculine and feminine only. In both languages, most masculine nouns end in a consonant (*stol* 'table' & *shulxan* 'table'), while most feminine nouns end in *-a* (*lisa* 'fox' & *mita* 'bed') (Corbett 1991, Schwarzwald 1982, Ravid & Schiff 2015). Some feminines in Hebrew also end in *-t* (*rakevet* 'train'). At the same time, there is some opaque gender assignment in both Russian and Hebrew. In Russian, nouns ending in a palatalized consonant (*kon'* 'horse', *sol'* 'salt') belong to either masculine or feminine gender, and nouns ending in unstressed vowels are ambiguous between feminine and neuter (*kukl*/ə/ 'doll', *kresl*/ə/ 'armchair'). Opaque nouns are present in Hebrew as well, e.g., feminine nouns ending in a constant (*regel* 'leg'). Both languages mark gender on attributive adjectives.

Previous research on Russian-Norwegian children (e.g. Mitrofanova et al. 2018) has shown that the masculine gender is overgeneralized across the board in children with a relatively low proficiency in Russian. Given that identical cues for masculine and feminine are offered to learners in Russian and Hebrew, we predict that the masculine-feminine distinction would be established from early on for transparent nouns classes in the grammar of bilingual Russian-Hebrew children. At the same time, in the absence of parallels in the neuter, this value of the gender feature is expected to be vulnerable.

We elicited adjectival agreement with transparent and opaque noun classes in Russian (Table 1), using the same experiment as in Mitrofanova et al (2018), as well as Hebrew (Table 2), which showed no gender overlap in the two languages. Forty-two bilingual Russian-Hebrew speaking children aged 4;1-7;7 participated. All bilingual children were born in Israel and started the acquisition of Russian as a Heritage Language from birth. The Age of Onset to Hebrew (AoO) varied between 0 and 5;00 years (M=1;6yrs; SD=1;5yrs). The bilingual children were born to families with one (n=11) or two Russian-speaking parents (n=31). A vocabulary task was used as a measure of proficiency in both languages (Haman et al. 2015).

Mixed-effects modeling was used to analyze the results from the Russian-Hebrew bilinguals and to compare their performance with the Russian-Norwegian population studied in Mitrofanova et al. (2018). Figures 1 and 2 show that the Russian-Hebrew bilinguals perform significantly better than the Russian-Norwegian bilinguals on feminine transparent (F-tr) nouns (82% vs 58% accuracy respectively), but not overall. In fact, they score lower than the Russian-Norwegian bilinguals on other non-masculine conditions: neuter transparent (N-tr) (33% vs 46%), neuter unstressed (N-unstr) (29% vs 41%) and feminine palatal (F-pal) (25% vs 35%). A binary logistic regression analysis also reveals that gender assignment accuracy in Russian is predicted by AoO, family type (Rus-Rus homes vs. Rus-Heb homes) and vocabulary size in Russian. Bilinguals' gender accuracy in Hebrew is predicted by AoO and vocabulary size; family type has no effect.

These results indicate that structural similarities can have a positive effect on gender acquisition where two languages show overlap in the gender features. At the same time, enhanced focus on transparency exhibited in the Russian-Hebrew language pair may be responsible for the fact that opaque noun classes are more problematic in Russian-Hebrew than in Russian-Norwegian bilinguals.

Table 1. Experimental conditions with existing nouns in Russian

	Feminine transparent	Masculine transparent	Neuter transparent	Masculine opaque	Feminine opaque	Neuter opaque
Stimuli	*lisá* ‘fox’	*dom* ‘house’	*kryló* ‘wing’	*gus’* ‘goose’	kost’ ‘bone’	*mylo* ‘soap’

Table 2: Experimental conditions with existing nouns in Hebrew

	MASC-consonant ending	FEM-ending *-a*	FEM-ending *-t*	FEM-opaque
Stimuli	*agas* ‘pear’	*sapa* ‘sofa’	*rakevet* ‘train’	*regel* ‘leg’

Figure 1. Gender assignment in Russian-Hebrew bilinguals

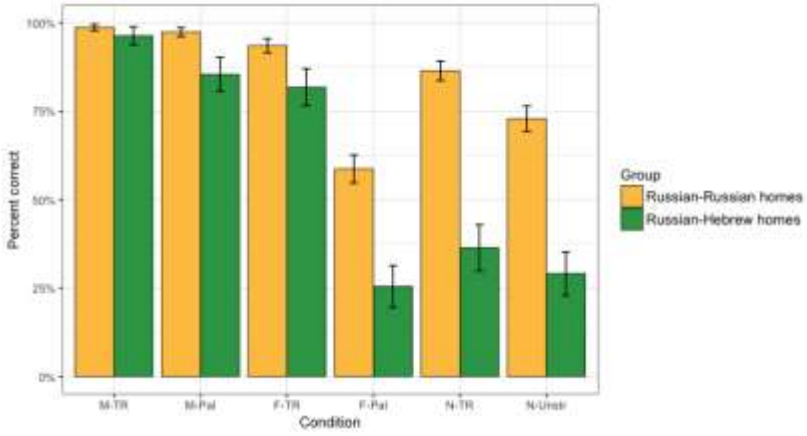
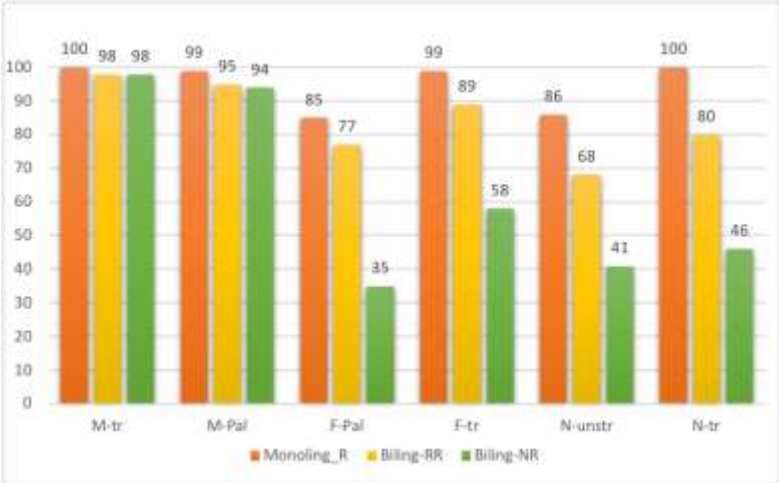


Figure 2. Gender assignment in Russian-Norwegian bilinguals (from Mitrovanova et al. 2018)



Selected references:

Haman, E., Łuniewska, M., & Pomiechowska, B. (2015). Designing cross-linguistic lexical tasks (CLTs) for bilingual preschool children. In S. Armon-Lotem, J. de Jong and N. Meir (Eds.). Assessing multilingual children: Disentangling bilingualism from language impairment (pp. 196-240). Multilingual Matters: Bristol.

Mitrofanova, N., Rodina, Y., Urek, O., & Westergaard, M. (2018). Bilinguals’ sensitivity to grammatical gender cues in Russian: the role of cumulative input, proficiency, and dominance. *Frontiers in psychology*, 9, 1894.

Ravid, D., & Schiff, R. (2015). It’s all about gender: Hebrew speakers’ judgment of adjective plural agreement. *Morphology*, *25*(3), 327-343.

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Morphological skills in developmental dyslexia

Background. While phonological and morphological abilities are both crucial for the acquisition of reading, morphology has been found to play a pivotal role especially at later stages of literacy acquisition, as established by several studies finding correlations between morphological skills and reading achievements in alphabetic orthographies (Brittain 1970; Tornéus 1987; Carlisle 1995). On the other side, research on reading impaired populations showed that their morphological abilities are severely compromised (Elbro & Arnbak 1996). In particular, deficits have been found in tasks assessing the abilities to isolate and blend morphemes (Casalis et al. 2004), in gender and number agreement (Jiménez et al. 2004; Rispens 2004) and in several other domains of inflectional morphology (Joanisse et al. 2000).

Research questions. In view of the above, the present study aimed to address the following questions: 1. Is there (and what is the extent of) the dyslexic disadvantage across domains of Italian inflectional and derivational morphology? 2. Which are the most problematic domains for dyslexic children? 3. Are morphological skills able to predict reading proficiency?

Methods. A protocol comprising morphological tasks and preliminary measures was administered to 16 Italian dyslexic children (DC; 10;2 years old, SD = 1.15) and 18 typically developing children (CC; 10;6 y.o., SD = 0.88). All children were tested along the following preliminary measures: non-verbal intelligence, receptive vocabulary, word and non-word reading accuracy and speed. Eleven morphological tasks elicited the production of a derived or inflected form of a non-word (as in Berko's 1958 original Wug Test) or the retrieval of the base of a morphologically complex non-word. Besides pseudo-noun pluralization, the focus of most tasks was on verb or verb-based formation, as with past participles, deverbal adjectives and nominalizations (Table 1). Conditions in each task manipulated suffix allomorphy in compliance with the base verb conjugation class.

Results. DC performed significantly more poorly than CC in the morphological tasks ($p < .001$). To compare their performances in each task, independent sample t-tests were run considering the general accuracy in each task; then, a multivariate analysis of variance (MANOVA) was conducted, with performance in each condition of every task as dependent variable and Group (DC; CC) as fixed factor. The analysis run on performance in each task revealed that DC underperformed CC in 9 out of 11 tasks, especially in all of the inflection tasks and base retrieval tasks and in 3 out of 5 derivation tasks. No differences were found in task 4 and task 7, assessing the ability to form deverbal nouns in *–mento* and to add evaluative suffixes to base nouns. Finally, correlation and simple linear regression analyses were run between the general mean accuracy in all morphological tasks and the preliminary measures. Morphological competence turned out to be a relevant predictor for all reading measures, especially for accuracy (Table 2).

Discussion. As for research question 1: Dyslexia emerges as a deficit severely affecting morphological skills, especially in (but not limited to) those tasks and conditions requiring fine morphological skills. As for research question 2: Dyslexic children's performance was significantly poorer in inflection tasks, i.e. noun pluralization and past participle formation, and in tasks tapping the ability to retrieve the infinitival form of (invented) deverbal nouns. As for research question 3: Morphological skills turns out to be a relevant predictor for all reading measures, especially for reading accuracy.

Implications. Morphological skills are impaired in dyslexic children and are relevant for predicting reading abilities, as measured by our Wug Test. Therefore, the results of this study could be taken as concrete indications for speech therapists and educators: morphology-based trainings should be further developed and deployed with the aim to improve dyslexics' reading skills (see Arnback & Elbro 2000; Bowers, Kirby & Deacon 2010); especially in the perspective of an inclusive education, instruction should insist on various aspects of metalinguistic skills, and especially, on morphological skills, as a potential remediation strategy for reading deficits.

THIS WORK CAN BE CONSIDERED FOR BOTH ORAL OR POSTER PRESENTATION

Table 1. Summary of the morphological tasks and type of ability tested

Task 1. noun pluralization	INFLECTION
Task 2. infinitive V > past participle	
Task 3. infinitive V > Agent N in *-tore*	DERIVATION
Task 4. infinitive V > Action N in *-mento*	
Task 5. infinitive V > Action N in *-ta*	
Task 6. infinitive V > Adjective in *-bile*	
Task 7. base N > evaluative N (*-ino*, *-one*, *-accio*)	
Task 8. N in *-tore* > infinitive V Task 9. N in *-mento* > infinitive V Task 10. N in *-ta* > infinitive V Task 11. N in *-bile* > infinitive V	BASE RETRIEVAL

Table 2. Summary of linear regression analyses predicting reading outcomes based on morphological competence

	B	***SE B***	**ß**	**t**	***p***
Word reading speed	14.054	4.086	.520	3.439	<.01
Nonword reading speed	6.754	2.916	.379	2.316	<.05
Word reading accuracy	8.597	2.530	.515	3.397	<.01
Nonword reading accuracy	8.394	1.763	.644	4.761	<.001

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To be considered for an oral presentation or for a poster

The Effects of Early Cochlear Implantation and Length of Exposure to Spoken Language in the Comprehension of A and A-bar Movement

Total auditory input deprivation in the first year(s) of life compromises exposure to spoken language during the critical period of language acquisition. Hearing loss (HL) has been long identified as causing syntactic impairment in hearing-impaired children (Power & Quigley, 1973; Friedmann et al. 2018; a.o.), in particular in the comprehension and production of structures derived by A-bar movement in school-aged children with hearing aids (Friedmann & Szterman, 2006, 2011; Volpato & Vernice, 2014; Ruigendijk and Friedmann, 2017; a.o.). The performance in the comprehension of movement derived sentences by hearing-impaired children deprived of spoken language input during the first year of life has been shown to correlate with the age of fitting of hearing aids: children fitted with cochlear implant (CI) before the age of eight months performed similarly to their hearing peers (Friedmann & Szterman, 2006, 2011; Friedmann & Haddad, 2013; a.o.). Different studies report different results on the acquisition of structures derived by A movement in children wih HL (Power & Quigley, 1973; Nolen & Wilbur, 1985; Franceschini & Volpato, 2015; Ruigendijk and Friedmann, 2017; a.o.), some of them suggesting that a more severe HL, *i.e.* a total deprivation of linguistic input, will cause difficulties in the acquisition of these structures.

Considering these hypotheses and the scarce data that may reflect the effects of total deprivation of spoken language input during the first year(s) of life on syntactic movement, the main objective of this research is to analyse and describe the effects of total HL during first year(s) of life on the comprehension of syntactic dependencies with A and A-bar movement in children with CI. The data is analysed taking into account not only the age of CI activation and the biological maturation age (chronological age), but also the length of exposure to spoken language (hearing age) contributing to the debate on whether the total HL in the first year(s) of life actually causes a syntactic movement impairment or whether it causes a developmental delay.

Forty-seven Portuguese preschool and school age cochlear implanted children with profound HL performed three A-bar movement comprehension tasks (relative clauses, non d-linked and d-linked wh-questions) with subject, direct and indirect object structures (adapted from Friedmann et al. (2009)); and an A movement comprehension task with long and short passive sentences (inspired by Volpato and Cardinaletti (2016)) with action and non-action verbs. The data were analysed according to 3 independent variables (Age of CI Activation; Chronological Age; and Hearing Age). We also considered the effects of 3 other variables (Type of Linguistic Exposure; Early Speech Therapy Intervention; and Unilateral vs. Bilateral Implantation) (Table 1). The performance of the children with CI was compared to the one from a paired control group.

Cochlear implanted children performed significantly worse than their hearing peers in all tasks when we consider chronological age. Children with early CI activation (age range 1;00-1;11) performed significantly better than children with late CI activation (after age 3). In relative clauses and d-linked wh-questions comprehension tasks, we observe that children with early CI activation and with older hearing ages performed similarly to their hearing peers both in subject and object structures. The comprehension of passive sentences was significantly worse in cochlear implanted children when compared to their hearing peers, with the exception of the comprehension of passives with non-action verbs up to 5 years of hearing age, which was similar in both groups. Our results reveal that although early CI activation seems to reduce the effects of total HL in A-bar movement acquisition as the length of exposure to spoken language increases, some cochlear implanted children continue to experience difficulties with A movement structures as a result of profound HL, as was also observed by Power and Quigley (1973) and Nolen and Wilbur (1985).

	VARIABLES											
GROUPS	Age of CI Activation		Chronological Age		Hearing Age (Legth of Exposure to Spoken Language)		Type of Language exposure		Early Speech Therapy Intervention		Unilateral / Bilateral CI Implantation	
	1;00 - 1;11	N= 19 N=13	3;00 - 5;11	N= 8 (M 4;02, ± .83)	2;00 - 3;11	N= 9 (M 4;04, ± .49)	Oral Monolingual	N= 17	Yes	N= 36	Unilateral	N= 29
					4;00 - 5;11	N= 8 (M 6;03, ± .50)	Oral Monolingual + Sign Language as L2	N= 5				
	2;00 - 2;11	N= 13 (M 3;07, ± .95)	6;00 - 7;11	N= 8 (M 6;06, ± .51)	6;00 - 7;11	N= 9 (M 8;05, ± .51)						
			8;00 - 9;11	N= 9 (M 9;91, ± .041)	8;00 - 9;11	N= 10 (M 8;55, ± .51)			No	N= 11	Bilateral	N = 18
	> 3;00	N= 15 (M 3;07, ± .95)	> 10;00	N= 22 (M 12;05, ± 2.03)	> 10;00	N=11 (M 12;05, ± 1.42)	Bimodal Bilingual	N= 25				

Table 1: Characteristics of Cochlear Implanted Sample.

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L2 acquisition of singular/plural interpretation of Japanese partitive constructions

This study investigates the acquisition of singular/plural sensitivity to distinct word orders of Japanese partitive constructions by adult L1 English speakers. In classifier languages, including Japanese, the traditional view is that all bare nouns are essentially number-neutral, requiring these languages to use classifiers as counting units (Chierchia, 1998). Recently, Watanabe (2017) challenged this traditional view, suggesting that bare nouns in Japanese partitive constructions represent systematic number-sensitivity despite the absence of number-sensitive overt morphology. In a partitive construction where a bare noun precedes a partitive, as in (1), the noun can be interpreted as singular or plural; accordingly, the sentence is ambiguous. However, in a reverse partitive construction where a bare noun follows a partitive, as in (2), the noun is only interpreted as plural, so the sentence is unambiguous. Japanese reverse partitive constructions are thus subject to the semantic restriction, as Table 1 shows. To the best of the author's knowledge, the applicability of this restriction has never been empirically tested.

Compared to Japanese, in English partitive constructions (3), no singular/plural ambiguity exists because of the availability of overt plural morphology. Moreover, fixed word order disallows reverse partitives in English. Therefore, acquisition of the semantic restriction on Japanese reverse partitives may cause learnability problems for L1 English speakers. The present study investigates two points: (i) whether the semantic restriction on reverse partitives holds in the grammar of native Japanese non-linguists; and (ii) whether L1 English speakers of L2 Japanese can acquire the semantic restriction on reverse partitives.

A picture-based Truth Value Judgment Task was administered to 19 native English speakers studying Japanese, with 30 native Japanese non-linguists as the control group. All L2ers were residents of Japan and their Japanese language proficiency levels were intermediate and advanced. The participants were asked whether the written Japanese (reverse) partitive construction sentences matched the meaning of the given picture, which provided either singular or plural interpretations, as in (4). The results so far suggest three points. First, the control group made a clear distinction between singular and plural interpretations of reverse partitives. They accepted the illicit singular interpretation of reverse partitives 16% of the time and accepted the licit plural interpretation 97% of the time. These results suggest that the semantic restriction holds in the grammar of native Japanese non-linguists, as Watanabe (2017) and Sauerland & Yatsushiro (2017) suggested. Second, the control group did not fully accept the licit plural interpretation. They accepted it only 63% of the time, which should not be expected if either the singular or plural interpretation of partitives is possible. I suggest that the low acceptance of the plural interpretation of partitives reflects the native Japanese non-linguists' preference of the singular interpretation of a bare noun presented out of context. Third, the semantic restriction on reverse partitives is acquirable by L1 English speakers. The individual result shows that 10 L2ers (i.e. 53%) successfully made the singular/plural distinction, just as the control group. This result aligns with previous L2 studies, including Dekydtspotter, Sprouse, and Swanson (2001), suggesting that advanced L2ers successfully acquire subtle interpretative differences between different syntactic forms in L2s.

(1) Partitive construction: ambiguous (singular or plural interpretation)
Ringo-no ichibu-ga kusastteiru.
apple-GEN part-NOM is rotten
'Part of the apple(s) is/are rotten.'

(2) Reverse partitive construction: unambiguous (plural interpretation only)
Ichibu-no ringo-ga kusastteiru.
Part-GEN apple-NOM is rotten
'Some of the apples are rotten.'

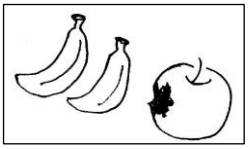
Table 1. Word order and singular/plural interpretations of bare nouns

constructions \ interpretations	Singular interpretation	Plural interpretation
Partitive (a bare noun precedes a partitive)	✔	✔
Reverse partitive (a bare noun follows a partitive)	✘	✔

(3) Interpretation of English partitive construction
a. Most of the city is off-limits to foreigners.
b. Most of the cities are off-limits to foreigners. (Watanabe 2017: 3)

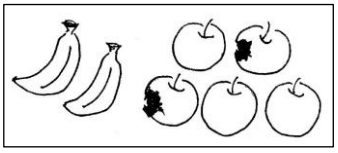
(4) Stimuli examples

a. Reverse partitive with singular interpretation
Ichibu-no ringo-ga kusastteiru.
part-GEN apple-NOM is rotten
'Some of the apples are rotten.'



True (False)

b. Reverse partitive with plural interpretation
Ichibu-no ringo-ga kusastteiru.
part-GEN apple-NOM is rotten
'Some of the apples are rotten'.



(True) False

Table 2. Group means of the ratios of choosing "true" in each condition (SD)

group \ stimuli	Condition1 (partitive-singular)	Condition2 (partitive-plural)	Condition3 (reverse-singular)	Condition4 (reverse-plural)
Control	0.98 (0.07)	0.63 (0.38)	0.16 (0.35)	0.97 (0.13)
L2	0.96 (0.17)	0.72 (0.36)	0.61(0.42)	0.96 (0.09)

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On recursive DPs in German acquisition

Recursive self-embedding constructions present a challenge for children and adults in different languages despite recursion being considered as a fundamental property of human grammars (Hauser et al. 2002). Previous studies show that recursive possession and recursive PP modification in English are difficult for children to understand and thus rarely produced; see Limbach & Adone (2010) and Roeper (2011). As a counterpart to these observations, the acquisition of recursion has been shown to be resilient (Pérez-Leroux and Roberge 2018) even when the relevant input is scarce or degraded, as shown by evidence that deaf home signers develop recursivity (Goldin-Meadow 1982). Also relevant for the study of recursion in child language is the fact that there is substantial cross- and intra-linguistic variation in the structures that can or cannot function recursively: the type of embedded phrasal category involved (e.g., PPs, relative clauses), phrasal directionality (left- versus right-branching structures), and linking elements (e.g., particles, morphological case-marking). The consequences of such variation for language development have not been systematically explored. In a 2012 study, Pérez-Leroux et al. reported that children's production of recursive structures in English lagged with Saxon 's compared to PPs but other studies contradict this claim (Giblin et al. 2018). Using the example of German, the current study explores to what extent language-specific variability in recursive structures impacts the developmental path.

The particular interest of German for the general study of recursion is the relatively rich overt case marking system and the considerable variety found in the expression of possession, including possessor fronting; see Delsing (1998), Eisenbeiß et al. (2010), i.a.. The DPs in (1) represent only a subset of the ways to express the same possession relations. In addition, other linking strategies can be used, including relative clauses (2). We can thus ask: Does recursive modification within DPs in German develop differently in possessive DPs? And do children use different strategies than adults? We elicited production of 4 different types of recursively modified DPs (6 trials per condition): possessive (1), comitative (3), locative (4), and relational (5). Participants were 21 monolingual five-year-olds recruited in kindergartens in the Frankfurt area (4;11-5;11, mean age 5;1) and 22 university-age adults from the same community; (Lowles 2016). Participants listened to a brief story introducing multiple referents shown on a picture. A referential elicitation question (*which x…?*) prompted for a description with recursive modifications. Overall results are given in Figure 1. Data was fitted into a generalized linear mixed effect (logit) model using Laplace approximation, with Group and Condition as fixed effects, and participants and items as random effects. The effect of condition was significant: possessive and comitative were comparably successful, but locative and relational were not (LOC, est=-1.03, p=.06; REL, est=-2.95, p<.001). Children produced significantly fewer targets than adults (est=-2.99, p<.001), but the difference was more moderate in the case of relational DPs (GroupChild:ConditionREL, est=1.38, p=.006). These results are comparable to those in other languages (Pérez-Leroux & Roberge, 2018). As for possession more specifically, the great diversity of surface strategies available in German does not impact the development of recursive ability in children. Although children and adults both produced recursive possessors at (relatively) high rates, the choice of structures differs between the two groups. Children do not use morphological marking (genitive) to express possession in our elicitation context, they show a strong preference for prepositional *von,* and rarely use fronting. Adults show a preference for Saxon *'s* with proper names, contrary to children, and also use genitive case for common nouns. These observations lead us to conclude that while children are not delayed due to the variety of recursive possessive structures, they selectively reduce the structural repertoire, altering extant patterns of productivity (Yang 2016).

(1) a. Postnominal possessor
Der Drache von dem/vom Sohn des Feuerwehrmanns = Possessee+vonPP+genNP
Der Drache des Sohnes des Feuerwehrmanns = Possessee+genNP+genNP
Der Drache des Feuerwehrmannsohns = Possessee+genCompound
Der Drache von dem/vom Sohn von dem/vom Feuerwehrmann = Possessee+vonPP+vonPP
b. Prenominal possessor (fronting)
Von dem/vom Sohn von dem/vom Feuerwehrmann der Drache = vonPP+vonPP+Possessee
Von dem/vom Feuerwehrmannsohn der Drache = vonPPCompound+Possessee
'The kite of the son of the fireman'

(2) *Der Ballon von dem Affen, der dem Clown gehört*
'the ballon of the monkey who the clown belongs'

(3) Recursive Comitative: *Das Mädchen mit dem Hund mit dem Hut*
'The girl with the dog with the hat'

(4) Recursive Locative: *Der Wurm in dem Apfel auf dem Teller*
'The worm in the apple on the plate'

(5) Recursive Relational: *Der Behälter mit den Stiften mit dem Gummiband*
'The box with the pencils with the rubber band'

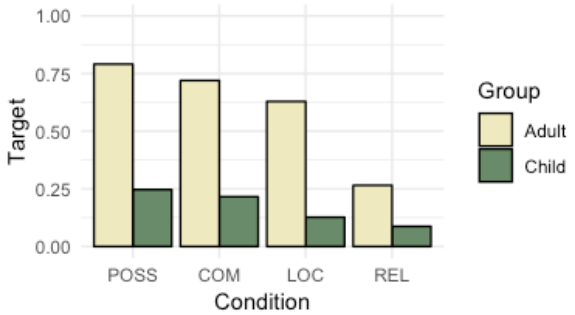

Figure 1. Proportion of target responses per group for each of the conditions

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Derivational morphology in monolingual and bilingual children with Developmental Language Disorder

Inverstigations into the linguistic abilities of bilingual children with Developmental Language Disorder (DLD) revealed contrasting results with respect to the bilingualism effect on the language development of these children (Marinis et al., 2017; Paradis, 2016; Restrepo et. al., 2013; among others). Previous research on derivational morphology in DLD in English indicated that derivational suffixes were not omitted (Marshall & van der Lely, 2007) while findings in Greek showed difficulties in compounds and diminutives (Dalalakis, 1997).

The present study explores the derivational morphology abilities of bilingual children with DLD (BI-DLD) and investigates whether bilingualism affects them by comparing BI-DLD to a group of monolingual children with DLD (MONO-DLD). The sample consisted of 10 BI-DLD (Mean chronological age (CA): 8;7; SD: 2;08; Range: 6;11-11;8)) with Greek as L2 and Albanian, Bulgarian, Russian or Georgian as L1 and 12 monolingual DLD children (MONO-DLD) (Mean CA: 8;9; SD: 1;92; Range: 6;1-11;8), native speakers of Greek, matched to the BI-DLD group on chronological age and sex. In addition, 20 typically developing bilingual children (BI-TD) (Mean CA: 9;5; SD:1;61; Range: 6;8-11;3) with Greek as L2 matched to BI-DLD on chronological age, sex, and age of first exposure to Greek participated. Furthermore, 6 younger typically developing monolingual children (MONO-TD) (Mean CA: 5;9; SD: 0;04; Range: 5;9-6;0) matched to the MONO-DLD group on language age have been included in the study up to now while further testing with TD children is still in progress. The experimental materials comprised *Deverbal Nouns*, e.g. klef-tis (thief), *Denominal Nouns*, e.g. kleid-aras (locksmith), *Deverbal Adjectives*, e.g. pothi-tos (desirable), and *Denominal Adjectives*, e.g. ksyl-inos (wooden). In total, there were 90 experimental items. The two major categories (*Deverbal* vs. *Denominal*) were matched for frequency, length and number of syllables. An elicited production derivational morphology task was employed. The experimenter asked participants to answer questions of the type 'How do you call the toy made by wood'? All participants were individually tested.

The results showed that the performance of the BI-DLD group was significantly lower than that of the other three groups while the performance of MONO-DLD did not significantly differ from the performance of BI-TD children. Further within group analysis revealed better performance on denominal than deverbal nouns and adjectives by MONO-DLD like both TD groups which may indicate delay in the deverbal category acquisition. Failure in reaching significant difference between the deverbal and denominal category by BI-DLD children reflects their low scores and substantial difficulties in both categories. Qualitative analysis was performed by investigating the error patterns produced by all groups which revealed major dissociations between DLD individuals and TD groups. Whilst increased suffix overgeneralization rates were revealed for TD individuals, this trend was reduced in both DLD groups and proved to be significant for MONO-DLD when compared to the BI-TD group. Individuals with DLD tended to produce 'other' errors including production of non-derived words to a great extent. While these findings indicate certain limitations in the acquisition of derivational morphology for both DLD groups and especially for the BI-DLD group, they implicate differentiated abilities in morphological rule application pattern (suffix overgeneralization) by showing weakness for children with DLD. We conclude that in quantitative terms the performance of BI-DLD differs from that of MONO-DLD and thus there is a significant bilingualism effect. However, in qualitative terms (error analysis) the major discrepancies appear to be between typical and impaired (DLD) linguistic development.

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The acquisition of objects by Portuguese and Polish heritage bilinguals in contact with German

In this study, we investigate the production of direct objects by bilingual Polish/German (mean age 7.8) and Portuguese/German (mean age 8.3) children, living in Germany, and compare them to each other and to age matched monolingual Portuguese and Polish children. On the basis of this comparative investigation, we argue that bilingual language acquisition is crucially determined by the grammatical properties of the respective languages and much less by other factors (e.g. cross-linguistic influence).

Polish and Portuguese are both clitic and null object languages. They have in common that the acquisition of different types of objects represents a complex acquisition task and that monolingual children acquiring these languages show high rates of object omissions and a longer null object stage than monolingual children acquiring other clitic languages (Varlokosta et al. 2016, Sopata 2016, Flores et al. subm.).

Based on a production task (adapted from Sopata, 2016), we focus on the realization of objects in different contexts. The task differentiates between contexts where (1) the referent is not immediately accessible (NIA) or immediately accessible (IA) in discourse and (2) refers to animate or inanimate entities. In NIA contexts, the use of full NPs is expected, whereas in IA contexts, a clitic or a null object should be produced. Animate referents are expected to be more likely overtly realized (as a clitic) and inanimate accessible referents as null objects.

We aim at answering the question whether the bilingual primary school children have acquired these pragmatic and referential conditions on object use in their heritage language. Furthermore, we analyze whether both groups of children overuse certain types of objects and, if yes, whether they perform in a comparable way.

Our investigation reveals that both groups of bilingual children have successfully acquired the different conditions of object use. The results of a generalized linear mixed model (multinominal logistic regression analysis) with 'answer' as dependent variable and the fixed factors 'group', 'condition' and 'cumulative input' (calculated on the basis of a parental questionnaire) shows a strong effect of 'condition' but no effect of bilingual 'group' and a very marginal effect of 'cum. input'. We conclude that both bilingual groups perform in a comparable way: they distinguish between the different pragmatic and referential contexts, showing a clear preference for full NPs in NIA contexts and for pronominal objects (clitic/null object) when the referent is immediately accessible (cf. diagram 1). Nevertheless, both bilingual groups more frequently produce null objects and the animacy effect is less expressed in comparison to an age matched monolingual group (cf. diagram 2). In addition, Portuguese-German bilinguals overuse NPs in contexts where the referent is immediately accessible.

We propose that these effects are due to an interplay of several factors: a) some delay in comparison to monolinguals (cf. the results of younger monolinguals in diagram 3), potentially as a result of reduced exposure to the languages (as shown by the marginal effect of cumulative input) and a language-internal, diachronic evolution along a referential scale (as proposed in Rinke et al. 2018). Crucially, we argue that the bilingual groups differ in quantitative but not qualitative ways from monolingual children acquiring Portuguese or Polish. Above all, the grammatical properties, which both languages share, determine the acquisition path in both monolingual and bilingual language acquisition in a similar way.

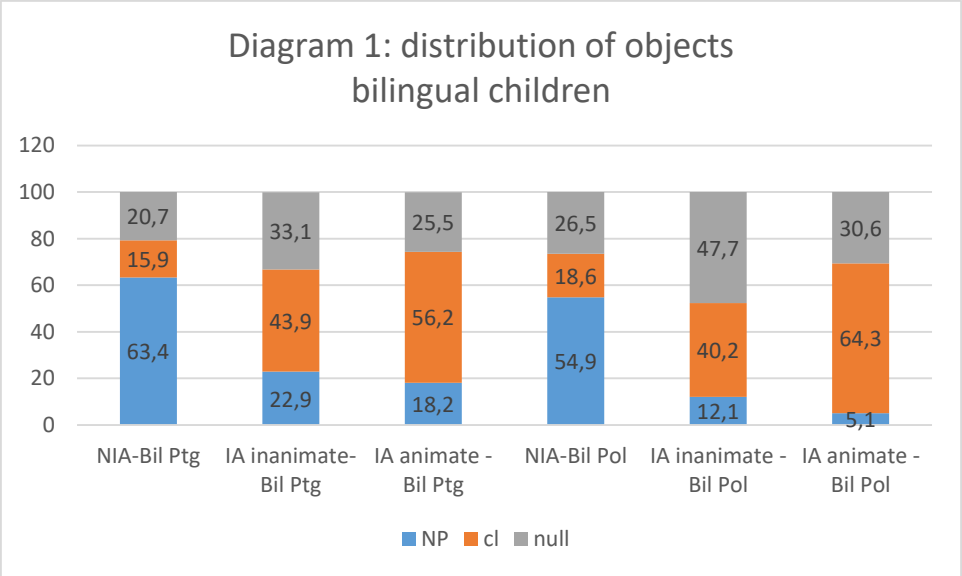
Diagram 1: distribution of objects bilingual children
120
100
80
60
40
20
0
20,7
15,9
63,4
33,1
43,9
22,9
25,5
56,2
18,2
26,5
18,6
54,9
47,7
40,2
12,1
30,6
64,3
5,1
NIA-Bil Ptg
IA inanimate-Bil Ptg
IA animate - Bil Ptg
NIA-Bil Pol
IA inanimate - Bil Pol
IA animate - Bil Pol
NP
cl
null

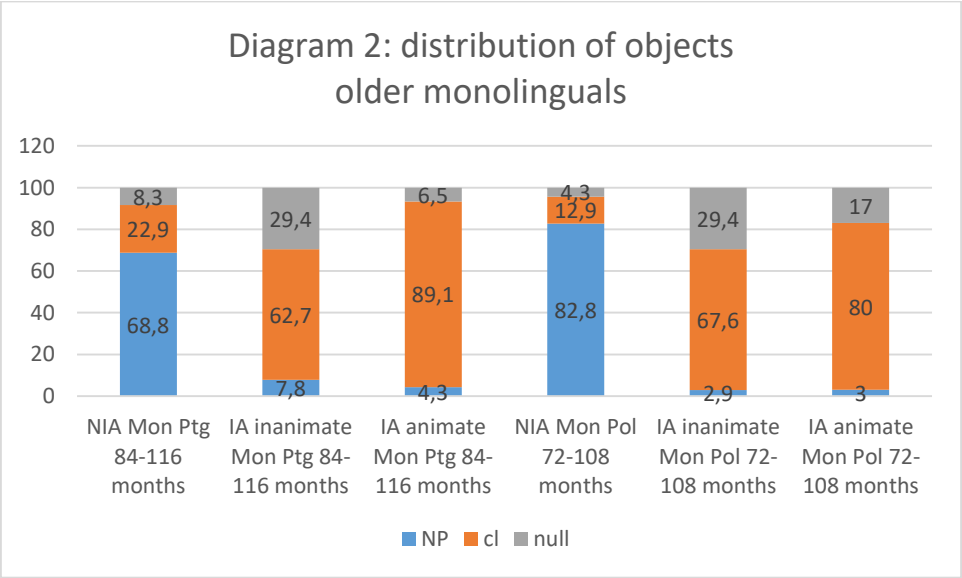
Diagram 2: distribution of objects older monolinguals
120
100
80
60
40
20
0
8,3
22,9
68,8
29,4
62,7
7,8
6,5
89,1
4,3
4,3
12,9
82,8
29,4
67,6
2,9
17
80
3
NIA Mon Ptg 84-116 months
IA inanimate Mon Ptg 84-116 months
IA animate Mon Ptg 84-116 months
NIA Mon Pol 72-108 months
IA inanimate Mon Pol 72-108 months
IA animate Mon Pol 72-108 months
NP
cl
null

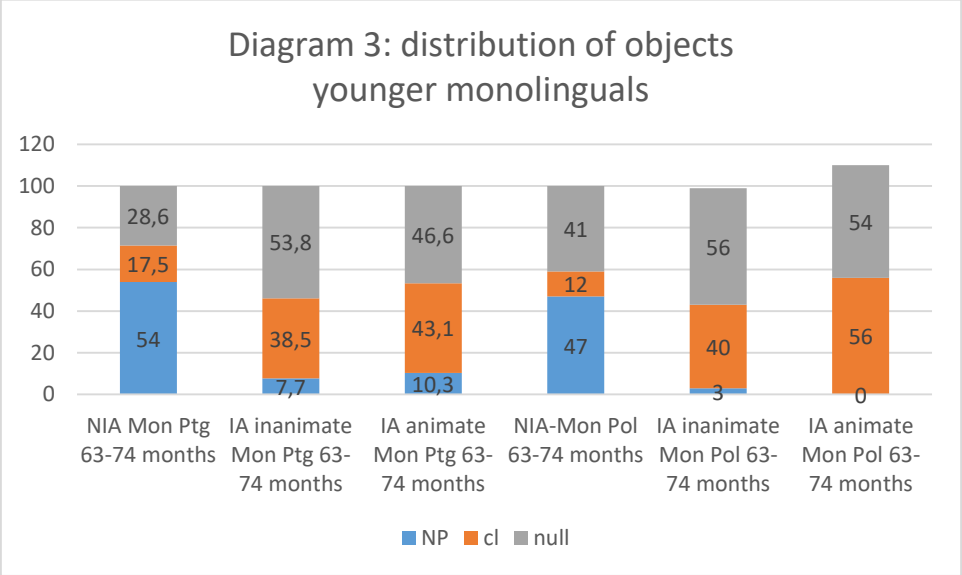
Diagram 3: distribution of objects younger monolinguals
120
100
80
60
40
20
0
28,6
17,5
54
53,8
38,5
7,7
46,6
43,1
10,3
41
12
47
56
40
3
54
56
0
NIA Mon Ptg 63-74 months
IA inanimate Mon Ptg 63-74 months
IA animate Mon Ptg 63-74 months
NIA-Mon Pol 63-74 months
IA inanimate Mon Pol 63-74 months
IA animate Mon Pol 63-74 months
NP
cl
null

How the analysis of monolingual acquisition data can inform on formal approaches to English and Spanish dative alternation

The syntactic status of English (1) and Spanish (2) dative alternation (DA) structures is still a matter of debate. In English, the debate has centered on how a passive-like movement is responsible for the derivation between the two DA types: whether prepositional structures (*to/for*-datives) (1a) are the source from which double object constructions (DOCs) (1b) are derived (e.g. Larson 2014, 1990, 1988; Hale and Keyser 2002; among others), or whether DOCs are the original structure instead (Aoun and Li 1989; Haspelmath 2006; among others). Proposals like that of Snyder and Stromswold (1997) and Snyder (2001), however, establish a common underlying configuration for both DA structures as complex predicates, although they also argue how *to*-datives might be subject to an additional syntactic requirement DOCs are not. In Spanish, Larson's (2014, 1990, 1988) view has been adopted and so *a/para*-datives (2a) are analyzed as the source construction of the Dative-Clitic-Doubled ones (DCLDs) (2b) in which an *a*-DP is doubled by a clitic; hence, DCLDs are said to correspond to English DOCs although they differ in the surface form (Beavers and Nishida 2009; Cuervo 2007, 2003; Demonte 1995, 1994; among others). From the standpoint of first language acquisition, derived structures are expected to emerge later in spontaneous production if compared to underived ones and possibly to have a lower incidence in the initial stages of acquisition (e.g. Snyder 2001 and Snyder and Stromswold 1997). However, if both DA types share a common dependence on a single property (as argued for by Snyder 2001, 327, for English), then their acquisition should be fairly concurrent. Studies on the acquisition of DA by monolingual children are rather scarce (Bowerman 1990; Gropen et al. 1989; Snyder 2001 and Snyder and Stromswold 1997 for English; Torrens and Wexler 2000 for Spanish) and they generally point to non-significant differences in the emergence of the two DA types.

In this context, we set to analyze how English and Spanish DA structures emerge and are produced in the spontaneous longitudinal speech of English and Spanish monolingual children. Our aim is to shed light on the status of DA in these two languages by focusing on the age of onset and on their incidence throughout development. We also examine whether the frequency of exposure to English and Spanish DA constructions in the adult input plays a role in the monolingual children's production of these structures.

Data come from 14 longitudinal corpora available in CHILDES (MacWhinney 2000), on the production of 13 English monolingual children (age range 0;06-8;00) and 9 Spanish monolingual children (age range 0;11-4;08). The children's DA data are classified in terms of DA type, and data analysis shows that in both languages double object and prepositional DA structures emerge at a similar age ($t(9)=-2.079$, $p=.067$ in English; $t(7)=.179$, $p=.863$ in Spanish) (table 1). The concurrent onset of DA as seen in monolingual acquisition data lends support to Snyder's proposal that prepositional and double object constructions are not derivationally related, and that this is possibly so for the two languages. Developmentally, frequency of production shows significant differences in that double object rates are relatively higher than prepositional DA rates across the two languages ($t(12)=-4.453$, $p=.001$ in English, figure 1; $z=-2.023$, $p=.043$ in Spanish, figure 2). This difference might be explained in terms of prepositional DA' additional syntactic requirements as well as adult input factors (figures 3-4).

(1) a. John sends a letter to Mary [*to*-dative]
b. John sends Mary a letter [DOC]
[Larson 1988, 343-353]

(2) a. Entregué las llaves al conserje [*a*-dative]
give.1sg.past the keys to+the janitor
'I gave the keys to the janitor'

b. Le entregué las llaves al conserje [DCLD]
cl.dat. give.1sg.past the keys to+the janitor
'I gave the keys to the janitor'
[Demonte 1995, 6]

Table 1. *English and Spanish dative alternation in child monolingual speech*

		Double object constructions	Prepositional structures
Monolingual English	Age of first occurrence	2;02	2;06
	# of cases (%)	752 (74.16%)	262 (25.84%)
Monolingual Spanish	Age of first occurrence	2;00	2;04
	# of cases (%)	775 (93.71%)	52 (6.29%)

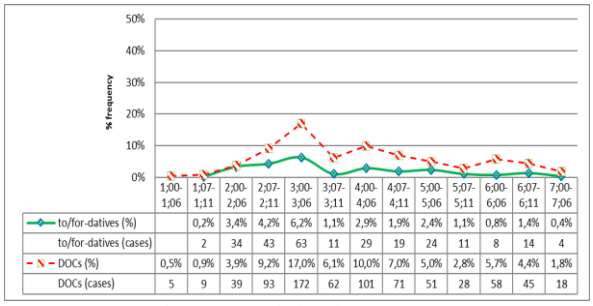

Figure 1. *Monolingual English children's dative alternation production*

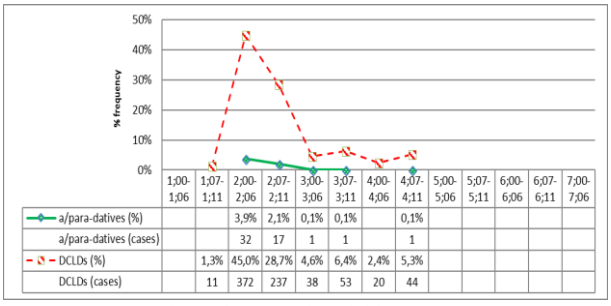

Figure 2. *Monolingual Spanish children's dative alternation production*

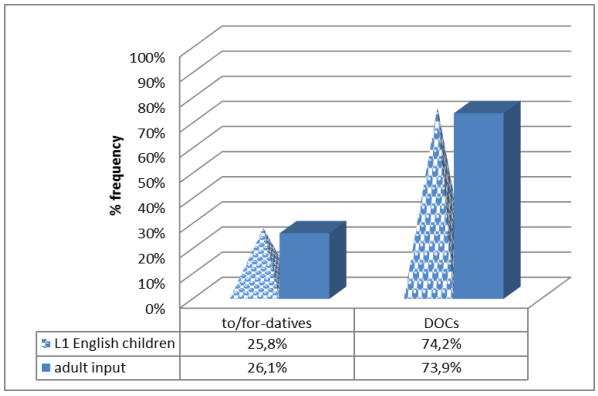

Figure 3. *The production of English dative alternation in the adult input and in the monolingual children's output*

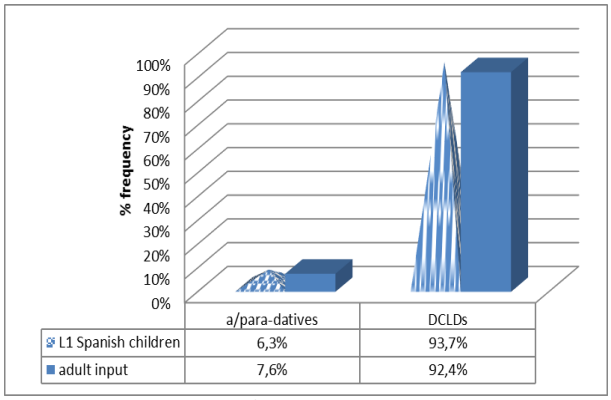

Figure 4. *The production of Spanish dative alternation in the adult input and in the monolingual children's output*

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Children are sensitive to the default verb order in German subordinate clauses: evidence from 'because'-clauses in spontaneous speech and elicited repetition

German subordinate clauses always allow verb-final (Vfin) placement; it is assumed to be the default order. Embedded verb-second (V2) is the marked verb order: it is not possible in all subordinate clauses and in the other clause types (e.g., complement, relative, 'because' clauses) it is allowed only if specific licensing conditions are met (Antomo/Steinbach 2010; Reis 1997). Focusing on *weil* 'because' clauses like (1), the present two studies explored children's sensitivity to the default verb order in subordinate clauses that allow variation between V2 and Vfin in the target system. Research on adults' spontaneous speech showed that in *weil*-clauses both orders occur at a similar rate (V2: 47%, Vfin: 53%, see Kempen/Harbusch 2016). This indicates that the default word order from a grammatical perspective, Vfin, is not necessarily the most frequent order in the target language. Previous acquisition research has focused on complement and relative clauses, but not on *weil*-clauses, with mixed results. Children have been reported to produce V2 variants earlier and more often than their Vfin counterpart (Brandt et al. 2008, 2010) as well as Vfin before V2 clauses (Rothweiler 1993; Sanfelici et al. 2017). The present studies add to this research by investigating the extent to which children are sensitive to the default verb order in *weil*-clauses. Study 1 analyzed children's spontaneous speech. Using an elicited repetition task, Study 2 prompted V2 and Vfin structures in contexts that fulfilled the specific licensing conditions for *weil*-V2-clauses (*i.a.* propositional modification, prosodic disintegration, sentence final position).

Study 1: The spontaneous speech of 8 typically developing German children (CHILDES) was analysed longitudinally (see Table 1). 2754 *weil*-utterances were extracted via the command *combo +t*CHI +s"weil" *.cha*, of which 2072 contained *weil*-clauses with the verb unambiguously in V2 or Vfin position. Overall, 1796 *weil*-clauses exhibited Vfin order, compared to only 276 *weil*-clauses with V2. The longitudinal analysis revealed that at age 6 and age 7 V2 and Vfin were used with the same frequency in *weil*-clauses, resembling the adult pattern. However, between ages 2 and 5 Vfin was the predominant order for *weil*-clauses, and during the first months in which *weil*-clauses occurred (2;2-2;4) it was the only verb order found.

Study 2: A delayed-imitation task was developed that required participants to repeat the sentence presented with either Vfin or V2 word order, see (1a/b). 109 monolingual children (age 3: n=33; age 4: n=40; age 5: n=34) and 28 adults were tested. The task had three parts: listening to the prerecorded target sentence, pointing to the scene matching the sentence, see (2), and repeating the target sentence. There were 8 test items, differing in verb placement only, and 8 unrelated fillers, which were repeated correctly. Responses were coded as 'Correct' if the verb placement was repeated correctly and as 'V-Change' (V2=>Vfin; Vfin=>V2) otherwise. We investigated whether the percentages of Correct and V-Change responses differed between the Vfin and the V2 conditions. The child data were collapsed, as the three child groups did not differ (Kruskal-Wallis test, all *p*s n.s.). The adults performed at ceiling in both conditions as expected. The children correctly repeated the Vfin structures significantly more often than the V2 structures, Wilcoxon related samples, Z=-5.3, $p<.001$, see Fig.1. Moreover, 15 children (8 3-year-olds, 4 4-year-olds, 3 5-year-olds) repeated the test items always with Vfin order and never produced V2 *weil*-clauses.

In summary, we found that children i) start with the Vfin variant of *weil*-clauses, acquiring the V2 variant later, and ii) up to age 5 have a strong preference for Vfin over V2 *weil*-clauses. These two studies extend previous findings for complements and relative clauses to yet another type of subordination. We suggest that children's sensitivity to the default verb order results from an economy-based strategy: in case of variation in the primary linguistic data the default value, i.e. Vfin, is favored, because its licensing conditions are more general than those of the other variant, i.e. V2, and this holds despite the frequent occurrence of the non-default in the ambient language.

(1) *Die zwei Kühe fressen Gras,* a. *weil sie ganz viel Hunger haben*.
b. *weil sie haben ganz viel Hunger*.
'The two cows eat grass, because they are very hungry.'

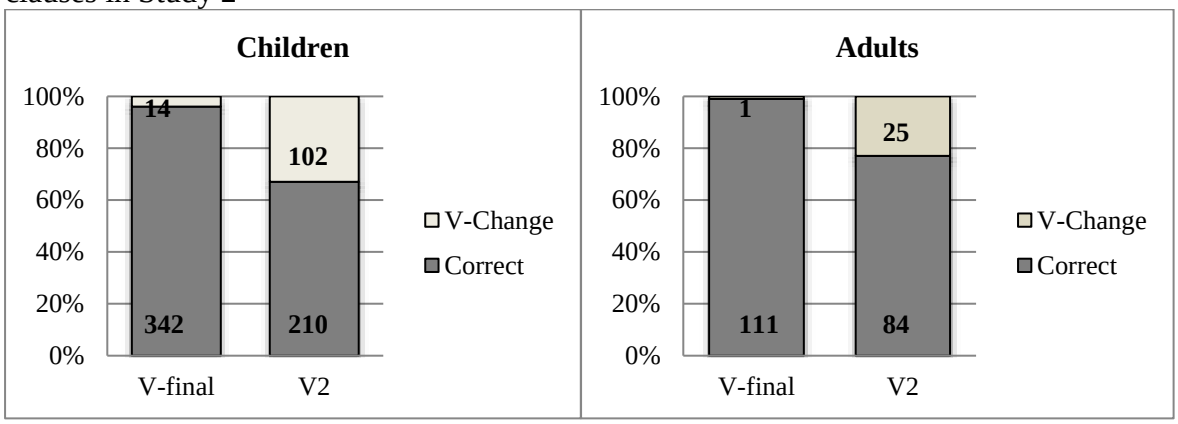
(2) Picture for the test item in (1a) and (1b)

Table 1. *Overview of the CHILDES corpora and children analyzed in Study 1*

Corpus	*Child*	*Age-Range*	*Total of extracted weil-CP*	*Total of analyzed weil-CP**	*Weil Vfin clauses*	*Weil V2 clauses*
Miller	Simone	1;9-4;0	388	305	267	38
Caroline	Caroline	1;0-4;3	140	84	53	31
Leo	Leo	1;11-4;11	1508	1226	1130	96
Rigol	Cosima	0;00-7;2	83	71	61	10
	Sebastian	0;00-7;5	176	136	105	31
	Pauline	0;00-7;11	258	202	108	94
Wagner	Carsten	3;6	9	8	7	1
	Gabi	5;4	10	8	8	0

* The remaining *weil*-CPs showed either no finite verb or doubling of the finite verb, and hence were not analyzed wrt verb placement.

Figure 1. Overview of the production (%) of Correct and V-Change in V2 and V-final *weil* clauses in Study 2



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Real-time processing of garden-path structures by Mandarin-speaking children

Recent studies suggest that when listening to a sentence, children incrementally compute the structural representation and possible meanings of the sentence. Due to this incremental nature of the parser, children sometimes overly rely on certain information to assign their initial interpretation and later fail to revise their initial interpretation when encountering the disambiguating linguistic cues (e.g. Trueswell *et al.* 1999; Choi & Trueswell, 2010; Weighall, 2008; but cf. Meroni & Crain, 2003). For example, Trueswell *et al.* (1999) found that when presented with garden-path structures as in (1), 4- to 5-year-old English-speaking children tended to misinterpret the first prepositional phrase *on the napkin* as the destination of the verb *put* and failed to revise it when later hearing the correct destination *in the box*, as shown by the frequent eye movements at the incorrect destination. Using the visual world eye-tracking paradigm, the present study offers a cross-linguistic perspective by looking at how 4-year-old Mandarin-speaking children process garden-path structures in real time.

Thirty adults and 25 four-year-olds (age range 4;1-4;11; mean 4;6) participated in the study. They were all native speakers of Mandarin and had no history of speech, hearing or language disorders. To describe a typical trial in detail: the participants viewed a visual image as in Figure 1 while listening to a spoken sentence as in (2), which is a typical garden-path structure in Mandarin. It has the structure: "NP1 + Modal + Verb + NP2 + DE + NP3". *DE* is a freestanding morpheme and is a possessive marker, so NP2 + DE + NP3 indicates a possessive relation where NP2 is the possessor (*xiaogou* 'dog') and NP3 is the possessee (*piqiu* 'ball'). The verb *ti* 'kick' could take either an animate or inanimate entity as its complement, so NP2 *xiaogou* 'dog' could be a perfect complement for the verb. If the parser incrementally computes the structural representation and possible meanings of the sentence, it might initially analyze the structure "NP1 + Modal + Verb + NP2" as a complete sentence, as in (3), before encountering the marker *DE*. In other words, when processing (2), the parser might initially analyze NP2 *xiaogou* 'dog' as the object NP of the verb *ti* 'kick', rather than the modifier of the actual object NP *xiaogou DE piqiu* 'dog's ball'. **This interpretation process would lead the participants to initially look more at the dog in Figure 1 before hearing the possessive marker *DE*.** The possessive marker DE is the trigger for reanalysis. Upon encountering the marker *DE*, the parser would need to revise its initial analysis of NP2 (*xiaogou* 'dog') and reanalyze it as the modifier of the object NP (*xiaogou DE piqiu* 'dog's ball'). **This reanalysis process would lead the participants to switch their eye movements from the dog to the dog's ball in Figure 1, so a significant increase of fixations in the area containing the dog's ball should be expected after the onset of *DE***.

Figure 2 gives the average fixation proportions from the onset of the target sentence in the two critical areas: the area containing the dog and the area containing the dog's ball. As shown in the figure, the 4-year-olds, like the adults, exhibited an eye gaze pattern that reflected their ability to revise the initial misanalysis using the information provided by the possessive marker *DE*, although there was a significant difference between the two groups in the time course of this reanalysis process. The adults started to look more at the expected area immediately after the onset of the marker *DE*, but the 4-year-olds did so after the onset of the object NP. The eye gaze patterns were confirmed by statistical modelling.

The finding adds further support to the incremental nature of the child parser, and suggests that 4-year-old Mandarin-speaking children can correctly comprehend garden-path structures, although they are not as effective as adults. We then discuss the question of why Mandarin-speaking preschool children are successful in revising and reanalysing, in contrast to their English counterparts, by referring to the features of Mandarin garden-path structures as well as how these features can reduce the working memory burden posed on children when they revise and reanalyse their initial interpretation.

(1) Put the frog on the napkin in the box
(2) Xiaomao yaoqu ti xiaogou DE piqiu
cat will kick dog DE ball
'The cat is going to kick the dog's ball.'
(3) Xiaomao yaoqu ti xiaogou
cat will kick dog
'The cat is going to kick the dog.'

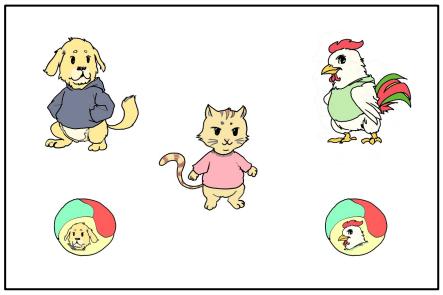

Fig.1. Example visual stimulus

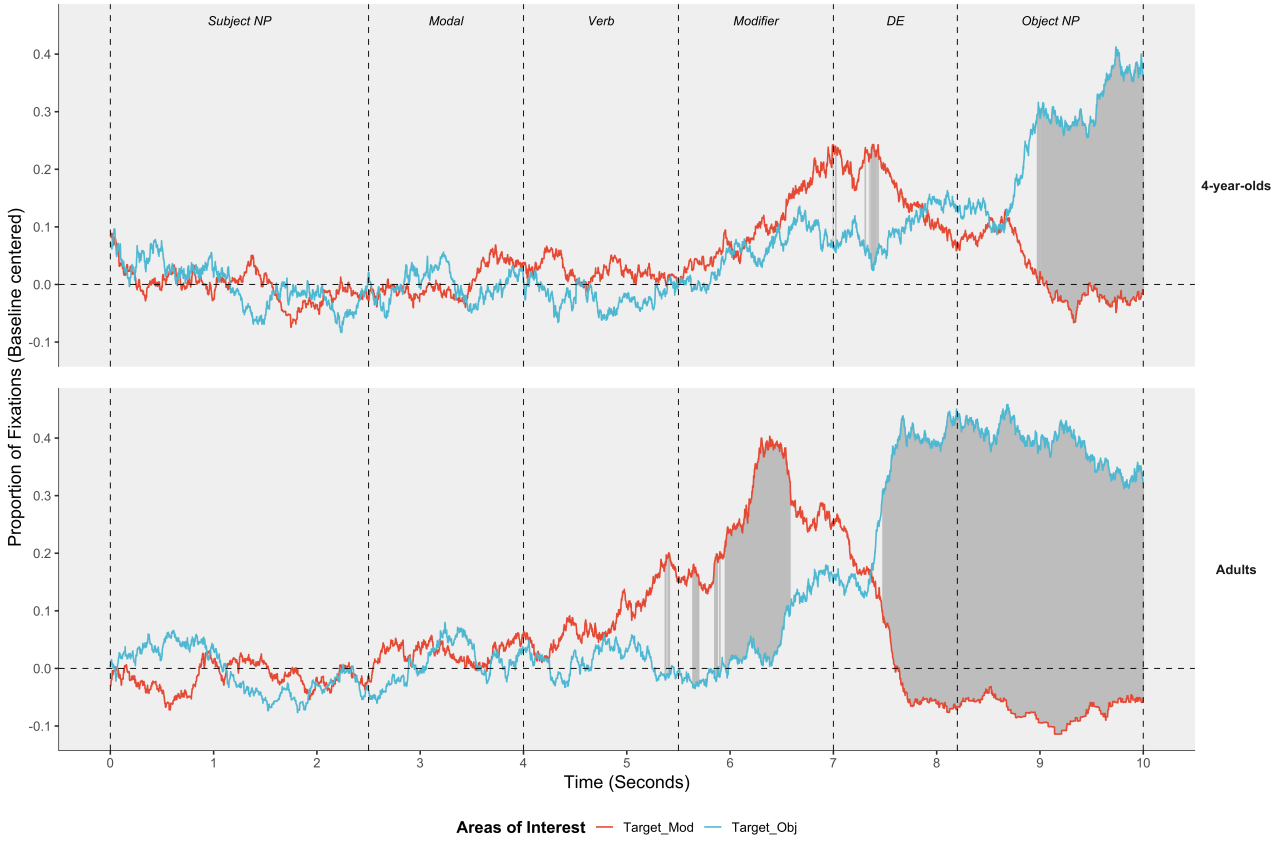

Fig.2. Average fixation proportions from the onset of the target sentence in the two critical areas: Target_Mod (e.g. the area containing the dog) and Target_Obj (e.g., the area containing the dog's ball) by the 4-year-olds and the adults; the dotted lines indicate the onset of each element in the sentence; the grey areas indicate a significant difference between the two critical areas within each participant group during the temporal bins.

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Syntactic and post-syntactic effects in the comprehension of A'-structures by children

The subject-object asymmetry in children's comprehension of A-bar structures (relative clauses (RCs)/WH(+N)-questions), with object structures being more demanding [1-3], has been explained as due to featural intervention, in the light of the relativized minimality principle [4]. When the moved element shares all formal features with the subject of the clause but the scope-discourse one, which promotes syntactic movement, the syntactic computation is particularly costly in RCs and WH(+N) structures for young children, SLI children and agrammatic aphasics [4-6]. This explanation entails that it is the ability to carry out the syntactic analysis of the sentence that is particularly vulnerable. Above-average difficulty with these structures beyond the age of 7 is taken as an alarm sign of language impairment in the syntactic domain [4]. It is not clear, however, the extent to which featural intervention is the sole factor giving rise to difficulties in the comprehension of these sentences. Post-syntactic processes pertaining to the mapping of the sentence onto referents/event can add to the overall processing difficulty. The picture-identification task usually used in the assessment of children's comprehension abilities can make this post-syntactic processes particularly hard. Two images are presented in which the event described by the RC/WH-question verb involves two identical characters in reversed thematic roles (agent-patient/patient-agent). It is not clear, therefore, the extent to which poor performance in this task can be taken as evidence of difficulties in the syntactic domain. The aim of this study is to tease apart a possible effect of featural intervention in the subject-object asymmetry of A´-structures from possible post-syntactic effects due to the complexity of the image in the sentence-mapping process. Children's comprehension of subject and object RCs and WH-questions (1-4) was assessed by means of a picture-identification task (the former being more inductive of intervention effects than the latter). The task required the identification of the referent of the WH-element. A background scene was provided which enabled the target referent to be distinguished from another token of the same type. Simple and complex images were used in this background scene. Simple images presented two different characters of the same type: the target one (agent/patient of the event depicted); and the other one just standing by the scene (Fig.1). Complex images presented both characters in scenes with reversed thematic roles (Fig.2).Three options were offered for the child to choose: the target referent; the other token of the same type (referential error); the referent of the subject/object of the relative/WH-question (intervention error in object structures). Difficulty in the post-syntactic sentence-matching process predicts more difficulty in the complex image condition, giving rise to more intervention errors. Image (simple/complex), structure (RC/WH-question) and moved element (subject-object) were within-subject factors in a 2X2X2 design. 68 Brazilian Portuguese-speaking children 7 year-olds were tested (37 girls; mean-age7;5). Correct responses, referential errors and intervention errors to object structures were the dependent variables (the latter in a 2(image)X 2(structure) design). For correct responses, the three independent variables gave rise to significant main effects in the predicted directions, and significant interactions were obtained between *image* and *moved element*, showing more difficulty in object structures in the complex image condition, and between *structure* and *moved element*, with relatively more correct responses to object WH-questions. For referential errors, only the structural factors gave rise to significant effects. The intervention errors to object structures presented significant main effects of image and structure and a 2-way interaction approached significance with more errors to RCs. The results indicate that post-syntactic processes add to the difficulty in the syntactic analysis and amplifies the number of errors that might be ascribed to featural intervention. Contrasting children's performance with simple and complex images can help to provide a more accurate picture of children's processing difficulties. Persisting difficulties in the simple image condition are more likely to provide an alarm sign to language impairment in the syntactic domain.

Examples

(1) Subject RC
Mostra o sapo que pintou o coelho.
Show me the frog that painted the rabbit.

(2) Object RC
Mostra o sapo que a zebra lambeu.
Show me the frog that the zebra licked.

(3) Subject WH-question
Quem lavou a formiga?
Who washed the ant?

(4) Object WH-question
Quem o macaco lavou?
Who did the monkey wash?

Figures

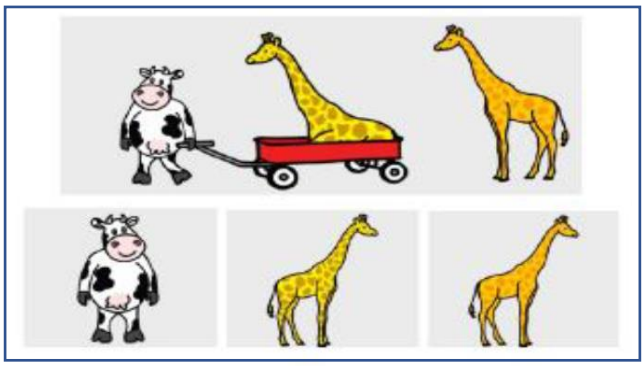

Fig 1 – Simple Image

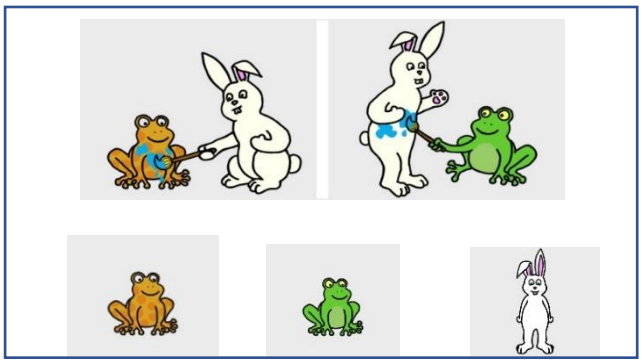

Fig 2 – Complex Image

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Evidence for Prediction-based Processing in Native and Non-Native Speakers of Russian and English

The prediction-based approach to processing puts together the linearity of word-for-word presentation of a sentence in real life and its syntactic parsing based on phrase structure rules (Croker 1999, Schneider & Phillips 2000). The study investigates how the top-down structural prediction is built in native and non-native sentence processing. In a self-paced reading task (Linger), native speakers (NS) of English and Russian and second language (L2) adult learners of these languages read sentences and answered comprehension questions. The stimuli manipulated perception and non-perception matrix verbs as well as the type of anaphor (1).

(1) Bill saw / arrested the mother of the woman that was speaking about herself / her in the yard.
This person was speaking about:
(a) the mother (b) the woman

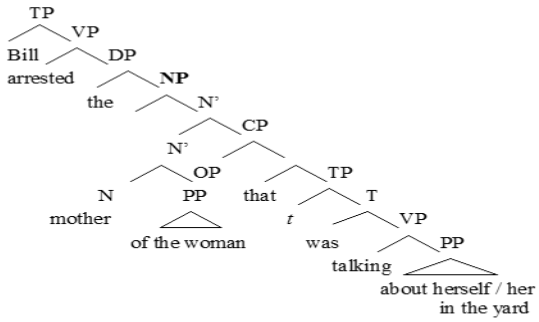
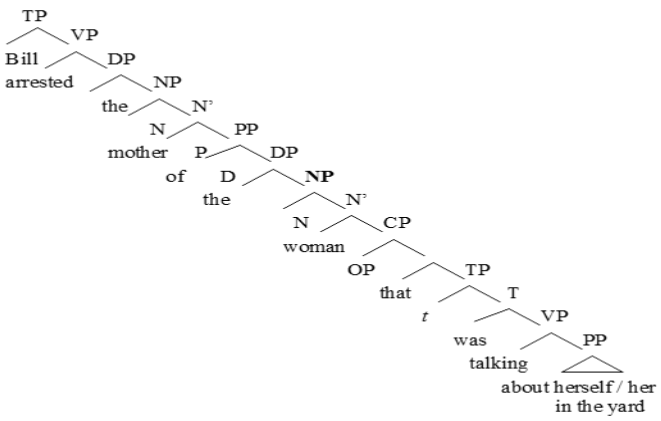
The possibility to attach the RC [*that was talking about herself / her in the yard*] high in Russian and low in English (Fodor 2002) yields two corresponding language-specific binding domains. In Russian the nearest c-commanding element to the anaphor is the noun phrase (NP) [$_{NP}$ *the mother*], in English – [$_{NP}$ *the woman*]. In the comprehension task, the Russian-like pattern of anaphor resolution is '*herself = the mother // her = the woman*', if binding principles are observed. In English, the pattern is reversed (Table 1).

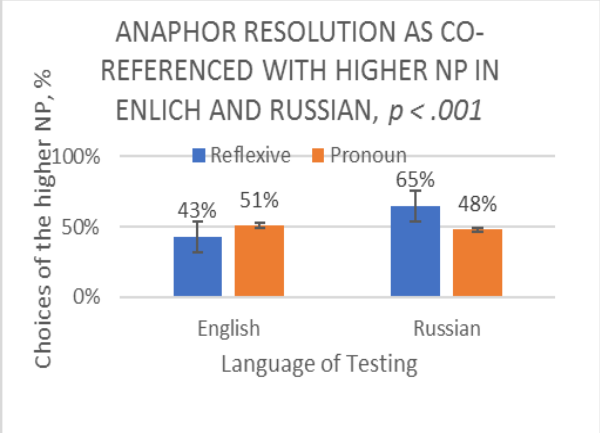
A perception verb *saw* in (1) makes the reader anticipate an eventive complement and triggers a projection that modifies the matrix verb: *Bill saw* (what) [*the mother of the woman's talking in the yard*]. Grammatically, the doer of *talking* can only be the higher NP [$_{NP}$ *the mother*] (Grillo & Costa 2014). When a perception verb is placed in the matrix clause of a restrictive RC, its eventive projection takes the upper-hand over the ambiguity of the RC and favors HA across languages (Grillo et al 2015). In top-down structural processing, a perception verb in the matrix clause facilitates RC attachment to the higher noun, which, in its turn, binds the reflexive. As a result, the preferred pattern for anaphor resolution is '*herself = the mother // her = the woman*' in the sentences with a perception verb in the matrix clause in both languages.

The data were analyzed with software R. The results show that adult NSs of Russian, as well as L2 learners, co-reference the reflexive with the higher NP and the pronoun with the lower one (*herself = mother // her = woman*). In English a reversed pattern is preferred. The interpretation decision is influenced by the language of testing *($p < .001$)* and the type of the matrix verb *($p = .05$).* Crucially, bilingual parsing is not influenced by their L1, but by the language currently in use. The matrix perception verb defines binding resolution and increases the reading time of the embedded verb *($p < .001$)*, the area where the eventive projection is inhibited. Across languages, reflexives are processed faster than pronouns ($p < .001$), and comprehension decisions are made faster in sentences with reflexives than with pronouns ($p < .001$). This suggests that Pirnciple A is easier for processing in both native and non-native languages than principle B.

In sum, different exterior interpretation patterns in English and Russian result from the application of similar parsing mechanisms, as shown through the monolingual and the bilingual data. The underlying processing mechanism is prediction-based, as parsing decisions made at higher cycles shape parsing preferences of the lower processing cycles.

Table 1. Two language-specific types of RC resolution and two binding domains.

Russian-like	English-like
herself = the mother ***her = the woman***	***herself = the woman*** ***her = the mother***
(2) 	(3) 



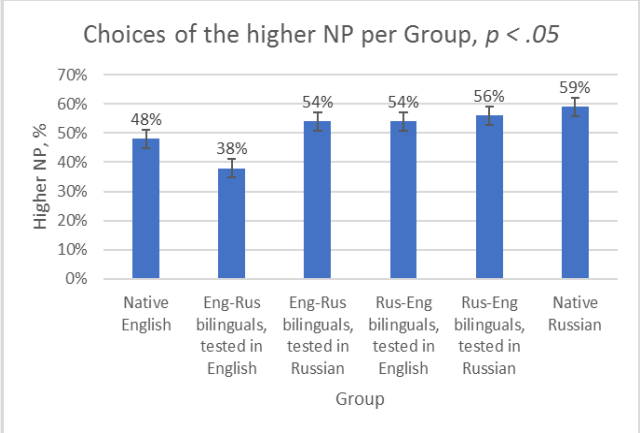


Table 4. Reading time of the embedded verb by experimental condition, p < .05.

after a perception verb	598
After a non-perception verb	572

Table 3. Processing times by experimental condition, p < .001.

	Reading time at the spill over, ms	Response time for the comprehension check, ms
Reflexive	806	3758
Pronoun	926	4348

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An investigation of long-distance bias in real-time processing of Japanese reflexive *zibun* by native and non-native speakers

The present study investigates native and non-native processing of the Japanese reflexive pronoun *zibun*, a long-distance (LD) reflexive that allows local (LOC) as well as non-local NP binding, as shown in (1). Omaki et al. (2015) report that native speakers (NSs) of Japanese show an LD binding bias for *zibun* in an eye-tracking while reading experiment, exhibiting greater difficulty in processing LOC-bound *zibun* than LD-bound *zibun*. The present study further investigates processing and interpretation of *zibun* by NSs using a different method, the self-paced reading (SPR) task. In addition to NS processing, second language (L2) processing of *zibun* is also examined. Previous research testing L2 learners on English reflexives, for which LD binding is not allowed, found that L2 learners did not show native-like antecedent resolution during sentence processing (e.g., Felser, Sato, & Bertenshaw, 2009; Felser & Cunnings, 2012), leading researchers to claim that real-time antecedent resolution in L1 and L2 is different. We investigate whether or not such L1/L2 differences are also found with the processing of an LD reflexive, Japanese *zibun*.

An SPR task (Just, Carpenter, & Woolley, 1982) and a multiple-choice antecedent identification task were created to test for LD bias with *zibun*. In the SPR task, each phrase in sentences in (2) was shown in a non-cumulative, moving window display. Following Dillon et al. (2014) and Omaki et al. (2015), the interpretation of *zibun* was manipulated using the animacy condition (Kuno, 1973). As shown in (2), *zibun* can be co-referential with an animate NP, *Taro*, but not with an inanimate NP, such as *daigaku* 'university'. Therefore, in (2a), *zibun* is LOC-bound and in (2b), *zibun* is LD bound. We compare reading times for LD-bound *zibun* and LOC-bound *zibun* and examine which co-reference relationship makes greater processing demands for NSs of Japanese. If Japanese NSs have an LD bias, (2a) is predicted to be more difficult to process than (2b). In addition, we examine whether there are differences between how NSs and L2 learners process these sentences. The same types of test sentences were also used in the antecedent identification task, in which participants were asked to interpret the sentences containing *zibun* and to choose an appropriate antecedent for it by selecting NP1 (LD), NP2 (LOC), *either* or *don't know* (DK).

Fifty-one native speakers of Japanese and 19 advanced Chinese-speaking learners of Japanese participated in this study. Residual reading times (RRTs) from the NS group showed statistically significant differences between LOC (2a) and LD (2b) conditions at the spillover and wrap-up regions (both $p < .005$) (Figure 1), with increased reading time for the LD condition, suggesting that for NSs, processing of LD-bound *zibun* is more difficult than LOC-bound *zibun*, contrary to what Omaki et al. found. The L2 group, on the other hand, showed no statistically significant difference between the two conditions at any region (Figure 2), showing different real-time processing behavior from the NS group. Results from the antecedent identification task (Figure 3), however, showed the opposite. In the LD condition both the NS group and the L2 group chose the LD antecedent more often than both the LOC antecedent and *either* combined, yet in the LOC condition, both groups chose either the LD antecedent or *either* more than the LOC antecedent, contrary to our expectation. These results suggest that in the offline task, both groups exhibit an LD preference while the NS group showed the LOC preference in the SPR task. We argue that this online/offline discrepancy was caused by logophoricity, a pragmatic co-reference condition in which the referent of an anaphoric form is an entity whose speech, thoughts, or feelings are being reported (e.g., Clements, 1975; Sells, 1987). In our experimental sentences, LD antecedents, both animate and inanimate, were such entities and thus both the NS and L2 groups may have been influenced by the logophoric condition in the offline task, but in the SPR task logophoricity exerts no influence as the verb of reporting, such as *syutyosita* 'claimed', is only encountered at the end of the sentence.

(1) Mika$_1$-wa Taro$_2$-ga zibun$_{1/2}$-o hihansita-to syutyosita.
Mika-Top Taro-Nom zibun-Acc criticized-Comp claimed
'Mika claimed that Taro criticized her/himself.'

(2)

	NP1	NP2	Critical	Post-critical	Spill-over	Wrap-up
a.	Daigaku$_1$-wa	Taro$_2$-ga	zibun$_{*1/2}$-o	hihansita-to	gakucho-ni	syutyosita. (LOC)
	university-Top	Taro-Nom	zibun-Acc	criticized-Comp	president-to	claimed
	'The university asserted to the president that Taro criticized himself.'					
b.	Taro$_1$-wa	Daigaku$_2$-ga	zibun$_{1/*2}$-o	hihansita-to	gakucho-ni	syutyosita. (LD)
	Taro-Top	university-Nom	zibun-Acc	criticized-Comp	president-to	claimed
	'Taro asserted to the president that the university criticized him.'					

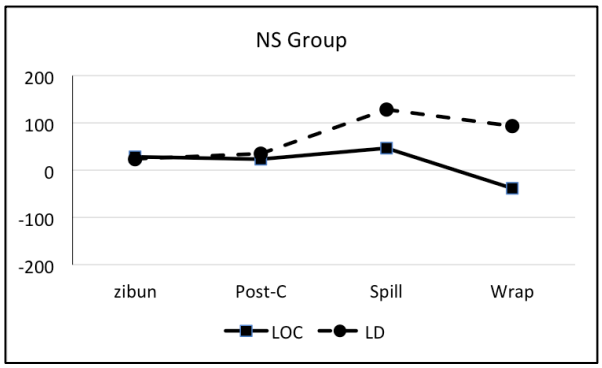

Figure 1. NS RRTs for (2a) and (2b) conditions

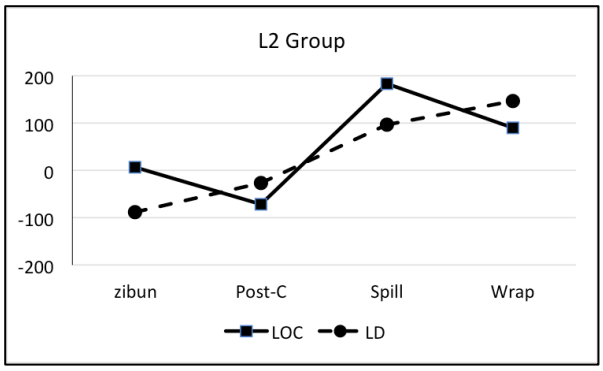

Figure 2. L2 RRTs for (2a) and (2b) conditions

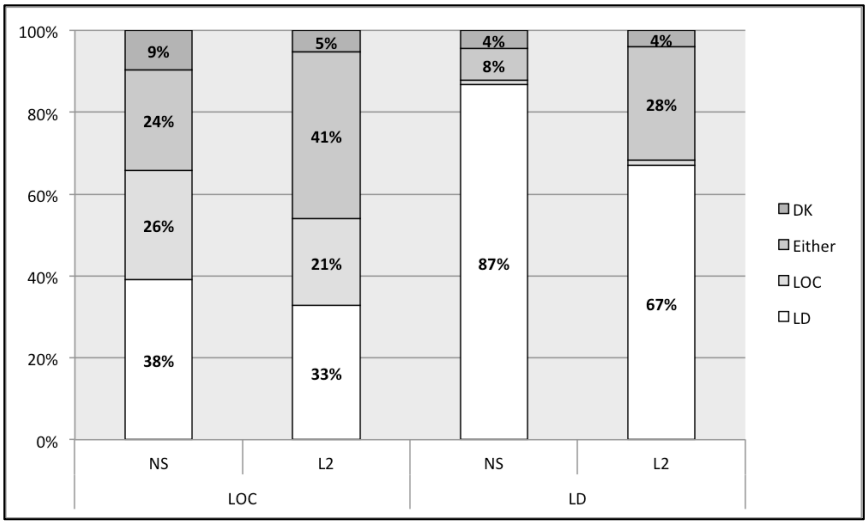

Figure 3. Antecedent Identification Task results

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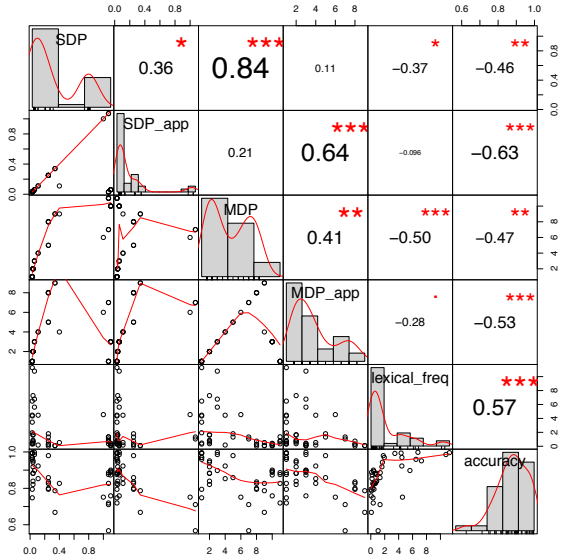
Structural complexity and input frequency: acquisition of Latvian initial onsets

Children's early speech productions are characterized by structural simplicity. In the realm of prosody, this means that syllable inventories start out containing only unmarked syllable types and are gradually expanded to include more complex structures (Fikkert 1994, Levelt, Schiller & Levelt 2000). While intuitively very appealing, this observation raises an important question: what is the complexity metric that captures the relative markedness of different syllable types? In generative phonology, answers to this question typically include a reference to sonority, the most general (and uncontroversial) claim being that in a well-formed syllable the sonority rises towards the nucleus and decreases towards margins (Jespersen 1904). However, the observed asymmetries between margin elements of the same shape (e.g. cross-linguistic preference for [kl-] onsets over [kn-] onsets, or the fact that initial [t-] is acquired earlier than [r-]) require a more fine-grained definition of syllable margin markedness. In other words, we need to wonder what is the property that distinguishes between two rising sonority clusters like [kl-] and [kn-], and what is the property that makes singleton plosives better onsets than singleton rhotics? The two leading theories claiming to account for these asymmetries are the Sonority Dispersion Principle (SDP; Clements 1990) and the Minimal Distance Principle (MDP; Selkirk 1984). SDP claims that the markedness of the onset increases with the increase in the sonority dispersion value (calculated as the sum of the inverse of the squared values of the sonority distances between the members of each pair of segments within a given demisyllable). MDP, on the other hand, claims that the markedness of the onset is inversely related to its sonority for singletons (i.e. the lower the sonority, the better the onset) and inversely related to the sonority distance between onset elements for clusters (i.e. the bigger sonority distance between C_1 and C_2, the better the onset cluster). While SDP and MDP cover a lot of the same territory (e.g. they make identical predictions for singletons), they make opposite predictions for certain types of onset clusters (e.g. for SDP, [tr-] onset is extremely marked in Latvian, while for MDP it is optimal). At the same time, both theories lack empirical support (as noted in Parker 2012), with the evidence from phonological acquisition being largely anecdotal and fragmentary. Testing the divergent predictions of SDP and MDP against data will show which metric has more explanatory power, which, in turn, will have theoretical consequences.

In this paper, we fill the gap by analyzing the production accuracy of different onset types attempted by 492 Latvian monolingual pre-schoolers (age- and gender-balanced sample). The previously unpublished data comes from an articulation study based on the Latvian Phoneme Test (picture-based tool, single-word utterances elicited, all possible initial onsets of Latvian included). In our analysis, we use mixed effects statistical modelling to predict production accuracy from a) MDP-based complexity; b) SDP-based complexity; c) lexical and token corpus frequency of different onset types. In addition, we address the question of whether s-initial onset clusters - often claimed to be structurally different from onset clusters of other types (Goad 2011) - pattern as a class, and if so, which complexity metric best accounts for their behavior. Our main results indicate that: 1. all our measures significantly correlate with accuracy (fig. 1); 2. Models that treat s-initial clusters as a distinct class do a better job (tbl. 1); 3. Frequency measure improves predictive power of a model (tbl. 2) 4. The model that includes the SDP-based complexity metric AND frequency as predictors is the best fit for our data (tbl. 3).

Figure 1. *Correlation between onset accuracy and various predictors*[*]



* "SDP_app"/ "MDP_app" – SDP dispersion values/ MDP rank assuming sC clusters are appendix-initial;

Table 1. ANOVA comparison for mixed effects models with and without SDP/MDP adjusted for appendix status of sC as a fixed effect (including SDP/MDP and age as fixed effects, and participant and item as random effects)

		AIC	BIC	logLik	dev	Chisq	p	R^2m
A.	model.SDP	10224	10264	-5107.0	10214			0.188
	model.SDP_SDP-app	10220	10268	-5104.0	10208	5.9997	0.014	0.216
B.	model.MDP	10220	10260	-5105.2	10210			0.20
	model.MDP_MDP-app	10218	10265	-5102.7	10206	4.9882	0.025	0.227

Table 2. ANOVA comparison for mixed effects models with and without lexical frequency as a fixed effect (including SDP/MDP and age as fixed effects, and participant and item as random effects)

		AIC	BIC	logLik	dev	Chisq	p	R^2m
A.	model.SDP	10224	10264	-5107.0	10214			0.188
	model.SDP_freq	10200	10255	-5092.9	10186	28.269	<0.001	0.29
B.	model.MDP	10220	10260	-5105.2	10210			0.20
	model.MDP_freq	10203	10251	-5095.6	10191	19.217	<0.001	0.28

Table 3. ANOVA comparison for mixed effects models including either MDP-app or SDP-app as a fixed effect with the model including both (including frequency and age as fixed effects, and participant and item as random effects)

		AIC	BIC	logLik	dev	Chisq	p	R^2m
A.	mdl.MDP_app-f	10199	10246	-5093.5	10187			0.29
	MDP-app-f/SDP-app-f	10191	10246	-5088.5	10177	10.023	0.001	0.32
B.	mdl.SDP-app-f	10189	10237	-5088.6	10177			0.32
	MDP-app-f/SDP-app-f	10191	10246	-5088.5	10177	0.2367	0.6266	0.32

Implicit learning, bilingualism and dyslexia: Assessing AGL with a modified Simon Task

This paper aims at presenting and discussing the results of an experimental study investigating **artificial grammar learning (AGL) in monolingual and bilingual children, with and without dyslexia, using an original methodology**. Individuals exposed to an artificial grammar (a set of rules that applies to an alphabet of symbols to generate strings), typically develop an implicit knowledge of the regularities associated with it (Pothos 2007). However, implicit learning can be more effortful for people suffering from developmental dyslexia, who have been found to exhibit problems in the implicit detection and abstraction of rules under complex conditions, showing nevertheless a sensitivity to structural regularities in AGL (Pavlidou et al. 2010). AGL in bilingualism has not been extensively studied and the limited results available are mixed, evidencing in some cases a bilingual advantage over monolinguals (Onnis et al. 2018) and no differences in others (Yim & Rudoy 2013). The interaction between bilingualism and dyslexia in AGL has not been studied yet.

Our study aims to provide further data about how implicit learning takes place in dyslexia and in bilingualism, while addressing the interaction between these two dimensions, featuring a radically different and original methodology. Instead of asking grammaticality judgments, which unavoidably induce in the subjects some awareness about the nature of the task, we administered a modified Simon Task, in which the sequence of the visual stimuli was manipulated according to the rules of one simple Lindenmayer system (a Fibonacci grammar). Crucially, this is not a finite-state grammar, as those normally used in AGL studies, and potentially lends itself to investigating how language acquisition is carried out by cognitive processes that exceed the generative power of Markovian processes.

Four groups of children took part in our study: 30 Italian monolingual typically developing children (mean age 10;0 years old), 30 bilingual typically developing children with Italian L2 (10;2 y.o.), 24 Italian monolingual dyslexic children (10;0 y.o.) and 24 bilingual dyslexic children with Italian L2 (10;4 y.o.). Participants were administered the modified Simon Task assessing implicit learning of the following regularities: (i) a red is followed by a blue; (ii) a sequence of two blues is followed by a red and (iii) a blue can be followed either by a red or by a blue. The task consisted in 432 stimuli divided in three blocks: to assess if learning took place, improvements in reaction times (RTs) across blocks were considered.

Results of the statistical analysis (Mixed Design Repeated Measures ANOVA) confirmed that implicit learning took place for all groups, as shown by the shorter RTs across blocks found in unambiguous trials, which could be correctly foreseen once these regularities were learnt, in comparison to ambiguous trials, where local transition probabilities are not enough for participants to perform above-chance. Moreover, all groups rapidly learnt that red trials were always followed by a blue, with differences being detected as early as between Blocks 1 and 2, whereas learning that two blues are followed by a red requires more time, with improvements found between Blocks 2 and 3. In addition, we compared two types of ambiguity characterising the Fibonacci grammar: derivationally ambiguous items, which are completely unpredictable, and representationally ambiguous items, which can be disambiguated once the hierarchical structure is considered. The two types of ambiguity were processed differently, with responses to representationally ambiguous items yielding slower RTs than those to derivationally ambiguous items. This arguably reflects the fact that children are able to reconstruct the hierarchical structure, but that this operation is effortful and takes more time.

Moreover, group differences were found, with **bilinguals being overall faster** than monolinguals and **dyslexics less accurate** than controls. Finally, **an advantage of bilingualism in dyslexia was found**, with bilingual dyslexics performing consistently better than monolingual dyslexics and, in some conditions, at the level of the two control groups. These results are taken to suggest that **bilingualism should be encouraged and supported also among linguistically impaired individuals**.

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This work can be considered for both oral and poster presentation.

The role of Common Ground on the acquisition of Wh-*in-situ* in Brazilian Portuguese

In adult Brazilian Portuguese (BrP) Wh-questions, Wh-phrases can move to Spec,CP or remain *in situ* ((i) and (ii)). 30% of Wh-questions are moved-Wh compared to 32,4% of Wh-*in-situ* [1]. Although Wh-*in-situ* comprises 1/3 of the Wh-questions children hear, spontaneous child data indicate that children acquiring BrP often produce moved-Wh, but (almost) never Wh-*in-situ*: one corpus found 2% of Wh-*in-situ* and the other 0% ([2] and [3]). Moreover, Wh-*in-situ* is the last strategy to emerge on child data, appearing after all of the other strategies have emerged ([2], [3], [4]). Curiously, the most economical option is the least produced strategy and the last one to emerge on spontaneous data. Child BrP sharply contrasts with child French, where Wh-*in-situ* is the first strategy to emerge and the preferred one ([5], [6]).

Pires & Taylor (2007), based on data from adult English and BrP, proposed that contexts with prominent Common Ground (CG) facilitate the production of Wh-*in-situ*. That is, Wh-*in-situ* is infelicitous in out-of-the-blue contexts or contexts with less prominent CG. In light of this proposal, the present study investigated the production of Wh-questions by young children in different pragmatic contexts. If Wh-*in-situ* needs a prominent CG context to be produced, it could be the case that BrP children did not produce them in spontaneous settings due to the lack of a prominent CG in the recording sessions.

Experiments: two elicited production tasks specifically designed for this study were conducted, one with prominent CG, and the other without it. In manipulating the presence/absence of CG, we were able to test Pires & Taylor's hypothesis with our adult speakers and to observe if children would be sensitive to this pragmatic cue. In the first one (prominent CG, see (iii)), a puppet received a set of cards with complete scenarios and the child received incomplete cards; the puppet offered instructions that left a prominent CG and the child asked questions to the puppet, in order to complete her cards so it would be identical to the puppet's card. In the second test (no-prominent CG, see (iv)), the child was free to build any scenario using stickers. The puppet guessed what she built; for this purpose, the child asked him some questions guiding him to the right answer.

Subjects: 52 children acquiring BrP from 4;6 to 5;6 years of age and 60 adults, native BrP speakers.

Results: Adults produced 648 questions with Wh-*in situ* (43,9%) and children 173 (20,6%). For the first time in BrP literature, we observe children producing Wh-*in situ* at a considerable rate. Charts 1 and 2 show that, for the prominent-CG, adults had a balanced rate of production of the two strategies. For the no-prominent CG context, adults produced more moved-Wh than Wh-*in-situ*, as predicted. As for children, in both conditions they produced fewer Wh-*in-situ* questions if compared to moved-Wh, but they produced even fewer in the no-prominent CG context. That is, both groups produced more Wh-*in-situ* when there was a prominent CG (p-value <0,01), indicating that Pires & Taylor's hypothesis is on the right track and that children are already sensitive to this pragmatic cue at an early age. Also, in constructions where we expected more Wh-*in-situ* (v) given the complexity of the Wh-movement because it involves pied-piping of a long PP, children preferred moving only the Wh-portion from inside the adverb (vi). Although grammatical, this type of response shows that children persistently avoid Wh-*in-situ*.

The method, specially designed for this experiment, was successful in eliciting Wh-*in-situ* from BrP children, something that had not been accomplished before. It was also successful in showing that a prominent CG is relevant for children, which can help explain the lack of Wh-*in-situ* in spontaneous data. At last, our results conform to spontaneous data in the sense that children tend to produce fewer Wh-*in-situ* questions than adults, and they curiously also avoid the construction, a fact that still needs to be explored.

Examples:

(i) O que João comeu? **(moved-Wh)**
What John eat-past *"What did John eat"*

(ii) O João comeu o quê? **(Wh-*in situ*)**
John eat-past what *"John ate what?"*

(iii) **Prominent CG:** The puppet chooses a card in which the cat is wearing a crown. The child cannot see the card. Puppet gives some instructions and the child asks questions in order to discover what is displayed in it.
Puppet's instruction: The cat is wearing something.
Child: He is wearing what? / What is he wearing?
Puppet: He is wearing a crown. (The child looks for a sticker that has a crown on it and puts it on the cat in her card. The game goes on, with the puppet describing another part of the card).

(iv) **No-prominent CG:** The child chooses the stickers and builds the card she wants. For example, she builds a card with a cat inside a train. The puppet cannot see it.
Interviewer: Let's ask about this one (points to the train).
Child asks the puppet: The cat is inside what? / What is the cat inside?
Puppet: He is inside a box!
Child: Wrong! He is inside a train.

(v) O gatinho está em cima do quê?
The kitten is on top of what *"The kitten is on top of what?"*

(vi) O que o gatinho está em cima?
What the kitten is on top *"What is the kitten on top of?"*

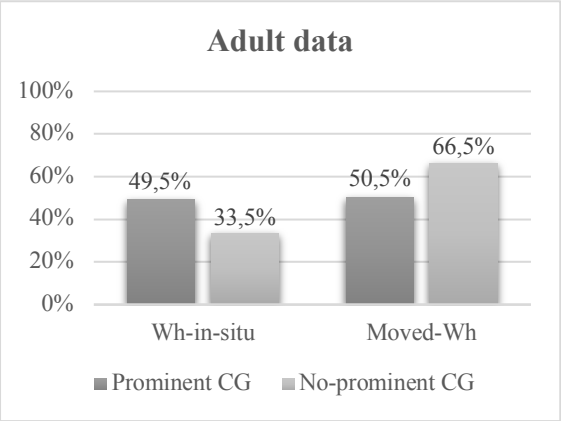

Chart 1: comparison between Wh-*in-situ* and moved-Wh in both conditions (adults, N=60).

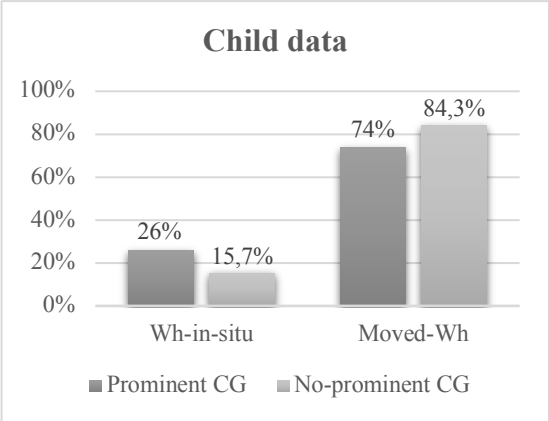

Chart 2: comparison between Wh-*in-situ* and moved-Wh in both conditions (children, N=52).

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Acquisition of English Adjectival Resultatives: Support for the Compounding Parameter

English allows all of the complex-predicate structures in (1a-f). A child typically acquires (1b-f) as a group, sometime before age 3 (Stromswold & Snyder 1995). Moreover, ages of acquisition for (1b-f) are highly correlated with the ages of first novel N-N compounds (Snyder 1995). Snyder proposes that (1a-f) all require the *marked* setting of the Compounding Parameter (TCP) in (2). Yet, the evidence is incomplete: Stromswold and Snyder (1995) were relying on longitudinal corpora for ages of acquisition. They did not check resultatives (1a), because these are very low-frequency, making corpus data unreliable. Here we address this gap. Since (1b-f) are all acquired before the age of 3, TCP predicts that children should all comprehend (1a) by the age of about 3.5 years, when it becomes possible to test them with a Truth Value Judgment (TJV) task.

Method: Laptop-based TVJ task, with PowerPoint animation. The experimenter narrated a story illustrated on screen, and asked an animated parrot, "What's happening here?" The child judged whether the parrot "got it right or said something silly" for 4 practice items, followed by a mix of 4 fillers and 8 test items (expected answers: 4 yes, 4 no) presented in pseudo-random order. In all, 24 English-speaking children were tested; 20 of them (age 3;05-5;07; mean 4;03) met the inclusion criterion: A child had to answer at least 7 of the 8 practice/filler items correctly: p(at least 7 out of 8 correct$|H_0$) = .035. (Significantly better than chance on the easier, non-resultative items => capable of performing the TVJ task.)

Materials: If a child's grammar did not yet allow resultatives, we expected there still to be a grammatically possible interpretation available (namely a depictive reading). Our materials supported such a reading, but with the opposite truth value. For example in (3), while adults strongly prefer the 'result' reading of *blue*, a depictive reading is also grammatical (and cross-linguistically, depictives are far more widely available than resultatives). Since painting had just begun, in the final image the chair was still *mostly* the original color; this supported the depictive reading as an option for the child. Alternatively, a child who lacked resultatives could adopt a guessing strategy, but any such strategy would succeed at most 50% of the time. For example, if the child said 'yes' whenever the parrot's adjective matched the last-mentioned adjective in the story, the resulting score would have been only 50%, due to the balancing illustrated in (4).

Results: Viewed as a group, children's sensitivity to the truth/falsity of the resultatives was robustly significant (Wilcoxon Signed-Ranks W=210, $n_{s/r}$=20, two-tailed p=.0001). The contrast was also significant for 18 of 20 children individually (i.e., at most one error; directional p<.05). (The other two children each had 4/4 'Yes' on True items, and 2/4 'Yes' on False items.) Finally, when the child indicated the parrot was wrong, we asked, "What's happening?" As shown in (5), every child in our study answered appropriately, and almost all used resultatives in their answers.

Discussion: As predicted by TCP, children who could do the TVJ task performed well on adjectival resultatives. This finding led us to another question: How do children determine that resultatives are available in English? Do they wait for direct evidence of resultatives, or do they rely on evidence from other complex predicates? To gain some insight, we conducted a corpus study to assess the frequency of true adjectival resultatives (with an open-class verb, not causative *make*/*get*) in child-directed speech. We used longitudinal corpora of child-parent interactions for four children in CHILDES. As in (6), the mothers of Adam, Eve, and Peter used zero adjectival resultatives. Lily's mother used only 4, in 63,423 utterances. Based on the group data, we estimate the frequency as about 4 uses per 100,000 maternal utterances. This suggests that the children in our study have acquired resultatives with *exceedingly few* examples in their input. While this does not *prove* that the children exploited a "parametric" strategy (i.e., inferring the availability of resultatives from other +TCP structures in the input), the evidence points in that direction.

1. a. John painted the house red. (Resultative)
   b. Mary picked the book up. (Verb-Particle)
   c. Fred made Jeff leave. (*Make*-causative)
   d. Fred saw Jeff leave. (Perceptual Report)
   e. Bob put the book on the table. (*Put*-locative)
   f. Alice sent the letter to Sue. (*To*-dative) (Snyder 2001)

2. *The Compounding Parameter*:
   The grammar {disallows*, allows} formation of endocentric compounds during the syntactic derivation. [*unmarked value]

3. *Experimenter:* This is a story about a little girl named *Mary*, and a little boy named *Jim*. Mary has a yellow chair, and Jim has a blue chair. Jim and Mary want their chairs to be the same color. Jim says he can put *blue* paint on Mary's *yellow* chair, but Mary doesn't like it. Then he gets a great idea: he'll put *yellow* paint on his *blue* chair! See he's painting! ... Parrot, what's going on here?

   Parrot: Jim is painting the chair blue!

4. Balancing for 'last-mentioned' adjective:
   a. ... he'll put *yellow* paint on his *blue* chair!
   b. ... he'll paint his *blue* chair with *yellow* paint!

5. Examples of resultatives produced by children during the experiment:
   a. She's painting her box YELLOW!
   b. No he's coloring it. Richard is coloring his bottle ... PINK!

6. Frequency of adjectival resultatives in maternal speech:

Corpus:	**Adam (Brown)**	**Eve (Brown)**	**Lily (Providence)**	**Peter (Bloom)**	***TOTAL***
Maternal utterances:	20,152	10,247	63,423	3,248	***97,070***
# Resultatives:	0	0	4	0	***4***
Frequency:	<1/20,000	<1/10,000	.0000631 (6.31/100,000)	<1/3,000	***.0000412 (4.12/100,000)***

Selected References and Related Works: Snyder, W. (2001) On the nature of syntactic variation: Evidence from complex predicates and complex word-formation. *Language*. Son, M. (2007) Directionality and Resultativity: the Cross-linguistic Correlation Revisited. *Nordlyd.* Stromswold, K. & Snyder, W. (1995) The acquisition of datives, particles, and related constructions: Evidence for delayed parametric learning. *BUCLD 19.*

L2 Input-oriented, Incremental development in SLA: Evidence from the use of psych verbs, periphrastic causative construction, and the lack of T/SM restriction

Abstract

This study investigates second language (L2) acquisition of psych verbs in English by Japanese speakers. Based on a thematically driven movement analysis of psych verbs (Fujimaki, 1998; Hornstein and Motomura, 2003; Motomura, 2004), we investigate L2 learners' morphosyntactic structure for sentences with psych verbs and an object experiencer interpretation (OE verbs) in early L2 grammar.

Previous studies (e.g., White, Montrul, Hirakawa, Chen, Bruhn de Garavito, & Brown, 1998) show that learners are insensitive to a T/SM restriction (Pesetsky, 1995) in the target language even when their first language has the T/SM restriction. An example of a T/SM restriction is in (1a), which restricts the occurrence of both a causer (*the article*) and the target/subject matter (*the government*) within a single clause. It does not operate in bi-clausal sentences, as in (1b). T/SM restrictions are subsumed under a more general constraint: One type of theta role should not be assigned to more than one argument in one clause (Hornstein & Motomura, 2002). This study will report on data that show L2 learners are insensitive to this restriction and examine possible reasons for their non-native-like behavior as well as the implications for SLA in general.

Two experiments were carried out: In the first experiment, 16 intermediate learners with L1 Japanese participated in a sentence completion task to describe a picture context (cf. Fig. 1-3) and demonstrated better performance using periphrastic causatives than object experiencer sentences. This is similar to 92 Thai-speaking learners of English in Witoon & Singhapreecha (2012). In the second experiment, 11 English and 16 Japanese-speaking learners of English (participants in Experiment 1), and 17 additional Japanese native speakers took part in a grammaticality judgment task. The results showed that both groups of native speakers were sensitive to T/SM restrictions in their L1s, while the learners were not in their L2. This is similar to 19 Malagasy-speaking learners of English in White et al. (1998).

We discuss: i) that the structure underlying OE type sentences in Japanese learners' L2 grammar is bi-clausal and identical to the structure underlying a periphrastic causative sentence (cf. (2a,b)), where T/SM restriction does not operate; ii) that the movement of lexical items takes place in Morphology in the sense of Distributed Morphology (Halle and Marantz, 1993); iii) and a new Vocabulary Insertion Rule in (3) should be acquired at the same time when movement of the OE-type is acquired. This should be read: When an OE-type verb (e.g., *impress*) is used, V_{CAUSE} has no realization as morpheme/phoneme.

We consider the implications to SLA in general: Full transfer of L1 grammar may not take place at the initial stage. If full transfer takes place, L2 learners should be sensitive to the T/SM restriction. This restriction operates in Japanese (see Fig. 7) but learners are not sensitive to it in English (see Fig. 6). This implies that a functional category v_{cause} used for Japanese mono-clausal causative *sase* (Motomura, 2004) may not be transferred or used in learner grammars in order to accommodate v_{cause} with OE-type verbs in the target grammar. This further suggests as follows: 1) (Parts of) Functional categories may not be transferred from the L1, probably because the phonological reflection (i.e. v_{cause} in the L2 input in this case) is phonologically null. This means that triggering input is required for a certain lexical item to be transferred from L1 to L2. 2) The use of periphrastic causatives may lead L2 learners to use V_{cause} instead of v_{cause} for the syntactic structure underlying OE-type sentences. This structure suffices for learners to use OE-type sentences as shown in (2a), tolerating violation of the T/SM restriction. 3) Consequently, a functional head (v) may be replaced by a lexical head (V) in L2 grammar.

Example sentences

(1) a. *The article annoyed my neighbor at the government.

b. The article made my neighbor annoyed at the government.

(2) a. [$_{vP}$ causer + theme [$_{VP}$ V_{CAUSE} 'psych' [$_{XP}$ experiencer 'psych' theme]]]

e.g., *The final report impressed Sally.*

a. [$_{vP}$ causer + theme [$_{VP}$ V_{CAUSE} [$_{XP}$ experiencer 'psych' theme]]]

e.g., *The final report made Sally impressed.*

(3) $\phi \leftrightarrow V_{CAUSE}/\{$'impress', 'annoy', ...$\}$

Figures

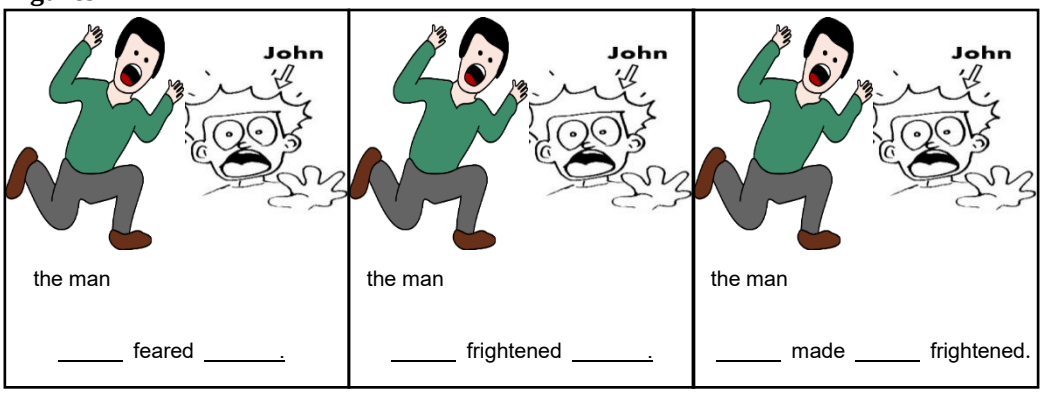

Fig. 1. SE type **Fig. 2.** OE type **Fig. 3.** periphrastic causative

The speeding ticket annoyed Michael.

Possible	Impossible	Unsure

Fig. 4. An example judgment question of Experiment 2

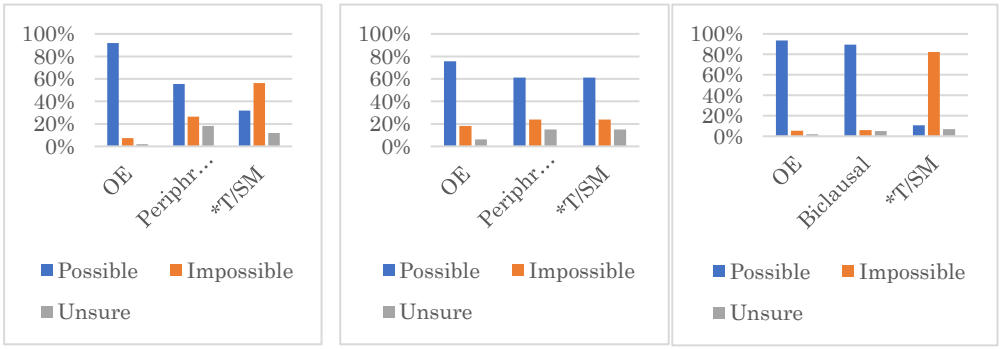

Fig. 5. English NSs' responses **Fig. 6.** Japanese L2 speakers' responses **Fig. 7.** Japanese NS's responses

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L1 Transfer and Locality in Reflexive Resolution in L2 Raising Constructions

This study investigates which factor is more influential in affecting Japanese EFL learners' (JEFL) comprehension of raising constructions in L2 English, the language-universal locality or the language-specific L1 transfer. Previous studies (YNF 2017, NYF 2018, YN 2019) have reported that JEFLs experience a great difficulty with the raising construction due to the presence of an intervening experiencer phrase (*to Mary* in (1a)) and the absence of Case-triggered A-movement in Japanese, as shown by the contrast between (1) and (2). We compared the results of our two experiments on JEFLs' resolution of reflexives and pronouns generated inside the embedded clause being matched with the raised subject DP. We paid attention specifically to the well-known fact that unlike *himself* in English, *zibun* in Japanese is a long-distance anaphor immune to the locality principle and must take the sentential subject as its antecedent, as in (3) (Kuno 1973). Based on JEFLs' misunderstanding that the subject-to-subject raising does not occur, two competitive hypotheses are explored: (i) If they rely on locality, the experiencer phrase can be construed as a possible antecedent in reflexive resolution; on the other hand, (ii) if they observe L1 transfer, the long-distance matrix subject can be interpreted as a possible binder for the reflexive in the embedded clause.

We reviewed 56 JEFLs' poor performance on our truth value judgment task reported in YNFY (2019). As in (4), each brief description was provided to implicitly tell the participants that TRUE was expected when the genitive pronoun inside the infinitive clause was compatible with the raised subject in gender whereas FALSE was expected when it is compatible with the experiencer phrase in gender. Despite such lexical-semantic cues, however, their mean correct response rates were merely 47.9% for TRUE and 38.8% for FALSE. We interpreted these low rates to indicate that their grammar has not acquired A-movement. In other words, the representation of (1a) must be (5), not (1b), without the copy-deleted subject ~~John~~, and consequently, JEFLs interpreted *Mary* as the subject of the infinitive clause, thereby observing the locality principle of Relativized Minimality (RM, Rizzi 1990).

However, different results were obtained from our subsequent TVJ study with reflexives within the infinitive clause being matched with the raised subject DP, as shown in (6-7). An ANOVA was conducted on 99 participants who were able to understand local reflexive binding correctly in the tensed clause 85% or more of the time. The results summarized in Figure 1 point to the three findings: (i) The learner groups' overall correct response rates were near the chance level or close to 60% in the case of *himself* and *herself*, with no significant difference between the two singular reflexives. There were only 15 participants out of 99 who could answer the four questions correctly 100% of the time, approximately 15%; (ii) They performed quite well on the interpretation of the plural reflexive *themselves*, unlike *himself*/*herself*, with the mean correct response rates ranging between 75.8% and 85.5%. Consequently, a significant difference emerged between *himself*/*herself* and *themselves* ($F(1,413)=18.546$, $p<.000$); and (iii) Only 19 participants (below 20%) could show perfect performance on all reflexive questions. These results together reconfirm our view that it takes time for JEFLs to understand the mechanism of A-movement pertinent to raising in L2 English. We further maintain that two components are responsible for JEFLs' better performance on *themselves* than on *himself*/*herself*: Namely, Japanese does not entail a clear gender distinction, and unlike number, gender is not part of the phi-feature complex in grammar (Belletti et al. 2012). Besides, JEFLs are number-sensitive (Yusa et al. (2014). More importantly, we analyze JEFLs' "good" interpretation of reflexives relative to pronouns by assuming that (6) would have the structure of (8) without A-movement, and L1 grammar tells them that the dative DP (*to Linda*) cannot be an antecedent of the reflexive whereas the long-distance matrix subject can be a "licit" antecedent of the reflexive (3b). We conclude that without any appeal to locality, JEFLs are inclined to employ their L1 knowledge in the resolution of reflexives in raising constructions.

(1) a. John seems to Mary to be happy.
b. [John seems to Mary [~~John~~ to be happy]] (A-Movement)

(2) a. Mary-ni John-ga shiawaseni omoeru/mieru
Mary-DAT John-NOM happy seem/appear
b. [$_{TP}$Mary-ni [$_{vP}$[$_{TP}$John-ga shiawaseni] mieru]] (base-generation, Takezawa 2015))
'To Mary, John seems/appears to be happy.'

(3) a. John$_i$ told his father$_j$ that Tom$_k$ blamed himself$_{*j/*j/k}$
b. John$_i$-ga titioya$_j$-ni [Tom$_k$-ga zibun$_{i/*j/k}$-o semeta to] itta
John-NOM father-DAT Tom-NOM self-ACC blamed that said

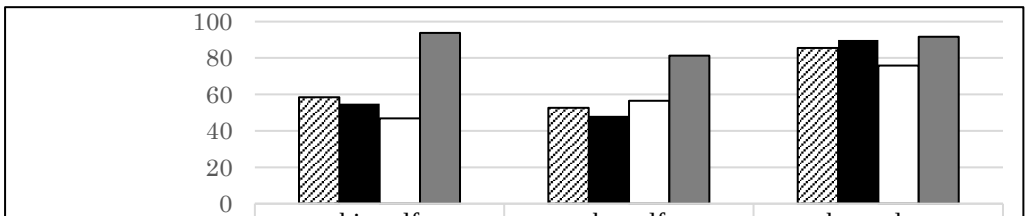
(4) a. Susan thinks that her brother Mike is now taller than his father.
Mike appears to Susan to be taller than <u>his</u> father. (TRUE) (Mean47.9%)
b. Yukiko thinks that her boss is unhappy with her work.
Yukiko seems to her boss to be unhappy with <u>her</u> work. (FALSE) (38.8%)

(5) [<u>John</u> seems [to Mary [to be happy]] (no movement, with base-generated subject *John*)

(6) Linda: Tom, Why are you so down?
Tom: I made a simple mistake and got below 60 points on the exam. I lost confidence.
Linda: Really? To tell the truth, I got below 60 points, too. I lost confidence, too. What shall we do?
Tom seems to Linda to have lost confidence in (1. *<u>himself</u>* 2. *herself* 3. *themselves* 4. *don't know*)

(7) Yasu: How was the chemistry exam?
Tomo: I got only 87 points. I couldn't make 90. That was bad. What about you, Yasu?
Yasu: Oh, the same. I also got 87 points. I thought I would have made 90. I am still no good.
Yoshi: What? What are you saying, guys? Isn't it great even you got 87 points? Both Yasu and Tomo are aiming high.
Yasu and Tomo appear to Yoshi to set the standards for (1. *himself* 2. *herself* 3. *<u>themselves</u>* 4. *don't know*).

(8) [Tom seems to Linda [to have lost confidence in <u>himself</u>]].



	himself	herself	themselves
LOW (n=38)	58.4	52.6	85.5
MIDDLE (n=30)	55	48.3	90
HIGH (n=31)	46.8	56.5	75.8
NSE (n=8)	93.8	81.3	91.7

Figure 1 Mean correct response rates by group and reflexive type

<u>Selected References</u>

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Be-Support in Second Language Acquisition: A Preliminary Study

Introduction: This research investigates the nature of *be* overgeneration in L2 English and L2 French. L2 English learners with different L1 backgrounds sometimes overgenerate copula *be* with thematic verbs as in (1) (Ionin and Wexler, 2003). The universality of overgenerated *be* in L2 acquisition suggests that the phenomenon may reflect properties of Universal Grammar but its syntactic properties have remained controversial. From a generative perspective, it is proposed that overgenerated *be* (*be*-support) is triggered by the inability of the functional category INFL to morphologically combine with a thematic verb (Ionin and Wexler, 2003). We assume, based on Lasnik's (1995) hybrid system of INFL and verbs in (2) and their possible combinations in (3), that languages parametrically vary depending on whether they have an affixal or featural INFL. English has a 'hybrid' system in a sense that modals and auxiliaries are reflections of featural INFL and overt agreement on thematic verbs reflects affixal INFL. We claim, extending Tesan and Thornton's (2003) analysis of non-adult like utterances in L1 acquisition as in (4), that L2 learners mistakenly adopt a featural INFL setting for thematic verbs, which explains frequent omissions of inflection on thematic verbs as in (5). A question that arises is why *be*-support is preferred to *do*-support to save a stranded featural INFL. We assume that *do* is not a tense-supporting morpheme traditionally assumed since Chomsky (1957) but it is a non-declarative modality marker, following Matushansky's (2000) observation that *do* cannot be used to contrast tenses as in (6). Since L2 learners receive robust evidence showing that *do*-support is used in non-declarative sentences such as interrogative sentences, negative sentences and imperatives, we predict that L2 learners more often overgenerate *be* in declarative sentences than in non-declarative sentences. We also make the following predictions: (P1) Japanese-speaking learners of English (JLE) overgenerate *be* more often than Japanese-speaking learners of French (FLF) overgenerate *être* since French exhibits V-to-I raising, which provides JLF with clear evidence for the "Infl (featural) … V (featural)" setting; (P2) JLE do not overgenerate *be* in negative and interrogative sentences.

Experiment, Results and Conclusion: 29 Japanese-speaking eighth-graders in a junior high school in Tokyo participated in the experiment:16 students learned English as their primary foreign language; 13 students learned French as their primary foreign language. The participants were asked to translate short Japanese sentences containing [*be/être* type, thematic V type] x [declaratives, interrogatives, negatives and VP-adverb sentences] into English/French. Results are presented in Table 1. P1 was supported since *be* overgeneration was more frequent than the *être* overgeneration. As predicted, when *be* was overgenerated, thematic verbs did not have any inflectional suffixes. P2 was also borne out since JLE overgenerated *be* only in declarative sentences and correctly used *do*-support in negative and interrogative sentences. Regarding declarative sentences that require obligatory surface inflection, the contingency between the presence/absence of overgenerated *be/être* and the languages is statistically significant (Table 2). We conclude that *be* overgeneration emerges as a result of L2 learners mistakenly setting the Infl (featural) value of copulas/auxiliaries to thematic verbs due to abundant positive evidence for the value, and resorting *be*-support to save a stranded featural INFL. The contrast in *be/être* overgeneration between English and French learners supports the conclusion, and suggests that L2 learners' interlanguages are constrained by the properties of Universal Grammar.

(1) a. Vava **is** want to go to the house. (L1 Sotho: Suzman 1999
b. He **is** run away, I stayed here. (L1 Russian: Ionin and Wexler 2001)
c. Andrés **is** no want to sleep in the bus. (L1 Spanish: Fleta 2003)

(2) a. French verbs are fully inflected in the lexicon (with inflectional features).
b. *Have* and *be* are fully inflected in the lexicon (with inflectional features).
c. All other English verbs are bare in the lexicon (with no inflectional features).
d. Infl (or T) is freely an affix or a set of abstract features.
e. Affixal Infl must merge with a V, a PF process (distinct from head movement) demanding adjacency. (Lasnik 1995: 258-259)

(3) a. Infl (featural) … V (featural) : French, *be / have* in English
b. Infl (affixal) … V (bare) : English thematic verbs PF merger
c. Infl (featural) … V (bare) : Ungrammatical
* at LF. The Infl feature will not be checked;
d. Infl (affixal) … V (featural) : Ungrammatical
* at LF. The Infl feature will not be checked.
* at PF also, if merger fails. (Lasnik 1995: 260)

(4) The bear s like the cheese. (Tesan and Thornton 2003: 252)

(5) John often **play** tennis.

(6) a. You DID study modals last year, right?
b. #I DO study modals now (but last year I didn't).

Table 1: Summary of the experiment (%)

	Omission of inflection	Correct verb placement	Faulty inflection	"Be/Être" overgeneration
L2 English	43.8	93.7	0	9.4
L2 French	4.8	92.3	2.6	1.9

Table 2: Contingency Table

	"be/être" over-generation	NO "be/être" over-generation
English	**6**	**26**
French	**1**	**51**

Fisher Exact Test (two-tailed): p=.011

Selected References

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Children have set the basic parameters of their target language, such as word order, by the earliest productive stage (as stated in VEPS, Wexler 1998). If this view is correct, an empirical issue to address is: at which point do we have evidence for parameter setting in infants? Relatively new experimental techniques such as eye-tracking allow us to address this question. Here we consider the acquisition of word order in infants raised in Mandarin-speaking environments.

In our experiment, modelled on an experiment by Lassotta et al. (2014) for infant comprehension of French, we test comprehension of canonical SVO sentences (1) and non-canonical sentences with left-dislocated objects and the *ba* construction (2a,b). Twenty-four typically-developing Mandarin infants with a mean age of 17.5 months (*SD* = 2.2) and eighteen adults as control group participated in the study. Children were shown two simultaneous videos while their eye fixation times were measured: in one video, the target causative event was depicted, while the other screen illustrated the same event with theta-role reversal. Each pair of videos included four windows: (i) a baseline window with a recorded sentence of the type *Look! What is happening?* and (ii) three consecutive presentations of the experimental sentence, starting at 5, 10, and 15 seconds (S1, S2, S3 in Fig. 1). Pseudo-verbs were used in all experimental sentences.

The results show that in the AGENT-first SVO and S*ba*OV conditions, both infants (see table 1) and adults looked significantly longer at the target video than at the reverse video. No significant difference was found in the baseline window. However, in the OS*ba*OV condition, infants showed a statistically significant above chance performance (Z = -2.77, p = .006, r = .57) to the scene with the first NP as THEME during the first presentation of the sentence, reflecting their rapid fixation to the target interpretation. Interestingly, adults showed a latency in the OS*ba*OV condition (t(17) = 3.0, p = .024, d = 1.14, see Fig. 1), which means that unlike infants, adults took longer to look at the matching scene at the first sight in this condition, although they can rapidly identified the target event from the second presentation (Z = -2.55, p = .011, r = .60). Thus, despite the additional complexities of the OS*ba*OV structure, where the object has been topicalized in the left periphery and is coindexed with a resumptive clitic pronoun in preverbal position (exemplified in (2b)), children still identified the target event very fast. These results are consistent with the idea that there is no delay in A' movement in child grammar (Babyonyshev et al. 2001, Wexler, 2004), a result similar to that of Lassotta et al. (2014) for French Clitic Left dislocation.

This indicates that infants exposed to Mandarin are sensitive to the presence of functional heads (like *ba*) from 17 months and they can use this knowledge to parse a sentence. To the extent that these results can only be accounted for if grammatical, language-specific knowledge is available, they constitute evidence for very early parameter setting.

(1) 小兔子 tuān 了 小鸭子。 (SVO)

the rabbit PSEUDO-VERB PERF the duck

(2) a. 小兔子 把 小鸭子 tuān 了。 (S*ba*OV)

the rabbit BA the duck PSEUDO-VERB PERF

b. 小鸭子 小兔子 把 它 tuān 了。 (OS*ba*OV)

the duck$_i$ the rabbit BA it$_i$ PSEUDO-VERB PERF

'The rabbit V-ed the duck.'

	SVO		S*ba*OV		OS*ba*OV	
	Target	Reverse	Target	Reverse	Target	Reverse
BS	1299(589)	1410(820)	1931(852)	1659(746)	1394(665)	1163(715)
S1	1511(916)	1451(853)	2273(1103)	1829(957)	**1867(986)****	**1289(785)****
S2	**1660(837)***	**1139(890)***	**1944(1193)***	**1396(933)***	**1888(1102)***	**1323(868)***
S3	**1523(865)*****	**1026(628)*****	1595(1079)	1900(1204)	1364(1060)	1290(825)

Table 1. Mean looking times across the four critical areas of interest in three conditions (infants).

*$p < .05$, **$p < .01$, ***$p < .001$ (in bold)

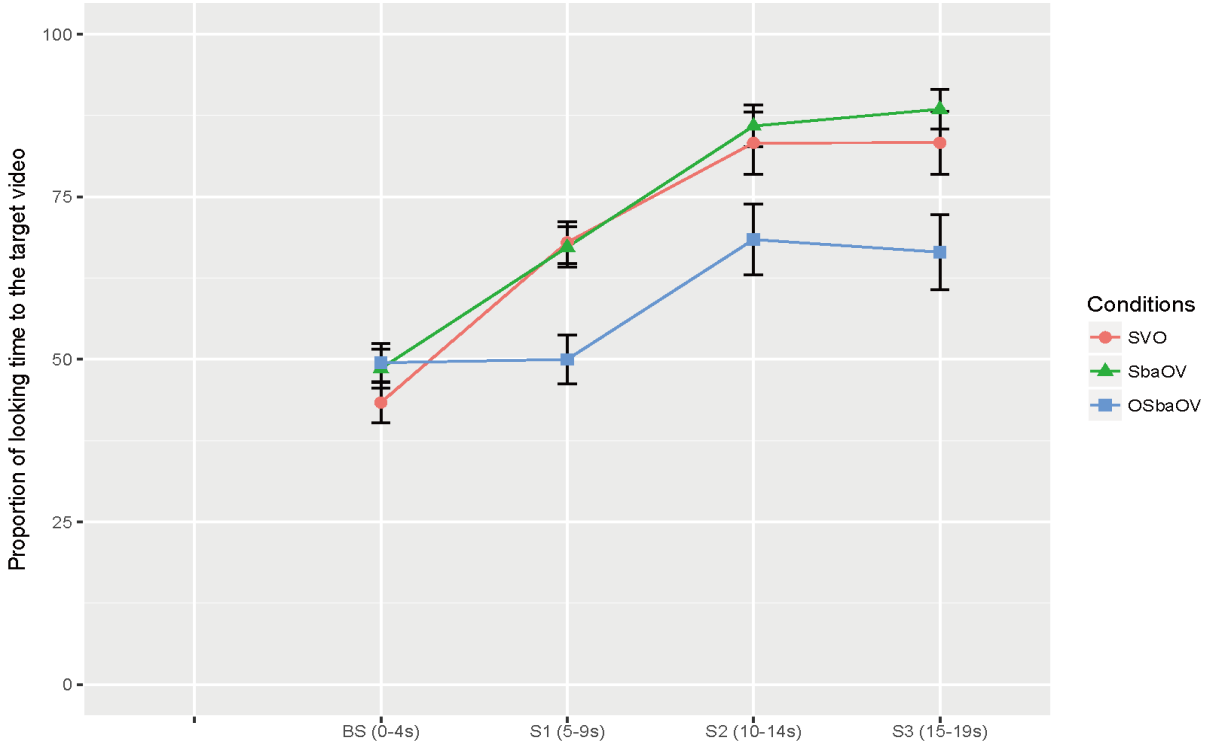

Fig.1 Proportion of looking time to the target video during the four critical AoIs in the three conditions (Adults).