CHAPTER THIRTEEN

ANIMACY DOES NOT HELP FRENCH-SPEAKING CHILDREN IN THE REPETITION OF OBJECT RELATIVES

KAREN MARTINI

The presence of a configuration of inclusion between the featural specifications of the moved object and the intervening subject is assumed to be the source of the difficulty speakers experience with object relatives. A number of recent studies has tried to identify which features are relevant in modulating intervention. This paper reports new evidence on the role of the animacy feature from a sentence repetition task with typically developing French-speaking children.

1. Introduction

A well-known fact is that object relatives are cross-linguistically more difficult to comprehend and produce for children than subject relatives (Sheldon 1974; Tavakolian 1981; Corrêa 1995; Mc Kee et al. 1998; Friedmann and Novogrodsky 2004; Belletti and Contemori 2010; Costa et al. 2011; Contemori and Belletti 2014, among many others). According to featural Relativized Minimality (henceforth fRM, Rizzi 1990, 2004; Starke 2001), object relatives like (1) are hard to compute as in their derivation the object moves from its clause internal position to the left periphery of the clause crossing over an intervening subject (Friedmann et al. 2009). In contrast, no intervention arises in the movement of the subject to the left periphery of the clause in subject relatives (2).[1]

---

[1] The same difficulty emerges in which object questions and other object A'-dependencies involving intervention (De Vincenzi et al. 1999; Avrutin 2000; Friedmann et al. 2009; Manetti and Belletti 2017; Belletti and Manetti 2018). The extra complexity that these structures involve also shows up in individuals suffering from language pathologies (Hickok and Avrutin 1996; Garraffa and

1.   OR: The cat that the dog bites __.

         ↑_____|

2.   SR: The dog that __ bites the cat.

         ↑_____|

We report in (3) and (4) the fundamental ideas of the fRM approach (from Rizzi 1990, 2004, 2013; Starke 2001; Friedmann et al. 2009; Belletti et al. 2012).

3.   Given three elements X, Y and Z, Y is in a local configuration with X if there is no Z such that:

- Z structurally intervenes between X and Y;

- Z matches the specification of X in relevant morphosyntactic features.

4.   Being A, B and C morphosyntactic features relevant for the calculation of intervention, the following relations between the featural specification of X and Z have been identified:

		X	Z	Y	CHILDREN	ADULTS
a.	Identity	+A	+A	<+A>	*	*
b.	Inclusion	+A,+B	+A	<+A,+B>	*	ok but hard
c.	Intersection	+A,+B	+A,+C	<+A,+B>	ok	ok
d.	Disjunction	+A	+B	<+A>	ok	ok

In (3), intervention is defined in terms of c-command and the morphosyntactic features assumed to be relevant for the principle are the features triggering syntactic movement. A local relation between X and Y cannot be established if Z intervenes between X and Y and matches the specification of X in relevant features (4a). A local relation between X and Y can hold if the feature specifications of X and Z are in a disjunction or intersection relation (4c-d). The local relation can also hold if the feature specification of Z is included in the feature specification of X (4b), but this configuration is harder to compute for adults and its computational cost exceeds the capacities of the child's system.

Grillo 2008; Grillo 2008; MacKenzie et al. 2015 on aphasia) and slower parsing of these sentences has been observed in healthy adults (De Vincenzi 1996; Schlesewsky et al. 2000; Gordon et al. 2004; Warren and Gibson 2005).

Going back to (1) (repeated below for convenience), in headed object relatives with a lexical preverbal subject the subject structurally intervenes in the A'-dependency between the relative head and its trace in the object position, and the (relevant) feature specifications of the subject and of the object are in an inclusion relation.[2] Thus, under fRM, this structure is expected to be difficult for children.

1.　　OR: The cat that the dog bites __.
　　　　　+R +NP　　　+NP　　+R +NP
　　　　　　↑_____|

The same difficulty is not expected with object relatives that do not involve inclusion. Indeed, children perform well in object relatives when the subject and the object mismatch in lexical restriction ((5) from Friedmann et al. 2009 on Hebrew), or in number ((6) from Adani et al. 2010 on Italian), or in gender ((7) from Belletti et al. 2012 on Hebrew), being lexical restriction, number, and gender relevant for intervention in the language observed.

5.　Tare li　　et　mi　she-ha-yeled　menadned.
　　Show to-me ACC who that-the-boy swings
　　　　　　　　　　+R　　　+NP
　　'Show me the one that the boy is swinging.'　　　　　(disjunction)

6.　　Mostrami il leone che i coccodrilli stanno toccando.
　　　Show me the lion that the crocodiles are touching
　　　　　+R +NP +sing　　+NP +plur
　　　'Show me the lion that the crocodiles are touching.'　　(intersection)

7.　　Tare li　　et ha-yalda　　she-ha-rofe　　　　mecayer.
　　　Show to-me ACC the-girl(fem) that-the-doctor(masc) draws-masc
　　　　　　　　+R +NP +fem　　　+NP +masc
　　　'Show me the girl that the (male)doctor draws.'　　　(intersection)

---

[2] In (1), the subject is specified by the lexical restriction feature NP, while the object is specified by NP and the relative feature R. R is the feature responsible for the A'-movement to the relative head position, and NP is the nominal feature participating in this movement (on the relevance of NP for intervention see also the results in De Vincenzi et al. 1999; Arnon 2010; Belletti and Contemori 2010; Contemori and Belletti 2014; Bentea 2017; Martini et al. to appear; Martini, in preparation).

Crucially, a mismatch in non-relevant features between the target and the intervener does not modulate intervention. A gender mismatch does not help children to compute ORs in Italian and Greek, where gender does not belong to the set of features triggering movement ((8) from Belletti et al. 2012; see also Angelopoulos and Terzi 2017), as well as a difference in the grammatical category has no an ameliorating effect in Hebrew ((9) from Costa et al. 2014; see also Friedmann et al. 2017 for similar results on case).

8.   Mostrami il dottore   che   la bambina disegna.
       Show me the doctor(masc) that the girl   draws
               +R +NP (masc)   +NP (fem)
      'Show me the (male)doctor that the girl draws.'

9.   Tare li   et   ha-yeled she-ha-kof   nogea b-o.
       Show to-me ACC the-boy   that-the-monkey touches in-him
                   R +NP (PP)   +NP (DP)
      'Show me the boy that the monkey lays a hand on him.'

A number of experimental studies explored the impact of the animacy feature on the computation of object relatives. The generalization that emerges from the literature is that ORs with an inanimate head and an animate subject (10) seem to be easier to parse and comprehend compared to ORs with an animate head and an animate subject (11), for both children and adults (on children: Brandt et al. 2009 on English and German; Bentea 2017 on French; on adults: Mak et al. 2002 on Dutch; Baudiffier et al. 2011 on French; Lowder and Gordon 2014 on English). Moreover, ORs like (10) seem to be the most frequent type of ORs found in corpora (on children: Hamman and Tuller 2015 on French; Kidd et al. 2007 on English and German; on adults: Mak et al. 2002 on Dutch and German; Belletti and Chesi 2014 on Italian).

10.   The ball that the boy threw.
11.   The boy that the friend combed.

A similar ameliorating effect of the mismatch in animacy does not emerge when the object is animate and the subject is inanimate. ORs like (12) appear to be as difficult to compute as ORs like (11) and as ORs like (13) where both the subject and the object are inanimate (on children:

Adani 2012 on German; on adults: Mak et al. 2006 on Dutch; Baudiffier et al. 2011 on French; Lowder and Gordon 2012 on English).

12.   The boy that the vase hit.
13.   The house that the fire destroyed.

Therefore, even though at first glance animacy would seem to be relevant in the computation of intervention, the presence of a mis/match in animacy does not appear to be the crucial factor. If this were the case, a major asymmetry between mis/match conditions would be expected. The absence of a major effect of the mis/match in animacy is in line with the predictions of the fRM approach: animacy is not expected to modulate intervention, as it does not belong to features triggering movement in the languages under consideration.

It could be that object relatives with an inanimate head and an animate subject are easier to compute because such a mismatch facilitates the assignment of thematic roles. In the absence of other information, the animacy feature of the two nominal expressions may indeed count as a cue for identifying the agent and the patient of the action (animate entity → agent, inanimate entity → patient) (see the discussion in Lowder and Gordon 2014 on adult processing and references therein). Notice that fRM does not exclude the presence of such an effect. Indeed, any cue useful in assigning the thematic roles or any dissimilarity between the two nominal expressions may help the processing of complex structures, like relative clauses. Crucially, this kind of unselective effect is expected to be significantly smaller than the selective effect of features relevant for intervention in the same language (see Belletti et al. 2012).

Assuming that a grammar-related effect shows up in both comprehension and production, in Martini (in preparation) we systematically investigated the effect of the animacy mis/match on the elicited production of relative clauses in French-speaking children. Under fRM, no effect was expected, as animacy is not responsible for movement in French. The prediction was borne out. The results clearly showed that a mismatch in animacy does not help French-speaking children in the production of object relatives. Our findings were consistent with the results from Belletti and Chesi's (2014) study on the elicited production of relative clauses in Italian-speaking adults.

In what follows, we report further evidence on the role of the animacy feature in the computation of ORs, from a new study on French-speaking children using a sentence repetition task.

2. The study

2.1. Participants

Eighty-eight typically-developing French-speaking children, aged from 3;2 to 9;2, participated in the study. They were divided into four subgroups: the 3 year-old group, the 5 year-old group, the 7 year-old group, and the 8 year-old group (see Table X-1[3]). The children were randomly selected from kindergartens and primary schools in Geneva (Switzerland).

Table X-1: Participants

Age Group	Total nr.	Age Range	Mean Age
3	19	3;2 - 4;5	3;7
5	25	4;9 - 6;2	5;4
7	23	6;9 - 7;4	7;1
8	21	8;4 - 9;2	8;8

2.2. Methods and materials

We explored children's performance on subject and object relative clauses using a sentence repetition task.[4] In order to elicit the repetition of relative clauses, we created a game using a cartoon character well-known to children, Dora the Explorer. In this game, Dora asked the participant to play with her the parrot game. The participant, like a parrot, simply had to

---

[3] In the 3-year-old group 15 children were aged 3;2–3;11 and 4 were aged 4;0-4;5; in the 5-year-old group 15 children were aged 5;0-5;11, 5 children were aged 6;0-6;2, and 5 were aged 4;9-4;11; in the 7-year-old group 18 children were aged 7;0-7;4 and 5 were aged 6;9-6;11; finally, in the 8-year-old group 15 children were aged 8;4-8;11 and 6 were aged 9;0-9;2.
[4] Sentence repetition has been investigated as a measure for children's language skills in a number of studies (Vender et al. 1981; Sturner et al. 1993;,Friedmann and Grodzinsky 1997; Conti-Ramsden et al. 2001; Friedmann and Lavi 2006; Devescovi and Caselli 2007; Chiat and Roy 2008; Seef-Gabriel et al. 2010).

repeat what Dora said.[5] Funny slides with positive feedback were shown after each response. At the end of the task, the participant received a small reward. Each participant was tested in a separate, quiet room in his school/kindergarten. No time limit was imposed during testing, and no response-contingent feedback was given by the experimenter. All the responses were tape-recorded and subsequently transcribed and coded by the experimenter. A preliminary meeting in the classrooms preceded the individual testing sessions, in order to familiarize the children with Dora and the experimenter. The children were generally very happy to participate and engaged in the game.

The repetition of 16 SRs and 16 ORs was elicited. As in the elicited production study (Martini, in preparation) mentioned in the Introduction, we manipulated two variables in a 2 x 4 design: (1) STRUCTURE (subject relative vs. object relative), and (2) ANIMACY CONFIGURATION (animate subject-animate object, animate subject-inanimate object, inanimate subject-animate object, inanimate subject-inanimate object). The four levels of ANIMACY CONFIGURATION were obtained by manipulating the animacy feature of the subject and the object. The subject and the object were always lexically restricted and in a match condition as for the number and gender features. For each of the eight experimental conditions there were four experimental items. The STRUCTURE variable was manipulated within items, whereas the ANIMACY CONFIGURATION variable was manipulated between items. A within-participants design was used. The task also included 16 fillers eliciting SVO (*le garçon regarde un dessin animé,* 'the boy watches a cartoon') sentences. The order of the items was randomized so that there were no more than two consecutive items of the same type. Each session started with a warm-up phase in which the child saw two practice trials aimed at familiarizing children with the task.

In Table X-2, we provide an item example for each experimental condition.

If animacy was relevant for intervention in French, we would expect significantly better performances in ORs with an animacy mismatch (intersection configuration, examples (vi) and (vii) in Table X-2) compared to ORs with an animacy match (inclusion configuration, examples (v) and (viii) in Table X-2). In contrast, if animacy does not count in the calculation of intervention in French, as predicted by fRM, we expect no significant difference between the two conditions.

---

[5] The task was administered using a laptop. Dora spoke to the participant through the pre-recorded voice of a French native speaker. The sound editor Audacity was used to make the recordings sound like a child voice.

Table X-2: Example of item in the eight experimental conditions

	SUBJECT RELATIVE	
i.	+AN SUBJ, +AN OBJ	La femme qui applaudit la fille. *The woman that applauds the girl*
ii.	+AN SUBJ, −AN OBJ	La fille qui prépare la tarte. *The girl that makes the cake*
iii.	−AN SUBJ, +AN OBJ	Le bruit qui réveille le garçon. *The noise that wakes up the boy*
iv.	−AN SUBJ, −AN OBJ	La cheminée qui réchauffe la salle. *The fireplace that warms the room*
	OBJECT RELATIVE	
v.	+AN SUBJ, +AN OBJ	La fille que la maman embrasse. +R +NP +An +NP +An *The girl that the mom hugs*
vi.	+AN SUBJ, −AN OBJ	La balle que la fille lance. +R +NP -An +NP +An *The ball that the girl throws*
vii.	−AN SUBJ, +AN OBJ	Le garçon que le vase cogne. +R +NP +An +NP -An *The boy that the vase hurts*
viii.	−AN SUBJ, −AN OBJ	Le trou que le tapis cache. +R +NP -An +NP -An *The hole that the carpet covers*

The investigation of the four level of ANIMACY CONFIGURATION allowed us to identify any effect of a particular animacy configuration, unrelated to fRM (for instance, animate subject-inanimate object condition slightly better than the other conditions; see Introduction).

Subject relatives (examples (i-iv) in Table X-2) were used as baselines. Subject relative clauses do not involve intervention, thus any effect of the animacy manipulation linked to intervention should emerge in ORs but not in SRs. If an impact of the animacy manipulation emerges in SRs, it cannot be related to fRM.

2.3. Coding criteria

Only the identical repetition of the experimental item was coded as target response.[6] All the other responses (simple sentences, ungrammatical sentences, fragments, subject relatives produced when the repetition of object relatives was expected) were coded as non-target.

3. Results

Tables X-3 to X-5 report the results. As Table X-3 shows, children perform well in the repetition of both SRs and ORs. However, an asymmetry between SRs and ORs emerges in children up to the age of 7 (*p.<.001*). Already at age 3, they perform almost at ceiling in the repetition of SRs, while some difficulty shows up in the repetition of ORs. These results replicate those from Contemori's (2011) study on the repetition of relative clauses in Italian-speaking children. The absence of the subject-object relatives asymmetry in the 8 year-old group can be explained by the well-known fact that the sensitivity of the repetition task decreases at the increasing of age (Vender et al. 1981; Marinis et al. 2010, among others). The high percentages of correct responses across age groups and conditions is probably because we asked the participants to repeat relative clauses in isolation, rather than complete sentences.

---

[6] Sometimes the participants repeated the given relative clause adding a resumptive clitic (examples (i) and (ii) below). If these repetitions are considered as target the results still do not change.

i.   Elicited SR: La femme qui applaudit la fille.
                The woman that applauds the girl
       SR with resumptive subject clitic : La femme qu'elle applaudit la fille.
                                The woman that she applauds the girl
ii.   Elicited OR : La fille que la maman embrasse.
                The girl that the mother hugs
       OR with resumptive object clitic : La fille que la maman l'embrasse.
                                The girl that the mother hugs her

Table X-3: Percentage of target responses as a function of the STRUCTURE and the AGE GROUP

	TARGET RESPONSES	
	SRs	ORs
3 y.o.	92%	72%
5 y.o.	93%	81%
7 y.o.	94%	82%
8 y.o.	100%	98%
Overall Total	94%	84%

As shown in Table X-4, a mis/match in the animacy feature of the two noun phrases does not affect the repetition of relative clauses, neither of SRs nor of ORs (*p.<.001*) (in any of the age groups; see footnote 7 for more details).[7]

Table X-4: Percentage of target responses as a function of the STRUCTURE and the ANIMACY MIS/MATCH

	TARGET RESPONSES	
	MATCH	MISMATCH
SRs	94%	94%
ORs	84%	84%

A small effect of the ANIMACY CONFIGURATION emerged on the repetition of ORs, namely children perform slightly worse in the inanimate subject-animate object condition than in the other conditions (*p.=0.02*) (no interaction was found with AGE GROUP).

---

[7] **Table X-A. Percentage of target responses in the repetition of SRs and ORs as a function of the ANIMACY MIS/MATCH and the AGE GROUP**

	TARGET SRs		TARGET ORs	
	MATCH	MISMATCH	MATCH	MISMATCH
3 y.o.	93%	91%	74%	70%
5 y.o.	93%	92%	81%	82%
7 y.o.	92%	96%	81%	82%
8 y.o.	100%	99%	98%	99%

Table X-5: Percentage of target responses as a function of the STRUCTURE and the ANIMACY CONFIGURATION.

	TARGET RESPONSES			
	+AN SUBJ +AN OBJ	+AN SUBJ −AN OBJ	−AN SUBJ +AN OBJ	−AN SUBJ −AN OBJ
SRs	95%	94%	95%	93%
ORs	85%	87%	80%	83%

3.1. Data analysis

The data were analysed with generalized mixed-effects models for binomial distribution estimated with the lme4 package in the R software environment. In order to explore the predictions of fRM bearing on the comparison between ORs with animacy match and ORs animacy mismatch, controlled for the corresponding structures without intervention (SRs with animacy match and SRs with animacy mismatch), we run two models with STRUCTURE and MIS/MATCH as fixed factors and participants and items as random factors (Models 1 and 2). In Models 3 and 4, we explored the effect of ANIMACY CONFIGURATION to check for any effect of animacy unrelated to fRM.[8] Response accuracy, representing the accuracy in repeating the target structure, corresponded to the categorical dependent variable.

- Model 1: STRUCTURE * MIS/MATCH + (1|participant) + (1|item)
- Model 2: STRUCTURE + MIS/MATCH + AGE GROUP + (1|participant) + (1|item)
- Model 3: STRUCTURE * ANIMACY CONFIGURATION + (1|participant) + (1|item)
- Model 4: STRUCTURE + ANIMACY CONFIGURATION + AGE GROUP + (1|participant) + (1|item)

Under fRM, Models 1-4 are all expected to show an effect of STRUCTURE, being the participants' performances better in SRs than in ORs, but no significant effect of ANIMACY MIS/MATCH. The older children are expected to perform better in the repetition of RCs than the younger

---

[8] Model 2b (STRUCTURE * MIS/MATCH + AGE GROUP + (1|participant) + (1|item)) and Model 3b (STRUCTURE * ANIMACY CONFIGURATION + AGE GROUP + (1|participant) + (1|item)) didn't converge.

ones. Tables 6-8 report the summary for fixed-effects for Models 1-3
respectively.[9]

Table X-6: Fixed effects for Model 1

MODEL 1	Estimate	Std. error	z	p
(Intercept)	4.78	0.92	5.17	<.001
Structure: SR	2.54	0.34	7.42	<.001
Mis/match: mismatch	0.07	0.27	0.27	0.78
Interaction: SR; mismatch	0.09	0.45	0.19	0.84

Table X-7: Fixed effects for Model 2

MODEL 2	Estimate	Std. error	z	p
(Intercept)	2.43	0.94	2.57	0.01
Structure: SR	2.57	0.26	9.87	<.001
Mis/match: mismatch	0.10	0.21	0.48	0.63
Age: 5 y.o.	1.14	1.23	0.93	0.35
Age: 7 y.o.	1.59	1.28	1.24	0.21
Age: 8 y.o.	4.76	1.35	3.51	<.001

Table X-8: Fixed effects for Model 3

MODEL 3	Estimate	Std. error	z	p
(Intercept)	5.05	0.96	5.27	<.001
Structure: SR	2.57	0.44	5.88	<.001
Animacy configuration: +An subj, -An obj	0.41	0.33	1.25	0.21
Animacy configuration -An subj, +An obj	-0.73	0.31	-2.31	0.02
Animacy configuration -An subj, -An obj	-0.52	0.32	-1.64	0.10
Interaction: SR; +An subj, -An obj	-0.64	0.58	-1.09	0.27
Interaction: SR; -An subj, +An obj	0.62	0.57	1.08	0.27
Interaction: -An subj, -An obj	-0.09	0.56	-0.15	0.87

---

[9] Model 4 provided no further information. No significant interaction emerged
between ANIMACY CONFIGURATION and AGE GROUP.

4. Discussion and conclusions

The results we presented clearly show the well-known subject-object relatives asymmetry. 3 to 7 year-old children perform almost at ceiling in the repetition of SRs, whereas they have some difficulties in the repetition of ORs. The absence of this asymmetry in 8 year-olds can be traced back to the fact that the sensitivity of the repetition task decreases at the increasing of age (Vender et al. 1981; Marinis et al. 2010, among others). The high performance across age groups and conditions can be explained by the fact that the participants had to repeat relative clauses in isolation, rather than complete sentences. These results replicate the ones from Contemori's (2011) study on the repetition of relative clauses in 3 to 8 years-old Italian-speaking children.

Crucially, a mis/match in animacy does not affect to any extent the repetition of relative clauses, neither of object relatives nor of subject relatives, at any age. This was expected under featural Relativized Minimality: animacy does not belong to the morphosyntactic features triggering movement in French and therefore it is not taken into account in the computation of intervention.

In the literature object relatives with an inanimate head and an animate subject have been reported to be easier to parse and comprehend compared to object relatives with an animate head and an animate subject (Mak et al. 2002; Brandt et al. 2009; Baudiffier et al. 2011; Lowder and Gordon 2014). This fact is not inconsistent with the predictions from fRM. Object relatives with an inanimate head and an animate subject could be easier to compute because such a mismatch facilitates the assignment of thematic roles. Regardless of the relevance of the animacy feature for intervention in a language, the animacy of the noun phrases can indeed count as a cue for identifying the agent and the patient of the action (animate entity → agent, inanimate entity → patient). Any cue useful in assigning the thematic roles or any dissimilarity between the two noun phrase can help the processing (storage and retrieval from memory, theta-roles assignment, etc.) in complex structures, like relative clauses. Crucially, this unselective effect is expected to be significantly smaller than the structurally selective effect of features relevant for the calculation of intervention in a given language. Belletti et al. (2012) showed that a gender mismatch significantly affects the comprehension of ORs in Hebrew (where gender is relevant for intervention), whereas it has a marginal, weaker impact on the comprehension of ORs in Italian (where gender is not relevant for intervention) and on the comprehension of SRs (where no intervention is involved) in both Italian and Hebrew. Interestingly, Villata (2017)

reported that an animacy mismatch modulates acceptability judgments of both *wh*-islands and grammatical *that*-clause structures in French-speaking adults; however, the effect of animacy is much reduced compared to the effect of features triggering movement in French.

To conclude, building on the assumption that a grammar-related effect should show up in both comprehension and production, in Martini (in preparation) we systematically explored the effect of the animacy feature on the production of relative clauses in French-speaking children and we found no effect of this feature on the children's performances. In the present work, we presented further evidence on the role of animacy in the computation of intervention, from a different type of task, sentence repetition. The study investigated the effect of animacy on the repetition of subject and object relative clauses in 3 to 9 typically developing French-speaking children. In line with the results from elicited production, animacy appeared to be irrelevant in modulating intervention in French object relatives, as predicted by featural Relativized Minimality.

Acknowledgments

References

Adani, Flavia. 2012. "Some Notes on the Acquisition of Relative Clauses: New Data and Open Questions." In *Enjoy Linguistics!*, edited by Valentina Bianchi, and Cristiano Chesi, 6-13. Siena: CISCL Press.

Adani, Flavia, Marie Sehm, and Andrea Zukowski. 2012. "How do German Children and Adults Deal with their Relatives." In *Advances in Language Acquisition*, edited by Stavroula Stavrakaki, Marina Lalioti, and Polyxeni Konstantinopoulou, 14-22. Cambridge: CSP.

Angelopoulos, Nikos, and Arontho Terzi. 2017. "Syntactic Locality and Intervention in the Acquisition of Greek Relative Clauses." Presentation at GALA 2017. Palma de Mallorca.

Arnon, Inbal. 2010. "Rethinking Child Difficulty: The Effect of NP Type on Children's Processing of Relative Clauses in Hebrew." *Journal of Child Language* 37 (1): 27-57. https://doi.org/10.1017/S030500090900943X.

Avrutin, Sergey. 2000. "Comprehension of Wh-questions by Children and

Broca's Aphasics." In *Language and the Brain: Representation and Processing*, edited by Yosef Grodzinsky, Lewis P. Shapiro, and David Swinney, 295-312. San Diego: Academic Press.

Baudiffier, Vanessa, David Caplan, Gaonac'h Daniel, and David Chesnet. 2011. "The Effect of Noun Animacy on the Processing of Unambiguous Sentences: Evidence from French Relative Clauses." *The Quarterly Journal of Experimental Psychology* 64 (10): 1896-1905. https://doi.org/10.1080/17470218.2011.608851.

Belletti, Adriana, and Carla Contemori. 2010. "Intervention and Attraction. On the Production of Subject and Object Relatives by Italian (Young) Children and Adults." In *Proceedings of Gala 2009*, edited by João Costa, Ana Castro, Maria Lobo, and Fernanda Pratas, 39-52. Newcastle-Upon-Tyne: Cambridge Scholars Publishing.

Belletti, Adriana, Naama Friedmann, Dominique Brunato, and Luigi Rizzi. 2012. "Does Gender Make a Difference? Comparing the Effect of Gender on Children's Comprehension of Relative Clauses in Hebrew and Italian." *Lingua* 122 (10): 1053-1069. https://doi.org/10.1016/j.lingua.2012.02.007.

Belletti, Adriana, and Cristiano Chesi. 2014. "A Syntactic Approach toward the Interpretation of some Distributional Frequencies: Comparing Relative Clauses in Italian Corpora and in Elicited Production." *Rivista di Grammatica Generativa* 36: 1-29.

Belletti, Adriana, and Claudia Manetti. To appear. "Topics and Passives in Italian-speaking Children and Adults". *Language Acquisition*.

Bentea, Anamaria. 2017. "Intervention Effects in Language Acquisition: The comprehension of A-bar Dependencies in French and Romanian." PhD diss., University of Geneva.

Brandt, Silke, Evan Kidd, Elena Lieven, and Michael Tomasello. 2009. "The Discourse Bases of Relativization: An Investigation of Young German and English-speaking Children's Comprehension of Relative Clauses." *Cognitive Linguistics* 20 (3): 539–570. https://doi.org/10.1515/COGL.2009.024.

Chiat, Shula, and Penny Roy. 2008. "Early Phonological and Sociocognitive Skills as Predictors of Later Language and Social Communication Outcomes." *Journal of Child Psychology and Psychiatry* 49 (6): 635-645. https://doi.org/10.1111/j.1469-7610.2008.01881.x.

Contemori, Carla. 2011. "The Comprehension and Production of Relative Clauses in Italian across Populations and in Different Modalities." PhD diss., Università degli Studi di Siena.

Contemori, Carla, and Adriana Belletti. 2014. "Relatives and Passive

Object Relatives in Italian-Speaking Children and Adults: Intervention in Production and Comprehension." *Applied Psycholinguistics* 35 (6): 1021-1053. https://doi.org/10.1017/S0142716412000689.

Conti-Ramsden, Gina, Nicola Botting, and Brian Faragher. 2001. "Psycholinguistic Markers for Specific Language Impairment." *Journal of Child Psychology and Psychiatry* 42 (6): 741-748.

Corrêa, Leticia M. Sicuro. 1995. "An Alternative Assessment of Children's Comprehension of Relative Clauses." *Journal of Psycholinguistic Research* 24 (3): 183-203.

Costa, João, Naama Friedmann, Carolina Silva, and Maya Yachini. 2014. "The Boy that the Chef Cooked: Acquisition of PP Relatives in European Portuguese and Hebrew." *Lingua* 150: 386-409. https://doi.org/10.1016/j.lingua.2014.08.005.

De Vincenzi, Marica. 1996. "Syntactic Analysis in Sentence Comprehension: Effects of Dependency Types and Grammatical Constraints." *Journal of Psycholinguistic Research* 25 (1): 117-133.

De Vincenzi, Marica, Lisa Arduino, Laura Ciccarelli, and Remo Job. 1999. "Parsing Strategies in Children Comprehension of Interrogative Sentences." In *Proceedings of the European Conference on Cognitive Science*, edited by Sebastiano Bagnara, 301-308. Roma: CNR.

Devescovi, Antonella, and M. Cristina Caselli. 2007. "Sentence Repetition as a Measure of Early Grammatical Development in Italian." *International Journal of Language and Communication Disorders* 42 (2): 187-208.

Friedmann, Naama, and Yosef Grodzinsky. 1997. "Tense and Agreement in Agrammatic Production: Pruning the Syntactic Tree." *Brain and Language* 56 (3): 397-425. https://doi.org/10.1006/brln.1997.1795.

Friedmann, Naama, and Rama Novogrodsky. 2004. "The Acquisition of Relative Clause Comprehension in Hebrew: A Study of SLI and Normal Development." *Journal of Child Language* 31 (3): 661-681. 10.1017/S0305000904006269.

Friedmann, Naama, and Hedva Lavi. 2006. "On the Order of Acquisition of A-Movement, Wh-Movement and V-C Movement". In *Proceedings of Gala 2005*, edited by Adriana Belletti, Elisa Bennati, Cristiano Chesi, Elisa Di Domenico, and Ida Ferrari. Newcastle-Upon-Tyne: Cambridge Scholars Publishing.

Friedmann, Namma, Adriana Belletti, and Luigi Rizzi. 2009. "Relativized Relatives: Types of Intervention in the Acquisition of A-Bar Dependencies." *Lingua* 119 (1): 67-88. https://doi.org/10.1016/j.lingua.2008.09.002.

Friedmann, Naama, Luigi Rizzi, and Adriana Belletti. 2017. "No Case for

Case in Locality: Case does not Help Interpretation when Intervention Blocks A-Bar Chain." *Glossa* 2 (33): 1-18. http://doi.org/10.5334/gjgl.165.

Garraffa, Maria, and Nino Grillo. 2008. "Canonicity Effects as Grammatical Phenomena." *Journal of Neurolinguistics* 21 (2): 177-197. https://doi.org/10.1016/j.jneuroling.2007.09.001.

Gordon, Peter C., Randall Hendrick, and Marcus Johnson. 2004. "Effects of Noun Phrase Type on Sentence Complexity." *Journal of Memory and Language* 51 (1): 97-114. https://doi.org/10.1016/j.jml.2004.02.003.

Grillo, Nino. 2008. "Generalized Minimality: Syntactic Underspecification in Broca's Aphasia". PhD diss., University of Utrecht.

Hamann, Cornelia, and Laurie Tuller. 2015. "Intervention Effects in the Spontaneous Production of Relative Clauses in (A)Typical Language Development of French Children and Adolescents." In *Linguistik Aktuell/Linguistics Today 223*, edited by Elisa Di Domenico, Cornelia Hamann, and Simona Matteini, 321-342. Amsterdam: John Benjamins Publishing Company. https://doi.org/10.1075/la.223.15ham.

Hickok, Gregory, and Sergey Avrutin. 1996. "Comprehension of Wh-Questions in Two Broca's Aphasics." *Brain and Language* 52 (2): 314-327. https://doi.org/10.1006/brln.1996.0014.

Kidd, Evan, Silke Brandt, Elena Lieven, and Marcus Tomasello. 2007. "Object Relatives Made Easy: A Cross-Linguistic Comparison of the Constraints Influencing Young Children's Processing of Relative Clauses." *Language and Cognitive Processes* 22 (6): 860-897. https://doi.org/10.1080/01690960601155284.

Lowder, Matthew W., and Peter C. Gordon. 2012. "The Pistol that Injured the Cowboy: Difficulty with Inanimate Subject-Verb Integration Is Reduced by Structural Separation." *Journal of Memory and Language* 66 (4): 819-832. https://doi.org/10.1016/j.jml.2012.03.006.

Lowder, Matthew W., and Peter C. Gordon. 2014. "Effects of Animacy and Noun-Phrase Relatedness on the Processing of Complex Sentences." *Memory and Cognition* 42 (5): 794-805. https://doi.org/10.3758/s13421-013-0393-7.

Mak, Willem M., Wietske Vonk, and Herbert Schriefers. 2002. "The Influence of Animacy on Relative Clause Processing." *Journal of Memory and Language* 47 (1): 50-68. https://doi.org/10.1006/jmla.2001.2837.

Mak, Willem M., Wietske Vonk, and Herbert Schriefers. 2006. "Animacy in Processing Relative Clauses: The Hikers that Rocks Crush." *Journal of Memory and Language* 54 (4): 466-490.

https://doi.org/10.1016/j.jml.2006.01.001.

Manetti, Claudia, and Adriana Belletti. 2017. "The Production of Clitic Left Dislocations by Italian-Speaking Children and the Role of Intervention." In *Proceedings of the 41st BUCLD*, edited by Maria La Mendola, and Jennifer Scott, 443-451. Somerville: Cascadilla Press.

Marinis, Theo, Shula Chiat, Sharon Armon-Lotem, Daniel Gibbons, and Elizabeth Gipps. 2010. School-Age Sentence Imitation Test (SASIT).

Martini, Karen. In preparation. "Aspects of the Acquisition of Locality: Comprehension and Production Studies in Italian and French." PhD diss., University of Geneva.

Martini, Karen, Adriana Belletti, Carla Contemori, and Luigi Rizzi. To appear. "On the Role of Lexical Restriction and Intervention in Production: A New Angle on the Subject-Object Relatives Asymmetry." *Generative Grammar in Geneva* 10.

Mc Kee, Cecile, Dana Mc Daniel, and Jesse Snedeker. 1998. "Relatives Children Say." *Journal of Psycholinguistic Research* 27 (5): 573-596.

Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge: MIT Press.

Rizzi, Luigi. 2004. *The Structure of CP and IP*. Oxford/New York: Oxford University Press.

Rizzi, Luigi. 2004. "Locality and the Left Periphery." In *Structures and Beyond*, edited by Adriana Belletti, 223-251. New York: Oxford University Press.

Rizzi, Luigi. 2013. "Locality." *Lingua* 130: 169-186. https://doi.org/10.1016/j.lingua.2012.12.002.

Schlesewsky, Matthias, Gisbert Fanselow, Reinhold Kliegl, and Josef Krems. 2000. "The Subject Preference in the Processing of Locally Ambiguous Wh-Questions in German." In *German Sentence Processing 24*, edited by Barbara Hemforth, and Lars Konieczny, 65-93. Netherlands: Springer.

Seef-Gabriel, Belinda, Shula Chiat, and Barbara Dodd. 2010. "Sentence Imitation as a Tool in Identifying Expressive Morphosyntactic Difficulties in Children With Severe Speech Difficulties." *International Journal of Language and Communication Disorders* 45 (6): 1-12. https://doi.org/10.3109/13682820903509432.

Sheldon, Amy. 1974. "The Role of Parallel Function in the Acquisition of Relative Clauses in English." *Journal of Verbal Learning and Verbal Behavior* 13 (3): 272-281. https://doi.org/10.1016/S0022-5371(74)80064-2.

MacKenzie, Shannon, Matthew Walenski, Tracy Love, and Lewis P. Shapiro. 2015. "The Auditory Comprehension of Wh-Questions in Aphasia: Support for the Intervener Hypothesis." *Journal of Speech*

Language and Hearing Research 58 (3): 781. https://doi.org/10.1044/2015_JSLHR-L-14-0099.

Starke, Michal. 2001. "Move Dissolves into Merge." PhD diss., University of Geneva.

Sturner, Raymond A., Sandra G. Funk, and James A. Green. 1996. "Preschool Speech and Language Screening: Further Validation of the Sentence Repetition Screening Test." *Journal of Developmental and Behavioural Paediatrics* 17 (6): 405-413.

Tavakolian, Susan. 1981. "The Conjoined-Clause Analysis of Relative Clauses." In *Language Acquisition and Linguistic Theory*, edited by Susan Tavakolian, 167-187. Cambridge: MIT Press.

Vender, C., R. Borgia, Silvana Cumer Bruno, P. Freo, and G. Zardini. 1981. "Un Test di Ripetizione di Frasi." *Neuropsichiatria infantile* 243: 819-831.

Villata, Sandra. 2017. "Intervention Effects in Sentence Processing." PhD diss., University of Geneva.

Warren, Tessa, and Edward Gibson. 2005. "Effects of NP Type in Reading Cleft Sentences in English." *Language and Cognitive Processes* 20 (6): 751-767. https://doi.org/10.1080/01690960500051055.