Advances in Language Acquisition

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Edited by

Stavroula Stavrakaki, Marina Lalioti
and Polyxeni Konstantinopoulou

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INTRODUCTION

This book includes papers presented at the conference *Generative Approaches to Language Acquisition* (GALA) held in Thessaloniki from 6-8 September 2011. This conference adopts a generative approach to language acquisition and brings together researchers working on first and second language acquisition and/or processing, bilingual development, language disorders, and neurolinguisitcs. The conference reflects the high quality ongoing work on these fields as can be seen by numerical facts, namely the *high* number of submitted abstracts from all over the world (21 countries) and the *low* acceptance rate reflecting the high completion of high quality abstracts submitted to the conference.

The conference included a general session, a workshop on *Phonological representations in early language acquisition (*organized by Barbara Höhle, University of Potsdam) and a workshop on *Syntax and Pragmatics: Division of Labour in Acquisition* (organized by Joao Costa & Spyridoula Varlokosta, Universida de Nova de Lisboa & University of Athens). The invited speakers for GALA 2011 were Harald Clahsen (University of Potsdam), Maria Teresa Guasti (University of Milan-Bicocca), and Chloe Marshall (University of London).

The present book reflects the GALA 2011 scientific presentations and discussions by raising issues that have been at the centre of research in language acquisition in multilingual societies by top researchers in the field. Specifically, it explores questions such as follows:

1. How do children acquire and process their native language and the other languages they are exposed to?
2. How do adults acquire and process a second language?
3. How do children with various developmental disorders acquire different domains of their native language; what are their strengths and limitations?

In addition, it discusses the question of what cross-linguistic differences and similarities imply for language acquisition in (ab) normal circumstances.

We wish that the present book chapters, as previous published work from GALA conferences, constitute a valuable reference guide for current work on the interdisciplinary research field of language acquisition.

We sincerely like to thank the present book contributors, the Research Committee of the Aristotle University of Thessaloniki for funding the GALA 2011 conference, and Carol Koulikourdi from CSP for her support to the present book project.

Thessaloniki, October 2012

Stavroula Stavrakaki
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PART I:

FIRST LANGUAGE ACQUISITION AND PROCESSING

CHAPTER ONE

ACQUISITION OF THE LEFT AND RIGHT PERIPHERIES IN EUROPEAN PORTUGUESE

SILVANA ABALADA

1. Introduction

This study discusses the acquisition of structures with non-basic word order involving constituents on the left and right peripheries of the sentence in European Portuguese (EP). Considering the recent debate concerning the acquisition of interfaces (especially the syntax/discourse interface), the main goal of this study is to discuss children's comprehension of structures with left- and right-peripheral constituents (topics and antitopics), taking into account their syntactic and information status in both child and adult grammars.

Over the past few years, there has been some debate about these structures, in terms of syntax and information structure. In what concerns the information status, studies carried out in different languages have shown that the constituents on the left and right peripheries are different. Whereas the constituents on the left periphery can correspond to either given or new information (Reinhart 1982, for English; Duarte 1987; 1996; in preparation, for EP; Frascarelli and Hinterhölzl 2007, for Italian), the constituents on the right periphery are always given information (Frascarelli and Hinterhölzl 2007; Brunetti 2009, for Italian; Duarte in preparation, for EP). Brunetti (2009) even argues that in Italian the material on the right periphery can never be interpreted as contrastive, differently from the material that occurs on the left periphery. As for the syntactic status of left- and right-peripheral material, some authors have discussed whether the constituents on the left and right peripheries are derived by Move or by Merge, opposing both peripheries. On the one hand, there are different structures on the left periphery with different derivations across languages. De Cat (2007), in a study of dislocations in spoken French, argues that French dislocation does not necessarily involve

movement. For EP, Duarte (1987; 1996) had already shown that there is left-peripheral material either derived by Move (topicalization) or by Merge (clitic--left dislocation). On the other hand, locality effects (*clause-bounded*, see *Right--Roof Constraint*, Ross 1967) are a strong argument in favor of a Merge derivation of antitopics (De Cat 2007, for French; Duarte in preparation, for EP).

Since a recent debate in acquisition is concerned with interfaces (namely, syntax/discourse), the acquisition of these types of structures is at the center of the debate. De Cat (2008), based on an elicitation study, presents experimental evidence for the mastery of the discourse notion of topic by monolingual preschool children (2;6 to 5;6). Confirming previous results in De Cat (2002), the author shows early sensitivity to some aspects of the syntax/pragmatics interface. For EP, Adragão and Costa (2004) and Adragão (2005) also argued in favor of the early acquisition of structures with non-basic word order, since preschool children (3;3 to 6;1) comprehend fronted object structures, regardless of the type of fronting strategy involved (topicalization or clitic-left dislocation). Additionally, theses authors show that topicalizations and clitic-left dislocations (i.e. OSV orders) are less problematic than OVS orders (i.e. subject-verb inversions with a focused subject). Nevertheless, according to Adragão and Costa (2004) and Adragão (2005), the problem is not due to the subject-verb inversion, because whenever the object is absent, in VS orders, children do not show difficulties comprehending these structures. Finally, Carrilho (1994) and Soares (2006) also assume the sensitivity to topic/comment structures with a marked topic by monolingual EP preschool children (2;0-3;3 in Carrilho 1994; 1;2-4;6 in Soares 2006), although topicalizations present a low rate in the spontaneous production corpora analyzed.

2. Hypotheses

Considering the syntactic and information status of left- and right-peripheral material in adult grammar, it is worth noting the importance of discussing the acquisition of structures with non-basic word order involving constituents on the left and right peripheries of the sentence in EP. On the one hand, these structures involve the syntax/discourse interface and thereby their study can provide answers to two related questions: is the acquisition of discourse-pragmatics early or delayed? Is the acquisition of the interfaces (namely, syntax/discourse) equally early or delayed? On the other hand, this discussion allows us to consider two theoretical issues: the Derivational Complexity Hypothesis (Jakubowicz

2004; 2005) and some hypotheses that explain the so-called intervention effects (Friedmann, Belletti, and Rizzi 2009), since the relation between both can clarify possible asymmetries in the acquisition of structures with left- and right-peripheral constituents.

According to Jakubowicz (2004; 2005), typical and atypical language development is constrained by economy considerations. Therefore, the author proposes the following derivational complexity metric:

> Derivational Complexity Metric:
>
> a. Merging α_i n times gives rise to a less complex derivation than merging α_i (n + 1) times.
>
> b. Internal Merge of α gives rise to a less complex derivation than Internal Merge of α + β. (Jakubowicz 2005).

Crucially, this Derivational Complexity Hypothesis can be applied to different conditions of language acquisition (L1, L2, typical and atypical development) and adult processing, and can also predict stages in children's acquisition (with less complex structures emerging earlier than more complex ones).

In addition, according to Friedmann, Belletti, and Rizzi (2009), subject/object asymmetries in relatives can be explained in terms of intervention effects. Hence, children have a worse performance in object relatives than in subject relatives since the presence of an intervener (namely, the subject) between the head and the tail of the chain in object relatives has a negative effect on the comprehension of the A' dependency.

> It appears to restate the effect in terms of intervention: the A' dependency fails (in young children) and is harder (in adults) when the terms to be connected in the dependency are separated by an intervener, a position which could potentially be involved in the A' relation: typically the subject position, which would be a potential site for the variable. (Friedmann, Belletti, and Rizzi 2009: 68).

It is important to note that comprehension and production difficulties with object relatives are, in the words of Friedmann, Belleti, and Rizzi (2009), selective, since they depend on the structural similarity between the A' moved element and the intervening subject. Moreover, the authors assume that intervention effects must be considered as an extension of Relativized Minimality (Rizzi 1990), the syntactic principle that expresses locality effects. If the same principle underlies adult performance as well as child development, then children must have a stricter version of Relativized Minimality, which requires a non inclusion featural

specification pattern between the A' moved element and the intervener (Belletti, Friedmann, Brunato, and Rizzi 2012).

Bearing in mind the theoretical issues discussed above, we can consider the following hypotheses.

H1: Right periphery is more accessible to children than left periphery. This prediction is based upon the Derivational Complexity Hypothesis (Jakubowicz 2004; 2005) and takes into account that the material on the right periphery is always merged and the material on the left periphery can be either derived by Move or by Merge.

H2: Children's performance is better in the topicalization of indirect object than in topicalization of direct object. To formulate this hypothesis, we considered the possibility of intervention effects and the assumption that there is structural similarity between the A' moved element and the intervening subject in a topicalization of direct object (since both are DPs), whereas in a topicalization of indirect object the same structural similarity does not exist (since we have a dative case marker in the indirect object).

H3: Children's performance is better in the topicalization of prepositional object than in topicalizations of direct and indirect objects. Similarly to the previous hypothesis, in this case we take into account the possibility of intervention effects and consider that there is some structural similarity between the A' moved elements and the intervening subjects in topicalizations of direct and indirect objects (in spite of structural differences between direct and indirect objects), but the same structural similarity does not exist in a topicalization of prepositional object (since it is a PP).

H4: Children's performance is slightly better in clitic-left dislocations than in topicalizations of direct object. This prediction is based upon the Derivational Complexity Hypothesis (Jakubowicz 2004; 2005) and assumes that topicalization of direct object is derived by Move, but clitic-left dislocation is derived by Merge.

H5: Children's performance is better in structures with post-focal subjects on the right periphery (VO#S) than in subject-verb inversions with a focused subject (VOS). This fifth hypothesis considers possible that structures with post-focal subjects on the right periphery (VO#S) are derived by Merge, whereas VOS orders with focused subjects are derived by scrambling of the object (crossing a subject with a similar structure) (Costa 1998; 2004).

3. Methodology

In order to find out whether preschool children understand structures with constituents on both peripheries of the sentence, we designed a Truth-Value Judgment Task (Crain and Thornton 1998) using pictures. The task was planned to test six conditions selected according to the periphery of the sentence (left or right) and the syntactic function of the argument (subject, direct object, indirect object or prepositional object) involved in the word order change. In the case of direct objects on the left periphery, we considered two conditions: gap (topicalization) and the presence of a clitic (clitic-left dislocation), using the same verbs in both structures. This allowed us to evaluate the status of the clitic as a possible syntactic clue for the adult interpretation. In what concerns structures with (post-focal) subjects on the right periphery, we tested structures with two and three-place predicates, with the aim of determining whether comprehension could be influenced by the presence of more lexical material. Additionally, subject-verb inversions with a focused subject were also tested, in order to verify if there are asymmetries in the comprehension of different structures with post-verbal subjects. The experiment included 32 items: 21 target-sentences (three for each of the seven conditions: two false and one true) and 11 distractors (about a third of the total number of items). The task was applied to a group of 41 monolingual EP preschool children, between 3;5 and 6;3 years of age (mean: 5;1), in two different sessions, and a control group of 30 monolingual EP adults with no background in linguistics. It is also important to mention that for the purpose of the analysis children were divided in two groups: the first one including children with ages between 3;5 and 4;11 (mean: 4;4), with a total of 15 subjects, and the second one children with ages between 5;0 and 6;3 (mean: 5;5), with a total of 26 subjects.

4. Results

As we can see in Table 1, the children's global results show that: (i) there is an asymmetry between the comprehension of structures with subjects on the right periphery (mean = 0,6524) and structures with direct objects on the left periphery (mean = 0,4841), since preschool children present better results with right- -peripheral material; (ii) there are asymmetries in comprehension of different structures with constituents that occur on the left periphery, since children have a better performance in structures with prepositional and indirect objects (mean = 0,8441 and 0,7044, respectively) than with direct objects (mean = 0,4841); and (ii) there is a slight

asymmetry between the comprehension of topicalizations of direct object (mean = 0,4841) and clitic-left dislocations (mean = 0,5573), revealed by a better performance in the last one. Finally, the results show that subject-verb inversions with focused subjects (mean = 0,4759) are more problematic than structures with post-focal subjects on the right periphery (mean = 0,6524). Additionally, the data show that children have a worse performance in structures with post-focal subjects on the right periphery with two-place predicates (mean = 0,5734) than with three-place predicates (mean = 0,7285).

Notably, although with a worse performance, children's behavior goes in the same sense as adult behavior.

Table 1. Global Distribution of Target Answers

Conditions	Children	Adults
Control (SVO)	0,9024	0,9750
Topicalization of Direct Object	0,4841	0,6303
Topicalization of Indirect Object	0,7044	0,9433
Topicalization of Prepositional Object	0,8441	0,9437
Clitic-Left Dislocation of Direct Object	0,5573	0,7520
Post-focal Subject on the Right Peripherie	0,6524	0,8757
Post-focal Subject on the Right Peripherie with Two-place Predicates	0,5734	0,8313
Post-focal Subject on the Right Peripherie with Three-place Predicates	0,7285	0,9210
Subject-Verb Inversion with Focused Subject	0,4759	0,5403

Table 2 allows us to compare the two groups of children and shows that there are no differences between the younger and the older group. Therefore, data do not reveal linguistic development in these structures.

Table 2. Distribution of Target Answers by Age

Conditions	Children [3;5-4;11]	Children [5;0-6;3]	Adults
Control (SVO)	0,9000	0,9038	0,9750
Topicalization of Direct Object	0,4620	0,4969	0,6303
Topicalization of Indirect Object	0,7753	0,6635	0,9433
Topicalization of Prepositional Object	0,8647	0,8323	0,9437
Clitic-Left Dislocation of Direct Object	0,6407	0,5092	0,7520
Post-focal Subject on the Right Peripherie	0,6380	0,6608	0,8757
Post-focal Subject on the Right Peripherie with Two-place Predicates	0,5520	0,5858	0,8313
Post-focal Subject on the Right Peripherie with Three-place Predicates	0,7080	0,7404	0,9210
Subject-Verb Inversion with Focused Subject	0,4633	0,4831	0,5403

5. Discussion

In conclusion, we can argue that the data confirm our initial predictions. Thus, regarding our first hypothesis, we can state that there are asymmetries between the left and right peripheries that can be explained if we assume that the constituents that occur on the left and right peripheries have different syntactic statuses. If right--peripheral subjects are not derived by Move, but by Merge, the Derivational Complexity Hypothesis (Jakubowicz 2004; 2005) would explain a preference for right-peripheral subjects over left-peripheral (topicalized) objects. Furthermore, the Derivational Complexity Hypothesis (Jakubowicz 2004; 2005) also plays a key role in children's slightly better performance in clitic-left dislocation than in topicalization of direct object, as predicted by the fourth hypothesis. If the topicalization of direct object is derived by Move and the clitic-left dislocation is derived by Merge, once again the preference for Merge over Move can explain (the slightly better) children's performance in clitic-left dislocations.

On the other hand, we identified asymmetries in comprehension between structures with different types of arguments on the left periphery (second and third hypotheses), which can be viewed as a consequence of

intervention effects (Friedmann, Belletti, and Rizzi 2009). Specifically, in structures involving direct objects on the left periphery, both the subject and the object have the same internal structure (i.e. DP), unlike what happens with structures involving indirect and prepositional objects, since at least in the latter case there is a preposition. Therefore, an intervention effect may explain worse results with the topicalization of direct object than with the topicalization of a true prepositional object (a PP crossing the DP subject does not create an intervention effect); as for indirect objects, the preposition *a* 'to' may act as clue, but since it is not a true preposition, it may induce worse results than those obtained with a topicalization of a PP complement. We indeed observed a comprehension scale involving topicalizations of different types of arguments: prepositional objects > indirect objects > direct objects.

Finally, the asymmetries between the different structures involving post-verbal subjects can be explained by their different derivations. Thus, the presence of an intervener between the head and the tail of the object chain (Friedmann, Belletti, and Rizzi 2009) in subject-verb inversions with a focused subject can explain intervention effects in these structures. In right-peripheral subjects, derived by Merge, we do not expect these effects. In this case, we think that we should also consider that the child might be guided by the different prosodic realization of subjects in VOS, where the subject is focused, and in VO#S with a right-peripheral subject (e.g. phrasing and f_0 measures).

It is also worth mentioning that adult performance in structures with left- and right-peripheral constituents leads to an important question: given the similar pattern of results between children and adults, shouldn't we analyze intervention effects in terms of processing?

Therefore, we conclude that the comprehension of non-basic word orders involving constituents on the left and right peripheries of the sentence in EP is not completely stabilized in the preschool years. Nevertheless, since children show early ability to recognize structures involving syntax/discourse mapping, we can argue in favor of an early acquisition of discourse-pragmatics as well as the syntax/discourse interface.

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CHAPTER TWO

HOW DO GERMAN CHILDREN AND ADULTS DEAL WITH THEIR RELATIVES[1]

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1. Introduction

Recent cross-linguistic experimental work on elicited production of relative clauses (RC, henceforth) has shown that children experience difficulties with fully-fledged object-extracted RC (ORC) e.g. (1), where both the embedded subject- (*the dog*) and the moved object- (*the cat*) constituents are full DPs:

1) The cat that the dog pushed.

However, psycholinguistic research has shown that how this difficulty manifests itself depends on children's age and on the language that they are acquiring. This paper contributes to this line of research with a sample of German monolingual children (age range: 5-9 years) and adults. The study reveals that, when 'standard' ORC are targeted, German speakers adopt a diverse range of contextually appropriate alternatives that their grammar offers.

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In the remaining part of this section, a sampling of some of the responses that are elicited in lieu of an ORC in speakers of a variety of languages is provided.

In contexts where ORCs (1) are targeted, Italian-speaking school-aged children often produce the Italian equivalent of (2), a subject-extracted RC (SRC) with passive voice:

2) The cat that is pushed by the dog.

In fact, Italian adults produce this type of response around 90% of the time (Utzeri 2007), when ORCs are targeted. Adult English speakers also produce this type of response, but only around 10% of the time in these contexts (Zukowski 2008).

Whereas passive subject RCs are only produced in lieu of an ORC, other response types appear for both SRC and ORC. Guasti and Cardinaletti (2003) propose that French-speaking children use *où*-RC as a default form until they have acquired the full paradigm of complementizers and relative pronouns. For example, 18% of French children's overall production of SRCs and ORCs was a structure like (3):

3) Touche l' orange où la dame a pris pour faire le jus.
Touch the orange where the lady has taken to make the juice.
Target: Touche l' orange que la dame a pris pour faire le jus.

Child speakers of English and Italian (Zukowski 2008; Belletti p.c.) also produce relative clauses with pronominal heads, such as (4)[2]:

4) The one that the dog pushes

In all of the response types described so far, even if the child does not produce the expected/targeted structure, she is nevertheless producing a grammatical and pragmatically appropriate sentence. Other cases, where either grammatical well-formedness or contextual appropriateness is not preserved, are RCs with resumptive pronouns (5) or resumptive DPs (6), or simple transitive SRCs with the incorrect meaning (7):

5) The cat that the dog pushed it.

[2] However, these structures are rarely distinguished in the counting of target sentences.

6) The cat that the dog pushed the cat.

7) The cat that pushed the dog.

At present, children's ability to produce RCs in German has only been investigated using spontaneous production and repetition data (Diessel and Tomasello 2005; Kidd, Brandt, Lieven and Tomasello 2007). This is the first study which provides a systematic analysis of how German speakers respond in contexts designed to facilitate the production of different RC types.

2. Properties of RC in German

In German, both 'standard' SRCs and standard ORCs are verb final. This entails that word order *per se* does not disambiguate between the two types of extractions. However, case-marking on the relative pronoun (when the RC head noun is masculine, e.g. (8)) or on the article of the embedded DP (when the RC head noun is feminine or neuter, e.g. (9)) can disambiguate between the two readings:

8) Der Junge der/den das Pferd jagt, ist rot.
The boy who-NOM/ACC the horse chases is red
The boy who {is chasing the horse}/{the horse is chasing} is red

9) Das Pferd das der/den Junge(n) jagt ist rot.
The horse who the-NOM/ACC boy chases is red
The horse who {the boy is chasing}/{is chasing the boy} is red

'Standard' German RCs are also known in the literature as D-RC, where 'D' is the initial letter of relative pronouns: *der/den* for masculine nouns (nominative and accusative case, respectively), *die* for feminine nouns (both nominative and accusative forms), *das* for neuter nouns (both nominative and accusative forms). However, besides D-RCs, there is at least one other form of RCs in German, the so-called W-RC (Fleischer 2004). W-RCs appear in several dialectal varieties of German and are derived using uninflected relative markers, which are analyzed as complementizers (de Vries 2002). The most frequent forms are *wo* (lit. 'where') and *was* (lit. 'what', mostly used with neuter nouns).

3. The Experiment

Participants & Procedure

Forty-five monolingual native speakers of German participated in the study. The children were recruited in kindergarten and primary schools in the area of Potsdam/Berlin; the adults were undergraduate students at the University of Potsdam. The participants were divided into the following age groups: 5-year-olds (N=10); 6-7 year-olds (N=9); 8-9 year-olds (N=14); adults (N=12). All participants neither had a language disorder, nor had familial risk for one.

The task was a German language adaptation of an elicited production task (Zukowski 2008). This task provides the opportunity to produce both SRCs and ORCs in 3 contexts: inside an isolated DP, modifying the subject of a main clause (center-embedded, CE), or modifying a direct object or indirect object of a main clause (right-branching, RB), (cf. Zukowski 2008). Three experimental conditions were manipulated, cf. Table 1. The same procedure as Zukowski (2008) was used, with the only differences that a puppet was used instead of the second experimenter and that the participants listened to pre-recorded stimuli.

All produced utterances were transcribed and coded. They were grouped according to the following three general categories: a) non-usable trials; b) productions that are both appropriate and grammatical; c) inappropriate/ungrammatical productions. Due to space limitations, only the appropriate and grammatical productions will be discussed.

Table 1. Experimental conditions

Type	Example of RC modifying a DP
SRC with 1 animate DP	Das Mädchen, das singt. The girl who sings 'The girl who is singing'
SRC with 2 animate DPs	Der Junge der das Pferd reitet. The boy who the horse rides 'The boy who is riding the horse'
ORC with 2 animate DPs	Das Pferd das der Junge reitet. The horse who the boy rides 'The horse that the boy is riding'

Results

The proportion of appropriate responses produced for all conditions is reported in Table 2:

Table 2. Percentages of produced appropriate and grammatical responses, sorted by condition and by age group

Condition:	SRC, 1 animate				SRC, 2 animate				ORC, 2 animate			
Age:	5	6/7	8/9	20	5	6/7	8/9	20	5	6/7	8/9	20
Target[3]	62	80	79	96	54	70	77	98	17	24	19	58
Pass. SRC	0	0	0	0	0	0	0	0	3	12	31	40
W-RC[4]	4	1	7	1	9	2	7	0	13	12	16	0
SVO[5]	0	2	3	1	2	5	4	0	2	10	8	0
Total	66	83	89	98	65	77	88	98	35	58	74	98

4. Discussion

In the remaining part of the paper, the German data will be discussed in light of some recent theoretical proposals about RC acquisition. The discussion will focus on ORC only, given that 'standard' SRC appear to be largely acquired by 5 years of age.

In recent work by Grillo (2009) and Friedmann, Belletti and Rizzi (2009), it was proposed that the correct interpretation and production of ORC is hindered by the presence of the embedded subject DP (*the dog*). This constituent plays a role as competitor of the object DP in the resolution of the relevant filler-gap dependency. What makes the subject DP a potential competitor is its structural similarity with the object DP: they are both full DPs (or lexically-restricted DPs, using Friedmann's et al. terminology).

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[3] This category includes: 'standard' D-RC (i), extraposed RC (ii), left-dislocated RC with resumptive pronoun (iii) and D-RC with a demonstrative pronoun head (iv):

i. Der Junge, der den Ball fängt, ist rosa.
ii. Der Junge ist rosa, der den Ball fängt.
iii. Der Junge, der rosa ist, der fängt den Ball.
iv. Der, der den Ball fängt, ist rosa.

'The boy that is catching the ball is pink'

[4] This category includes W-RC with both locative and non-locative reading.

[5] Only pragmatically felicitous declarative sentences are included.