The Acquisition of French in Different Contexts

Focus on functional categories

Edited by
Philippe Prévost
Johanne Paradis

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Functional categories in the acquisition of French

Johanne Paradis and Philippe Prévost

Our objective for this volume was to bring together recent generative research on the nature of the grammars developed by French learners in different acquisition contexts, namely first language (L1) acquisition, second language (L2) acquisition, bilingual first language acquisition and specifically-language impaired acquisition. The development of functional categories has been the topic of intense research in the past decade in each of these acquisition domains to the extent that acquisition of functional categories has become the dominant line of inquiry in the research on syntactic development in the generative framework. However, the research in each acquisition context has been pursued quite independently of work in the other domains, and this is reflected in the mainly single-learner context reports in the literature. At the same time, and precisely because of the vast number of studies on each kind of learner, there currently is a growing tendency for researchers to compare their studies to those conducted with a different population. Indeed, most of the general questions investigated in each acquisition domain are strikingly similar, such as the status of functional categories in developing grammars, or whether or not learners' systems are deficient with respect to functional categories and/or features. The idea behind comparing research carried out in various acquisition contexts is to find out what diverse learner populations can teach us about functional categories in developing grammars: What are the similarities and differences across acquisition contexts? What is the impact of these similarities and differences on a unified theory of syntactic acquisition? What different kinds of research methods are used and how does that influence the comparability of the findings?

The collection of studies in this volume provides a unique opportunity for readers to see how similar issues and syntactic properties can be investigated

in a range of various acquisition contexts, and in turn, how each context can contribute to our general understanding of language acquisition in all learners of French, and potentially in all language learners in general. One of our intentions in focusing on French was to fill an empirical gap in the acquisition studies on European languages. Indeed, there appear to be more studies in the generative literature focused on languages like English, Dutch, German, Spanish and Italian than on French. But our interest in centering this volume on French is not entirely empirically motivated. By keeping the target language constant, cross-learner comparative studies can more effectively yield theoretical information regarding the universal and learner-specific aspects of functional category acquisition.

In this introductory chapter, we give a brief sketch of what functional categories are in generative grammar and why they are considered to be a central part of grammatical development. We then discuss the relevance and contribution of cross-learner comparative research to theory building, to understanding the process of language learning in general and the emergence of functional categories in particular. We also put forth our synthesis of the generalizations about functional category acquisition in French that emerge from the studies presented in this volume. Finally, we provide summaries of the contents of each individual chapter.

1.   Functional categories and their role in acquisition

Grammatical or closed class morphemes have long been noted as an area of difficulty for language learners in all contexts, as well as in situations of language loss, like aphasia. For example, L1 English-speaking children will frequently omit auxiliary verbs, or the past tense suffix [-ed] in spontaneous speech before the age of 3 1/2. English-speaking children with Specific Language Impairment (SLI) also omit these forms for a longer period in development. Beginning adult L2 learners of English from a variety of L1 backgrounds also omit auxiliary verbs and inflections. In the generative framework, grammatical morphemes are the lexical content associated with the functional categories of a language's grammar. Thus, looking at functional categories in acquisition means looking at the formal structure underlying an aspect of morphosyntax that is notoriously problematic for language learners in general. But research on the status of functional categories in developing grammars goes beyond the issue of knowledge of inflectional morphology, as will become clearer below.

In current generative models of grammar, sentence structure consists of lexical and functional categories. The canonical lexical category projections NP and VP are associated with nouns and thematic verbs, and functional categories are associated with items such as complementisers (complementiser phrase or CP), verbal inflections (inflection phrase or IP) and determiners (determiner phrase or DP). Most recent models assume that IP is subdivided into individual functional categories headed by various grammatical properties, such as agreement (AgrP), tense (TP), negation (NegP) and aspect (AspP). Quantifier phrases are also in the functional layer of the grammar. The chapters in this volume present different versions of the details of functional structure, since formal theoretical work in this area is on-going and different proposals are currently being put forward. The sentence structure we have put in (1b) can be viewed as a basic, skeletal model from which we explain some of the fundamental properties of minimalist morphosyntax that virtually all the contributing authors assume in their chapters.[1]

(1) a. Les filles prennent les bonbons
        the girls take.3P   the candies
        'The girls are taking the candies.'

   b.
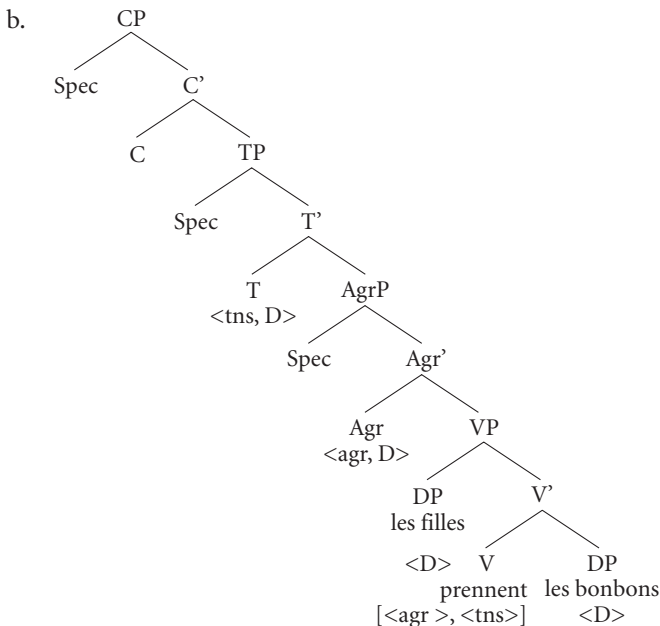
In a minimalist framework, there are three main modules in the grammar: phonological form (PF), the computation, and logical form (LF). The compu-

tation is the module where derivations are constructed. In contrast to earlier generative models, in minimalist syntax, lexical items enter the computation fully inflected, and movement takes place to satisfy certain requirements, chief among which is feature checking (Chomsky 1995). In the example given in (1), the verb *prennent* 'take' is generated in the VP and is inflected for third person plural present tense and accordingly has the features <agr> and <tns>. These features must be checked against the <agr> and <tns> features in T and Agr, and so the verb moves through these functional heads to land in T. In French, these features are strong, and so this movement takes place in the computation, whereas in English these features are weak and so they are checked at LF. This strong/weak distinction is demonstrable in surface word order differences, for example, with respect to negative placement. If we take the example sentence above, *les filles prennent les bonbons* 'the girls are taking the candies' and put it in the negative, we note that the placement of the main verb and the negative operator is different in French and English: *les filles* (*ne*) *prennent* **pas** *les bonbons* 'the girls are**n't** taking the candies'. In French, **pas** appears after the main verb while in English **n't** appears before. This difference can be accounted for by assuming that the main verb moves in the computation over NegP in French to TP, but in English this movement takes place at LF and therefore is 'covert', meaning there is no impact on surface word order. In both languages, the subject DP moves through Agr and T to land in SpecTP in order to check D-related features such as (nominative) Case features.

In the nominal domain, it is currently assumed that noun phrases are represented by a determiner phrase which encodes semantic features such as definiteness, specificity and referentiality. These features may in turn correspond to different functional layers, such as Num(ber)P, as illustrated in (2).[2]

(2) a. Les   animaux   tropicaux
        the.PL animal.PL tropical.PL
        'The tropical animals.'

b.
```
                        DP
                   ┌─────┴─────┐
                 Spec          D'
                          ┌─────┴─────┐
                          D          NumP
                       <num>     ┌────┴────┐
                               Spec       Num'
                                      ┌────┴────┐
                                     Num        NP
                                    <num>   ┌────┴────┐
                                           AP         N'
                                         △            │
                                     tropicaux        N
                                      <num>        animaux
                                                    <num>
```
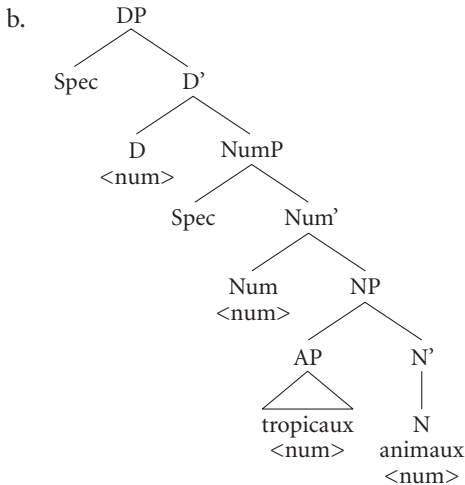
The internal structure of DPs is parallel to that found in clauses like those in (1b), with head movement motivated by feature strength. For example, it is assumed that surface adjective placement is the result of the noun moving overtly or covertly, depending to the strength of number (<num>) N-features. In Romance languages (such as French), most adjectives are postverbal, as in (2a). N-features are assumed to be strong in these languages, with N moving to a higher position than adjective phrases, Num, in order to check them. In contrast, adjectives are prenominal in English, as in the gloss in (2a), so the movement is covert.

This brief sketch of how a minimalist grammar operates crosslinguistically is important to distinguishing between looking at the acquisition of functional categories versus looking at the acquisition of closed class morphemes. Since the lexical material in functional categories by and large corresponds to what can be called closed class, what does it buy us to label them this way? Studying the acquisition of functional categories entails far more than studying the presence or absence of a required grammatical morpheme in learners' production or comprehension. It includes this aspect, but it also includes the word order contingencies determined by grammatical properties like feature strength. Moreover, feature strength varies crosslinguistically, so couching empirical research on the development of say, verb inflections, in this framework provides a unified base of comparison between languages at the level of abstract grammatical features which would not be apparent if one were to simply document the emergence and the target-like usage of individual morphemes in each language. Recently, researchers have been focusing on the relationship between knowledge of inflectional morphology and knowledge of the corre-

sponding functional categories and features: does the acquisition of inflectional morphemes trigger the emergence of functional layers or does knowledge of morphology and functional categories develop independently of each other? In addition, functional categories play a central role in minimalist syntax in the determination of crosslinguistic variation, since they are held to be the locus of parametric differences across languages. Therefore, to a large extent in this grammatical framework, acquiring the properties of the functional layer of the grammar is the essence of acquiring the grammar of a particular language. This is one reason why so much attention has been focused on the acquisition of functional categories in the past decade.

Most of the research on knowledge of functional categories has been conducted in the clausal domain, and has only been recently extended to the context of noun phrases. As with research on sentence structure, generative investigation of the acquisition of DPs involves not only examination of the presence of morphology marking number, definiteness and gender, it also involves examination of morpheme-order contingencies driven by these grammatical features. This recent interest in the structure of DPs and in the development of DPs in learner grammars has led many researchers to investigate whether or not the development of the functional projections of CP, IP and DP may be related in acquisition. Indeed, the parallel between the structure of the nominal and clausal domains in formal theory yields parallels in the empirical investigation of IPs and DPs in acquisition. Moreover, comparisons across the acquisition of functional categories have become an important new strand of research in the field. In particular, the possible connections between the emergence of DP and IP in learner grammars has been the subject of current consideration, e.g. Hoekstra and Hyams (1998). The contributions to this volume reflect this interest in DP acquisition in that five chapters examine this functional category in particular. DP is examined in SLI, bilingual L1, child and adult L2, and two chapters offer DP-IP comparisons and critical evaluation of the proposals suggesting a relationship between the nominal and clausal level functional projections in acquisition.

2.   Why conduct cross-learner comparisons?

Comparing the acquisition of a certain aspect of the grammar across different populations of learners is an important step toward understanding what is universal in the acquisition process of a language versus what is particular to a specific population when they acquire that language. Concerning theo-

retical issues, comparisons of the target population with another population of learners serve to inform issues pertaining to the target population. For instance, researchers of L2 acquisition frequently compare L2 patterns to the L1 patterns for the target language with a view to determining the extent to which the L2 interlanguage patterns are the result of transfer from the L2 learners' native languages versus whether these patterns emerge in the acquisition of the target language in any learner context. To take another example, a longstanding debate among researchers of specifically language-impaired acquisition is whether these children's developmental language is delayed or deviant with respect to the language of typically developing children. Deviant refers to developmental patterns found only in the SLI population; patterns that might serve as clinical markers. One method that researchers employ to circumscribe the aspects of developmental language unique to children with SLI is to compare them to typically-developing children, both age-matched and language-level matched. Bilingual L1 acquisition is another field where comparisons between children acquiring two languages simultaneously and monolingual children acquiring each language are regularly undertaken to address issues such as whether bilingual children acquire two languages at the same rate as a monolingual child acquires one, and whether the two languages of a bilingual child show crosslinguistic interference in development.

When we look specifically at theories of functional category acquisition, we can see that cross-learner comparisons should enable us to build a unified theory of this process. The recent theoretical debates about functional category acquisition in L1 and L2 are a case in point because these debates have been going on largely in isolation of each other, and yet, the theories being put forward are often describing much of the same phenomena in learner language. For example, a common issue in the debates in both L1 and L2 is how much functional structure is present in early or initial state grammars. In the L1 domain, there is a continuum of viewpoints ranging from positing fully-developed functional structure (Poeppel & Wexler 1993) to full structure with particularly underspecified functional features, namely <tns> and <agr> (Wexler 1998), to gradually developing functional structure (Clahsen, Penke, & Parodi 1993/1994; Radford 1995). The same kind of continuum holds in the L2 domain: the Full Transfer/Full Access model suggests a fully developed functional layer in initial-state L2 (Schwartz & Sprouse 1994, 1996), models put forth by Beck (1998) and Eubank (1994, 1996) argue for specific areas of less than full competence with respect to feature specification, and Vainikka and Young-Scholten's (1994, 1996) Minimal Trees account posits limited initial functional structure. The main area of difference is that theories of L2

need to include assumptions about the role of L1, and theories of L1 like Wexler (1998) include an ontological maturational component that cannot be operative in late onset L2 acquisition. These differences notwithstanding, the parallels in the debates between the theoretical perspectives are obvious: The Full Transfer/Full Access model assumes that L2 learners have access to Universal Grammar (UG) to reset parameters with respect to the functional features of the target language, and in addition, their initial state L2 grammars have full functional structure, but with L1 settings. The Agreement and Tense Omission Model (ATOM)/Unique Checking Constraint (UCC) hypotheses of Wexler (1998) also assume full access to the functional categories in UG from the initial stages of acquisition, so that children do not go through a 'pre-functional' stage, even if omission of either T/<tns> or Agr/<agr> can occur. Minimal Trees and Radford's Structure-Building are along the other end of the continuum of how fully articulated initial state learner grammars are: Both these models assume an early pre-functional or proto-functional stage where there are no functional projections or one generic or underspecified projection. Both also assume gradual development of functional structure driven by accumulation of lexical knowledge, e.g., as learners accumulate more diverse verb paradigms in memory, this triggers generalizations about categories like person and tense, which in turn triggers the projection of the associated functional structure in the grammar. In short, these parallels between theories of L1 and L2 functional category acquisition beg for a unified theory making special reference when necessary to the particular characteristics of certain populations. Comparative cross-learner research is a crucial step in this process.

In a related vein, another contribution of comparative research is to test the limits of a theory that has been formulated based on research from one population only. For example, Wexler's ATOM/UCC model of the Optional Infinitive stage in acquisition has a maturational component in that the mechanism that generates root infinitives (RIs) in children's speech is assumed to disappear as UG matures. Paradis and Crago (this volume, 2000) have found that the developmental language phenomena associated with the Optional Infinitive stage appear in the language of L2 children who have passed the stage where the UCC is supposed to disappear. Finding that these phenomena also occur in the incomplete grammars of learners whose UG is indisputably fully-developed challenges the notion that ontological mechanisms are the source of this aspect of language development. To take another example, Prévost, this volume, examines two accounts of the nature of RIs in learner grammars that attributes this phenomenon to certain limitations on the discourse-syntax interface and semantic interpretations stemming from cognitive immaturity of

young children (Ferdinand 1996; Hoekstra & Hyams 1998). Finding the predicted patterns in L2 acquisition supports their claims about the distribution and interpretation of RIs in learner grammars, but it challenges their explanations for why it should occur.

3.   Generalizations about functional category acquisition across learner contexts

In Table 1 below, we list the aspects of French morphosyntax and the learner populations examined in the chapters of this volume. One can see that there is a cluster of chapters where a certain structure is examined. More specifically, several authors focused on the acquisition of DP morphemes, subject and object clitics, and root infinitives across learners. This kind of clustering should enable us to make some generalizations about the acquisition of these aspects of morphosyntax, although differences in methodologies between the studies and the developmental stage of learners in each context makes generalizing somewhat tentative.

What can the studies in this volume tell us about the emergence of DP in French learner grammars? It seems that older children with SLI and child and adult L2 learners do not omit determiners very often. In contrast, younger children with SLI and bilingual L1 children do go through a stage of determiner omission. Gender accuracy with determiners poses some problems for children with SLI and for child and adult L2, but is reasonably accurate for the most part. Also, in adult L2 French, accuracy with gender may vary according to the L1 of the learners. Cliticization of the definite determiners before a vowel-initial noun, i.e. *liaison*, emerges earlier in bilingual L1 than in adult L2 learners.

Another aspect of morphosyntax that several studies touched on was the use and distribution of subject and object clitics. Subject clitics pose less difficulty than object clitics for all learners, and object clitic omissions and distribution errors with object clitics appear to be a salient characteristic of French SLI and adult L2 French. In contrast, bilingual L1 and early child L2 learners have few distribution and form errors with clitics. It is possible that these very young L2 children had quickly advanced beyond the stage in L2 French where object clitic omissions occur, since object clitic omissions in older child L2 French have been documented elsewhere (see Herschensohn, this volume).

The third area that a number of studies focused on was root infinitives. The research shows that RIs occur across learner populations in French acquisition:

Table 1. Aspects of French morphosyntax and learner populations addressed in the volume

Morphosyntax	Learner populations	Chapter
Quantifiers	L1	Labelle and Valois
Null and non-nominative subjects and null objects	L1 Bilingual L1 Early child L2	DeCat Müller, Hulk Belletti and Hamann
DP (determiners, number, gender and adjective placement)	Child L2 SLI Bilingual L1 Adult L2	Paradis and Crago Hamann, Paradis and Crago Granfeldt and Schlyter, Hulk Granfeldt and Schlyter, Hawkins and Franceschina
Root Infinitives	SLI Early child L2 Child L2 Bilingual L1	Hamann Belletti and Hamann Prévost Hulk
Subject and object clitics	Bilingual L1 SLI Early child L2 Adult L2	Granfeldt and Schlyter Hamann Belletti and Hamman Granfeldt and Schlyter, Herschensohn

bilingual L1, SLI and child L2 French. One exception to this was the early child L2 learners in Belletti and Hamann's study. Perhaps these children were more advanced in their L2 development than the older L2 children in Prévost's study. Both Hulk and Hamann showed that the developmental patterns for RIs, or TP morphosyntax, were not as closely connected to those for DP morphosyntax as certain theoretical claims in the literature have suggested (Hoekstra & Hyams 1998).

4.   Chapter summaries

4.1 Chapters on L1 acquisition, with and without SLI

Labelle and Valois's chapter focuses on the acquisition of functional categories related to quantification. In French, universal quantifiers (UQs) (e.g. *chacun* 'each' and *tous* 'all') appearing between an auxiliary and a lexical verb may quantify over the (c-commanding) subject, as in (3a), while indefinite partitive quantifiers (IPQs) (e.g. *assez* 'enough', *beaucoup* 'many' and *trop* 'too many')

may not. Instead, IPQs may quantify at a distance over a c-commanded DP, the object (3b). Such a possibility is excluded for UQs (except in Quebec French).

(3) a. Les enfants ont *tous* reçu   un ballon
        The children have all   received a   balloon
        'All children received a balloon.'
    b. Les enfants ont *beaucoup* reçu   de ballons
        The children have a-lot   received of balloons
        'The children received a lot of balloons.'

In Cinque's framework (1999), UQs and IPQs occur in distinct functional positions. UQs are the head of a functional position through which the subject DP transits (Sportiche 1996), as in (4a). As for IPQs, they occupy the specifier of a lower functional category close to that of manner adverbs (4b). The IPQ also binds an empty quantifier in the following *de*-phrase (Obenauer 1994). The difference between the two types of quantifiers is further illustrated in (4c).

(4) a. Les enfants$_i$ ont [$_{QP}$ t$_i$ chacun [$_{VP}$ t$_i$ reçu un ballon]]
        'The children each received a balloon.'
    b. Les enfants$_i$ ont$_v$ [$_{QP}$ beaucoup$_i$ t$_v$ [t$_v$ t$_i$ reçu [e$_i$ de ballons]]]
    c. Les enfants$_i$ ont$_v$ [$_{F1}$ t$_i$ tous [$_{F2}$ beaucoup$_k$ t$_v$ [$_{VP}$ t$_i$ reçu [$_{QP}$ e$_k$ de ballons]]]]

Labelle and Valois address the question of when and how children learn the properties of UQs and IPQs in two grammaticality judgment tests based on pictures administered to 3–5 year old children and a control group of French-speaking adults. The results show that the youngest children do not distinguish between UQs and IPQs in that they accept all sentences displaying a quantifier, regardless of whether quantification is over the subject or over the object. Labelle and Valois suggest that at that age children have only one (functional) quantifier category above VP where the quantifier is generated, and that the quantifier then raises out of the clause (at LF), from where it can c-command either the subject or the object. By the age of five the children have acquired the syntax of IPQs: they prefer quantification over the object to quantification over the subject with *beaucoup* 'many'. However, they still struggle with the syntax of UQs like *chacun* 'each', as they accept both quantification over the object and over the subject with such quantifiers.

   DeCat's chapter examines the nature of non-nominative subject pronouns in the early stages of L1 French acquisition, as in (5).

(5)   Moi mettre   ça   comme Pol   (Max 2;3.20)
      me   put-INF that like   Pol
      'I (want to) put it like Pol.'

Two potential accounts are examined: Schütze and Wexler's (1996) ATOM and
the dislocation approach (Ferdinand 1996; Labelle & Valois 1996). According
to the former, agreement and tense may be (separately) underspecified in child
grammars. In particular, an underspecified Agr yields subjects that must bear
default case, which is non-nominative in French. On this approach, the sub-
ject pronoun is in subject position. In contrast, the dislocation analysis holds
that the strong pronoun is in a left-dislocated position, with a null resumptive
clitic in Infl (IP).

    De Cat analysed longitudinal production from monolingual children be-
tween the ages of 1;9.19 and 2;10.18. The children were found to go through
a period during which subjectless sentences were productively used. The vast
majority of subjects were overtly realised thereafter. DeCat reports that non-
nominative subjects are mostly found during the null-subject period.

    The predictions of ATOM were not borne out in the data. Indeed, non-
nominative subjects were found with fully specified Agr, i.e. with unambigu-
ously agreeing verbs. Moreover, nominative subjects occur with underspecified
Agr, i.e. with so-called elsewhere verb forms (third person singular forms).
Evidence in favor of the dislocation account includes a prosodic analysis of
sentences such as (5). It was found that the prosody of child non-nominative
subjects was similar to adult left-dislocation (with an overt clitic), as in (6).

(6)   ça, c'est un super livre
      this it is a   great book
      'This is a great book!'

Paradis and Crago compare monolingual French SLI and French L2 children's
use of DP-related morphosyntax. These authors' prior research has shown that
children acquiring French as an L2 and French-speaking children with SLI,
at the same age and the same level of language development as measured by
MLU, have striking similarities in their morphosyntax associated with tense,
agreement and finiteness (Paradis & Crago 2000). In particular both groups
of children appeared to go through an optional infinitive (OI) stage (Wexler
1998) of language acquisition, even though this stage in language development
is predicted to occur only in L1. However, just a subset of the grammatical
properties that characterize the OI stage were examined in this prior study.
Children in the OI stage should have particular problems in the realization of

TP-related morphemes, but should have fewer problems with DP-related morphemes marking other functional features, such as, definiteness, number and gender (Wexler 1998; Rice & Wexler 1996; Bedore & Leonard 1998). Paradis and Crago sought to examine these children's use of DP-related morphemes in order to complement their earlier study and further investigate the possibility that the OI stage occurs in L2 acquisition as well as L1 acquisition, with and without impairment.

There were four groups of participants in this study. The two experimental groups consisted of seven-year-old French-speaking monolingual children with SLI, and English L1 children of the same age who were acquiring French as an L2. The two control groups consisted of typically-developing monolingual children, one group age-matched to the children with SLI, and the other MLUW-matched to the children with SLI. Analysis of spontaneous language samples from the children indicates high accuracy with respect to determiner omission/realization, gender and number concord between the noun and determiner, and adjective-noun placement.

Paradis and Crago's analyses indicate that SLI and L2 French expressive language is very accurate with respect to use of DP-related morphemes overall. These data are discussed in terms of the possible universal presence of an OI stage in the acquisition of French across learner contexts, and how this challenges the maturational account of Wexler (1998). The findings are also considered in terms of their relevance for assumptions about transfer of L1 functional features in L2 acquisition.

Hamann discusses the acquisition of functional structures involved in the nominal domain, especially the determiner system, by two French speaking children with SLI (aged 3;10–5;1 and 4;7–5;6 respectively). She also offers a comparison between the development of the nominal and verbal functional domains which reveals important differences. The acquisition of determiners is also compared to the development of complement clitics (*le* 'him/it', *la* 'her/it', and *les* 'them'), which in French are homophonous with definite articles and have been identified as being particularly difficult for French children with SLI.

Some accounts of the problems experienced by SLI children with functional categories assume a close parallel between the production of infinitives and the omission of determiners. These include hypotheses focusing on prosodic properties of certain functional elements (Gerken 1994), hypotheses appealing to feature underspecification (e.g. Hoekstra & Hyams 1998) and hypotheses concentrating on properties of the syntax-pragmatics interface (e.g. Avrutin 1999). In contrast, there are approaches holding that language devel-

opment in the verbal and the nominal domain is not necessarily related, such
as Wexler's (1998) UCC and Rizzi's (2000) Truncation approach.

The results of Hamann's study show that the acquisition of the obligatory
nature of determiners and of finite verbal inflection is clearly dissociated. For
one child there is a very high proportion of root infinitives (70%) but few de-
terminer omissions (15.2%), while the distribution is reversed for the other
child. Although these SLI children work their way through the functional struc-
tures of the verbal and the nominal domains by following independent paths,
they both reach target consistency eventually. As for the developmental pat-
tern of complement clitics, the incidence of omission is high for both children.
However, clitic omission appears to be totally disconnected from determiner
omission. Taken together, these results provide counter-evidence to those ac-
counts of development which closely link the development of the nominal and
verbal domains.

4.2 Chapters on L2 and bilingual L1 acquisition

Belletti and Hamann investigate null subjects and finiteness in early child L2
French. They examined longitudinal production data from two children with
Italian and German as source languages. The children were aged 3;5–4;11 and
4;0–5;5 respectively and had been exposed to French for over a year when data
collection began. Belletti and Hamann investigate whether early child L2- and
L1-acquisition pattern alike in showing a phase of subject omission and RIs,
as argued by Prévost (1997, this volume), and whether there is transfer in L2
acquisition, and if so, to what extent it occurs.

The authors found that null subjects and RIs are virtually absent in the
data. In addition, the few RIs that are observed differ from their counterparts
in L1 acquisition in that they often have a nominative clitic subject and they
may appear in subordinate clauses, as in (7). These results are different from
what has been found by Prévost (1997) and Prévost and White (2000) for two
anglophone children learning French.

(7)   comme je boire   (Elisa 4;2)
      how   I   drink-INF

For Belletti and Hamann, this suggests that RIs are due to missing inflection
(Lardiere 1998) rather than to underspecified tense (Wexler 1994) or trunca-
tion (Rizzi 1993/1994), which have been proposed to account for RIs in L1
acquisition. As for transfer, only the German child is reported to show evi-
dence of L1 influence, particularly with respect to word order and the analysis

of pronouns. However, it is not full transfer given that several L1 properties do not seem to affect his interlanguage grammar. For instance, there is no trace of the V2 phenomenon in his French. The other child, whose L1 is Italian, demonstrates flawless acquisition of French in areas of significant differences with Italian, such as subject clitics and wh-in-situ. The authors suggest that the two children follow different patterns of L2 acquisition: one as an early L2-er (at least in the early recordings), the other as a bilingual learner.

Prévost investigates the nature of RIs in early L2 French by focusing on the verb types (eventive vs. noneventive) occurring in those utterances and on their interpretation (temporal vs. modal). In the early stages of L1 acquisition of languages that possess overt infinitival morphology, such as French, there seems to exist a double correlation between finiteness and verb type (such that eventive verbs are likely to be found in the nonfinite form), and between finiteness and modality (such that most child RIs bear a modal interpretation).

Following Vendler (1967) and Wijnen (1998), Prévost assumes that eventive verbs inherently refer to the time axis and that they select an event argument. When Tense is part of the representation, the event argument is interpreted via binding to Tense. However, when T is absent from the representation, the event argument can be interpreted contextually, which in turn means that the relation between the event time and the utterance time is free (Wijnen 1998: 388). In contrast, non-eventive predicates do not select an event argument. Therefore, the temporal reference of these verbs cannot be interpreted deictically. In other words, non-eventive verbs need Tense in order to be referentially bound.

Prévost investigates two hypotheses on the nature of RIs in child L2 acquisition. On the Truncation Hypothesis (TH), functional categories are assumed not to be systematically projected (Prévost 1997). When only VP is projected, the resulting utterance is an RI; if at least Infl is projected, a finite clause is produced. It is expected that only eventive predicates, and not non-eventive ones, will appear in nonfinite declaratives since Tense is not projected in such clauses. In contrast, non-eventive verbs should be restricted to finite declaratives. Moreover, the interpretation of RIs should be free: they should refer to present, past or future events. Finally, since infinitival morphology has an [irrealis] property, we should observe a high incidence of future/modal interpretation in RIs. According to the Missing Surface Inflection Hypothesis (MSIH), the nonfinite ending is used as a substitute for finite markers, presumably due to mapping problems between syntax and morphology (Lardiere 1998). Under the MSIH, Tense is part of the representation of RIs. Hence, all verb types should be observed in such declaratives, including eventive and non-

eventive predicates. Furthermore, there should be no contingency between modality and finiteness, since all verbs are considered to be equally finite.

The analysis of spontaneous production data from two anglophone children learning French (aged 5;4–7;2 and 5;8–7;6) (Lightbown 1977) confirms the TH: almost all RIs display event-denoting predicates, in contrast to finite declaratives, which contain non-eventive verbs. Next, most RIs have a modal reading, compared to just around 10% in the case of finite verbs predicates. The latter almost always receive a temporal interpretation. These results are similar to what is observed in child L1 French and L1 Dutch.

Granfeldt and Schlyter compare bilingual first language acquisition and L2 acquisition with particular attention to subject and object clitics, and clitic-like elements such as determiners. They adopt Cardinaletti and Starke's (1999) typology, where pronouns are either strong, weak or clitics depending on the amount of structure that they project, from more to less (i.e. from XP to X$^•$). Within this framework, subject and object pronouns, and determiners are clitics in French, whereas in Swedish pronouns are usually considered weak. As for Swedish determiners, they qualify as clitic-like elements. Based on results from previous research, Granfeldt and Schlyter hypothesize that adult L2 learners do not cliticise pronouns and determiners in initial stages of development, whereas bilingual L1 children do. Theoretically, the authors assume that adults treat pronouns and determiners as XPs at spell-out, whereas bilingual children treat them as heads (X^0).

The data consist of spontaneous production from 11 adult Swedes (about 20–40 years) acquiring French at varying proficiency levels and 4 young bilingual (Swedish/French) children (2–4 years). The analysis of the data confirms the authors' hypothesis. The children use subject and object pronouns, and definite determiners as clitics from their first appearance, i.e. clitic doubling is frequent, clitics do not get modified, and elision in front of a vowel is almost systematic. Furthermore, children start using object pronouns in all target-like positions from the moment they appear at about 2;6. Such is not the case for the adult L2 learners who fail to use doubling constructions or elided pronouns/determiners. In addition, pronouns can be separated from the finite verb by an adverb and pronouns can be stressed in the adult data. Finally, the adult learners often incorrectly place object pronouns after the verb or before a past participle.

The results suggest that the adult learners, in contrast to the children, initially categorize pronouns and determiners as XPs, and acquire cliticisation through a gradual process. The authors argue that this process is not due to an initial lack of functional categories nor to transfer. Rather, they appeal to

Rizzi's (2000)'s Categorial Uniformity Principle, whereby a unique canonical structural realisation is assumed for a given semantic type. If this principle guides adult learners, then a unique structural representation is preferred in order to express the function of subjects and objects. According to Grandfeldt and Schlyter, this representation must be modeled on DPs in order to include Noun Phrases. The result is an overgeneralisation of XP-categories (i.e. weak and strong subject pronouns) to contexts where an X^0 would be the target-like choice.

Herschensohn investigates the L2 acquisition of object clitics in French by two anglophone subjects studied longitudinally (age 16–17). Herschensohn assumes that French clitics are heads licensing *pro* in argument position. In contrast, English does not have clitic pronouns, only strong ones, which are considered DPs. This yields well-known word order differences between the two languages, as shown in (8).

(8) a.   I saw her / I have seen her
    b.   Je la   vois / Je l'   ai   vue
         I her see   I her have seen

While in English the object pronoun occurs after the verb (SVO) (8a), object pronouns always cliticise to the left of the verb in French (SOV) (8b). Acquisition of French object clitics entails acquiring the level of structural deficiency of clitics (Cardinaletti & Starke 1999), their placement, and the featural properties of the functional category which hosts them. Herschensohn argues that successful acquisition of these properties constitutes evidence for the availability of UG in L2 acquisition. Previous research on the acquisition of object clitics in L2 French by anglophone learners identifies four stages of acquisition: (1) in-situ pronouns, (2) null pronouns, (3) cliticisation to past participle, and (4) target-like cliticisation to inflected verb (as above) (Towell & Hawkins 1994).

The two learners studied by Herschensohn were considered to be at the intermediate level when data collection began. A grammaticality judgment (GJ) task including 9 sentences with pronouns was also administered to the teenagers. The production data reveal that the two learners had not acquired object pronouns in French by the first interview, in contrast to subject clitics. Although the data are somewhat limited (there were only 26 contexts of obligatory use of object clitics), the four types of errors identified above were observed. As for the GJ task, accuracy is much higher than on the production task. Herschensohn notes that most errors are due to acceptance of clitic attachment to the past participle.

Based on these data, as well as on data reported in previous research, Herschensohn argues that the L2 acquisition of French object clitics can be accounted for by integrating Full Transfer/Full Access (Schwartz & Sprouse 1996), Missing Inflection (Lardiere 1998) and Constructivism (Herschensohn 2000). According to the author, the first stage is characteristic of L1 transfer. Next, she claims that the absence of overt clitics is a case of missing inflection. She also considers that dropped objects are *pro* at that stage. At the next stage, some of the key features of clitics have been integrated, as evidenced by their correct placement with respect to finite verbs. However, the learners keep on attaching object clitics to the past participle, which to Herschensohn, is evidence that acquisition proceeds construction by construction. Herschensohn concludes that there is no evidence of wild interlanguage grammars at any point in development, which supports a UG-based approach to L2 acquisition.

In their chapter, **Hawkins and Franceschina** examine the acquisition of gender in L2 French. The authors start by noting that there are crosslinguistic differences with respect to the activation of grammatical gender: some languages, like English, do not have morphosyntactic reflexes of gender (9a), while others, like French and Spanish, have complex gender systems involving special forms for determiners, adjectives, participles and pronouns (9b).

(9) a. a green dress
     b. une   robe verte
         a-FEM dress green-FEM
         'a green dress'

The authors assume that in addition to an intrinsic gender feature in the lexical entries of nominals, there is an uninterpretable gender feature in the syntax of languages like French and Spanish (under D), which needs to be checked in the course of the derivation. Initially, child learners establish D-N concord on the basis of probabilistic correlations between noun phonology and determiner form in the input (e.g. most words ending in -*eau*, like *bateau* 'boat', are masculine in French). At some point, however, associations established in the vocabulary component activate the uninterpretable gender feature in D. Hawkins and Franceschina argue that the acquisition of this feature is subject to a critical period, such that it cannot be acquired by adult native speakers of a language where it is not activated. In other words, adult learners are claimed not to be able to go beyond the stage of probabilistic selection of determiner forms on the basis of noun phonology. In contrast, if the gender feature is active in the L1, acquiring the overt reflex of gender in the L2 will pose few difficulties.

Consistent gender errors are reported in highly proficient anglophone learners of French. In particular, they persistently overgeneralise either *le* or *la* (or *un* or *une*). For the authors, this means that the learners may be (near-)perfect in selecting one member of each pair of determiners on the basis of noun phonology and that the other member is the form used 'elsewhere', i.e. where the phonological shape of the N does not give any gender cue. By comparison, highly proficient native speakers of Italian (a language with gender concord) learning Spanish were found to produce no gender error in spontaneous production.

Hawkins and Franceschina draw further evidence in favor of their analysis from studies on children with Williams Syndrome (WS). When confronted with clitics (which take the form of the definite determiners *le/la*) or bare nonce words, children with WS seem to be unable to make the correct gender interpretation, compared to children without WS. For the authors, this suggests that the gender feature can be independently impaired and that the capacity in the 'vocabulary' component for selecting determiners on the basis of noun phonology can be affected.

Hulk investigates the development of D in a bilingual (Dutch/French) child (Anouk) between the ages of 2;13.5 and 3;10.7. She looks at the order of emergence and the frequency of determiners, comparing her results to the findings reported in the literature on the acquisition of D by monolingual French children. She also investigates the relationship between the development of functional projections in the nominal and clausal domains by comparing her results to two accounts of DP acquisition that propose links between these domains (Hyams 1996; Schaeffer 1997).

Analysis of longitudinal production data reveals that singular articles are the first determiners to be produced. Definite and indefinite determiners appear more or less at the same time, while demonstratives and possessives occur last. This order of emergence is quite similar to that found in monolingual French children (e.g. Clark 1986), although development is slower in Anouk. This could be due to cross-linguistic influence from Anouk's other language (Dutch) in which bare nouns are allowed.

Hulk reports that the acquisition of the structure of DP in French takes place in four different stages: (1) only bare nouns, which suggests that no functional category is projected; (2) the noun is preceded either by an article or by an adjective, which suggests that there is only one pre-nominal position available; (3) both an article and an adjective precede the noun, suggesting the activation of two pre-nominal positions; (4) post-nominal adjectives start to

appear, which indicates the availability of a functional projection to which the noun can move across the adjective.

How can these results be interpreted theoretically? Hyams (1996) proposes that early L1 grammars lack temporal specificity in the clausal domain and nominal (referential) specificity in the nominal domain. This would account for the optional production of finite markers and determiners in the early stages of acquisition. This analysis predicts that temporal and nominal specificity will emerge at the same time in the child's grammar. Hence, RIs and bare nouns should disappear at the same time and at the same rate. Schaeffer (1997) relates the optional marking of specificity in the child's grammar to a pragmatic principle, called Discourse Rule. Her hypothesis predicts that definite determiners and object clitics should emerge at the same time since they both involve (acquisition of) that rule. Neither predictions are verified in the data analysed by Hulk, since null objects, null determiners and RIs were found to disappear independently of each other.

Müller analyzes subject and object omission in the French of a French/German bilingual child (Céline, aged 2;0.9–5;0). Research on monolingual acquisition reports multiple differences between subject drop and object drop in children learning a Romance vs. a Germanic language. While the incidence of subject drop is similar in both learning situations (around 40%), object omission is more frequent in L1 acquisition of a Germanic language than in the acquisition of a Romance language (40% vs. 10%). Moreover, the incidence of subject and object omission (yielding target-deviant utterances) is similar in child Germanic, whereas subject drop is much more frequent than object drop in child Romance. Finally, object drop tends to decrease significantly once the C-system is lexically instantiated.

Müller and Hulk (2001) argue that early child grammar has the shape of a Minimal Default Grammar (Roeper 1999) in which null arguments are licensed by discourse. Müller and Hulk claim that a prerequisite for convergence with adult grammar with respect to the licensing of null arguments is a fully specified CP-level, i.e. full specification of the level where syntax and pragmatics interact. Results from monolingual children suggest that French children are able to map the universal strategies onto language specific rules quickly, in contrast to children learning a Germanic language.

Examining longitudinal production data from the bilingual child Céline reveals similar findings on object drop as in the other bilingual children acquiring a similar language pair: object drop in French is much higher than in monolingual French children (30%). However, the incidence of subject omission is much lower (10%) than what is reported for other bilingual children.

Closer inspection of the data reveals that the difference is quantitative rather than qualitative. Indeed, Céline patterns like monolingual French children in terms of subject realization: they all tend to use clitic pronouns, and not lexical NPs in subject position. Moreover, as with monolinguals, Céline's subject omissions disappear to the benefit of pronouns and not lexical NPs.

Müller argues that the bilingual data cannot be explained solely by the language dominance approach, whereby the stronger language influences the weaker one. In the case of another bilingual French/German child (Ivar) studied by Müller and Hulk (2001), no language seems to be stronger than the other. Yet, the incidence of object drop in Ivar's French is similar to that found in his German. Céline differs from Ivar in that German is the dominant language for a while. Yet, her subject omission rate is much lower in French than in German. This said, she drops objects in French to a similar extent as in German. Müller concludes that both languages belong to different systems that may influence each other.

Notes

1. For example, there is a great deal of variation in assumptions concerning AgrP. First, the ordering of AgrP and TP is under debate - some models assume AgrP is above TP in the hierarchy. Second, there is no consensus on whether there is an AgrP in the representation at all, and if this can differ crosslinguistically. Finally, some researchers assume a tree structure where AgrP is subdivided into heads associated with subject and object agreement, AgrS and AgrO, situated higher and lower in the tree respectively (see Belletti 2001).

2. As in the phrasal domain, several proposals have been made as to the internal functional contents of DP, such as the projection of a Gender phrase (see Longobardi 2001 for a review). In this chapter, we focus on the projection of NumP for ease of explanation.

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L1 and SLI

Functional categories and the acquisition of distance quantification*

Marie Labelle and Daniel Valois

1.   Introduction

In this paper, we discuss the acquisition of the constructions illustrated in (1).

(1) a. Les enfants   ont   ***chacun*** reçu   un ballon.
       the children have each   received a   balloon
       'Each of the children received a balloon.'
    b. Les enfants   ont   ***beaucoup*** reçu   de ballons.
       the children have a.lot   received of balloons
       'The children received a lot of balloons.'

In both (1a) and (1b), a quantifier appears between the auxiliary and the past participle – a position where VP adverbs are also found in French. However, the two constructions differ by the fact that *chacun* quantifies over the subject while *beaucoup* quantifies ov er the object. The first construction occurs with universal quantifiers (Qs) like *tous* 'all' and *chacun* 'each' as well as with other strong quantifiers such as *tous les deux* 'both'. The second construction occurs typically with weak quantifiers like *beaucoup* 'a lot' and *peu* 'few', as well as with *trop* 'too much' and *autant* 'as much'.

   The existence of two constructions with the same AUX Q V word order, where Q quantifies over a different DP, raises the following question: How do children learn the syntax of quantification? More specifically: When and how do they learn the syntactic properties of *floated quantifiers* like *chacun* and those of *quantifiers at a distance* like *beaucoup*? As a first step towards answering these questions, we conducted two experiments in which we obtained grammaticality judgments from children on sentences of type (1a–b), where Q quantifies over the subject in some cases and over the object in others. Specifically, we tried to test whether children accept sentences where *chacun* quantifies over a

subject as grammatical, while judging sentences where it quantifies over an object as ungrammatical, and conversely, whether children reject sentences where *beaucoup* quantifies over a subject while accepting sentences where it quantifies over an object.

This chapter is structured as follows. In Section 2 we discuss the syntax of the two constructions; in Section 3 we present the experiments; finally, we discuss the results in Section 4.

2.   The syntax of quantifiers

2.1 Floated quantifiers (FQ)

As discussed in Bobaljik's (1998) extensive review of the question, there is no clear consensus concerning the syntactic analysis of floated quantifiers. Just as with adverbs, there has been some debate concerning the nature of these elements in generative grammar. As it stands, the current state of the theory allows three possibilities: FQs are: (i) specifiers, (ii) adjoined to the XP they modify or (iii) heads. Sportiche (1988) generates FQs as part of a VP internal subject, and proposes that they are stranded when the DP part of the subject moves to SpecIP. Baltin (1995) analyzes them as predicate specifiers. Cinque (1999) proposes that, like other adverbs, they are generated as specifiers of a functional category in the extended projection of the verb. For reasons that will become clear below, we will adopt Sportiche's more recent proposal that they are heads of their projection (Sportiche 1996).

Sportiche's (1996) proposal for floated quantifiers is an extension of his analysis of French clitics. According to Sportiche, clitics are base-generated as X^0 heads (Cl^0), an empty pronominal occupying the corresponding argument position within the VP. The Cl^0 head is in turn subject to a general specifier-head syntactic licensing condition. In the case of French, the specifier-head relation is achieved through movement of *pro* through the SpecClP position, as in (2c):

(2)   a.   Je connais Julie.
          'I know Julie.'
      b.   Je [$_{ClP}$ la connais *pro*]
      c.   Je [$_{ClP}$ *pro* la connais t]

Extending this analysis to the pre-verbal quantifier *tous*, Sportiche suggests that pre-verbal quantifiers such as *tous* in (3) are heads subject to the same licens-

ing condition, once again achieved via successive movement of *pro* through SpecQP and SpecClP:

(3) a. J'ai contacté *tous* les étudiants.
        'I contacted all the students.'
     b. Je les ai *tous* contactés *pro*.
        'I contacted them all.'
     c. Je [$_{ClP}$ *pro*$_i$ les ai [$_{QP}$ t$_i$ tous [$_{VP}$ contactés t$_i$]]]

The same analysis extends to *tous* quantifying over a subject. Thus, (4a) has the structure in (4b):

(4) a. Les enfants ont *tous* reçu un ballon.
        'The children have all received a balloon.'
     b. Les enfants$_i$ ont [$_{QP}$ t$_i$ tous [$_{VP}$ t$_i$ reçu un ballon]].

Morphological agreement between *tous* and the subject or object DP is checked as the DP transits through the specifier position of *tous*.

   It has often been observed that floated quantifiers are anaphoric in character in that they must be c-commanded by the DP over which they quantify (cf. Jaeggli 1982; Kayne 1984). In (5) *les étudiants* 'the students' does not c-command *tous*, and the sentence is ungrammatical (compare with (3a–b)):

(5) *J'ai *tous* contacté les étudiants.

The proposed analysis accounts for this observation. Since there is no element in the specifier of *tous* in (5), the Q head is not syntactically licensed.

   The analysis proposed for floated *tous* extends naturally to *chacun* 'each':

(6) Les enfants$_i$ ont [$_{QP}$ t$_i$ chacun [$_{VP}$ t$_i$ reçu un ballon]].
     'The children each received a balloon.'

However, *chacun* differs from *tous* in that it requires the presence of two specific types of DPs (Safir & Stowell 1988): A plural definite DP that determines the set of objects over which *chacun* quantifies (the R(ange)-DP), and an indefinite plural DP that determines the objects that are distributed among the quantified objects (the D(istributive)-DP).[1] Gender agreement applies between *chacun* and the R-DP.

(7) Les enfants (R-DP) ont chacun reçu un ballon (D-DP).

Aside from the floated (pre-verbal) position, *chacun* may also appear inside a DP in partitive constructions, as in (8); we call it "partitive *chacun*":

(8)   [Chacun des enfants] (R-DP) a reçu un ballon (D-DP).
       'Each of the children received a balloon.'

In this case, the presence of both an R-DP and a D-DP is not required (9), and
the quantifier cannot be floated (10):

(9)   a.   [Chacun des enfants] a dormi.
             'Each of the children slept.'
       b.   L'enfant a reçu [chacun des ballons].
             'The child received each of the balloons.'

(10)   a.   *[Les enfants] ont chacun dormi.
       b.   *L'enfant a chacun reçu [des/les ballons].

2.2 Quantification at a distance (QAD)

The phenomenon of quantification at a distance (QAD) was originally dis-
cussed in Obenauer (1983, 1984/1985). Given the parallel between (11a) and
(11b), it is natural to conceive of *beaucoup* in (11b) as binding an empty
quantifier within the object:

(11)   a.   Il   a   acheté   [beaucoup de livres].
             He   has bought many   of books
             'He bought many books.'
       b.   Il a beaucoup$_i$ acheté [e$_i$ de livres].

Beaucoup may also appear in pre-verbal position of a VP with no post-verbal
empty category or with a definite DP. In this case, it has a pure adverbial
(intensifying) interpretation.

(12)   a.   Il   a   beaucoup dormi.
             He   has a.lot   slept
             'He slept a lot.'
       b.   Il   a   beaucoup aimé ce   livre
             He   has a.lot   liked this book
             'He liked this book a lot.'

Obenauer (1994) proposes that *beaucoup* is base-generated in SpecVP. In QAD
constructions it binds a variable within VP and imposes a multiple event inter-
pretation on the VP. We basically follow Obenauer in assuming that *beaucoup*
binds a trace in the VP-internal DP, but we adopt Cinque's (1999) approach
where *beaucoup,* like any other adverb, is the specifier of a functional category
in the extended projection of the verb. The multiple event interpretation is

obtained via specifier-head agreement as the verb (here the auxiliary) moves through the head of this functional category on its way to Tense.

(13)   Il a$_v$ [$_{QP}$ beaucoup$_i$ t$_v$ [t$_v$ acheté [e$_i$ de livres]]].

To summarize the discussion so far, floated quantifiers are analyzed as heads in the functional projection of the verb phrase, while QAD quantifiers are in specifier position. Thus, (14a) is analyzed as shown in (14b):

(14)   a.   Ils   ont   tous beaucoup lu   de livres.
            They   have   all   a.lot   read of books
            'They all read a lot of books.'
       b.   Ils$_i$ ont$_v$ [$_{F1}$ t$_i$ tous [$_{F2}$ beaucoup$_k$ t$_v$ [$_{VP}$ t$_i$ lu [$_{QP}$ e$_k$ de livres]]]].

One advantage of this type of analysis is that it accounts for the fact that QAD quantifiers create an intervention effect, while floated quantifiers do not, even though both appear in preverbal position.

(15)   a.   *Combien$_i$ ont- elles beaucoup lu t$_i$ de livres?
            How.many   have they a.lot   read of books
            'How many books have they read a lot?'
       b.   Combien$_i$ ont- elles toutes lu t$_i$ de livres?
            How.many   have they all   read of books
            'How many books have they all read?'
       c.   Combien$_i$ ont- elles chacune lu t$_i$ de livres?
            How.many   have they each   read of books
            'How many books have they each read?'

Obenauer's (1984/1985) analysis of (15a), reinterpreted by Rizzi (1990) as a Relativized Minimality effect, is that the intervening *beaucoup* operates as a potential A-bar binder for the empty category in post-verbal position, leaving the adjunct wh-phrase *combien* without an empty category to bind. Our contention concerning the absence of an intervention effect in (15b–c) is that the intervening specifier is the trace of a DP subject or object, i.e. an A position, as reflected by morphological agreement between the DP and the quantifying head. As such, no A-bar element interferes between the adjunct and its trace.

We now turn to the experimental part of this chapter.

3. Experiments

In this section we discuss the first of a series of experiments we conducted as part of a research program that addresses the following question: When and how do children learn the syntax of Quantifier Float (QF) and Quantification at a Distance (QAD), and the difference between floated quantifiers and quantifiers involved in QAD? As we saw briefly in the previous section, both QAD and QF allow the quantifier to appear between an auxiliary verb and a past participle in a compound tense verb.

Let us summarize the problem. Both FQs and QAD quantifiers appear in some functional projection between the verb phrase and the auxiliary. They differ in that floated quantifiers are c-commanded by the NP over which they quantify, while QAD quantifiers c-command the NP over which they quantify. In terms of the analyses we have adopted, based on Sportiche and Cinque, floated quantifiers are heads of a functional projection; they agree with and quantify over the NP which transits through their specifier (an A-position). QAD quantifiers are A-bar specifiers of a functional projection (*à la* Cinque), and they govern an empty category in the object phrase. The question we are addressing is the following: when and how do children learn to distinguish these two kinds of quantifiers and their properties? We know of no study in the acquisition literature that addresses this particular question.

There has been a good body of work conducted on the interpretation of quantifiers by children, but very little on the syntax of these elements. Roeper and de Villiers (1991) noticed that, in a sentence containing a universal quantifier, like (16), preschool children tend to interpret *every* or *all* as applying to all NPs in the clause, requiring that the event involve all the boys and all the ponies present in the context (an observation already made by Inhelder & Piaget 1959). Roeper and de Villiers, who dubbed this phenomenon 'Quantifier-spreading', interpret this finding as reflecting the adverbial analysis of *every* as an unselective binder, on a par with *often*.

(16)   Every boy is riding a pony.

Philip (1995) explored the question in detail. He proposes that the Q-spreading effect described by Roeper and de Villiers is due to the fact that children interpret (16) as involving event quantification. He proposes that the LF corresponding to the interpretation of (16) is informally as in (17):

(17)   All minimal events in which either a boy or a pony (or both) is a participant are events in which a boy is riding a pony.   (Philip 1995:44)

(For a different point of view, see Crain et al. 1996.) Philip's work does not specifically address the question of floated quantifiers, but Philip (1995: 142, n. 56) noted that children spontaneously use floated *all*. This suggests that the syntax of FQs poses no difficulty to English-speaking four-year-old children. To our knowledge, there has been no work on the acquisition of QAD.

Also relevant to our discussion is the question of A-binding and A-bar binding, given that *tous* involves A-binding, and *beaucoup* A-bar binding. From previous studies, it is clear that A-bar movement is acquired early. In particular, it was shown that three year-old French-speaking children produce questions with a WH constituent in clause initial position (see e.g. Hulk 1996; Hulk & Zuckerman 2000). This suggests that A-bar binding in the case of QAD constructions should not be a source of difficulty.

As for A-movement, it has mainly been studied with respect to passive constructions. Given the late appearance of full passives with English-speaking children, Borer and Wexler (1987) concluded that A-movement matured around age four. This conclusion, however, has been questioned by Demuth (1989) who showed that full passives are acquired early in Sesotho, casting doubts on the maturation account for English (see also Weinberg 1987). The question is still controversial, as Wexler (1999) claims that the facts are not sufficiently convincing to argue against the A-chain theory account. Given the VP internal subject hypothesis, French SVO sentences involve A-movement of the subject over the tensed verb. The presence of SVO sentences in the French of preschool children would be a sign that A-movement is mastered by the children. While non-dislocated subject NPs are relatively rare in spontaneous child French (Hulk 1995: 47, Labelle & Valois 1996) three-year-olds produced SVO sentences like those in (18) during the experiments described below.[2]

(18) a. Le chat a renversé les billes.   (A36, 3;08.30)
          'The cat spilled the marbles.'
      b. La grenouille joue avec les Barbies.   (A43, 3;08.21)
          'The frog plays with the Barbies.'
      c. Le bonhomme prend un journaux.   (B4, 3;05.24)
          'The man takes a newspaper.'

Thus we assume that the children we tested master A-movement of the subject to SpecTense. By three, children also correctly produce clauses with object clitics in preverbal position (Hamann, Rizzi, & Frauenfelder 1995).

Independently of A-movement, a very robust finding in the literature is that A-binding of an anaphor is well mastered (see Wexler 1999 and references cited there), suggesting that the A-binding involved in FQ should also be

technically available to children. Our hypothesis is that the formal mechanisms required for FQ and for QAD are available to children, but that they may have difficulty deciding what the specific properties, and the proper analysis, of the various quantifiers are: Are they specifiers or heads? Are they A-bar binders or is their specifier the trace of some A-type movement? Must they c-command the NP over which they quantify or must they be c-commanded by it? Since these questions are syntactic in nature, and since we have no theoretical reasons to believe that semantic factors should be at play here, we opted for a syntactic test. We thus designed a grammaticality judgement test with the purpose of verifying whether children knew the c-command constraints between the two kinds of quantifiers and an NP.

We present two experiments, one with the QAD *beaucoup*, and one with the FQ *chacun*.

3.1   Experiment 1 – *beaucoup*

In this test, we verified whether children distinguish between grammatical sentences in which *beaucoup* quantifies over an object and ungrammatical sentences where *beaucoup* quantifies over a subject.

3.1.1   *Procedure*

We use a computer-run grammaticality judgment test inspired by the general paradigm described in McDaniel and Cairns (1996).

The computer program first introduces a character, called Bubu, who has blue skin and antennas, and who we say is a Martian. We told the children that Bubu is in the process of learning French, and, as a consequence, still makes occasional mistakes. For every stimulus, the routine is as follows. Bubu looks at a picture. During that time, the experimenter makes sure the child interprets the picture correctly, and introduces the vocabulary used to describe it. Then Bubu utters a sentence that describes the event depicted in the picture. The picture always matches the sentence. It serves to ensure that the child interprets the quantifier as referring to the intended referent.

The child is instructed to hit the key with a smiling face if Bubu "said it right", or to hit the key with a frowning face if Bubu "said it wrong". In the first case, Bubu replies "Yippy, I got it right!"; in the second case his reply is "Oops, I made a mistake! How would YOU say it?" The child then corrects Bubu orally as he sees fit. His answer is tape-recorded and transcribed immediately.

In order to ensure that the general task at hand is well understood by the subjects, there is a short training phase with four words and four sentences

where the children must decide whether they are well-formed or not. The test sentences are randomized, but we make sure that no more than two sentences of the same type are uttered consecutively.

3.1.2   *Material*

The test consists of five sets of sentences.

(**i**)   Three grammatical sentences of type (19), with *beaucoup* in a QAD position quantifying over the object (labeled *bOg*). Since *beaucoup* requires a plural DP, the presence in these sentences of a singular subject and a plural object ensures that quantification over the object is the only option. The corresponding pictures show a single individual acting upon a group of objects.

   (19)   Le garçon a beaucoup acheté de livres.
            'The boy bought a lot of books.'

(**ii**)   Three ungrammatical sentences of type (20), having the intended interpretation in (21), with *beaucoup* in a QAD position. Quantification over the subject is the only possibility given the situation depicted and the stimulus sentence (plural subject DP and singular object DP) (labeled *bSa*).

   (20)   *Les garçons* ont *beaucoup* acheté un livre.

   (21)   *Beaucoup de garçons* ont acheté un livre.
            'Many boys bought a book.'

For sentences of type (20), we decided to use a definite subject NP instead of an NP of type *de garçons* (i.e. the remnant of *beaucoup de garçons*) for two reasons. First, when we consider *chacun*, we notice that when it introduces a partitive DP, it is followed by *de/des*, but when it is floated, the subject DP is definite:

   (22)   a.   *Les garçons* ont *chacun* acheté un livre.
            b.   *Chacun des garçons* a acheté un livre.

If children treat *beaucoup* on a par with *chacun*, they might expect a definite subject. Second, DPs of type 'de N' are ungrammatical in subject position, according to Kayne (1984), because they contain an empty category to the left of *de* which is not properly governed. We thought that it was quite possible that children would recognize the ungrammaticality of *de garçons* in subject position independently of *beaucoup*.

(iii)–(v)   In order to ensure that the task was clearly understood by the children, we included two sets of simple sentences: five grammatical sentences (labeled *sg*) and five ungrammatical sentences (labeled *sa*); and to verify that children accepted *beaucoup* in its canonical pre-nominal position, we had two sentences of that type (labeled *bg*).

The complete list of stimuli we used for this experiment is given in Appendix 1.

3.1.3   *Subjects*

We tested 71 French monolingual children aged 3;01 to 6;03 attending all-French day-care centers in Montreal, Canada. Of these we excluded 16 children who gave up before the end of the test, and another 13 who seemed to have adopted a response bias. Overall, we retained:

- 6   three-year-olds
- 19   four-year-olds
- 4   five-year-olds
- 3   six-year-olds

As a control group, we also tested 21 adults (first year undergraduate students).

3.1.4   *Results*

The acceptance rates for each set of sentences are presented in Figure 1 (1 = acceptance; 0 = rejection). It should be noted at the outset that the children displayed a clear ability to do the task properly since they consistently accepted the simple grammatical sentences (*sg* in Figure 1) while rejecting simple ungrammatical ones (*sa*).

Regarding *beaucoup*, sentences where it appears in its canonical pre-nominal position (*bg*) are accepted by all subjects. The interesting cases are those where *beaucoup* occurs between the auxiliary and the verb. First, consider sentences in which *beaucoup* quantifies over a subject (*bSa*). These are ungrammatical. Accepting these sentences would imply treating *beaucoup* like a floated quantifier, since only in FQ is quantification over a subject possible. We see that three-year-old children accepted them at the rate of 80%, with this percentage decreasing with age. Five- and six-year-olds rejected them correctly more often than they accepted them. In most cases the children did not propose a corrected sentence to the one they rejected. When they did, they repeated the sentence without the quantifier, produced a quantifier in adnominal position, or reformulated the sentence in their own words (see examples (26)–(29)).

Results for Experiment "Beaucoup"

	Three	Four	Five	Six	Adult
			Age		
◆—Condition bg	1	0,865	0,815	1	1
■—Condition bOg	0,929	0,78	0,711	0,889	0,419
▲—Condition bSa	0,778	0,589	0,357	0,333	0,097
✕—Condition sa	0,067	0,084	0,1	0	0,049
✱—Condition sg	0,893	0,966	0,955	0,933	0,933

Legend:
◆—Condition bg
■—Condition bOg
▲—Condition bSg
✕—Condition sa
✱—Condition sg
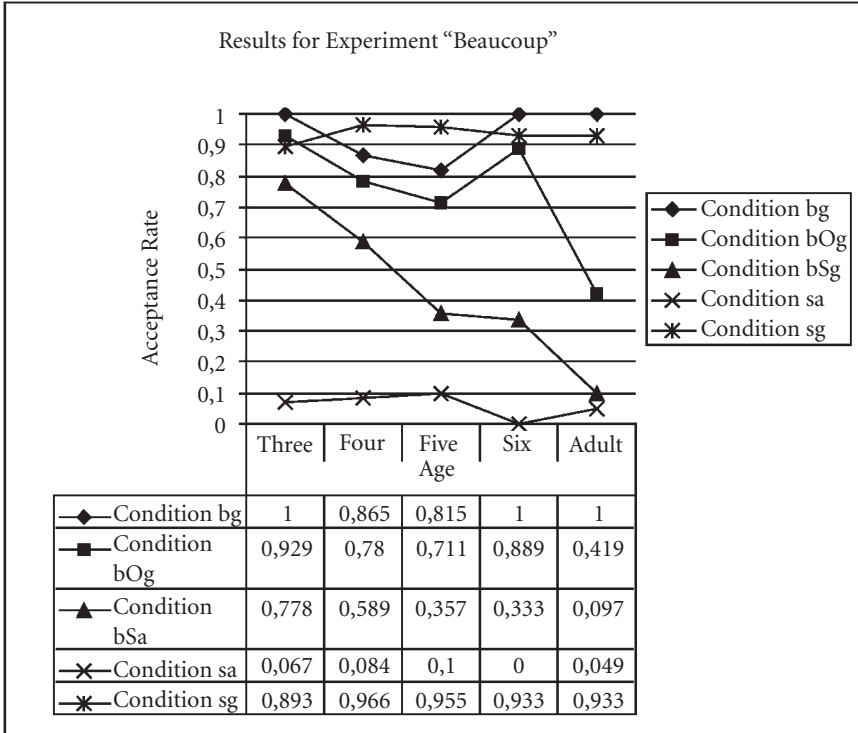
Figure 1. *Beaucoup.* Acceptance rate by condition by age

The case of *beaucoup* quantifying over the object (*bOg*) yielded an unexpected result. These are standard grammatical QAD sentences. Children accepted them; however, our adult subjects surprisingly tended to reject them (67%, 62% and 45% rejection respectively for the three test sentences. In other words, adults displayed grammaticality judgments that are different from ours and the children's.

An Analysis of Variance shows that there were significant main effects for *age* ($F = 20.444, p < 0.0001$) and *condition* ($F = 176.75, p < 0.0001$), and a significant *age X condition* interaction ($F = 6.297, p < 0.0001$).

Before discussing these results, we present our second experiment.

3.2 Experiment 2 – *chacun*

In this test, we verified whether children distinguish between grammatical sentences where *chacun* quantifies over a subject with ungrammatical sentences where *chacun* quantifies over an object.

3.2.1 *Procedure*
The procedure is the same as for Experiment 1.

3.2.2 *Material*
As with Experiment 1, there are five types of test sentences.

(i)   Three grammatical sentences of type (23) with *chacun* in a floated position quantifying over the subject (*fcSg*):

(23)   Les enfants ont chacun reçu un ballon.
'The children each received a balloon.'

(ii)   Three ungrammatical sentences of type (24), with the intended interpretation in (25), with *chacun* in a floated position but for which quantification over the object is the only possibility, given the situation depicted (*fcOa*). This situation is ensured by the fact that the subject is singular.

(24) *L'enfant a chacun reçu des ballons.

(25)   L'enfant a reçu chacun des ballons.
'The child received each of the balloons.'

(iii)–(v)   Again, in order to ensure that the task was clearly understood by the children, we included two sets of simple sentences: five grammatical sentences (labeled *sg*) and five ungrammatical sentences (labeled *sa*). To verify that children accepted *chacun* in its canonical pre-nominal position, we had three sentences with partitive *chacun*, one where the DP is in subject position (labeled *cSg*) and two where it is in object position (*cOg*).

The complete list of stimuli we used for this experiment is given in Appendix 2.

3.2.3 *Subjects*
We tested 57 subjects. Excluded from our analysis were nine children who did not understand the task at hand, two who gave up, and five who exhibited a response bias. In order to have a uniform group of monolingual French-speaking

children, we also excluded one bilingual child. Overall, we retained 40 children aged 3;01 to 5;4.

14 three-year-olds
17 four-year-olds
 9 five-year-olds

As a control group, we also tested 13 adults.

3.2.4   *Results*

For this test, the adults scored perfectly. The results for the children are illustrated in Figure 2. Like in Experiment 1, the children are able to distinguish simple grammatical sentences (*sg*) from ungrammatical ones (*sa*). They also judge sentences with partitive *chacun* as grammatical (*cOg* & *cSg*). But when *chacun* occurs in a floated position, they accept *chacun* quantifying over the object (*fcOa*) at the same rate as *chacun* quantifying over the subject (*fcSg*). This contrasts with the results of the previous experiment, where five-year-old children appropriately reject sentences in which *beaucoup* quantifies over a subject.

An Analysis of Variance shows that *age* was a significant factor ($F = 10.979, p < 0.001$). Three-year-olds were significantly different from four-year-olds, but four-year-olds were comparable to five-year-olds. *Condition* ($F = 82.717, p < 0.001$) was also a significant factor: simple ungrammatical sentences (*sa*) were different from all other conditions.

While performing the test in Experiment 1 with *beaucoup*, the children produced many examples of a quantifier within the DP (of type *beaucoup de X*) (26), but no example of QAD. In Experiment 2, however, children often produced *chacun* in a floated position, either spontaneously when they commented on the picture (27) or on cue when they were asked to correct Bubu (28). We also observed examples of floated *tous* (29). As mentioned earlier, Philip (1995:142), testing English-speaking children, also observed that children spontaneously produce floated quantifiers.

(26) a. Beaucoup de jouets.   (tpbOg1, 3;1)
          'Many toys.'
      b. Une police qui veut tuer beaucoup de voleurs.   (tpbOg3, 3;8)
          'A policeman who wants to kill many thieves.'
      c. … arrête beaucoup de voleurs.   (tpbOg3, 5;1)
          '… arrest many thieves.'

Results for Experiment "Chacun"

Age	Three	Four	Five	Adult
Condition cOg	0,643	0,824	0,833	1
Condition cSg	0,786	0,882	1	1
Condition fcOa	0,714	0,804	0,926	0
Condition fcSg	0,643	0,843	0,889	1
Condition sa	0,171	0,118	0,2	0
Condition sg	0,671	0,929	0,911	1
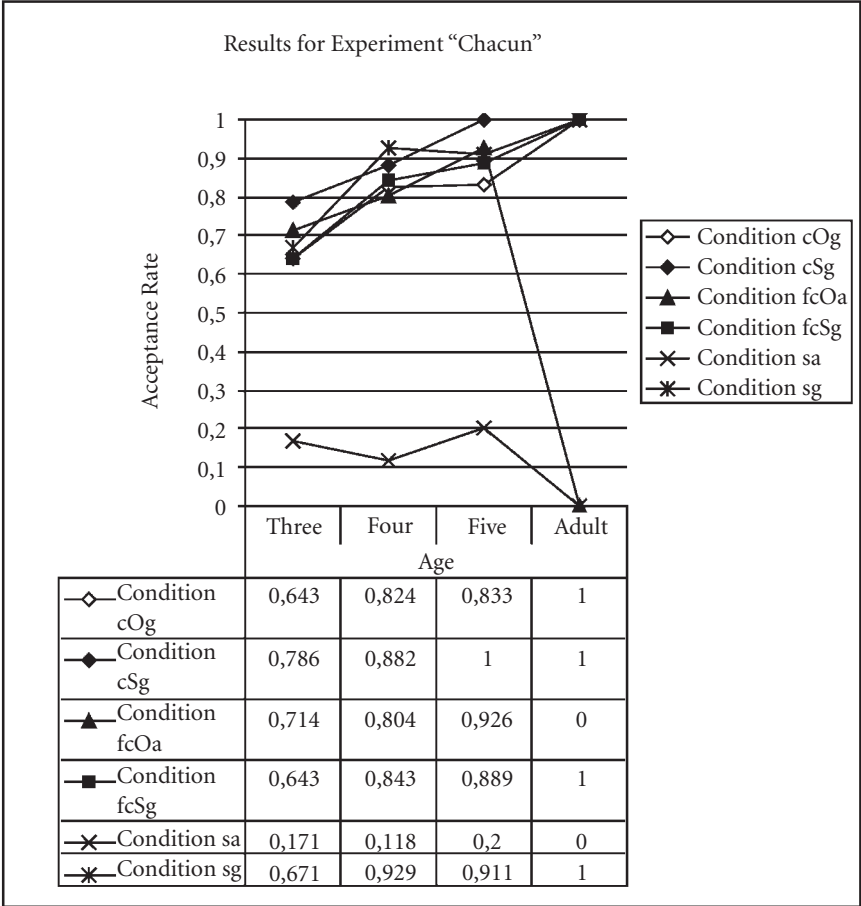
Figure 2. *Chacun.* Acceptance rate by condition by age

(27) a. Les souris ont chacun pris une bouchée de fromage.   (A2,5,02,fcSa1)
         'The mice have each taken a bite of the cheese'
     b. On les avait chacun planté dans les trous.   (A3,5,01,fcSa2)
         'They had stuck each of them into the holes.'
(28) a. Des cochons qui ont chacun croqué une pomme.   (A37,3,09,fcSg2)
         'Some pigs that have each bit into the apple.'
     b. Des cochons i ont chacun des cœurs de pomme.   (A32,3,08,fcSg2)
         'Some pigs, they each have apple cores.'

    c.   Les cochons ont chacun pris une pomme et ont mangé tout autour.

                    (A38,4,05,fcSg2)

        'The pigs have each taken an apple and have eaten all around.'

(29) a.   C'est des bonhommes qui sont /tut/ attachés.   (A43,3,08,fcOa2)

        'These are men who are all tied up.'

    b.   Les souris ont /tut/ mangé un petit morceau de fromage.

                    (A27,3,12,fcSa1)

        'The mice have all eaten a little piece of cheese.'

    c.   Un crocodile qui a /tut/ attrapé les fleurs.   (A23,4,06,fcOa1)

        'A crocodile that caught all of the flowers.'

    d.   Le chat a /tut/ fait tomber ses billes par terre.   (A11,4,11,fcOa1)

        'The cat has dropped all his marbles on the floor.'

Notice that in (27a) the masculine gender form *chacun* does not agree in gender with the feminine DP subject. We return to this in the discussion section.

    Interestingly, when asked to correct Bubu's sentence, in two occasions, children produced a sentence with *chacun* quantifying over the object, while correcting some other element in the clause (30).

(30) a.   Le policier i(l) a chacun attrapé des méchants.   (B4,3,05,fcOa2)

        (Stimulus: *Le policier a chacun attrapé des voleurs.)

        'The policeman, he caught all the bad guys.'

    b.   Un petit garçon a chacun mis des jouets dans les boîtes.

                    (A13,4,10,fcOa3)

        (Stimulus : *Le garçon a chacun mis des jouets dans une boîte.)

        'The little boy put all the toys in the boxes.'

Given that children do not normally produce or repeat sentences that their grammar does not allow (Lust, Flynn, & Foley 1996), these utterances converge with the grammaticality judgments elicited from the children and thus provide confirmation that their grammar allows sentences with floated *chacun* quantifying over the object (fcOa). Notice that the fact that children produce sentences containing *beaucoup* and *chacun* is an indication that they know these words, which are frequent in normal day-to-day speech.

4. Discussion and conclusion

Let us first discuss the grammaticality judgments produced by adults in answer to Experiment 1 with *beaucoup* in a QAD position. Recall that adults

reject these sentences at a slightly lower than fifty percent rate.[3] However, some of them told us that this type of sentence should be possible, but that they still did not find them acceptable. Since *beaucoup* is grammatical in this context, we have to assume that some subtle undetermined, presumably semantic, factor intervened in the adult judgments. Children accepted these sentences. We surmise that the difference in grammaticality judgments between children and adults is due to the fact that children have not yet mastered the aspect of semantics that is responsible for the adults' judgments.

Let us now turn to the initial question of our study. Do children distinguish between QAD and Q-float? Do they know over which NP a quantifier can quantify? We first consider three-year olds, then five-year-olds.

Three-year-olds accept all sentences with a quantifier between the auxiliary and the verb, whether quantification is over the subject or over the object. This shows that they do not distinguish between QAD and Q-float. Given that they correctly reject simple ungrammatical sentences, we have to conclude that they understand the task, but are not aware of the syntactic conditions on *beaucoup* and *chacun*. One possible explanation for this is that children have only one type of functional category above the VP for quantifiers; they generate the quantifiers in that projection, and raise them by Quantifier Raising out of the clause. From that raised position, the Qs c-command both the subject and the object DPs, explaining why children consider that the Qs may quantify either over the subject or over the object. As mentioned in Section 3, Roeper and de Villiers (1991) and Philip (1995) report that children interpret sentences with a universal quantifier in subject position and an indefinite in object position as if the universal quantifier applied to both DPs. Roeper and de Villiers (1991: 246) also report that Q-spreading is just as likely to apply if the subject is indefinite and the Q is on the object, suggesting that c-command is not a necessary condition for Q-spreading. They suggest that the Q is raised out of the clause, from where it unselectively binds both DPs. The alternative proposed by Philip (1995), schematized in (31b) for the corresponding sentence in (31a) where Q is raised out of the clause from where it quantifies over events, is also consistent with the facts:

(31)   a.   Every boy is riding a pony.
        b. $\forall e$ [PART(boy,e) or PART(pony, e)] [a boy is riding a pony]

One interesting aspect of our data is that it suggests that not only do three-year-old children raise universal quantifiers out of the clause at Logical Form, they also do the same with weak quantifiers, a phenomenon never noticed before. If this is true, it suggests that three-year-old children have a non-adult like

understanding of sentences with *beaucoup*, of the same type as that observed with universal quantifiers. In other words, we predict that Q-spreading should occur with *beaucoup* just as it does with *every/all*.

By five year of age, children prefer quantification over the object to quantification over the subject with *beaucoup* 'many'. As for floated *chacun* 'each', they accept both quantification over the object and quantification over the subject. These judgments are summarized in (32)–(33).

(32) a. QAD over the subject: *Les enfants ont *beaucoup* lu un livre.
                                          'The children have a-lot read a book'
      b. QAD over the object: √L'enfant a *beaucoup* lu de livres.
                                          'The child has a-lot read of books'

(33) a. Q-float over the subject: √Les enfants ont *chacun* lu un livre.
                                          'The children have each read a book'
      b. Q-float over the object: √L'enfant a *chacun* lu des livres.
                                          'The child has each read of-the books'

The distinct judgments for *beaucoup* and *chacun* show that five-year-olds now distinguish two types of quantifiers: weak quantifiers like *beaucoup*, and quantifiers subject to Q-float. The judgments in (32) are adult-like, suggesting that the syntax of QAD is acquired. *Beaucoup* is now interpreted in its surface position and is required to bind an empty element in the DP it quantifies over. Thus, it is excluded from quantifying over the subject. The syntax of Q-float, on the other hand, is still not mastered.

The early acquisition of the syntax of QAD may be hastened by the fact that *beaucoup* is used as a verb modifier in contexts like (34), where it has an intensifying interpretation:

(34) Paul a   beaucoup ri.
      Paul has a-lot   laughed
      'Paul laughed a lot.'

This observation may lead the child to generate quantifier *beaucoup* in specifier position of a functional adverbial category, like any other adverb. Assuming that the child does so, and given the analysis of QAD proposed above, the ungrammaticality of (35) follows.

(35) *Les enfants   ont$_v$ [beaucoup t$_v$ [t$_v$ lu   un livre].
       The   children have a.lot   read a   book

Recall that the intended interpretation is one where *beaucoup* quantifies over the subject. Assume that the verb (here the auxiliary) transits through the

head of *beaucoup* on its way to Tense, yielding, through spec-head agreement, a multiple-event interpretation. Under this scenario, *beaucoup* is now frozen since further movement would destroy the spec-head relation between the quantifier and the verb.[4]

Let us now turn to *chacun* 'every'. The fact that five-year-old children accept quantification over the subject as well as over the object suggests that the children have not modified their earlier grammar, where *chacun* is raised out of the clause.

Another possibility, which we have not yet considered, is that children have difficulty determining the syntactic nature of *chacun*, sometimes treating it as a specifier, sometimes as a head. It could be that when children are confronted with *chacun* in preverbal position quantifying over the object, they analyze it as a partitive *chacun* in a QAD position like with *beaucoup*. Notice that the DP in object position is introduced by *de/des*, just as the DP with QAD. When *chacun* quantifies over the subject, they would correctly analyze it as a floated quantifier.

One factor that must be taken into account in this context is the existence in Quebec French of the universal quantifier TOUT, superficially similar to standard French *tous*, but different from it in two aspects: first, it is morphologically invariant; second, and more importantly, it may quantify over a full DP object (Lemieux & Sankoff 1983):

(36) Il   a   /tUt/ acheté ses meubles à   crédit.
      He has all   bought his furniture on credit
      'He bought all his furniture on loan.'

One cannot dismiss the possibility that our Quebecois children extend to *chacun* the grammar of TOUT. This would explain why they accept sentences with *chacun* quantifying over an object. But note that *chacun* in Quebec French does not behave like TOUT: it agrees with the R-DP, and it does not quantify over a full DP object. Thus the adult subjects in Experiment 2 rejected all the sentences with *chacun* quantifying over an object (0% acceptance). If this hypothesis is correct, children learning a standard dialect of French should reject sentences in which *chacun* quantifies over an object.

Notes

ation of the experiments and helped with data collection: Gaëlle Bélanger, Ghislaine Gagné, Isabelle Léger, Nouhad Naciri, Jeanne Poitras, Mélissa Sauvé.

1. Other than the pre-verbal position, *chacun* may also appear in two other positions: the pre-nominal position (i), and the post-nominal position (ii) (see Junker 1995; Tellier & Valois 1993). We are not concerned with these in this paper.

(i) Les enfants ont reçu [chacun un ballon].
(ii) Les enfants ont reçu [un ballon chacun].
    'The children have received a balloon each'.

2. Our youngest child, of 3;01, produced only dislocated subjects, but the other children produced some SVO sentences as well as dislocated subjects. The preferred sentence type among the children was a pseudo-relative construction, of type: *A NP who IP*.

3. Of our 21 adult subjects, 6 accepted all sentences, 8 rejected them, and 7 exhibited mixed judgments.

4. Observe that apart from the interpretation where *beaucoup* quantifies over the subject, all other possible interpretations for *beaucoup* in (35) are also excluded: the VP-adverb interpretation is excluded because the VP *lu un livre* denotes a unique countable event; and the QAD interpretation is not possible because the post-verbal DP object does not contain a variable.

Appendix 1 – Experiment 1 with *beaucoup*

bOg
  a. Un garçon a beaucoup mis de jouets dans un garde-robe. (bOg1)
     'A boy placed many toys in a closet.'
  b. Un crocodile a beaucoup cueilli de fleurs. (bOg2)
     'A crocodile picked many flowers.'
  c. Un policier a beaucoup attrapé de voleurs. (bOg3)
     'A policeman caught many thieves.'

bSa
  a. *Les cochons ont beaucoup croqué une pomme. (bSa1)
     (Beaucoup de cochons ont croqué une pomme.)
     'Many pigs bit into an apple.'
  b. *Les enfants ont beaucoup construit un château de sable. (bSa2)
     (Beaucoup d'enfants ont construit un château de sable.)
     'Many children built a sand castle.'
  c. *Les lutins ont beaucoup coupé une banane bleue. (bSa3)
     (Beaucoup de lutins ont coupé une banane bleue.)
     'Many goblins cut a blue banana.'

bg

a.   Beaucoup de poissons font des bulles. (bSg1)
     'Many fish are making bubbles.'

b.   Une grosse grenouille tient beaucoup de poupées entre ses pattes. (bOg1)
     'A big frog is holding many dolls in its legs.'

sg

a.   Les chats jouent aux cartes. (sg1)
     'The cats are playing cards.'

b.   Les enfants nagent dans la boue. (sg2)
     'The children are swimming in the mud.'

c.   La fille trempe ses pieds dans la peinture. (sg3)
     'The girl is soaking her feet in the paint.'

d.   Un lutin joue du violon. (sg4)
     'A goblin is playing violin.'

e.   Un clown lance des oeufs. (sg5)
     'A clown is throwing eggs.'

sa

a.   *Un soleil dort au lion. (sa1) (Un lion dort au soleil)
     'A lion is sleeping in the sun.'

b.   *Un bonhomme de neige un journal lit. (sa2) (Un bonhomme de neige lit
     un journal)
     'A snowman is reading a newspaper.'

c.   *La femme danse la pluie. (sa3) (La femme danse sous la pluie)
     'The woman is dancing in the rain.'

d.   *La fille lit la livre. (sa4) (La fille lit le livre)
     'The girl is reading the book.'

e.   *Le lion est dans sur la forêt. (sa5) (Le lion est dans la forêt)
     'The lion is in the woods.'

Appendix 2 – Experiment 1 with *chacun*

fcSg

a.   Les éléphants ont chacun attrapé un ballon. (fcSg1)
     'The elephants each caught a balloon.'

b.   Les cochons ont chacun croqué une pomme. (fcSg2)
     'The pigs each bit into an apple.'

c.   Les enfants ont chacun construit un château de sable. (fcSg3)
     'The children each built a sand castle.'

fcOa

a.   *Le crocodile a chacune cueilli des fleurs. (fcOa1)
     (Le crocodile a cueilli chacune des fleurs.)
     'The crocodile picked each of the flowers.'
b.   *Le policier a chacun attrapé des voleurs. (fcOa2)
     (Le policier a attrapé chacun des voleurs.)
     'The policeman caught each of the thieves.'
c.   *Le garçon a chacun mis des jouets dans une boîte. (fcOa3)
     (Le garçon a mis chacun des jouets dans une boîte.)
     'The boy put each of his toys in a box.'

cSg and cOg

a.   Chacun des poissons fait des bulles. (cSg1)
     'Each of the fish is making bubbles.'
b.   Une grosse grenouille tient chacune des poupées dans ses pattes. (cOg1)
     'A big frog is holding each of the dolls in its legs.'
c.   Un clown a lancé chacun des oeufs sur le mur. (cOg2)
     'A clown has thrown each of the eggs onto the wall.'

sg

a.   Un lion dort au soleil. (sg1)
     'A lion is sleeping in the sun.'
b.   Un bonhomme de neige lit un journal. (sg2)
     'A snowman is reading a newspaper.'
c.   La femme danse sous la pluie. (sg3)
     'The woman is dancing in the rain.'
d.   La fille lit le livre. (sg4)
     'The girl is reading the book.'
e.   Le lion est dans la forêt. (sg5)
     'The lion is in the woods.'

sa

a.   *Les aux cartes jouent chats. (sa1)
     (Les chats jouent aux cartes.)
     'The cats are playing cards.'
b.   *Sous la table dort souris les. (sa2)
     (Les souris dorment sous la table.)
     'The mice are sleeping under the table.'

   c. *La fille trempe dans ses pieds la peinture. (sa3)
      (La fille trempe ses pieds dans la peinture.)
      'The girl is soaking her feet in the paint.'

   d. *Un lutin joue du avec violon. (sa4)
      (Un lutin joue du violon.)
      'A goblin is playing violin.'

   e. *Le chien tire le garçon avec. (sa5)
      (Le chien tire le garçon.)
      'The dog is pulling the boy.'

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Apparent non-nominative subjects in L1 French[*]

Cécile De Cat

1. Introduction and background

Young French speaking children often produce sentences like (1), where both the apparent subject and the verb are realised in a non-target-like fashion: the apparent subject is not in the nominative case, and the verb is not finite.

(1) moi mettre ça   comme Pol   (Max 2;3.20)[1]
     me put-INF that like   Pol
     'I (want to) put it like Pol.' (meaning derived from context)

The non-target-like realisation of subjects by children has often been linked to the lack of finiteness of the verb. It is well established that the majority of non-finite root verbs occur without a subject (for child French, see e.g. Rasetti 1996). Two types of non-finite root verbs are distinguished in the literature: 'true' Root Infinitives (henceforth RIs) (Rizzi 1994b), which typically bear non-finite morphology, and what could be referred to as 'default' RIs, where the verb does not bear non-finite morphology, but is not fully inflected either (see e.g. Schütze & Wexler 1996; Schütze 1997). In child French, RIs are either infinitivals (as in (1)) or past participles used in a context where the adult language would require a finite verb.[2] French RIs have been shown by Pierce (1992) not to raise across negation, which indicates that they are analysed by the child as non-finite. Partially inflected forms ('default RIs') are also attested in this language, as will be discussed in Section 3. Each type of RI (strictly non-finite and not fully finite) is associated with a different rate of subject realisation.

Children's realisation of subjects in the early stages of acquisition has been much studied in the literature (for L1 French, see e.g. Ferdinand 1996). Two claims in particular are relevant to the present analysis: (i) Children acquiring non-pro-drop languages go through a null subject stage when they omit sub-

jects where the target grammar would require one (see e.g. Rizzi 1994a; Rhee & Wexler 1995). It is often claimed in the literature that null subjects occur predominantly with Root Infinitives (Rasetti 1996), but this has been disputed for child French by Plunkett and De Cat (2001); (ii) Children's subjects can initially surface in non-nominative case (as seems to happen in (1)). Schütze and Wexler (1996) argue that this happens only with verbs that are not fully inflected, more specifically when the Agreement head is underspecified, as will be explained presently.

This chapter proposes an evaluation of the latter claim in the light of the former, with special attention devoted to the 'wider picture' of subject realisation in French.

French has three ways of expressing a subject referent overtly: as a subject clitic (2a), as a *heavy subject* (as in (2b))[3] or as a dislocated subject (i.e. a left- or right-peripheral XP coindexed in most cases with a *resumptive subject clitic*[4] as in (2c–d)).

(2) a. Ils   sont fous.
         they are   mad
         'They're mad.'
     b. Les Belges   sont les plus braves.
         the Belgians are   the most brave
         'The Belgians are the bravest.'
     c. Rosalind$_i$, elle$_i$ est illustratrice.
         Rosalind   she   is   illustrator
         'Rosalind is an illustrator.'
     d. C'$_i$ est le   numéro neuf, sa   maison$_i$.
         it   is the number nine her house
         'Her house is number nine.'

In French, nominative case is not distinguishable from default case on DPs. There is no visible case distinction between the subject *les Belges* in (2b) and the dislocated elements *Rosalind* or *sa maison* 'her house' in (2c) and (2d). The picture is different for pronouns. In dislocated positions, pronominals appear in their strong form, which can be considered to be in the default case in French (as argued by Schütze 1997). As a consequence, strong pronouns are banned from the canonical subject position, where nominative case is assigned/required. There are two exceptions to this rule: the pronoun *ça* 'that' can appear in the subject position in all varieties of French; and third person singular lui can appear in that position (with a neutral intonation) in Canadian

French, as illustrated in (3). In European French *lui* can only be in the subject position if it bears contrastive stress.

(3) et   lui   s'   appelle Fernand le   pélican.   (Catherine, C)[5]
     and him refl calls   Fernand the pelican
     'And that one's called Fernand the pelican.'

When investigating apparent non-target-like realisations of the subject, it is important to consider all the possibilities offered by the target grammar. Hence, the strong pronoun in (1) could be either a non-nominative subject in the subject position (i.e. a strong pronoun surfacing instead of a clitic, in an attempt at producing a structure like (4a)), or a dislocated subject with a missing resumptive (i.e. an attempt at producing a structure like (4b)).

(4) a. je vais mettre ça   comme Pol.
        I   will put-INF that like   Pol
        'I'll put it like Pol.'
    b. moi, je vais mettre ça   comme Pol.
        me   I will put-INF that like   Pol
        'I'll put it like Pol.'

I propose to evaluate these two analyses on the basis of spontaneous, longitudinal data from three monolingual children – which will be introduced in Section 2. Either Apparent Heavy Subjects (henceforth AHSs) in non-finite contexts (like *moi* 'me' in (1)) are true subjects in a genuine subject position, or they are dislocated subjects with a missing resumptive clitic. The former option requires an account of the target-deviant possibility of licensing non-nominative subjects (e.g. along the lines of Schütze & Wexler 1996). The latter postulates that these AHSs surface in the default case (which, in French, is only visible on strong pronouns), outside of the subject position. It will be argued that any non-nominative AHS in child French is a left-dislocated subject with a missing subject clitic, both in cases like (1), where the verb is unambiguously non-finite, and in cases like (5) where the verb is apparently finite but might be argued to be a 'default' RI on the basis of the fact that such verb forms do not display unambiguous agreement morphology.

(5) moi tire   ça.   (Max 2;1.25)
     me   pull:FIN that
     'I'm going to pull that.'

Support for the dislocation hypothesis is provided on the basis of quantitative, distributional evidence, and a preliminary acoustic analysis of the data. The

analysis proposed completes the picture outlined by Ferdinand (1993, 1996) and Labelle and Valois (1996), who showed that target-deviant postverbal 'subjects' are in fact target-like right-dislocated subjects with a missing resumptive clitic (i.e. a null subject).

2. Data and methods

The data set used for the present analysis contains production from three children: Max (Canada) and Anne (France) from the York corpus, and Tom (Belgium), from the Cat corpus.[6] Each child was video-recorded fortnightly for half an hour, usually at home, over a period of 18 months. The transcriptions were made where possible by the observer, and later checked and coded by another native speaker of French (myself).

The main period under investigation corresponds to the core of the null subject stage (for an analysis based on the same corpora, see Plunkett, under review). This period was chosen so that the null subject factor could be taken into consideration, and because non-nominative AHSs almost exclusively occur during that stage. I have considered data up to the time when children only omit subjects in 5% of obligatory contexts. After that, a few isolated cases are still found in the data for a little while, but only in particular contexts, which I will consider in Section 4.5.

The developmental profiles of the children at the relevant period are sketched in Table 1. The MLUw in this table corresponds to the Mean Length of Utterance in words, excluding utterances consisting of only *oui* 'yes' or *non* 'no' or non-words such as *ah, oh, euh, m, mm.*

The transcriptions were done according to the CHAT system (MacWhinney 2000). The following conventions were adopted: (i) # indicates a short

Table 1. Ages and MLUws at the null subject stage

	Max	Anne	Tom
Onset			
Age	1;9.19	1;10.12	2;1.11
MLUw	1.136	1.875	2.506
End of null subject stage			
Age	2;9.12	2;10.18	2;6.22
MLUw	3.748	3.897	3.015
Total number of files	26	23	13

pause; (ii) the verbal ending -*E* stands for the [e] sound, which is ambiguous between infinitival and participial morphology in verbs of the first class; (iii) commas indicate syntactic junctures (e.g. what was perceived by the coder as a dislocation – see Section 4.3); (iv) parentheses contain unpronounced strings; (v) the letter *e* stands for an 'embryonic' element (i.e. a sound roughly corresponding to a schwa in the child's pronunciation, in a slot normally occupied by a function word. See Bottari et al. 1992; Bohnacker 1999; Peters 2001); (vi) yy stands for an unintelligible word (followed by a rough phonetic transcription), and (vii) 0 indicates a missing element.

The data was coded according to a variety of factors. Any element coreferential with the intended subject and appearing preverbally in the absence of a subject clitic was coded as an AHS. Factors coded for included: The nature of the AHS (strong pronoun, DP, or other), the presence of an intervening element (e.g. a dislocated element like *là* 'there') between the AHS and the verb (thus indicating that the AHS is clearly a left-dislocated subject), the presence of a subject clitic, and the finiteness of the verb (see Section 3.1). Embryonic elements were treated as follows: If an embryonic element was the only element in a verb slot, the token was discarded (as potentially containing no verb); if an embryonic element was clearly in a modal slot, i.e. between a subject clitic and a verb with non-finite morphology, the token was discarded (as unclear between finite or non-finite); if an embryonic element was clearly in a subject clitic position (before a finite verb), it was coded as a subject clitic; if an embryonic element was in a position that could host either a subject clitic or a modal, the assumption was that the embryonic element was an embryonic modal and the token was discarded (see De Cat 2002 for arguments supporting this treatment of embryonic elements). Excluding these tokens did not affect the results significantly.

As illustrated in the examples below, non-nominative AHSs appear at the two-word stage (6a). They are attested throughout the null subject stage, and very sporadically after that (6e). They occur both with non-finite forms (6a), (6b), and with finite-looking forms (i.e. forms that do not bear non-finite morphology but may nonetheless be non-finite, ac-cording to Schütze & Wexler 1996, for reasons to be explained shortly) (6c, d, e).

(6) a. moi vu.   (Max 1;11.0)
     me   seen
     'I (have) seen (one).'

b. toi # apportE   ça.   (Max 2;6.12)
    you   bring-INF that.
    'You (must/should/can) bring that.'

c. ça   est 0 drapeau.   (Anne 2;2.0)
    that is   flag
    'That's a/the flag.'

d. et   moi a   gagné.   (Tom 2;4.8)
    and   me   have:FIN.3SG won
    'I won.'

e. mais moi veux   mettre ça.   (Anne 3;5.4)
    but   me   want:FIN put-INF that
    'But I want to put that one.'

Instances of AHS that are ambiguous as to their case marking also occur, where a DP expressing the subject immediately precedes the verb:

(7) Fifi # pas allE   dans l'   eau.   (Max 2;0.0)
     Fifi   not go:INF in   the water
     'Fifi can't go in the water.'

During the null subject stage, the highest proportion of AHSs is found in non-finite root clauses, as detailed in Table 2, but overall, most AHSs appear with finite-looking verbs. A refinement of what counts as finite or non-finite clauses will be discussed in Section 3.1.

In Section 3 and Section 4, I concentrate on the analysis of AHSs for which case is visible (as in (6)). However, the analysis of pronominal AHSs can be carried over, to an extent, to a number of non-pronominal AHSs, as argued in De Cat (2002).

3. Hypothesis 1: Pronominal AHSs are true subjects in the default case

Subject case errors in child language have been reported in the literature since the 1960's (e.g. Gruber 1967; Valian 1991; Vainikka 1993). One proposal in particular makes clear cross- linguistic predictions as to which types of case er-

Table 2. Distribution of AHSs at the null subject stage

	Non-finite root clauses	Finite-looking clauses
Pronominal AHSs	13% (43/336)	2% (81/3713)
Non-pronominal AHSs	4% (13/336)	2% (84/3713)

Table 3. Theoretically possible (under)specifications of Agreement and Tense

Agr	Tns	Subject
–	–	Default case or null
–	+	Default case
+	–	Nominative case or null
+	+	Nominative case

rors should be expected. It is presented in Schütze and Wexler (1996), Schutze (1997), and Wexler, Schütze, and Rice (1998) as the Agreement and Tense Omission Model (ATOM). The core idea is that in child grammar, the two Inflection heads may be underspecified independently of each other. When the Agreement head is underspecified (as indicated by a '–' in Table 3), the subject is predicted to surface in the default case.[7] Non-nominative subjects are claimed not to be due to a lack of knowledge of the case system or of the nominative-assigning property of Agr; both are part of the child's grammar from early on (as argued in detail by Schütze 1997). Rather, the presence of non- nominative subjects is said to result from the underspecification of Agreement. Nominative case can only be assigned to the subject when Agreement is fully specified. Whether the verb looks finite or non-finite depends on the other Inflection head, Tense. Whenever Tense is fully specified, the verb looks like a finite verb: It is expected to undergo raising in languages like French, and it does not bear overt non-finite morphology. By contrast, whenever Tense is underspecified, the verb surfaces as a RI (a true RI in the case of French). Schütze (1997: 263–271) also argues that the presence of null subjects is dependent on Tense, and not on Agreement, so whenever Tense is underspecified in the child's grammar, a null subject will be possible. The matrix of theoretical possibilities of specification of the Inflection heads is as in Table 3.

Under the ATOM, tensed verbs may still allow null subjects under pragmatic licensing, a possibility I will not dwell on as it goes beyond the scope of the present chapter.

3.1 Patterns of Agreement and Tense specification in child French

In (child) French, subject clitics themselves never appear in a case other than nominative (no such error has been attested in the literature, to my knowledge – where e.g. an accusative clitic would appear in the subject position). Schütze (1997: 250) argues that strong pronouns are the default form of pronoun in French, and that they are expected to surface when Agreement is

Table 4. Nominative clitics and strong pronouns in spoken French

Person	Nominative clitic	Strong pronoun
1st sg.	je	moi
2nd sg.	tu	toi
3rd sg.	il, elle, on	lui, elle, Ø
1st pl.	on	nous
2nd pl.	vous	vous
3rd pl.	ils, elles	eux, elles

underspecified. The relevant paradigms are given in Table 4. First person plural clitic *nous* 'us' is not considered here, as it is not used as a subject clitic in spoken French (at least not in colloquial French, which constitutes the input to the children studied here); the third person singular subject clitic *on* 'we' is used instead, sometimes in conjunction with a dislocated pronoun *nous* 'us'. *On* 'one' is also used as a genuine third person singular (especially as an impersonal), but it does not have a corresponding strong pronoun in such cases.

The ATOM predicts that in child French, whenever the subject is realised as a pronoun, it will surface as a nominative clitic when Agreement is fully specified, and as a strong pronoun when it is not.

3.1.1   *Agreement morphology with tensed verbs in French*

Before examining the paradigm of verbal Agreement morphology as it is instantiated in child French, it is important to remember that the input available to the child can only provide him/her with audibly perceivable distinctions between forms. As a consequence, only audibly distinct agreement morphemes can be taken into account in this analysis. The possibility of distinguishing between forms on the basis of liaison only (as in *tu es une chipie* [tyEzynSipi:] 'you are a scoundrel') was discarded, because liaison between the verb and the following word is rare in spoken French, especially in the familiar register, and no systematic transcription of liaison was carried out for the corpora investigated here.

A note on the status of subject clitics is called for at this point, as it has been claimed that, in spoken French, these elements are agreement morphemes on the verb (e.g. Roberge 1990; Zribi-Hertz 1994). Against such a claim, Côté (1999, 2001) convincingly argues that a morphological analysis of subject clitics is untenable for Unmarked Spoken French, i.e. the varieties of French that do not allow for a true quantifier to be used as a subject coindexed with a subject clitic, as in (8). She argues that the data in the Leveillé corpus (Suppes, Smith, & Leveillé 1973) (available via childes – MacWhinney 2000) falls within

this category, as does her own native variety: Montreal French (which also corresponds to the input to which Max of the present study is exposed).

(8) *Personne, il   est venu.
       nobody   he is   come

All the data investigated here comes from unmarked varieties of spoken French, as demonstrated in De Cat (2002). Consequently subject clitics will be analysed as 'true' subjects, and only verbal suffixes will be considered to be markers of subject agreement.

The paradigm of verbal agreement morphology is very impoverished in spoken French. Ferdinand (1996) argues that for the most part, this paradigm consists of what might be classified as *elsewhere* forms. Following Halle and Marantz (1993), she defines *elsewhere* forms as underspecified in the lexicon with respect to particular features (person and number in this case). This allows *elsewhere* forms to be compatible with more than one feature specification on an element such as a subject, with which the verb is expected to agree. In the adult language, I assume that *elsewhere* forms are specified for person and number. Later in acquisition, when all overuse of *elsewhere* forms have disappeared, I assume that the child also has specified person and number features on these forms.

In Table 5, *elsewhere* forms are indicated in phonetic transcription. Specified forms only appear in their orthographic spelling. Three verb types are distinguished on the basis of the number of persons with agreement morphology distinct from the third person singular form. These three types need only be distinguished in the present indicative, though, since in all the other tenses attested in the present corpora, the spread of *elsewhere* forms is identical in the agreement paradigm of all verb types. Periphrastic tenses do not receive special mention in this table, as Agreement is marked on the auxiliary, which is itself in the present tense. In the *passé composé*, the present form of *avoir* 'to have' or *être* 'to be' is combined with a past participle, as in (9a); in the *futur proche*, the present form of *aller* 'to go' is combined with an infinitival, as in (9b).

(9) a. C'est déjà   fini.
            it is   already finished
            'It's over already.'
      b. On va   manger dehors.
            we will eat   outside
            'We're going to eat out.'

Table 5. Verbal agreement morphology in spoken French

		-er, -oir	-ir, -re, vouloir	être, avoir, aller
present	1 p.sg	[plœ:r]	[vø]	vais
	2 p.sg.	[plœ:r]	[vø]	[va]
	3 p.sg.	[plœ:r]	[vø]	[va]
	2 p.pl	pleurez	voulez	allez
	3 p.pl.	[plœ:r]	veulent	vont
imperfect	1 p.sg		[vulɛ]	
	2 p.sg.		[vulɛ]	
	3 p.sg.		[vulɛ]	
	2 p.pl		vouliez	
	3 p.pl.		[vulɛ]	
future (synthetic)	1 p.sg		voudrai	
	2 p.sg.		[vudra]	
	3 p.sg.		[vudra]	
	2 p.pl		voudrez	
	3 p.pl.		voudront	
subjunctive (present)	1 p.sg		[vœj]	
	2 p.sg.		[vœj]	
	3 p.sg.		[vœj]	
	2 p.pl		veuillez	
	3 p.pl.		[vœj]	

Second person plural is hardly used by children at the ages relevant in this study, but has been included in this table on account of its presence in the input. The second person plural marking is phonologically indistinguishable from the infinitival form for verbs of the *-er* class, and in the case of *allez* 'go'. Only a clear context or the presence of a subject clitic can distinguish between the two. However, as the children studied only attempted to use the former when the null subject stage was almost over, and only in very rare occasions, this homophony was not problematic.

Ferdinand (1996) argues that children acquiring French start by using only *elsewhere* forms, i.e. over-extending their use to the whole paradigm. Evidence for the *elsewhere* status of third person singular in child French (glossed as els. in the examples) comes from the fact that the only errors of agreement observed between the verb and the features of the subject are cases where an apparently third person singular form of the verb is used while the phi-features of the (intended) subject are non-third-singular, as in (10) (see Ferdinand 1996).

(10) a. Il$_i$[8] va   regarder la yy [%pho: fEm] tous
          he will:ᴇʟs watch   the (?)   all
          les   deux$_i$.   (Max 2;5.29)
          the two
          'The two of them will look at the (?).'

      b. 0 est   là,   les dames.   (Anne 2;7.16)
            is:ᴇʟs there the ladies
          'The ladies are there.'

      c. et   moi, j'a   gagné.   (Tom 2;4.8)
          and me   I have:ᴇʟs won
          'I've won.'

The use of default person and number features on the verb suggests that in cases like (10), Agreement is not fully specified. Following Schütze and Wexler (1996), the finite-looking form of the verb is due to the full specification of Tense, while Agreement remains underspecified. When all the details of the French morphological paradigm are taken into account, it becomes clear that verb forms displaying overt agreement with the subject are quite rare in spoken French. Given that the second person plural is hardly attested at all in the corpora studied here, and that most verbs are of the *-er* class (i.e. the one with the smallest number of specified forms), only a small number of verbs can be expected to indicate whether the child is marking verbal agreement: *être* 'to be', *avoir* 'to have', *aller* 'to go', *vouloir* 'to want', and the rare instances of verbs from the *-ir* and the *-re* class (like *faire* 'to do', *dormir* 'to sleep') that are used by the child. But to complicate matters further, even with those more richly inflected verbs, second and third person singular will have to be discarded from the analysis, as they are homophonous (see Table 5). The first instances of clearly agreeing verbs appear around 2;1 in the present corpora.

When the *elsewhere* form is "incorrectly" used instead of a specified form (as would be required by the target grammar), Agreement will be argued to be underspecified. When a specified form is correctly used, Agreement will be argued to be fully specified. But in the majority of cases, because the *elsewhere* form fills most of the paradigm, the verb form will have to be treated as ambiguous with respect to agreement marking.[9]

The features of the intended subject were recovered as follows: (i) from the features of either a subject clitic, a dislocated DP coreferential with the subject, or an AHS; (ii) from those displayed by adjectives modifying the subject or by participials with the auxiliary *être* 'be' (but only participials that are not of the first verb class and certain adjectives display audible marks of agreement with

the subject); (iii) from the features of a reflexive clitic on the verb, when distinct from the default *se*, and (iv) from the context, where possible. Agreement mismatches between a dislocated element and the verb were the most common in the present data.

Although the specification of Agreement alone is sufficient to predict whether nominative is assigned to the subject, the specification of Tense also has to be taken into account. In particular, an important question to address is whether Agreement can be specified when Tense is not in child French.

3.1.2   *Agreement morphology with untensed verbs in French*

According to the ATOM, finite morphology on a verb is due to the specification of Tense. Three "levels" of Tense specification can arguably be distinguished in the French data (although only the first two are strictly relevant to the present discussion of the ATOM): (i) non-finite verbs (bearing non-finite morphology), (ii) finite verbs in the present tense, and (iii) finite verbs marked for a tense other than present.

The clearest case of Tense underspecification is that of true RIs, where a verb bears non-finite morphology and does not raise to INFL (as indicated by the fact that it follows the negation *pas* 'not', cf. e.g. Pierce 1992; Ferdinand 1996). Schütze (1997: fn. 83, p. 250) entertains the possibility that non-finite agreeing forms could exist in French. In that language, infinitives cannot bear morphological marks of Agreement, but past participles can. In French, past participles with the auxiliary *être* 'to be' can in principle agree with the subject.[10] Participles used with *avoir* 'to have' need not concern us here as they never agree with the subject.

One might therefore postulate (i) that RIs are always [−Tns,−Agr] when bearing infinitival morphology (as in (1)) or in cases where the target grammar would require the *avoir* auxiliary (as in (6a)), and (ii) that RIs are possibly [−Tns,+Agr] when consisting of a participial that would require the *être* auxiliary in the target grammar as in (11). The ATOM would predict pronominal AHSs to appear in the former case but not the latter.

(11)   0 parti xx.   (Anne 1;11.29)
           gone ?

The problem, once more, is that in most instances, it is impossible to tell if the RI is an infinitive or a past participle (as in (6b)), and when it is clearly a participle, whether it is marked for agreement or not, given that most forms are homophonous with respect to gender and number. It is impossible to hear the difference between masculine singular *vu*, feminine singular *vue*, mascu-

line plural *vus* and feminine plural *vues*.[11] I have found no instance of a root participle clearly agreeing with the subject out of 336 RIs in the data.

A question that needs to be raised with respect to the ATOM is how it would be syntactically possible for RIs to license subjects at all. Two facts make this problematic for the French data. First, RIs do not undergo verb raising and may not involve the projection of T (e.g. Rizzi 1994b). Second, the element expressing the subject of the RI nearly always appears higher than the negation particle *pas* in this and other corpora (e.g. Pierce 1992; Ferdinand 1996; Phillips 1996). If such elements really are subjects, they must therefore appear higher than NegP, presumably in [spec,TP]. The question then is: how can a lexically empty T license a subject in its specifier?[12]

If AHSs with true RIs turn out not to be heavy subjects but dislocated DPs coreferential with the (missing) subject, no special mechanism needs to be postulated to account for the licensing of these subjects with RIs.

Let us now turn to verbs with finite morphology. At first, the only finite-looking verbs attested are in the present tense (as also observed by e.g. Meisel 1994; Labelle 1994; Ferdinand 1996). In the overwhelming majority of cases where negation is present, the verb appears before it, which is typically taken to indicate that finite-looking verbs raise to an Inflectional head in child French (see e.g. Pierce 1992). However, this does not entail that verbs in the present tense are interpreted as 'truly' tensed by the child at that point. Ferdinand (1996) proposes that initially, verbs in the present tense are marked simply [+tense], but not for any specific tense. Accordingly, one could argue that morphologically present tense verbs in child French are initially not fully specified for Tense.

For the purpose of this analysis, although present tense verbs may not be fully specified for Tense features, I will assume that any finite-looking verb is [+Tns] (this is the option adopted by Schütze 1997 for child French).[13] This will however not be taken to mean that such verbs are interpreted as present tense by the child, in the sense discussed in Ferdinand (1996).[14]

I will assume that periphrastic tenses (as illustrated in (10a)) are [–present], in spite of the fact that the auxiliary is itself in the present tense (this is compatible with Jakubowicz et al. 1999, but goes against Ferdinand 1996). This has no direct bearings on the present study, as I take both present and 'non-present' finite-looking verbs to be [+Tns]. I would just like to point out here that verbs are not automatically marked for Agreement if they are not in the present indicative, as indicated in Table 5. Cases like (12) have been analysed as [+Tns,?Agr] due to the fact that the agreement suffix on the verb is not audibly distinct from that of the *elsewhere* form.

(12) (je) mettais   les pieds dans l'   eau.   (Anne 2;4.2)
     (I) put-IMP:ELS the feet   in   the water
     'I used to put my feet in the water.'

Evidence for the *elsewhere* status of third person singular forms of 'non-present' verbs is particularly clear in (13), extracted from data from another child of the York corpus, who was otherwise excluded from this analysis on the grounds that she had already passed the null subject stage at the beginning of the recordings. In (13a), a 1st person singular clitic appears together with the *elsewhere* form *prendra* instead of the expected *prendrai*.[15] In (13b), a 3rd person plural subject clitic appears with the *elsewhere* form *sera* instead of the expected *seront*.

(13) a. mais quand on part, je prendra   mon
         but when we leave I will-take:ELS my
         parapluie.   (Léa 2;11.18)
         umbrella
         'But when we leave, I'll take my umbrella.'
     b. et   quand ces   deux jours+là   sera   fini,   on
         and   when these two days-there will-be:ELS finished we
         sera +//.   (Léa 3;5.17)
         will-be
         'And when these two days are over, we'll be ...'

In contrast, in cases like (14), where the agreement suffix is audibly distinct from the *elsewhere* form, both Tense and Agreement will be taken to be fully specified.

(14) ai   cassé   bonhomme.   (Tom 2;1.13)
     have:1SG broken man
     'I've broken the man.'

In Section 3.2, the various combinations of Agreement and Tense (under)-specification are explored in relation to child French.

3.2 Predictions of the ATOM for child French

As we have seen in Section 3.1.1, verbs displaying unambiguous audible agreement morphology are rare in spoken French, especially in the early child data. Below are detailed the cases where the value of Agr is unambiguous. Ambiguous cases will be presented in Table 7.

Table 6. Clear Tns/Agr feature combinations as predicted by the ATOM for child French

Finiteness	Examples	Description Subject phi-features	Subject case
[+Tns,–Agr]	finite-looking verbs lacking expected specific agreement morphology		
	moi va, moi a mangé	≠ elsewhere	default
	(6d) (10) (13)		
[+Tns,+Agr]	finite-looking verbs with specific agreement morphology		
	je suis, ils vont aller	≠ elsewhere	nominative
	(14) (20) (21a) (21b)		

Table 6 shows the clear cases of INFL feature specification. For each combination of features, a description of the verb form is given, followed by an example. The numbers refer to attested examples given in this and other Sections. The *subject phi-features* are those of the intended subject, which may be altogether absent when Tense is underspecified. '? *elsewhere*' in that column indicates that the *subject phi-features* are incompatible with the *elsewhere* form of the verb. For details on what such forms are, see Table 5. The case mentioned in the last column is that predicted by the ATOM: Nominative where Agr is fully specified, default where Agr is underspecified.

Combinations including [–Tns] were excluded from the clear cases (and hence from Table 6), because verbs bearing non-finite morphology cannot bear (overt) agreement morphology at the same time in spoken French. We have seen in Section 3.1.2 that the specification of Agreement is not audible on the vast majority of verbs bearing non-finite morphology. [–Tns] verbs therefore have to be treated as ambiguous with respect to their Agreement specifications.

It is important to note that for Agreement to be visible, the phi-features of the intended subject have to be incompatible with the *elsewhere* form of the verb. So only cases like *je vais* 'I go', *ils veulent* 'they want', where the agreement morphology is audibly distinct from the *elsewhere* form, can be unambiguously analysed as [+Agr], while cases like *je veux* 'I want', *tu vas* 'you go', have to remain [?Agr]. The ambiguous combinations of feature specifications are presented in Table 7.

For the purpose of this evaluation of the ATOM, the crucial cases to be considered are those where the specification of Agreement can be morphologically identifiable. This means discarding the bulk of the data, as the majority of finite-looking verbs are *elsewhere* forms with respect to Agreement. According to the ATOM, Agreement is underspecified when a finite-looking verb displays 'incorrect' agreement morphology, which is only visible when the features of

Table 7. Ambiguous Tns/Agr feature combinations as predicted by the ATOM for child French

Finiteness	Examples	Description Subject phi-features	Subject case
[–Tns,?Agr]	verbs with non-finite morphology (moi) mangE, (toi) allE any (1) (6a) (6b) (7)		default (or nominative?)
[+Tns,?Agr]	finite-looking verbs with default agreement morphology moi/je mange (5) (6e) (12) = elsewhere lui/il va (6c) (19) (19a)		default or nominative

the intended subject are not compatible with the *elsewhere* form of the verb. Whenever a verb is inflected with specific Agreement morphology, Agreement is said to be fully specified.

The predictions of the ATOM for child French are as follows: (i) if a verb lacking the required agreement morphology has a realised subject, the latter will surface in the default case; and (ii) non-nominative subjects do not occur with verbs marked for specific agreement; All preverbal strong pronouns (and DPs) expressing the subject could be genuine subjects under that hypothesis, in which case they are expected not to receive a dislocation intonation.

3.3 Child French does not behave as predicted under the ATOM

The data from the York and the Cat corpora contradict the predictions of the ATOM. Non-nominative AHSs do occur with verbs clearly marked for [+Agr] and nominative subjects do occur with verbs clearly lacking Agreement morphology.

3.3.1 *Non-nominative AHSs **do** occur with fully specified Agr*
The ATOM predicts that whenever a verb bears specific agreement morphology, the subject will surface in the nominative case. Non-nominative subjects are thus totally unexpected in such cases. Contrary to this prediction, unambiguously agreeing verbs do appear with a pronominal AHS, as in (15).

(15)   moi   ai   cassé   ça   là.   (Anne 2;2.0)
       me   have:1sG broken that there
       'I broke that.'

Among the verbs appearing with an (apparent) subject, the proportion of pronominal AHSs with unambiguously agreeing verbs is strikingly similar to

that of pronominal AHSs appearing with the rest of the [+Tns] verbs: 2% and 3% respectively.[16] Given this, I believe that cases like (15) should not be treated as noise in the data. An extra argument to that effect will be provided in Section 4.5, where it is shown that late cases of pronominal AHSs (as illustrated in (16)) occur exclusively in the rare configurations still allowing null subjects (while the core of the null subject stage is by then over).

At that stage, agreement mismatches between the features of the (intended) subject and the morphology of the verb have almost totally disappeared from the child's speech. It is thus extremely likely that by then, finite-looking verbs are [+Agr] even when they (correctly) surface as an *elsewhere* form (as in (16)). This renders cases like (16) comparable to (15) given that in both instances the verb is fully finite and appears with a pronominal AHS.

(16) a. mais moi veux   mettre ça.   (Anne 3;5.4)
          but   me   want:TNS put-INF that
          'But I want to put that one.'
      b. moi veux   pas ranger.   (Max 2;9.12)
          me   want:TNS not tidy-up-INF
          'I don't want to tidy up.'

I conclude that, if the pronominal AHSs in (15) are analysed as subjects, such cases constitute counter-evidence to the ATOM.[17]

3.3.2 *Nominative subjects **do** occur with underspecified Agr*

Whenever Agreement is underspecified, the subject is predicted by the ATOM to surface in the default case. However, this is not what we find in child French. The evidence presented below is crucial, as it rests on the only uncontroversial (and unambiguous) cases where Agreement is underspecified: cases where a finite-looking verb lacks the expected specific agreement morphology (i.e. where the phi-features of the intended subject are incompatible with the *elsewhere* form in which the verb appears). I have found 25 such cases in the two corpora under investigation. Out of these 25 cases, only 3 appear with a pronominal AHS (as in (6d)), while 15 (= 60%) appear with a (nominative) subject clitic (as in (17)).

(17) a. moi, j'est   pas méchant.   (Tom 2;4.8)
          me   I is:ELS not nasty
          'I'm not nasty.'
      b. moi aussi, je va   monter.   (Anne 2;9.15)
          me too   I will:ELS go-upstairs
          'I'll go upstairs too.'

Table 8. Subject distribution among verbs under [+Tns] [–Agr] in child French

Type of subject	Proportion among all [+Tns,–Agr] verbs	
Pronominal AHSs (default case)	12%	(3/25)
Other AHSs (unclear case)	8%	(2/25)
Subject clitic (nominative case)	60%	(15/25)
No subject	20%	(5/25)

These results also go in the opposite direction to what the ATOM predicts: In child French, an underspecified Agr licenses nominative subjects in the majority of cases. This is summarised in Table 8.

We have seen that in child French, (i) Agreeing verbs co-occur with non-nominative AHSs (to the same extent that such subjects occur with other finite-looking verbs), and (ii) Clearly non-agreeing verbs do license nominative subjects much more often than non-nominative subjects. Faced with this evidence, we have to conclude that the ATOM is untenable, and that it is not the underspecification of an inflectional head that accounts for the default form in which pronominal AHSs appear in child French.

Incidentally, the same conclusion would have to be drawn under a morphological analysis of subject clitics, according to which these elements are agreement markers without argument status (e.g. Auger 1994). Note that under that analysis, what counts as an agreeing verb becomes problematic: is the presence of the clitic sufficient, or is specific morphology on the verb also required in cases where it would be in the adult language? In the former case, the presence of a subject clitic would be the sole indicator of agreement, and cases like (18a, b, c) would be analysed as agreeing, as opposed to cases like (18d), (18e). In the latter case, agreement would only be marked when both the clitic and specific morphology are realised on the verb, hence considering cases like (18b, c, d, e) as non-agreeing, as opposed to cases like (18a).[18]

(18) a. j'ai   mangé.
          I have:1SG eaten
      b. j'a   mangé.
          I have:ELS eaten
      c. je mangE.
          I   eat-INF
      d. ai   mangé.
          have:1SG eaten
      e. a   mangé, moi.
          have:ELS eaten   me

Under the assumptions of the morphological analysis of subject clitics, only one prediction of the ATOM could be tested, as there would be no clear nominative subject in spoken French. This prediction is that non-nominative subjects never appear with [+Agr]. It would be contradicted even more clearly than under the assumptions held in the present analysis. Indeed, if the presence of a subject clitic indicates that the verb is [+Agr], the proportion of non-nominative AHSs appearing with an agreeing verb would rise to 11% of [+Tns] clauses.

In Section 4, I propose that there is no need to postulate a special mechanism or restriction impeding nominative case assignment in child French, because pronominal AHSs are all left- dislocated elements coindexed with a null subject.

4.   Hypothesis 2: Pronominal AHSs are dislocated subjects with a missing resumptive

The occurrence of pronominal AHSs in child French (as in (6)) has been noted before in the literature (e.g. Pierce 1992; Ferdinand 1996; Legendre et al. 1999), but it was generally assumed that such elements could not be in the subject position because they were clearly not in the nominative case. In particular, Ferdinand (1996: 201–202) has argued that, given the absence of (other) non-adult-like case assignment in child French, strong pronouns could not be in the subject position, and that, consequently, they had to be in a peripheral position.[19]

4.1   There are clear dislocated pronominal subjects in child French

Unambiguously left-dislocated elements expressing the subject are attested in child French from very early on. In these cases, the dislocated element (which can be a strong pronoun or a DP) is coindexed with a resumptive clitic as in (19).

(19)   a.   et   ça,   c'est là.   (Anne 2;2.30)
             and that it is   there
             'And that one is there.'
       b.   et   toi   aussi, t'   as   tapé # comme ça.   (Tom 2;3.22)
             and you too   you have hit   like   that
             'You've hit like that too.'

    c.   da(lmati)en, c'est lui.   (Max 2;3.6)
        dalmatien   it is   him
        'That one's the Dalmatian.'

It has also been established (on the basis of Ferdinand 1993, 1996; Labelle & Valois 1996) that child French allows for the subject to be right-dislocated, even in the absence of a resumptive clitic (20).

(20) (j') ai   gagné, moi.   (Tom 2;1.11)
      (I) have:1SG won   me
      'I've won.'

Given the independently attested existence in the children's grammar of subject left- and right-dislocations coindexed with a null subject, it is plausible that (pronominal) AHSs are subject left-dislocations with a missing resumptive clitic. The frequent occurrence of left-dislocated pronouns coindexed with a subject clitic (as in (21)) supports this hypothesis (exact figures will be given shortly in Table 9).

(21) a. moi, je vais   là.   (Max 2;4.18)
         me   I go:1SG there
         'I'm going there.'
      b. moi, j'ai   dormi.   (Tom 2;4.9)
         me   I have:1SG slept
         'I've slept.'

4.2 Predictions of the dislocation analysis of AHSs

I have argued in De Cat (2002) that dislocated elements are base-generated by adjunction to IP or CP in adult French, and that they are interpreted as the topic of the clause/sentence in which they appear. This is true of left- and right-dislocated elements alike.[20] Children display from the earliest attested stages clear signs of competence in the encoding and decoding of topics by means of dislocation (De Cat 2002). A certain level of similarity between subject left-dislocations and subject right-dislocations in child French can thus reasonably be expected. More specifically, with respect to the present analysis, it is likely that if pronominal AHSs are in fact left-dislocated subjects, they will behave to an extent like right-dislocated subjects: We can expect that the rate of omission of subject clitics at the null subject stage will not be significantly different whether the dislocated subject appears in the left- or the right-periphery of the clause. Section 4.4 will show that this is indeed the case. Another prediction if

non-nominative AHSs are dislocated subjects is that their prosody will be that of left-dislocated pronominal subjects, to the extent that the specificity of their prosody can be defined. This will be investigated in Section 4.3.

To sum up, a dislocation analysis of child French pronominal AHSs predicts that (i) the acoustic profile of pronominal AHSs is similar to that of left-dislocated pronouns; (ii) pronominal AHSs behave like other subject dislocations in a period P of development, from a distributional point of view. More specifically, we should expect no significant difference in the rate of subject clitic omission between clauses containing a pronominal AHS and clauses containing a right-hand pronominal subject topic.

4.3 Acoustic evidence

There is still little consensus as to the best way to describe and analyse the prosody of left-dislocated elements in spoken French. However, most of the studies I have come across argue that such dislocated elements do receive a distinctive prosody (Deshaies, Guilbault, & Paradis 1992; Guilbault 1993; Rossi 1999; Mertens, Goldmann, Wehrli, & Gaudinat 2002), and that left-dislocated subjects are prosodically distinct from heavy subjects (Rossi 1999).

In De Cat (2002), I have closely examined prosodic diagnostics to distinguish left-dislocated from heavy subjects in spoken French on the basis of three types of approaches: that of Deshaies et al. (1992) and Guilbault (1993), that of Mario Rossi (Rossi 1971, 1972, 1981, 1999) and that of Piet Mertens (Mertens 1987, 1993, 1997; Mertens et al. 2002). The first approach investigates the relevance of various arbitrarily chosen traits as characteristic of left-dislocation prosody. The other two integrate the prosody of left-dislocated elements within a coherent system aiming at describing and explaining the prosody of spoken French. A short introduction to these two approaches is therefore called for before addressing the diagnostics in question.

Mario Rossi's work follows the morphological approach to intonation, in the tradition of the Prague school. Within this approach, left-dislocation prosody is defined and identified by a bundle of traits or *intonemes*, according to various parameters (intensity, time, melody). Such traits should thus not be considered in isolation. Rossi's research is based on a fine-grained acoustic analysis of the data, whereby variations in each parameter are measured in terms of *Perception Units* (PU). One PU corresponds to the minimum difference in a given parameter that can be perceived by the human ear, in naturalistic speech.[21] In a nutshell, left-dislocated elements are identified by the following intonemes:

–   F^0 (i.e. fundamental frequency or pitch) dominating the utterance and characterised by a rise of at least 3 PUs on the accented (i.e. stressed) syllable of the left-dislocated element. The peak of the rise reaches the Infra-High or High level of the speaker's range.[22]
–   Lengthening of approximately 5 PUs on the accented syllable.
–   Peak of intensity on the vowel of the accented syllable.

Piet Mertens' theory (Mertens 1987, 1993, 1997; Mertens et al. 2002) is situated at the interface between syntax and prosody. It follows the distributional approach to intonation. The core idea is that prosody is determined by the presence of intonation markers. These markers correspond to combinations of *tones* (or height morphemes) and syllables (i.e. localisation points). The whole model is based on a multi-layered representation of prosodic structure, where each layer results from the combination of units from the preceding level. The levels directly relevant to the present purpose result of: (i) the combination into syllables (which can be stressed or not), (ii) the combination into Intonation Groups (IGs), and (iii) the combination into packages.

An IG corresponds to a sequence of syllables bearing a unique stress or *final accent*. In French, the syllable bearing this accent is the only one that can be lengthened and it contains two tones (one on each mora).[23] The composition of the French IG is given in (22), where sequences in square brackets indicate optional parts. NA stands for 'non-accented syllable', IA for 'syllable bearing the initial accent' and FA for 'syllable bearing the final accent'.

(22)   IG → [[NA] IA] [NA] FA [NA]

A package is the result of the combination of two or more IGs. This grouping is done according to the rule given in (23).

(23)   For any two successive IGs: if the tone in the FA position of the last IG dominates that of the first IG, then there is an embedding effect of the first IG with the second. Otherwise, the two IGs are independent (juxtaposition).   (Mertens 1993:3)

Dominance is defined according to the tone of the syllable bearing the FA (Final Accent). The tone of a syllable corresponds to the *level* associated to that syllable. Four levels are distinguished: infra-low, low, high and extra-high. These levels are relatively defined (contrary to what is done in Rossi's approach). The passage from one level to the next is marked by a major interval (typically 5 semitones). Within a given level, minor intervals (typically 3 semitones) can create a heightening or a lowering.

The delimitation of IGs and packages is largely dependent on the speaker's choices. An example of grouping into packages is given in (24a). The square brackets indicate the grouping into packages. The sequences l...l etc. inside the brackets correspond to the IG. In this example each IG ends on a FA, indicated by two capital letters.

(24)   La lecture   n'était pas   un niveau auquel   on s'intéressait
        [l.....l HH] [l.....l HH] [l.....l HH ll/LL]   [\l..........l HH]
        quand on faisait   une théorie   de la littérature.
        [[l............l/LL   \l.....l HH]   l.........\l L-L-][24]

(adapted from Mertens 1993)

The underlying assumption of this model is that there is a certain level of congruence between prosody and syntax. Intonation boundaries define a structure that cannot be mapped one-to-one onto the syntactic structure, but it nonetheless respects syntactic structure (Mertens et al. 2002).

An acoustic analysis of spontaneous speech across dialects of French suggests the following diagnostic procedure to distinguish the prosody of heavy subjects from that of left-dislocated subjects:[25]

(25)   To distinguish left-dislocated from heavy subjects on the basis of their prosody:
        a.   If the IG of the element in question gets combined with the following IG into a package, that element must be a heavy subject
        b.   If such a combination does not take place, the element in question will be taken to be a left-dislocated subject if:
              (i)   there is a pitch rise of more than 3 semitones (culminating) on the last syllable of that element (the rise can be smaller in utterances with very little pitch variation overall)
              (ii)   the last syllable of that element is strongly prominent, either in terms of intensity or in terms of duration
              (iii) a 'Medium-High-Low' contour (illustrated in Figure 1) is observed on the last syllable of that element and the following two syllables

Point (25b-i) cannot be relied on in most cases where the dislocated element is monosyllabic because there is usually no room within a single syllable for such a pitch rise.
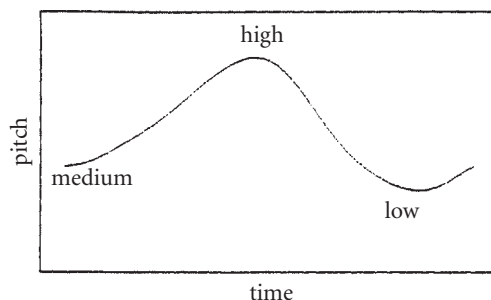
Figure 1. The 'medium-high-low' contour of left-dislocation prosody

4.3.1   *The prosody of dislocated subjects in adult spoken French*

The preliminary analysis carried out on the present corpora was based on a random sample of 20 utterances from adults and children, each containing either a heavy subject, a left-dislocated subject adjacent to its resumptive clitic, or (in the case of children) a pronominal AHS. All the examples presented here come from the same recording session involving a child (Lisette) and her mother (Audrey), both natives of Montreal,[26] in order to control for interfering factors such as dialectal differences or recording conditions (the recordings were made at home, with no control over background noise or echo level).

I will present three pairs of sentences from the speech of Lisette and her mother. The first and second pairs of sentences contain the same left-dislocated element (*ça* 'that' and *moi* 'me' respectively). The third pair compares a pronominal AHS from Lisette's speech with a strong pronominal subject in her mother's.

The first two pairs of sentences clearly show that the prosody of left-dislocated pronominal subjects is similar in the speech of Lisette and that of her mother. The first pair of sentences involve dislocated *ça* 'that'. In all the examples, a prosodic description is given on the second line, following Mertens' (1987, 1997) model.

(26) a. ça,   c'(es)t un super livre.   (Mother)
          [HH] [l   H \h LL]
          'That's a brilliant book.'

      b. ça,   c' est jaune.   (Lisette 2;9)
          [/LL] [l   /LL]
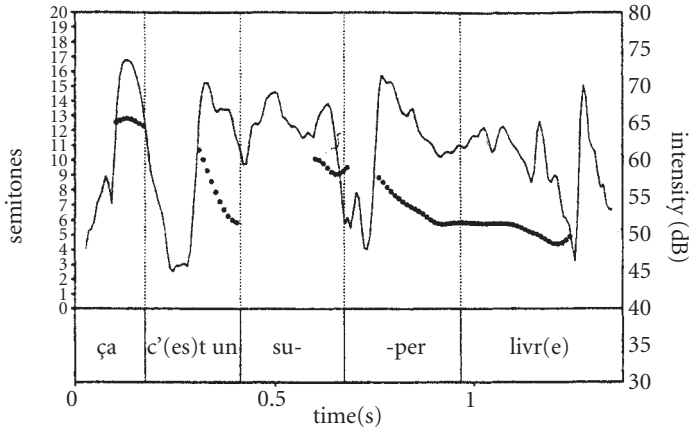   'That's yellow.'

Figure 2. The prosody of left-dislocated *ça* 'that' (spontaneous, Audrey)

The prosody of the adult sentence (26a) is as in Figure 2, where the thick line represents the pitch trace (or F^0), measured in semitones,[27] and the thin line the intensity, measured in decibels.

Although there is no clear rise in pitch on the left-dislocated element itself (which is to be expected, given that it is monosyllabic and starting with a voiceless consonant), the pitch of this element dominates the whole sentence, and is situated in the high register of this speaker's range. It is followed by a substantial drop in F^0 (5.5 semitones). Note that this sentence is emphatic, and that consequently the pitch variation will be exacerbated. The prominence of the left-dislocated element is further enhanced by a peak of intensity (the highest of the sentence). The dislocated element does not get combined with the following IG into a package (because the Final Accent (FA) of the latter does not dominate that of the former). This is compatible with the fact that left-dislocated elements are prosodic islands.

The prosody of the corresponding child utterance is given in Figure 3.

The left-dislocated subject *ça* in Figure 3 is not as prominent in pitch as its counterpart in Figure 2, but the pitch trace of the sentence as a whole is fairly flat, so no substantial variation is to be expected.[28] The relatively small pitch prominence is compensated by a clear intensity peak on the left-dislocated element (the highest in the sentence). The pitch of *ça* is not dominated by that of the next IG's final accent. This is compatible with a left-dislocation analysis of *ça*.

The second pair of sentences involve a left-dislocated *moi* 'me' expressing the subject.
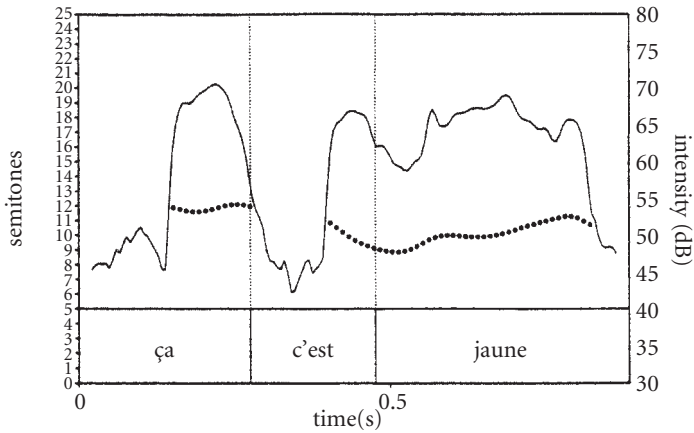
Figure 3. The prosody of left-dislocated *ça* 'that' (spontaneous, Lisette)

(27) a. moi,   j' aimerais   que tu m' expliques parce que (…)[29]   (Mother)
          [/HH] [l   /LL] [\l..........l HH]   l........l
          'I'd like you to explain because...'
      b. moi,   je veux aller   chez Solène.   (Lisette 2;9)
          [H+H+] [l....../l] [h /HH l.......\ l L-L-]
          'I want to go to Solene's!'

There is a considerable rise in pitch (7.7 semitones) on the left-dislocated element, as shown in Figure 4. The pitch of *moi* is not dominated by that of the following IG,[30] which is to be expected given that dislocated elements are prosodic islands. Figure 5 shows the prosody of the child sentence in (27b).

The rise in pitch (11.8 semitones) on the left-dislocated *moi* in Figure 5 is even bigger than that in the comparable adult sentence. The pitch on the nucleus of *moi* dominates even the high pitch on the emphatic *aller* 'go' and is clearly in the highest register of the speaker. As expected, left-dislocated *moi* does not get combined with the following IG given that the dominance condition is not met.

Let us now turn to the third pair of sentences, where a strong pronominal subject in the adult's speech is compared to a pronominal AHS in the child's speech. The possibility of having a strong pronoun in the subject position of a finite sentence in adult French is allowed only with third person *lui* 'him'.[31] In Canadian French, strong pronouns such as *lui* can refer to inanimates as well as animates (which is not possible in European French).
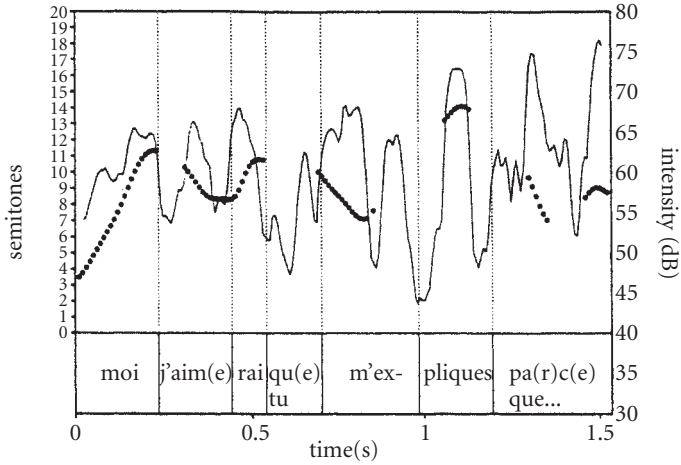
Figure 4. The prosody of left-dislocated *moi* 'me' (spontaneous, Audrey)

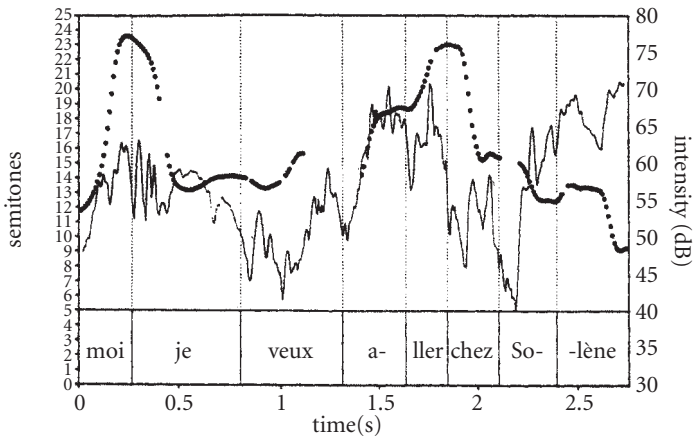**Figure 5.** The prosody of left-dislocated *moi* 'me' (spontaneous, Lisette)

(28) a. lui   est plus pâle.   (Mother)
          [L/L] [l.....\l   /LL]
          'That one's paler.'
      b. moi   en a.   (Lisette 2;9)
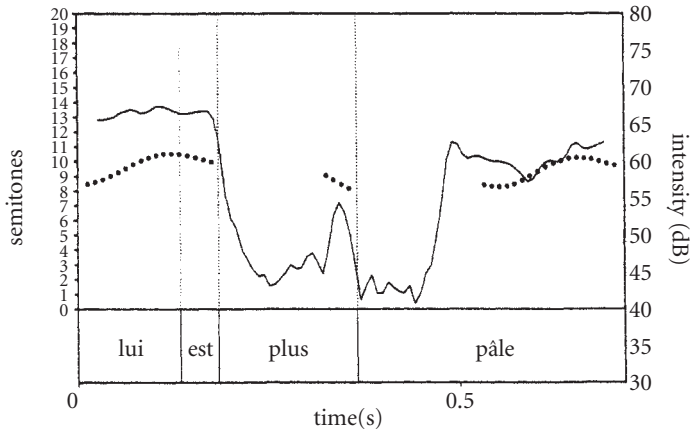   [HH] [l   LL]
          'I've got some.'

Figure 6. The prosody of a strong pronominal subject (spontaneous, Audrey)

There is a small rise of 2 semitones on the sentence-initial *lui* in Figure 6. However, the pitch of *lui* remains marginally lower in average than that of the next IG's FA syllable. Note also that there is no drop of F^0 after the strong pronoun; the pitch remains constant on the copula (from a perceptive point of view, given that a variation of less than one semitone is not perceivable by the human ear, as argued by Rossi 1971). The strong pronoun is thus in the subject position in this sentence.[32]

Figure 7 gives the prosody of the sentence in (28b). This sentence contains a pronominal AHS and a tensed verb lacking specific agreement morphology. Under the ATOM, the pronominal AHS is expected to occupy the canonical subject position. If this is the case, the prosody of this element should resemble more that in Figure 6 than that of all the other elements observed so far (which were clearly left-dislocated). There is a rise in pitch of only 2.4 semitones on the strong pronoun, i.e. hardly more than the one observed in Figure 6. However, in this case, there is a clear drop of F^0 after this element (5.7 semitones), and the pitch of *moi* dominates that of the rest of the sentence (leaving aside the *oui* 'yes' at the beginning of the sentence). There is also an intensity peak on *moi*, the highest of the sentence. The strong pronoun can thus not be combined with the following IG, which is compatible with the status of prosodic island. We have to conclude that in this case, the prosody indicates that the strong pronoun is dislocated rather than in the subject position.

This preliminary analysis has shown that the prosody of left-dislocated subject pronouns in the speech of Lisette was similar to that of those elements in the speech of her mother. It has also shown that in the absence of a subject
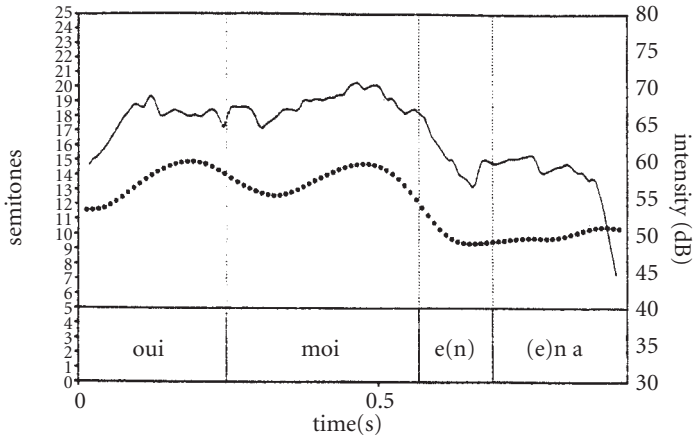
Figure 7. The prosody of an AHS (spontaneous, Lisette)

clitic, a preverbal strong pronominal expressing the subject can have a clear left-dislocation prosody, even when the verb unambiguously lacks agreement morphology. This indicates that at least some cases of pronominal AHSs are in fact left-dislocated subjects with a missing resumptive clitic. It also suggests that all pronominal AHSs could be dislocated in that way. This is what I argue for in Section 4.4.

4.4 Distributional evidence

As suggested in Section 4.2, a dislocation analysis of pronominal AHSs predicts a certain degree of similarity between these and right-dislocated pronominal subjects. In De Cat (2002), I argue that left- and right-dislocated pronominals are alike topics. It can therefore be expected that the rate of realisation of subject clitics will not be significantly different whether the 29 dislocated pronominal subjects appear on the left or on the right. This is indeed what we find, as detailed in Table 9.

The data in Table 9 has been subdivided into two periods, determined on the basis of the emergence of obviously agreeing verbs.[33] This table clearly shows that pronominal AHSs are comparable with right-dislocated pronominal subjects: in both cases, across the periods, the same proportion of strong pronominals expressing the subject co-occur with a subject clitic. No significant difference in the rate of the appearance of nominative clitics is observed, whether the strong pronoun is left- or right-peripheral. Statistical significance

Table 9. Subject clitic realisation in sentences with a pronominal subject dislocation

Strong pronouns interpreted as the subject	With a coindexed clitic	Without a coindexed clitic
TIME 1		
Left-dislocated	25% (3/12)	75% (9/12)
Right-dislocated	35% (6/17)	65% (11/17)
Total	(9/29)	(20/29)
TIME 2		
Left-dislocated	72% (310/431)	28% (121/431)
Right-dislocated	70% (99/141)	32% (42/141)
Total	(409/572)	(163/572)

was computed for Time 1 with a Fisher exact test, due to the low number of tokens in some cells. The p value found was 0.431, which means that there is a greater than 40% chance of wrongly rejecting the null hypothesis (according to which these distributions would be the same). For Time 2, the Chi-square test was used, yielding similar nonsignificant results: $X^2 = 0.153; p < 0.7$). Pronominal AHSs are thus best treated as left-peripheral elements coindexed with the (sometimes null) subject.

4.5 Additional evidence

Additional evidence in favour of a dislocation analysis of pronominal AHSs comes from the fact that these elements are almost exclusively attested during the core null subject stage. Crucially, after that period, the only cases of pronominal AHSs that are attested occur in a very limited number of contexts, which correspond exactly to the contexts still licensing (target-deviant) null subjects. Compare (16), repeated below as (29), with (30). Such cases typically involve what are standardly treated as control verbs with an intended first person subject.

(29) a. mais moi veux   mettre   ça.   (Anne 3;5.4)
          but   me   want:TNS put-INF that
          'But I want to put that one.'
      b. moi veux   pas ranger.   (Max 2;9.12)
          me   want:TNS not tidy-up-INF
          'I don't want to tidy up.'

(30) a. (je) vais aller chercher euh +//.   (Max 2;9.12)
          (I)   will go   get   er
          'I'm going to get …'

b. (je) peux tourner la   page?   (Tom 3;0.6)
    (I)   can   turn   the   page
    'Can I turn the page?'

These 'late' examples suggest that pronominal AHSs in child French are only attested where there is a null subject. This is exactly what is expected under the dislocation analysis proposed in this chapter.

5. Conclusion

Apparent non-nominative subjects in child French have been shown to be best analysed as left-peripheral subjects with a missing resumptive clitic. What seemed to be a correlation between non-nominative subjects and lack of finiteness of the verb is in fact a by-product of the correlation between null subjects and lack of finiteness.

Schütze and Wexler's (1996) ATOM, which links the licensing of non-nominative subjects in child grammar to the underspecification of Agreement, has been shown not to be tenable, given that the cross-linguistic predictions it makes are not borne out in child French: (i) non-nominative AHSs occur when Agr is fully specified (to the same extent that they do with Tensed verbs in general), and (ii) nominative clitics occur in the majority of cases where Agr is clearly unspecified.

The presence of apparently target-deviant non-nominative subjects in child French turns out to be target-compliant use of left-peripheral subjects. Like adults, French-speaking children only assign nominative to the subject of their finite sentences. Like adults, they frequently produce subject dislocations – and these are attested from the onset of word combination (as shown in De Cat 2002). The difference between child and adult language in this context is restricted to the well-known but not fully understood null subject phenomenon in language acquisition.

Notes

1. The age of the child is given as "years;months.days".

2. Some researchers further distinguish RIs stricto sensu from root participles (e.g. Legendre, Hagstrom, Vainikka, & Todorova 1999), as illustrated in (i).

(i)   moi vu.   (Max 1;11.0)
       me   seen
       'I (have) seen (one).'

In this chapter, this extra distinction will not be made. Note that the majority of verbs are of the *-er* class and that the form such verbs is ambiguous between infinitival and participial morphology because both are pronounced with a final [e].

3. The term heavy subject is used in this chapter to designate a non-clitic element in the subject position.

4. In some cases the resumptive can be a non-clitic element, as in (i).

(i)   La crème$_i$, ça$_i$ sent   bon.
       the cream   it   smells nice
       'Cream smells nice.'

Clear cases of dislocated elements are in bold throughout the chapter. I assume that subject clitics have full argument status in spoken French (see De Cat 2002 for arguments to that effect and for a discussion of the various diagnostics for dislocated elements in that language).

5. The letter following the name of adult speakers indicates the country of origin: B for Belgium, C for Canada, F for France.

6. The York corpus was collected under the direction of Bernadette Plunkett (ESRC grant #R000 22 1972). It contains data from Belgium, France and Canada. The Cat corpus was collected by myself, and contains longitudinal data from Belgium and cross-Sectional data from Belgium and Canada.

7. Schütze (1997) does not consider that AgrS is an independent head. Rather, he argues that the Agreement features are on the Tense head. Instead of Agreement, he introduces Accord, which is defined as the presence of agreement features on the verb and of case features on the subject. I will leave aside here the question as to whether AgrS should be considered an independent head (as in Pollock 1989; Belletti 1990; Chomsky 1993) or whether it consists of features on Tense (as in Chomsky 1995; Schütze 1997). If the latter possibility is to be retained, an "empty" AgrS would correspond to the absence of AgrS-features on Tense.

8. It is impossible to distinguish between *il* and its plural counterpart *ils* in this context, as the following word starts with a consonant, which impedes liaison, if any – Canadian French even allows for the absence of liaison between *ils/elles* 'they' and the following verb when the latter begins with a vowel.

9. Cases like (i) have also been treated as ambiguous with respect to the specification of Agreement in Max's data, given that in adult Canadian French, the forms va and vais alternate for the first person singular.

(i) moi va   faire un truc de magie.   (Max 2;3.20)
     me will:ELS do a   trick of magic
     'I'll do a magic trick.'

10. This has been claimed not to be the case in certain spoken varieties (e.g. Sportiche 1996). Participle agreement with the subject is attested in the input received by the children in the present study.

11. In certain dialects (e.g. Belgian French) a slight lengthening of the vowel can be observed with the feminine forms, but this is not clearly discernible in all cases.

12. In De Cat (2002) I show that the York and Cat corpora do not give any reason to believe that such licensing is possible.

13. A different view is adopted by Jakubowicz, Nash, and Van der Velde (1999), who argue that an additional functional projection is required for *passé composé*: on that analysis, present tense verbs are finite but do not contain a Tense projection. Analysing verbs in the present tense as [–Tns] would increase the proportion of (finite-looking) non-finite verbs in the present corpora. This would have no bearing on the expected case of the subject of such verbs, but would predict an overall higher rate of null subjects with finite-looking verbs. However, even then, the underspecification of Tense is not sufficient to account for the null subject stage, as illustrated later in the text by (14), (20), and, if the present analysis is correct, (15), where the subject is missing in spite of the full specification of Tense.

14. The Tense specifications of verbs in the present is crucial for analyses aiming at distinguishing the acquisition of Tense from that of Agreement in child French (e.g. Legendre, Hagstrom, Vainikka, & Todorova 1999). Initially, the only verbs displaying agreement morphology are all in the present tense. The choice of whether to analyse such verbs as [–Tense] (because present would be seen as default), or as [+Tense] (because of the absence of non-finite morphology and of the presence of verb raising) becomes a crucial one, as under the latter assumptions, one would be forced to conclude that the acquisition of Agreement cannot be distinguished from that of Tense in early child French.

15. The ATOM predicts that cases like this do not exist, where a subject clitic appears with a non-agreeing verb. I come back to this in Section 3.3.

16. The proportion of pronominal AHSs found with finite-looking verbs is of 4/204 with [+Tns,+Agr] and 77/2795 with the rest of the [+Tns] verbs. A Fisher exact test revealed no significant difference between the two distributions. An anonymous reviewer wonders why the proportion of pronominal AHS with [+Tns,+Agr] verbs is so low and suggests it would be much higher if calculated over root declaratives only. I have two points to make with respect to that. First, no such effect is to be expected under the ATOM. What is relevant is the inflection of the verb, not the status of the clause or the utterance type (note also that the bulk of the data consists of root declaratives anyway). Second, contrary to what the reviewer in question appears to believe, the very same data sample has been used to calculate

the proportions reported throughout Section 3.3. The differentiating criterion between the various sub-samples is the inflection of the verb, as defined by the ATOM.

17. Note that if pronominal AHS are analysed as dislocated subjects with a missing resumptive, the occurrence of such examples in child French does not bear on the ATOM one way or the other.

18. Legendre et al. (1999) adopt an intermediary position, whereby the presence of either a subject clitic or an agreement suffix on the verb is taken to be sufficient indication that Agreement is specified. Hence in (18), only (18e) would be argued to be non-agreeing. Note however that forms like (18b) and (18d) are both ungrammatical in adult French. Treating them as agreeing in child French would have to be backed up by theoretical arguments, but Legendre et al. (1999) do not address this issue.

19. Ferdinand argued that in finite sentences in child French (i.e. when the verb did not bear non-finite morphology), preverbal *moi* 'me' was always in [spec,FocusP]. This is disputed in De Cat (2001).

20. Overall, the rate of left- or right-dislocation of subjects is the same in adult French, across dialects: 7% of clauses contain a left-dislocated subject, and 8% of clauses contain a right-dislocated subject (out of a total of 4030 coded clauses from the adults of the York and Cat corpora).

21. "*Une unité de perception est égale à une fois le seul de perceptibilité (ou seuil différentiel) du paramètre considéré*" (Rossi 1999: 212).

22. The *range* of a speaker is the total melodic span covered by his/her voice in spoken language (e.g. Rossi 1999). In the three approaches to the prosody of French left-dislocation discussed here, the notion of dominance has to be understood in terms of 'quantity', not structural superiority – e.g. an element X dominates Y in pitch if X is higher than Y.

23. The mora is a subword prosodic constituent smaller than the syllable, used to analyse the metrical structure of speech.

24. In Mertens' notation, *l* stands for 'low' and *h* for 'high'. Capital letters indicate that the syllable is stressed. Sequences l....l involve only low tones. The '−' sign indicates that the pitch reaches the lowest level in the speaker's range. The / and n signs indicate heightening and lowering within a given level. See Mertens (1987) for details. I have indicated the grouping into packages on the same line as the grouping into IGs.

25. Space limitations prevent me from going into the detail of this analysis. The reader is referred to De Cat (2002).

26. This data was collected in Montreal in June 2000, with a minidisk recorder Sony MZ-R91 and a boundary microphone Sony ECM-F8. The sound files were subsequently converted into wave files (22,050 Hz). The data from the York corpus was also used in this analysis, but I have chosen not to present it here due to its inferior sound quality. Too much background noise was picked up in these recordings, and as a result, the pitch traces are more sketchy. The results were nonetheless similar to those presented here.

27. 0 semitone represents the lowest pitch the speaker reaches in spontaneous (recorded) speech. The value of level 0 was calculated on the basis of 5 minutes worth of extracts from the speaker in question, including very quite moments as well as lively, loud and more high-

pitched ones. All calculations were done using the sound analysis programme Praat, written by Paul Boersma (http://www.fon.hum.uva.nl/praat).

28. Note that the little rise occurring at the end of the very last syllable is situated on the consonant (it is due to an enumeration intonation), not on the syllable nucleus, where the F0 is measured.

29. The adjoined clause introduced by *parce que* 'because' has not been included in the acoustic analysis because it would make the sentence too long for clear presentation in a single figure. The pitch of the remainder of the sentence is lower than that of *expliques*, so there could be no grouping of the first part of the sentence (the matrix clause) with the following part into a bigger package.

30. The relevant IG ends on aimerais, not on expliques, as indicated by the square brackets.

31. It is not allowed with a stress-bearing *ça* 'that', and as far as I can tell unattested with a stress-bearing *elle* 'her' in the present corpora.

32. Other examples from the adult Canadian data showed a clear combination of the strong pronominal subject's IG into the following IG. Example (28a) was the only of its kind in the session from which the present data was extracted.

33. The first instance of a spontaneously produced unambiguously agreeing verb was taken to indicate the onset of Time 2. This is not meant to imply that Time 2 coincides with the acquisition of subject-verb agreement. Further analysis of the data is required to determine when subject-agreement is fully acquired, which is beyond the scope of this chapter. See Plunkett (under review) for an analysis of the null subject phenomenon based on the acquisition of agreement feature distinctions.

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Comparing L2 and SLI grammars
in child French
Focus on DP

Johanne Paradis and Martha Crago

Research comparing second language (L2) with first language (L1) acquisition, and impaired L1 with typically-developing L1 acquisition has been quite widespread. One outcome of such cross-learner comparative research has been to illuminate acquisition patterns that are common to developmental language in general, versus those that are particular to certain acquisition contexts. To date, there has been very little research comparing impaired L1 acquisition with child L2 acquisition. Such a comparison serves two purposes: First, comparing children with specific language impairment (SLI) to children learning an L2 is an essential third piece to "close the circle" on cross-learner comparisons (L2 – L1, L1 – SLI, SLI – L2), and thus, contribute to our understanding of the universal versus population-specific properties of acquisition. Indeed, because children acquiring an L2 can function as both language- and age-level matches to children with SLI, they are an important comparative group. After all, comparisons between L1 and adult L2 can be limited in the aspects of language examined because the cognitive abilities and levels of mental maturity are so divergent between these two populations. Second, comparing SLI with L2 has an important applied relevance. We have little systematic information on the longitudinal linguistic aspects of typical child L2 development, in comparison to the wealth of information on bilingual and L2 children's language competencies embedded in the educational context (e.g. Cummins 2000). However, it is precisely the linguistic details of expressive language that are important for distinguishing between L2 and impaired acquisition. Anecdotally, researchers have noted overlap between L2 learner errors in expressive language and those produced by children with SLI, and caution practitioners about the complications this poses for differential diagnosis of typically-developing and impaired

L2 learners (Damico, Oller, & Storey 1983; Juárez 1983; Schiff-Meyers 1992; Westernoff 1991).

Our prior comparative research on French-speaking children with SLI and children acquiring French as an L2 showed striking similarities between these two groups in their use of morphosyntax associated with the inflectional functional features of tense [tns] and agreement [agr] (Paradis & Crago 2000). In essence, both groups of children omitted finite verb morphology at rates of 51% to 11%, depending on whether the target was past, present or future, and these omission rates were significantly higher than those displayed by typically-developing (TD) age-matched monolingual children, who supplied finite verb morphology nearly 100% of the time. Furthermore, we argued that the error patterns shown by the L2 and SLI groups were consistent with the optional infinitive stage in L1 developmental language, and also with its SLI counterpart, the extended optional infinitive stage (Rice, Wexler, & Cleave 1995; Rice & Wexler 1996; Wexler 1998, 2003). The optional infinitive (OI) stage refers to a period in children's expressive language where they intermittently omit grammatical morphemes associated with the inflectional features [tns] and [agr], and as a result, they produce nonfinite root clauses which would not be permitted in the adult grammar. For example, an English-speaking child might say "this cup go here" instead of "this cup goes here", thereby omitting the 3rd singular present habitual [-s] and producing a nonfinite clause. The extended optional infinitive stage (EOI) refers to a parallel phenomenon in impaired developmental language that occurs over a more protracted period of time. For example, five-year-old children with SLI produce tense-marking morphology approximately 30% of the time in obligatory context whereas TD five-year-old children have achieved over 90% accuracy in tense-marking. In formal terms, Wexler (1998, 2003) argues that the nonfinite root clauses in children's language are the result of either an absent [tns] or [agr] feature underlyingly. Wexler claims that the reason young children's grammars display this characteristic is because of a constraint on their computational systems (the Unique Checking Constraint – UCC) that only permits the checking of the D-feature of subjects once, in either [tns] or [agr], whereas there is no such constraint in adult grammars. The inability to check D-features of subjects more than once results in the omission of one of the two features [tns] or [agr] in the computation, and this accounts for the optional omission of certain grammatical morphemes on the surface. Wexler (1998, 2003) argues that the OI stage in children's grammars is internally-controlled by maturation and externally-controlled by language typology. Specifically, TD children acquiring non-null subject languages will display an OI stage in development due to the UCC,

which is part of Universal Grammar and is maturationally-timed to fade away before the age of three. Rice and Wexler (1996) suggest that the EOI stage in children with SLI could be the consequence of a deficit in the maturational mechanism whereby the usual age of resolution of the UCC is extended over a much longer period of time.

Because Paradis and Crago (2000, 2001) found that children learning French L1, L2 and SLI, also display an OI/EOI stage in their development, we hypothesized that the OI phenomenon might be a property of intermediate language in all child learners of French or non-null subject languages in general. If our hypothesis is correct, it poses a challenge to Wexler's claim that OI effects in early grammars are due to the maturation of an innate language acquisition program, with a deficit in the program underlying the protracted OI effects in impaired L1 acquisition. After all, the L2 children we studied were learning language beyond the primary acquisition period, and were not impaired. However, Paradis and Crago (2000) did not examine grammatical morphemes associated with functional features in other domains of the grammar in the SLI and L2 children. Other researchers have found that both TD L1 children and children with SLI who are in the OI/EOI stage where they are marking tense variably tend to have fewer or no difficulties supplying other obligatory grammatical morphemes in the nominal domain such as determiners, plural and possession markers[1] (Bedore & Leonard 1998; Rice & Oetting 1993; Rice & Wexler 1996). This discrepancy between grammatical morpheme use in the verbal inflectional versus the nominal domain is a hallmark of the OI/EOI phenomenon. Therefore, the study we present in this chapter is intended to compliment our previous research in that we examine the same L2 children and children with SLI, but focus our attention on the use of DP morphosyntax. If the L2 learners show significant differences in the DP domain from the children with SLI, then it is possible that they do not have the same OI/EOI profile as found for TD and impaired L1 acquisition.

An additional reason for examining the use of DP morphosyntax in these two groups of children is to determine the role of the L1 in the L2 learners' acquisition. Recently, there has been considerable debate about the role of L1 transfer in the L2 acquisition of functional categories (Schwartz & Sprouse 1996; Vainikka & Young-Scholten 1996; White 2000, *inter alia*). The functional structure of DP contrasts between French and English, and thus, transfer from the English L1 of the L2 children may occur, and be a reason for them to display different patterns than the monolingual children with SLI (see 1.1 and 1.4). Even though our principal concern is to investigate cross-population similar-

ities and differences, this study is also intended to contribute to the on-going debate about the role of the L1 in the emergence of L2 functional categories.
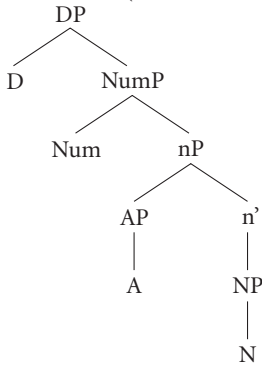
1.1 DP in French and English

The surface properties of nominal phrases differ between French and English. First, determiners are almost always required in French, but in English bare nouns are used for purposes such as generic reference, or because of the noun's lexical properties (mass versus count). This contrast is illustrated by the examples in (1a) to (1d). Second, number is typically marked on the determiner in French, while in English it is marked by a regular plural suffix on the noun, or by an irregular noun form. A plural noun has a final [-s] in French orthography, but this is not pronounced, and so phonological realizations of plurality on the noun occur only for the irregular forms, such as, animal-animaux [animal-animo] 'animal-animals'. The distinction between the regular plural marking in French and English is shown in (1e) and (1f). Unlike English, French has grammatical gender. French nouns are divided into two classes, masculine and feminine, and class membership is only partially predictable by the phonological form of the noun (Hawkins & Franceschina, this volume; Kupisch, Müller, & Cantone 2002). The gender of a noun is more reliably predicted by the phonological form of the determiner or possessive pronoun accompanying it in the singular form; this distinction is not made in the plural forms. Paradigms for definite, indefinite determiners and possessive pronouns are given in Table 2. There is gender concord within the DP in French since determiners (singular form) and adjectives agree in gender with the noun, as illustrated in (1g) and (1h). Only a subset of adjectives has two phonologically distinct gender forms, for example, *rouge* 'red' does not have a different form when it appears with a feminine noun. Finally, English and French differ with respect to adjective placement. Adjectives are placed prenominally in English, but French has both pre- and postnominal adjectives. The adjective *nouveau* 'new', given in (1g) and (1h) is prenominal, but colour terms for example, are postnominal in French, as shown in (1i) and (1j). The majority of French adjectives are postnominal, but prenominal adjectives tend to be high frequency ones.

(1) a. Je déteste les   chats.
         I   hate   DET.DEF:PL cats
     b. I hate cats.

   c.   Le   riz est bon à   manger.
          DET.DEF:MASC:SG rice is   good PREP eat-INF

   d.   Rice is good to eat.

   e.   Les   chats miaulent.
          DET.DEF:PL cats   mew:PRES

   f.   The cats are mewing.

   g.   Le   nouveau   livre.
          DET.DEF:MASC:SG new:MASC book
          'the new book'

   h.   La   nouvelle radio.
          DET.DEF:FEM:SG new:FEM radio
          'the new radio'

   i.   Le   manteau rouge.
          DET.DEF:MASC:SG coat   red

   j.   The red coat.

The differences between French and English DP word order can be accounted for by assuming a formal structure for DP including intermediate functional phrases and overt N-movement in French (Bernstein 1993; Carstens 2000; Valois 1996, *inter alia*, and see also Hawkins & Franceschina, and Hulk, this volume). We adopt Carstens' (2000) structure of Romance DP for French, and a simplified version of this DP structure is given in (2). Carstens (2000) assumes that possessive pronouns are generated in an intermediate projection between nP and NP and move to [Spec, Num]. In contrast, we assume Valois (1996)'s analysis, where possessive pronouns in French are in D^0, along with articles. According to Carstens (2000), N raises to n and then to Num to satisfy morphological subcategorization requirements. This results in the N-Adj surface word order in French. Furthermore, gender and number concord within the DP is achieved through checking of uninterpretable features. The features of [number] and [gender] are interpretable for the heads Num and N, but are uninterpretable features for A and D because they are agreeing features, i.e., not an inherent property of their lexical entries. Uninterpretable features are checked via movement of heads with the corresponding interpretable features. This movement is overt in the case of A (N-movement to Num in the computation), and covert in the case of D (N-movement at LF).

(2)   French DP (based on Carstens 2000)

```
              DP
             /  \
            D   NumP
               /    \
             Num     nP
                    /  \
                  AP    n'
                  |     |
                  A     NP
                        |
                        N
```

1.2   DP Acquisition in SLI Romance

Research on the use of determiners by Romance-speaking children with SLI has produced divergent results. Jakubowicz et al. (1998) report on an elicitation task given to French-speaking children with SLI, younger TD children, and adult controls. All participants scored above 90% for suppliance of a determiner, except the children with the most severe SLI symptoms who scored at 80%. The authors do not report on errors of commission with respect to gender and number. Jakubowicz (1999) compares these findings with those for the use of tense marking morphology by the same children and observes that determiners are mastered much earlier than tense in French-speaking children with SLI. Similar results have been found for the use of determiners in the spontaneous speech of French-speaking children with SLI (LeNormand, Leonard, & McGregor 1993). In contrast, Royle (1998) examined the spontaneous production of determiners in French-speaking older children and adults with SLI and found that some of her participants made omission errors and commission errors with gender and number at much higher rates. Furthermore, several researchers have found that Italian-speaking children with SLI omit determiners significantly more than younger, TD children (Bortolini, Caselli, & Leonard 1997; Bottari, Cipriani, Chilosi, & Pfanner 1998; Bottari, Cipriani, Chilosi, Loffredo, & Pfanner 2000; LeNormand, Leonard, & McGregor 1993; Leonard, Bortolini, Caselli, McGregor, & Sabbadini 1992). However, Bottari et al. (2000) discuss task-based differences in the Italian findings; in spontaneous speech Italian-speaking children with SLI omitted determiners more than any other form of grammatical morphology examined, but in a sentence imitation task, determiner omissions were only about 15%. Also, crosslinguistic differences

between French and Italian in the distributional and semantic properties of determiners may account for differences in the SLI populations (Bottari et al. 1998). Because the children in our study are French-speaking, we might expect them to not omit determiners frequently. However, it is still unknown to what extent French-speaking children with SLI produce errors of commission with number and gender within the DP, or whether they place adjectives correctly.

1.3 DP Acquisition in L2 Romance

Adult L2 learners of Romance show some difficulties in their acquisition of DP. L2 learners of French and Spanish make gender and number errors at fairly low but consistent rates (Bruhn de Garavito & White, in press; Hawkins & Franceschina, this volume; White, Valenzuela, Kolzowska-Macgregor, Leung, & Ben Ayed 2001), with L2 proficiency level being an intervening variable in error rate (White et al. 2001). In contrast, errors of omission with determiners seem to be fewer than errors of commission in adult L2 learners. Granfeldt (2000a) looked at determiner omission errors longitudinally in the spontaneous speech of Swedish L1-French L2 learners. He found that such errors were very limited, 10% most of the time, even at the early stages of acquisition. Grondin and White (1996) also found that in child L2 learners of French, determiner omission occurred at a rate of 10% after a few months' exposure to the L2.

Researchers are divided on the issue of whether transfer from L1 can be construed as the cause of errors with the L2 determiner system. On the one hand, Hawkins and Franceschina (this volume) propose that the English L1 of their L2 learners is a probable underlying cause of gender errors, and Granfeldt (2000a) reports that the contexts of determiner omissions in the data from the French L2 learners corresponded to where a bare noun could be used in Swedish. On the other hand, White et al. (2001) found no differences between English L1 and French L1 intermediate and high proficiency learners of Spanish in gender and number errors. Similarly, Bruhn de Garavito and White (in press) reported that French L1 learners of Spanish produced gender errors for determiners, even though their L1 has the feature [gender]. But, the English L1 learners studied in White et al. (2001) who had low proficiency in Spanish made more errors with number and gender than controls, possibly implying the role of transfer at the early stages of acquisition. In sum, these findings lead to the expectation that the French L2 children in this study might show low rates of determiner omission, but display some commission errors in their acquisition of determiners, possibly more so than the monolingual children with SLI.

Since most research on DP acquisition in L2 has been conducted with adults, it might be relevant to our study to examine prior findings on DP acquisition in Germanic-Romance bilingual L1 contexts. Researchers who have examined DP acquisition in English-French, Dutch-French, and Swedish-French simultaneous bilinguals have noted early stages where determiner omissions in French occur, ranging from about 50% to over 90% depending on the child (Granfeldt 2000a; Hulk, this volume; Paradis & Genesee 1997). In contrast, researchers have observed that, while the children incorporate gender and number features gradually in their spoken language, errors of commission with gender are very few once the determiner paradigm emerges (Granfeldt 2000a, 2000b; Hulk, this volume; Kupisch et al. 2002; Müller 1994). Thus, determiner omission errors seem to be much greater for bilingual children than commission errors, contrary to what has been reported for L2 learners. If we find a prevalence of omission errors over commission errors for the L2 children, this would indicate that their acquisition patterns are more like those of bilingual L1 than adult L2 acquisition.

1.4 Predictions for French L2 and French SLI

If L2 and SLI development show similar patterns in DP morphosyntax, and those patterns accord with the OI/EOI model, we expect to see the following results: Generally-speaking, the children would make few errors with DP morphosyntax, certainly fewer than the errors they make with finite verb morphology as reported in Paradis and Crago (2000). More specifically, they should not omit determiners frequently, they should make few errors with number and gender and few errors of adjective placement. On the other hand, if the L2 children show different patterns from the children with SLI based on the influence of their English L1, then we would expect to see a different set of results. First, the L2 children might show higher omission rates with determiners than the children with SLI, because English permits bare nouns. Second, the L2 children may also make more errors with number and gender than the children with SLI because English marks number differently and has no grammatical gender. Third, they may make errors with placement of postnominal adjectives due to the contrast with English adjective placement. Finally, whether the error patterns in the children's data resemble the OI/EOI model or not, if the SLI and the L2 children look very much alike, such a result would cast doubt on L1 transfer being the source of the L2 children's DP acquisition patterns (cf. Bruhn de Garavito & White, in press; Paradis & Crago, to appear).

2. Method

2.1 Participants and procedures

There were four groups of participants in this study. The two experimental groups consisted of seven-year-old French-speaking monolingual children with SLI, and English L1 children about the same age who were acquiring French as an L2. The two control groups consisted of TD monolingual children, one group age-matched to the children with SLI (7TD), and the other MLUW-matched to the children with SLI (3TD). The ages and MLUWs for each group of children are given in Table 1. In previous studies with these children, we performed one-way ANOVAs with post-hoc comparisons on the ages and MLUWs to ascertain whether the children are appropriately matched. We found that just the TD three-year-old group had a significantly lower mean age than the others who were equivalent to each other. We also found that the TD seven-year-old group was the only one that had a significantly different mean MLUW than the others, who were thus equivalent to each other (Paradis & Crago 2000, 2001).

The children with SLI were recruited from classes for children with language impairments (*dysphasie*) in the greater Montreal area in Canada. The children all had IQ scores within the normal range, and none had significant hearing loss, frank neurological damage, oral-motor or social-emotional difficulties. The L2 children were recruited from French medium schools also in the greater Montreal area. Note that these were not immersion schools, and so the children were spread across several classes and schools and were acquiring French amidst numerous native speaker peers. All the children had begun acquiring French in kindergarten and they participated in this study at the end of grade one, so they had had two years exposure to French at the time their samples were taken. The TD monolingual children were recruited from community playgroups, summer day camps and elementary schools in the Greater Mon-

Table 1. Mean ages and MLUs in words for participants

Group (sample size)	MLUW	Age
SLI (N = 10)	3.98	7;6
L2 (N = 15)	4.09	6;10
3TD* (N = 10)	3.67	3;3
7TD (N = 10)	5.70	7;3

*TD = typically-developing

treal area. They all had normal birth and developmental histories according to parental report.

Spontaneous language samples were recorded from each of the monolingual children (SLI, 7TD, 3TD) in the context of a one-on-one play session with an experimenter who was a native speaker of French. The data for the L2 children are also naturalistic language samples, but were gathered in the context of a semi-structured interview where the child was asked to describe events in their lives, favorite television shows, and so on, to an experimenter who was also a native speaker of French. For further details on the participants and procedures, see Paradis and Crago (2000, 2001). We have no reason to suspect that the slight differences in data collection procedures would have influenced the children's use of DP morphosyntax in their language production.

2.2 Coding and analysis

The language samples were transcribed according to the CHAT conventions of the CHILDES system (MacWhinney 2000; http://childes.psy.cmu.edu), and coded for determiner use and adjective placement. We coded both articles and possessive pronouns as determiners, and examples of the determiners coded are given in Table 2. First, we coded for suppliance or omission of a determiner in obligatory context. Second, we coded for accuracy with number (plural determiner with a plural noun) on a realized determiner. Noun plurality was judged on the basis of its referent in discourse context, or on the basis of the noun form if an irregular noun was used. If the discourse context was ambiguous, the determiner was not counted for number accuracy. Third, we coded for accuracy of choice of gender for the determiner based on the gender of the noun. For this calculation, [*l'*] was excluded because it is not overtly marked for gender. In French, when masculine definite determiners appear in parti-

Table 2. Determiners coded in the language samples

	Singular masculine/feminine	Plural
Articles – definite	le/la (l')*	les
Articles – indefinite	un/une	des
Possessive pronouns-1st sing	mon/ma	mes
Possessive pronouns-2nd sing	ton/ta	tes
Possessive pronouns-3rd sing	son/sa	ses

*This form is used for vowel-initial words and is opaque with respect to gender

tive or locative constructions, the [*de* + *le*] and [*à* + *le*] combinations become contracted as *du* [dzy] and *au*[o]. We counted instances of *du* and *au* in our accuracy scores for masculine determiners, although there were not many instances of them. Finally, adjectives were coded for whether they are pre- or postnominal in the target system, and whether they were placed appropriately by the children.

3.   Results

We first examined determiner omission errors by calculating the percent correct suppliance of determiners in obligatory context for each group of children and the results are presented in Figure 1. All the children supplied determiners over 90% of the time, and a one-way ANOVA with children as an independent factor (SLI, L2, 3TD, 7TD) confirmed that there was no difference between the groups ($F(3, 41) = 1.68, p > .05$).

   In order to determine accuracy with the choice of determiner used, we calculated the percent correct choice of a plural determiner with a noun having a plural referent for each group, and these percentages are shown in Figure 2. As with the results for determiner suppliance, the children were highly accurate with number marking, with all scores virtually at ceiling. Not surprisingly,
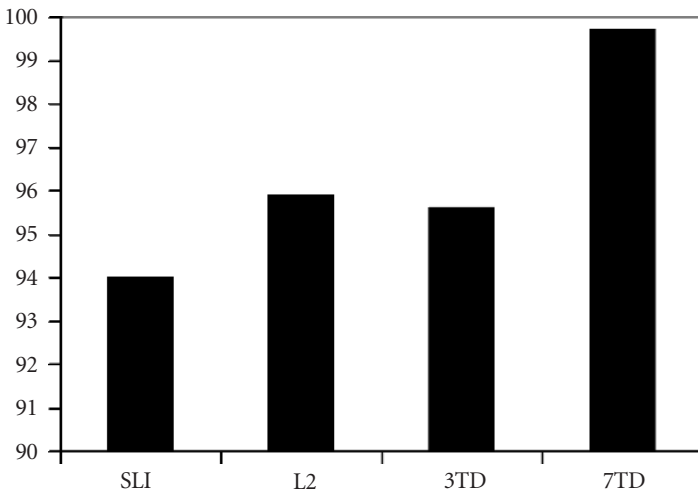

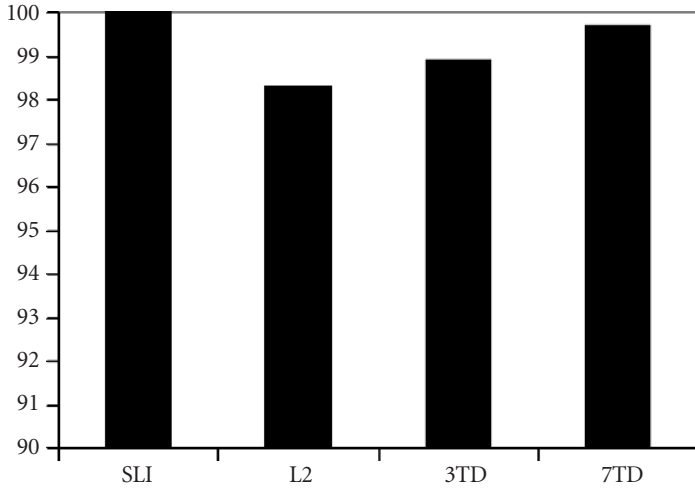**Figure 1.** Percent use of determiners in obligatory context

Figure 2. Percent correct choice of plural determiner

a one-way independent groups ANOVA of these scores was not significant ($F(3, 44) = 1.78, p > .05$).

For accuracy with gender, we calculated percent correct use of feminine gender determiners with feminine nouns and masculine gender determiners with masculine nouns. Percent correct scores are plotted in Figure 3. We performed a two-way mixed ANOVA on these accuracy scores with children as an independent factor (SLI, L2, 3TD, 7TD) and gender as a repeated factor (feminine, masculine). There was a significant main effect for children ($F(3, 38) = 5.432, p < .01$), but no significant effect for gender ($F(1, 3) = 0.568, p > .05$) and no significant interaction between children and gender ($F(3, 38) = 2.06, p > .05$). Tukey post-hoc tests showed that both the children with SLI and the L2 children were significantly less accurate with gender overall compared to the TD seven-year-olds (SLI: 91.6% and L2: 89.6% vs. 7TD: 99.1%), and the L2 children were also significantly less accurate than the TD three-year-olds (L2: 89.6% vs. 3TD: 97.1%). There was no difference between the TD three-year-olds and the children with SLI (3TD: 97.1% vs. 91.6%), or between the children with SLI and the L2 children (SLI: 91.6% vs. L2: 89.6%). In addition, we performed within-group comparisons for accuracy with masculine and feminine determiners for the children with SLI and the L2 children. For both groups of children, there was no significant difference between their accuracy with masculine versus feminine determiners (L2: 87.8% vs 91.9%, $t(9) = .721, p > .05$; SLI: 97.2% vs. 86%, $t(9) = -1.712, p > .05$).
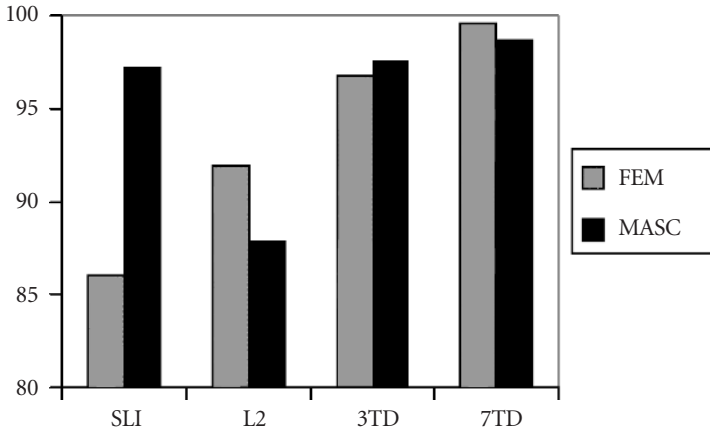
Figure 3. Percent correct choice of feminine or masculine determiners

In addition to examining determiner use, we looked at adjective place-ment in the DP. The children's use of pre- and postnominal adjectives in pre- and postnominal positions is presented for each group, frequencies combined across individuals, in Tables 3a to 3d. For each group of children the over-whelming majority of adjectives are appropriately placed. Interestingly, the L2 children did not use any postnominal adjectives, so their understanding of ad-jective placement cannot fully be assessed from these language samples (cf. Grondin & White 1996).

Table 3a. Adjective placement for the children with SLI

| | | Placement | |
		Prenominal	Postnominal
Adjective type	Prenominal	64	0
	Postnominal	2	10

Table 3b. Adjective placement for the L2 children

| | | Placement | |
		Prenominal	Postnominal
Adjective type	Prenominal	23	0
	Postnominal	0	0

Table 3c. Adjective placement for the TD three-year-olds

| | | Placement | |
		Prenominal	Postnominal
Adjective type	Prenominal	66	1
	Postnominal	1	30

Table 3d. Adjective placement for the TD seven-year-olds

| | | Placement | |
		Prenominal	Postnominal
Adjective type	Prenominal	110	0
	Postnominal	0	11

4.   Discussion

We know from our prior research that these SLI and L2 children have signifi-
cantly lower scores for the use of obligatory tense markers than the TD control
groups, and these patterns are consistent with the OI/EOI stage in developmen-
tal language (Paradis & Crago 2000, 2001). According to the OI/EOI account,
the children with SLI should have comparatively fewer problems with real-
ization, accuracy and placement of grammatical morphemes in the nominal
domain. Our objective in this study was to see whether the L2-SLI similarities
held in the nominal domain, and in so doing, find further evidence to support
our claim that L2 children can have OI effects in their grammars.

On the whole, our results support the claim that the OI phenomenon can
occur in non-primary acquisition. Neither the L2 children nor the children
with SLI had difficulties with realization of determiners, accuracy with number
marking, and adjective placement. They showed significant differences from
the TD age controls for gender marking; however, generally-speaking, they
were very accurate with gender marking, having scores above 85%. When we
directly compare the children's scores for suppliance of past tense markers with
those for plural determiners, the contrast between tense and non-tense mor-
phology is made clear. For past tense verb morphology in obligatory context,
the children with SLI scored 74% correct and the L2 children scored 48% cor-
rect (Paradis & Crago 2000), while the children scored 100% and 98% respec-
tively for number marking on determiners in obligatory context in the present
study. This contrast between the surface morphology associated with [tns] and
[agr] and that associated with the features of [gender] and [number] sug-
gests that the computational properties of the nominal features are productive

and nearly target-like in the children's grammars; whereas, the computational properties associated with [tns] and [agr] are still developing. Consequently, together with the data presented in Paradis and Crago (2000), these findings present a challenge to Rice and Wexler's (1996) and Wexler's (1998) biological maturation account of the OI/EOI stage in language development. We believe that the presence of an OI stage may be a property of language learning in children in general, and not specific to the primary acquisition period. Thus, the mechanisms underlying this aspect of the language learning process must be constant throughout the childhood years, *contra* the maturational perspective.

Another outcome of these similarities between the SLI and L2 learners concerns differential diagnosis of the clinical population. Rice and Wexler (1996) proposed that tense marking could be a clinical marker of SLI because it is variable in the clinical population and stable in the TD population of children the same age. Paradis and Crago (2000) pointed out that tense marking may function effectively as a clinical marker when considering monolingual populations only; however, it would not effectively signal the clinical population in a multilingual context where children would be assessed in their L2. With respect to the nominal domain, we predicted above that it was logically possible for the L2 children to show distinct patterns from the monolingual children, based on transfer from their L1. Finding the predicted differences would have led to the potential for a set of clinical and L2 markers, based on both the verbal and the nominal domains, that could set apart French-speaking children with SLI from both monolingual and bilingual peers. As it stands, both the data presented here and the data reported in Paradis and Crago (2000) show limited evidence for consistent differences in the use of verbal and nominal morphosyntax between the children with SLI and the L2 learners. Thus, an effective clinical marker for mixed monolingual and bilingual populations still eludes us.

In addition to informing issues on the nature and diagnosis of SLI, these results also bear on issues in L2 acquisition. Because the L2 children did not perform differently from the children with SLI, it does not seem likely that transfer of DP functional structure from English is a property of their French grammars at the point in development we have observed (see Paradis, to appear, for similar conclusions regarding object clitic acquisition in L2 and SLI). The results of the adjective placement analysis might be interpreted as an indicator of influence from English. Recall that the L2 children only used prenominal adjectives in their spontaneous speech. Because English does not have postnominal adjectives, one could speculate that the L2 children were avoiding them, although, it is very difficult to determine avoidance in a naturalistic language

task. We believe the skewed distribution might simply reflect frequency, since many common adjectives are prenominal, for example, *petit* 'small', *grand* 'big', *nouveau* 'new', and further, all the groups of children used more prenominal than postnominal adjectives. But, given the findings of White et al. (2001), because the L2 learners in this study were not beginners, it is possible that L1 transfer would have played a larger role in their L2 functional structure earlier in development.

The sole area of difficulty that the L2 children had in the nominal domain was gender accuracy, which seems to be common among L2 learners of Romance (Bruhn de Garavito & White, in press; Hawkins & Franceschina, this volume; White et al. 2001). Because we found the same level of difficulty in the monolingual children with SLI, and because Bruhn de Garavito and White (in press) and White et al. (2001) found that even Romance L1 speakers made gender errors in a Romance L2, taken together these results suggest that gender errors are developmental in Romance acquisition, and not limited to L1 influence in the L2 context. It does not seem difficult to understand why gender concord errors would arise in acquisition. Gender is an inherent property of the noun, and while there are some systematic matches between the phonological shape of the stem and the noun class, these matches are not as regular and predictable in French as they are in a language like Italian (Kupisch et al. 2002). Thus, this component of French lexical acquisition places some demand on memory and incompletely learned gender assignment would lead to the selection of the incorrect form for the determiner. It is important to point out that these kinds of errors with gender do not necessarily imply deficits in gender concord as a process.

The L2 children's patterns of use for DP morphosyntax were distinct from what has been reported for bilingual L1 acquisition, and closer to what has been reported for other L2 learners of French. Furthermore, because the SLI and L2 children showed similar patterns, this suggests shared intermediate-language properties between the L2 and SLI children on the one hand, and the bilingual toddlers on the other. This difference between very young learners and older children and adults may arise from differences in cognitive and linguistic maturity. For example, appropriate determiner use requires some understanding of shared knowledge in the discourse, as well as the ability to easily produce utterances longer than one or two morphemes. As such, we believe our data highlight the usefulness of L2 children as TD language-matches to children with SLI.

In sum, the results of this study suggest the following generalization: DP morphosyntax is nearly mastered in the development of French when learn-

ers have MLUWs between 3.6 and 4.0. This generalization holds for TD L1, impaired L1 and childhood L2 French.

Note

1. Rice and Wexler (1996) found that while children with SLI achieved high levels of accuracy supplying non-tense nominal morphemes like plural [-s], they omitted determiners in obligatory contexts 38% of the time. Thus, with respect to their findings, it is not entirely accurate to state that children with SLI have no difficulties with DP grammatical morphemes. However, it is important to point out that omission/realization of determiners is the only place in the nominal domain where the children exhibited difficulties, and moreover, the claim about tense being the locus of impairment in OI/EOI grammars is based on the *relative* greater difficulty with tense marking morphemes than with other grammatical morphemes. Since the children with SLI in Rice and Wexler (1996)'s study omitted tense-bearing morphology approximately 70% of the time, it is clear that this component of grammatical morphology was more vulnerable than any grammatical morpheme in the nominal domain.

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Comparing the development of the nominal and the verbal functional domain in French Language Impairment*

Cornelia Hamann

1. Introduction

In recent years, the study of Specific Language Impairment (SLI) has become an interesting topic for theorists of language acquisition. As children usually acquire their native language quite rapidly and without explicit training or structured input, it is very interesting that some children show serious difficulties in learning the grammar of their native language even if they do not manifest any obvious problems in their intellectual, auditory or neuromotoric abilities. As these children's difficulties thus appear to be specific to their language ability, their study can give valuable insights into the acquisition process and the biological foundations of language.

In particular, the search for diagnostic criteria and for the cause of SLI has lead to recent cross-linguistic investigations and different types of hypotheses. On one hand, there are accounts that appeal to a reduced processing capacity, specific or general, as in the Auditory Processing Deficit (Tallal & Stark 1981) or the Low Phonetic Substance Hypothesis (Leonard 1989 and related work). On the other hand, we find accounts that assume a grammatical deficit. Among these increasingly sophisticated linguistic approaches, we find the Feature Blindness Hypothesis (Gopnik 1990), the Missing Agreement Hypothesis (Clahsen 1988), the Extended Optional Infinitives Hypothesis (first proposed by Rice & Wexler 1995 for English and recently transferred to other languages, see Paradis & Crago 2000, 2001 on French), the Representation Deficit for Dependent Relationships (van der Lely 1998), the Minimal Default Grammar (Hamann et al. 1998), or the Computational Complexity Hypothesis (proposed for French by Jakubowicz et al. 1998).

In the course of this research, it has emerged that SLI is a heterogeneous disorder, although a typical difficulty of children with SLI concerns certain formal aspects of the morpho-syntactic system of their language, in particular its system of functional categories such as verbal inflections (I), determiners (D), or complementizers (C). Moreover, school-age children with SLI use and omit functional categories in a manner resembling the profiles observed in unimpaired children in their third year of life even though they may have a wider vocabulary range and more complex communicative intensions. Thus, we note an important trend in recent theorizing which involves the transfer of models proposed for early normal development to account for the grammar of children with SLI. Such models specifically are the 'No functional category hypothesis' advanced by Radford (1990), the truncation hypothesis (Rizzi 1994), the Agreement or Tense Omission Model (ATOM) and its more recent formulation as the Unique Checking Constraint (UCC) (Schütze & Wexler 1996; Wexler 1998, 1994; see also DeCat, this volume; Grandfelt & Schlyter, this volume; Prévost, this volume). Other models of this kind are the Minimal Default Grammar (Roeper 1996), the assumption that the number feature is underspecified in child grammar (Hoekstra & Hyams 1996) or the idea that the problem is located in the syntax-discourse interface (Avrutin 1999).

Transferring these models to SLI essentially presupposes a fundamentally parallel but delayed development in SLI (see Rice & Wexler 1995). Recent analyses of the spontaneous productions of young French children with SLI have shown that in the use of non-finite constructions, subject omission and subject pronouns, these children show a parallel but delayed development with respect to normal children, see Paradis and Crago (2001) and Hamann et al. (2003), which appears to support the view that normal development and impaired development follow the same paths for many phenomena. So, the developmental profiles of children with SLI can provide a slow motion close-up of details that could be masked by the speed of normal development at a younger age.

The linguistic interest of studies of children with SLI thus lies in the fact that phenomena that are developmentally related due to a shared property of syntax or the interface should be impaired to more or less the same degree in abnormal language development. In contrast, phenomena that are not so related may be impaired selectively or to different degrees. From this point of view, "the diversity found in SLI may provide interesting insight into the dissociable aspects of the linguistic system" (van der Lely & Wexler 1998: 84).

Following this line of research, this paper discusses the acquisition of certain functional structures by French speaking children with Specific Language Impairment. The focus is on the nominal domain, especially the determiner

system. A comparison of the development of these nominal functional structures with the development of the verbal functional domain reveals important differences, especially in two of the children, and leads to the question of whether the development of these two functional domains is necessarily related or can be dissociated. The acquisition of determiners will also be compared to the development of complement clitics, which in French are homophonous with definite articles, and have been identified as being particularly difficult for French children with SLI.

In focusing on the differences in the development of two of the children, this study does not aim to establish the "typical" profile of a French child with SLI nor search for a clinical marker (see Cronel-Ohayon et al., in preparation; Hamann et al. 2003; or Paradis et al. 2002 for a focus on typical development and clinical markers). Instead, a close comparison of the phenomena found in the speech of children with SLI and in the speech of unimpaired children aims to provide data constraining possible theories of development. It is hoped that the study of SLI will provide insights into the phenomenon of determiner omission and the possible association or dissociation of the nominal and the verbal domain in development.

In the following section some background will be given about the prevailing phenomena concerning the acquisition of functional categories in normal (Section 2.1) and impaired acquisition (Section 2.2) as discussed in the literature. Section 2.3 will introduce some of the hypotheses advanced to account for problems with determiners and other functional categories such as inflectional forms or complement clitics. Though not all of these hypotheses have been explicitly formulated to account for normal as well as impaired language development (with the exception of the UCC), it should now be clear that by the parallelism assumption, they could also apply to SLI. Therefore, these hypotheses will be discussed as general hypotheses, not as specific to either normal acquisition or to SLI, and especially their predictions will be considered and evaluated with respect to both modes of acquisition.

2. Theoretical background

2.1 Observations on the development of functional categories in French unimpaired children

In the normal development of French and other languages, there are two production phenomena concerning the nominal and the verbal functional

domains that appear to coincide temporally and have often been treated as theoretically related. These are the omission of determiners and the use of non-finite structures. Another phenomenon, particularly relevant for French and interesting in connection with determiner omission because of an overlap in forms, is the omission of complement clitics.

Many recent hypotheses on language acquisition have focused on the production of non-finite structures in early child language (see Haegeman 1996; Hyams 1996; Rizzi 1994; Wexler 1994 and related work). This phenomenon, though not found in all languages, is present in French. French normally developing children generally produce non-finite constructions (see (1a)) at peaks of 35–45% during a short-lived phase, producing finite phrases at the same time (see (1a')). See Pierce (1992), Rasetti (2000), Hamann (2002) and Hamann (2003) for more data on the production of non-finite structures.

Roughly in the same period, around the second birthday and shortly after, there is a phase of determiner omission (see (1b)), which may start with 80% to100% omissions but shows a steep and fast drop. See vd Velde (1999), Guerrero, Jaquet and Rochat (2000) or Chierchia, Guasti and Gualmini (2000) for a discussion of determiner omission in normal French children.

(1) a. couper ça   Louis 1;10.5
         cut-INF that
         'cut that'

     a'. veux   ça   Louis 1;10.5
         want:FIN that
         'want that'

     b. tiens   couteau   Louis 1;10.5
         hold:FIN knife
         'hold the knife'

(2) mets   là?   Augustin 2;6.16
     put:FIN there
     'will you put it there?/should I put it there?'

The third phenomenon relevant here is the "delay" of complement clitics observed in early French syntax and discussed in Hamann et al. (1996) for the longitudinal data of the child Augustin or by Jakubowicz et al. (1997) in a cross-sectional study. (2) is an example of such a complement omission which is usually interpreted as the omission of the clitic pronoun. In French, the paradigm of complement pronouns comprises elements like *me, te*, and *le, la*, in the singular with the reflexive *se* in the 3rd person and *nous, vous, les* in the plural. These forms are called clitic pronouns because they (usually) oc-

cur in preverbal position and cannot occur in isolation, cannot be separated from the verb, cannot be conjoined and cannot be stressed. See Kayne (1975) for the original discussion of these properties. These clitic pronouns are complemented with strong pronouns like *moi, toi, lui, elle, nous, vous,* with the reflexive marker *-meme,* as in *lui-même*. A similar contrast to clitic and strong pronouns also exists in the subject paradigm *(je, tu, il, elle*, etc. versus *moi, toi*, etc.). The development of the subject and complement paradigms is strikingly different, however. At the age of 2;0.2, Augustin already produces 33.3% subject clitics in finite utterances compared to 0% object clitics in complement taking constructions. This total absence of complement clitics persists to the age of 2;4.22 where he uses 5% complement clitics. Only at the age of 2;9.30 does his use of complement clitics reach a percentage (33.9%) similar to that of subject clitics in the beginning of the recording period. A potential difficulty for complement clitics is the fact that, in their nature as pronouns, they are nominal expressions that are hosted within the string of verbal functional heads and are thus related to both the nominal and the verbal domain. They resemble determiners in form (*le, la, les*) and, like determiners, they are radically absent in a first phase. This phase is considerably longer than for determiners, however. It has been shown for the child Hugo that determiners are used systematically by French children long before complement clitics appear (vd Velde 1999). The data presented in Section 5.1 for Augustin corroborate these findings.

Apart from the rather rough global temporal coincidence of non-finite constructions and determiner or complement omissions in the third year of life, different observations on determiner omission have been made cross-linguistically. One such observation concerns asymmetries with respect to determiner omission with respect to subjects and objects. In English there are more determiner omissions for subjects than for objects (Gerken 1994), whereas in Dutch and German more determiner omissions for objects than for subjects have been observed (at least for some children, see Schoenenberger et al. 1997 and Wijnen et al. 1994).

2.2 Observations on the development of functional categories in French children with SLI

Given the introductory remarks, it is not surprising that much of the research on SLI concentrates on the same phenomena as described in 2.1. In the literature on English children with SLI, a recurrent observation is that these children have great difficulties with tense morphology, which is very often omitted (see Gopnik 1990; Leonard 1989; van der Lely 1998). In focusing on the absence of

such morphological tense marking and the prevalent occurrence of non-finite forms, this phenomenon has been described as a 'phenotype' for English SLI by Rice and Wexler (1995) and, with reference to the occurrence of such a phase in three-year old unimpaired English children, has been named the 'Extended Optional Infinitive' phase.

In contrast to the overwhelming occurrence of non-finite forms in English SLI, the observations for French are not quite as clear cut. Jakubowicz et al. (1998), who consider 13 French children with SLI with a mean age of 8;11, find that the production of non-finite forms (infinitives and bare participles) is extremely rare and cannot be considered characteristic for French SLI. In a study of younger children with SLI (mean age 7;6), Paradis and Crago (2001) find evidence for the prevalent omission of finiteness markers in French and argue that, due to structural properties of French, these omissions are not necessarily manifest in the use of morphological infinitives which is less frequent in French SLI than in English SLI. The analysis of even younger children's spontaneous speech productions seems to show a large percentage of such morphological infinitives and a remarkable absence of auxiliaries (LeNormand 2000). A cross-sectional comparison of the spontaneous production of 6 French children with SLI under and up to the age of 5 years (mean age 4;5) and of 5 French children with SLI over the age of 5 years (mean age 7;1) conducted by Hamann et al. (2003) corroborates this trend as all of the younger children have more than 5% non-finite structures in their verbal utterances and two of them show an extreme use (70%), whereas the older children practically do not use infinitives. Note that the two children with the high rate of non-finite structures produced 50%–56% morphologically marked root infinitives.

A similar contrast in the data found for English and French SLI can be observed for the use of determiners. English children with SLI show considerable difficulties with this nominal functional category and determiner omission is an integrate part of their "morpho-syntactic" problems. For French, LeNormand et al. (1993) have found no such problems and attribute this cross-linguistic difference to the different phonological nature of English and French articles. Jakubowicz et al. (1998) also show a good mastery of the definite article *le* in French, so that the general picture for French SLI is that determiners are mastered quite well (see also Paradis & Crago, this volume).

As for complement clitics, it has emerged that they are particularly hard to acquire for French children with SLI. Jakubowicz et al. (1998) report a mean of only 25.2% correct use of the object clitic *le* by their 13 children (age range 5;7–13;1) in an elicited production experiment. Omissions occur at a mean of 25.7% among the different error types, which amounts to 19% object omis-

sions. The recent study of spontaneous production reported on in Hamann et al. (2003) shows that in both age groups (under and over 5 years), the use of complement clitics remains rather limited. In the younger group, complements are omitted in 16% of obligatory contexts and only about 18% complement clitics are produced. This is a much lower rate than that found for Augustin at the age of roughly 2;10; note that Augustin is younger than all the SLI children (age range 3;10–5;0). The older SLI group of the above study has fewer omissions (8%) but still only produces 23% complement clitics in obligatory contexts and appears to have replaced omissions by the use of lexical material. In an elicited production experiment conducted with the same group of children at later ages, high rates of complement omission persist (34.3% in the younger group and 27.2% in the older group), see Chillier et al. (2001) and Cronel-Ohayon et al. (in preparation).

2.3 Theoretical approaches to determiner omission in (normal) language development

2.3.1 *Development is related in the verbal and the nominal domain*

Among the competence-oriented approaches to determiner omission, hypotheses predominate that postulate a close theoretical link between this phenomenon and the use of non-finite constructions, and often extend this link to the omission of complement clitics. Among these approaches there are hypotheses focusing on prosodic properties of certain functional elements (Gerken 1994), hypotheses using the notion of feature underspecification (Hoekstra & Hyams 1996; Schaeffer 1997) and hypotheses concentrating on properties of the syntax-pragmatics interface (Avrutin 1999; Baauw et al. 2002). Most approaches also attempt to account for the observed asymmetries of determiner use with subjects and objects.

The approach suggested by Gerken (1994) appeals to phonological templates and suggests that children are normalizing to the trochaic template [stressed, unstressed], thus explaining omissions of unstressed material (especially functional material) at the word and the sentence level. It predicts more omissions in sentence initial position since omission of unstressed sentence initial material (like articles or subject pronouns) is obligatory in order to obtain a trochaic template, whereas sentence medial unstressed material could be part of a trochaic template without any omission, e.g. [SEE him] [RUN]. As subjects occur mostly sentence initially in English, this explains the subject/object asymmetry of pronoun and determiner omission observed in English.

Starting from the idea that 'functional elements connect syntax to discourse' (Hyams 1996) and Hoekstra and Hyams (1996) postulate that the number feature in both the I (inflectional/verbal) and the D (determiner/nominal) domain is underspecified. This predicts a parallel development in infinitive use and determiner as well as pronoun omission. Alternatively, a problem in the syntax-discourse interface has been postulated which leads to default anchoring of anaphoric elements like tense or determiners (Avrutin 1999) and predicts that determiners should be used frequently only when finite constructions predominate (Baauw et al. 2002).

In a development of the proposal advanced by Hoekstra and Hyams (1996), weak predictions have been derived by vd Meulen (1999). Agreement relations or selectional restrictions between elements in the nominal and the verbal domain demand that the relevant feature either be present in both elements or absent in both. Thus no full DP subjects (with full feature specification) should occur with root infinitives (with feature underspecification) and no bare Ns should occur after overt prepositions, which select for full DPs. Taking this argument further, we do not expect bare noun subjects in finite clauses. The occurrence of null subjects in finite clauses should also be a priori excluded. It is a well-known fact of French acquisition, however, that finite null subjects occur to a rather high percentage, see Hamann et al. (1996), Rasetti (2000), Hamann (2002). Hoekstra and Hyams (1996) pointed out that French children produce only singular finite verb forms in the phase under discussion. Such forms arguably lack the number feature, are therefore underspecified and license a null subject. However, the assumption of underspecification of the finite forms produced by young children cannot account for the observation that null subjects occur in finite declaratives, but are not found in finite constituent questions with a fronted Wh-element (see Crisma 1992; Levow 1995; and Hamann 2000; but see Plunkett 2001 for a different view). Both should be licensed by the underspecification. We therefore assume that the proposed underspecification cannot explain null subjects in finite declaratives and consider such null subjects to be unexpected under the above hypotheses.

2.3.2   *Development in the verbal and the nominal domain is not necessarily related*

In contrast to these hypotheses assuming a close parallel in the development of infinitives and determiner omission, several recent suggestions do not postulate too close a relationship of these two phenomena. Clearly, the assumption that children start with the default setting of the 'determiner parameter' as suggested by Chierchia et al. (2000) admits different developmental pro-

files according to the language and does not entail a connection to the use of non-finite constructions.

The Agreement or Tense Omission Model (ATOM) hypothesis introduced by Schütze and Wexler (1996) focused on the use of infinitives and null subjects. Recently, Wexler (1998) introduced the Unique Checking Constraint (UCC), which says in essence that nominal expressions can only move once, or can form chains of one link only. This derives ATOM because one of the categories, Tense or Agreement, may be omitted by the child in order to place the subject and obey the UCC. Because object clitics are nominal elements in a preverbal position, their surface position is linked to their argument position by a chain of more than one link (see Wexler in press, for technical details on complement clitics and Wexler 1998 for an exact formulation of the UCC). Therefore, the UCC relates the use of non-finite constructions and the delay of object clitics, but it does not necessarily predict determiner omission at the same time.

The truncation approach in its recent formulation (see Rizzi 2000) with the principles of **Structural Economy** (see (3)) and **Categorial Uniformity** (see (4)) likewise allows for different profiles of these phenomena. **Categorial uniformity** may be reached at different times and in different manners for the nominal and the verbal domain, and so a close relation in the development of non-finite constructions and the omission of determiners and complement clitics is not necessarily predicted.

(3) Structural Economy:
     Use the minimum of structure consistent with well-formedness constraints.

(4) Categorial Uniformity:
     Assume a unique canonical structural realization for a given semantic type.

2.4 Structure of this chapter

The method of this investigation is described in Section 3. The following three sections present the data and consider their implications. Section 4 presents the principal results in comparing determiner omissions and the use of non-finite structures in the speech of two normally developing children (4.1) and in the speech of two children with SLI (4.2). Section 5 adds a discussion on determiner omissions and the omissions of complement clitics in the development

of a normal child (5.1) and of children with SLI (5.2). The data from these two sections, showing a dissociation of determiner omission and the use of non-finite structures, argue against too tight a theoretical link between the verbal and the nominal domain. They are not detailed enough, however, to decide whether the weak predictions discussed in 2.3.1 may be fulfilled nonetheless, or whether a prosodic approach might account for the data. In order to round off the argument with additional evidence, Section 6 considers the occurrence of what I call "unexpected subjects": the occurrence of determiner omission after overt prepositions, and the occurrence of determiner omissions in initial and non-initial contexts. Finally, a different possible account of the dissociation is considered. This is the idea that the observed selective difficulty of the two SLI children with determiners or verbal inflections could be due to a selective problem with free or with bound morphology. This is investigated and rejected by an analysis of the use of auxiliaries and copulas by the two children with SLI in Section 7. The conclusion in Section 8 argues that the observed selective difficulties in the nominal or the verbal domain shown by two French children with SLI indicate that theories of development should allow for a possible dissociation of these two domains.

3.   Method

3.1 Participants

Based on the "parallelism assumption" this study primarily aims to compare the developmental profiles of determiners and the use of infinitives in the spontaneous productions of French children with SLI to those of younger, normally-developing French children. The data on the normally-developing children will always be presented first as they serve as the measure of comparison for the data on SLI. The essential comparison concerning the two phenomena mentioned above is between two children with SLI, Rafaelle and Loris, and two normally developing children, Marie and Louis, in their third year of life. Though the MLU's of the two children with SLI lie within the range of the normal children's MLUs (1.33–4.28), see Table 1, a match according to MLU was not a priori attempted. The match consists more in the phenomena we observe: At the beginning of data collection, all of these children have "problems" with these two phenomena albeit to different degrees, at the end of data collection they have more or less reached target performance (at different ages, of course). As the purpose of this study was to discover whether there are

similarities or differences in development (apart from the time course) in order to derive constraints on theories of development, this procedure was judged adequate.

Apart from the 2 children with SLI involved in the principal investigation, the first recordings of another 9 children with SLI were analyzed with respect to determiner drop in different contexts. As the longitudinal perspective is not especially relevant for this issue, this procedure was judged appropriate for providing a large amount of data. These data will not be compared to normal acquisition in this study.

The 11 language impaired children analyzed for determiner omission in this study (age range between 3;10 and 7;11 at the beginning of recording) were clinically diagnosed as SLI by their speech and language therapists, a neuropsychologist and a neuro-pediatrician. A complete language battery assessing lexical and semantic, phonologic and syntactic components of language (including tests like the ECOSSE, the French equivalent of the TROG), and a cognitive battery (Wechsler 1991) were conducted with each child. The characteristics of these children complied with the SLI diagnostic criteria (Leonard 1998) in that they showed normal cognition (QIP > 80) but language acquisition difficulties and delay (< 1.25 SD below the mean on more than 2 language tasks) in the absence of any neurological, organic, hearing or psychiatric abnormality. Children who had suffered a secretory otitis media in the last 12 months were excluded from the study. This group was recruited for a 2 1/2 year long longitudinal study and recordings were made approximately every three months at the home of these children in the presence of a parent and an investigator. The first recordings of all 11 of these children had already been analyzed with respect to their verbal development and their use of subject and object clitics (see Hamann et al. 2003). For this study, these first recordings were analyzed for determiner use. Moreover, two of the children, Rafaelle and Loris, who differed in their uses of determiners and infinitives in their first recordings, were selected as the principal participants for a longitudinal analysis of these phenomena. At the time of this study there were 6 transcribed recordings for Rafaelle, at the ages of 3;10, 4;1, 4;4 and 4;8, 4;10 and 5;1 and 5 transcribed recordings for Loris, at the ages of 4;7, 4;10, 5;0, 5;3, and 5;6, see Table 1. For more information on the individual SLI children and their longitudinal development see Cronel-Ohayon (in preparation).

The development of determiner and infinitive use of two younger, normally developing children is used as a backdrop for the discussion of the data obtained from Rafaelle and Loris. Both normal children were recorded fortnightly at their home, rendering 12 recordings for **Louis** between the ages of

Table 1. The principal participants, their ages and MLUs

SLI Rafaelle		Loris		Normal Marie		Louis		Augustin	
Age	MLU	Age	MLU	Age	MLU	Age	MLU	Age	MLU
3;10	1.91	4;7	3.57	1;8.26	1.64	1;9.26	1.33	2;0.2	2.37
4;1	3.33	4;10	2.77	1;9.3	1.91	1;10.5	1.36	2;0.23	2.34
4;4	3.19	5;0	3.62	1;9.10	2.10	1;10.19	1.48	2;1.15	2.58
4;8	4.19	5;3	4.22	1;9.16	1.95	1;11.9	1.52	2;2.13	2.91
4;10	3.05	5;6	2.90	1;10.1	2.13	1;11.23	1.61	2;3.10	2.68
5;1	3.59			1;10.22	2.23	2;0.8	1.76	2;4.1	2.25
				1;11.5	2.11	2;1.4	2.36	2;4.22	2.73
				1;11.18	2.33	2;1.20	2.38	2;6.16	3.24
				2;0;9	2.13	2;2.4	3.33	2;9.2	3.72
				2;1.4	2.36	2;2.17	2.98	2;9.30	4.28
				2;1.7	2.07	2;3.8	3.45		
				2;1.28	2.39	2;3.29	3.98		
				2;2.11	2.57				
				2;3.3	2.35				
				2;3.13	2.63				
				2;5.26	3.13				
				2;6.10	3.03				

1;9.26 and 2;3.29, and 17 recordings for **Marie** between the ages of 1;8.26 and 2;6.10, see Table 1. The data on Louis as presented here for the first time were collected and analyzed by Guerrero, Jaquet and Rochat (2000) and have been regrouped for this study. Data from Marie on the use of infinitives and null subjects as well as Wh-questions have already been published (see Hamann 2000; Hamann 2002; Rasetti 2000). Her data on verbal development were regrouped and her determiner use was analyzed specifically for this study. In order to provide comparative data on clitic use from a normal child, recourse was made to data and transcripts from **Augustin,** who was recorded 10 times at his home between the ages of 2;0.2 and 2;9.30 and who has already been analyzed in detail for his use of pronominal clitics, infinitives and null subjects (see Hamann et al. 1996; Rasetti 2000). For this study, his determiner use was analyzed and compared with his use of pronominal clitics. As these data corroborate what is known from the literature, no other child was analyzed for comparison in this respect.

3.2 Data analysis

The recordings of Louis, Marie and of the 11 SLI children were transcribed, verified and then standardized in the CHAT format (see McWhinney 1991 and subsequent editions). They were hand-coded and further analysed by CLAN tools (see McWhinney 1991). The Augustin corpus was verified and standardized according to the Emacs editor in order to allow hand-coding and machine analysis with Unix-tools like 'egrep'.

All the data were analyzed according to the same criteria and conventions, which had been established for the coding and analysis of Augustin's transcripts (see Hamann et al. 1996). Verbatim repetitions of an adult's or the child's own preceding utterance were not included in the calculations pertaining to the analysis of infinitives and pronominal clitics. For determiners an exception was made to this rule as isolated DPs were included in the counts and some of these occurred in a phonological repetition task in the first recording of some of the children with SLI. Following the logic of repetition experiments – the child will be able to reproduce only what is in her/his grammatical system – the absence of determiners in such a context was judged to be very revealing. For this reason, and only in this case, repetitions of isolated DPs were included in the calculations.

For the analysis of non-finite verbal utterances, infinitives and bare participles were grouped together. For this purpose forms ending in *-er, ir,* and *-re* were counted as infinitives, whereas inflected forms of the verbal paradigm like *aime* 'love (1sg)', *aimes* 'love (2sg)', *aime* 'loves (3sg)', *aimons* 'love (1pl)', *aimez* 'love (2pl)', *aiment* 'love (3pl)' or the auxiliaries *suis* 'am (1sg)', *es* 'are (2sg)', *est* 'is (3sg)', *sommes* 'are (1pl)', *etes* 'are (2pl)', *sont* 'are (3pl)' or *ai* 'have (1sg)', *as* 'have (2sg), *a* 'has (3sg)', *avons* 'have (1pl)', *avez* 'have (2pl)', *ont* 'have (3pl)' and the occasional *étais* 'was (1sg)', *était* 'was (3sg)', *étaient* 'were (3pl)' were counted as finite. Note that finite forms in the plural are rare and that we opt for counting forms like *aime*, which could arguably be stem forms, as finite. The decision as to what is an infinitive or a bare participle, i.e. a participle unaccompanied by an auxiliary, is notoriously difficult in French for verbs which have the *-er* infinitive and the *-é* participle. Decisions were made during the transcription from the context and forms that could not be classified were marked and were not included in the coding procedure. Forms that had been identified as infinitives were not coded for either missing modals (*veux*) or periphrastic forms (*vais*) for theoretical reasons. They were subsequently counted as true root infinitives if they did not occur in structures where such forms are licensed in adult language (*ne pas fumer* 'do not smoke (jussive)', *tu veux faire*

quoi-jouer au foot 'what do you want to do – play football'). Infinitives in such contexts were counted as adult root infinitives. Missing copulas were not considered for the calculations on finiteness. Bare participles were included in the count of non-finite verbal forms, so that the data presented here differ slightly from the data published on Marie and Augustin where only infinitives are considered (Hamann 2002; Rasetti 2000). Constructions like *a vu* 'has seen', were counted as finite, of course.

   Bare participles clearly lack an auxiliary, however, so that the use of functional verbs was analyzed in the following manner. As null subjects occur freely with copulas and auxiliaries in French (*_est ou?* 'is where' *_a mangé* 'has eaten'), contexts with and without subjects but with a following adjective/DP (see examples (6a, b)) or participle (see examples (7a, b)) were counted as 'aux/cop' contexts. According to the conventions specified above, infinitives that had been classified as non-adult root infinitives were not counted as such contexts. Note that utterances as given in (6) do not enter into the calculations for finiteness as these were not considered as verbal utterances, e.g., see above.

(6) a. Marie__ jolie   was counted as (–)cop in a copula context
         Marie   nice
         'Marie is nice looking'
     b. __ pas content   was counted as (–)cop in a copula context
            not satisfied
         '(she) is not satisfied'

(7) a. papa___ parti   was counted as (–)aux in an aux context
         daddy   gone   (also counted as a non-adult nonfinite form)
         'daddy is gone'
     b. _____ parti   was counted as (–) aux in an aux context
               gone   (also counted as a non-adult nonfinite form)
         '(he) is gone'

   The use of determiners was analyzed in the following manner. The definite and indefinite articles, *le* (def,sg,mas), *la* (def,sg,fem), *les* (def,pl), *un* (indef,sg,mas), *une* (indef,sg,fem), *des* (indef,pl), the possessive determiners *sa, son, ses* (3p, sg and pl), *mon, ma, mes* (1p, sg and pl), *ton, ta, tes* (2p, sg and pl) and prenominal numerals *un, deux...* 'one, two...' were counted as determiners. Cases as in (8a) were counted as omissions. Overt forms as in (8b) were coded as correct use, which means in particular that their phonological form was clearly identifiable and that they were used appropriately with respect to gender, number and definiteness. Forms that were phonologically identifiable but were erroneous with respect to gender, number or definiteness were coded

as "inappropriate". Prenominal vocalic syllables and the occasional preverbal "n" were coded as placeholders (see Bottari et al. 1992 and example (8d)).

(8) a. tiens   couteau   Louis 1;10.5
         hold:FIN knife
         'hold the knife'
     b. apporter des   cadeaux   Rafaelle 3;10
         bring-INF DET:INDEF gifts
         'bring gifts'
     c. le   grosse   Loris 4;7
         the:MASC big:FEM
         'the big one'
     d. dans a   cheminée   Loris 4;7
         in   PL-H fireplace
         'in the fireplace'

For the figures on longitudinal development in the verbal and the nominal domain, determiner omissions and non-finite verbal structures are compared. The percentages are calculated on the total of nouns requiring a determiner and on the total of verbal utterances, respectively. Note that this excludes nominal contexts, which in the target language do not require a determiner, as is the case of example (12h), Section 4.2, from the calculations of determiner use.

For the discussion of complement clitics (*le, la, les, me, te, se, nous, vous, en, y*) data from the literature were considered for normal development (Hamann et al. 1996) and for SLI (Hamann et al. 2003). Note that placeholders were not considered in these studies, as it is difficult to decide whether a vocalic syllable placed before a verbal element acts as an auxiliary, a subject clitic or a complement clitic. Moreover, the absence of a complement clitic, see (2), was counted as an omission, notoriously difficult to decide, only if several native speakers agreed that this context definitely needed a complement. In these studies, percentages were calculated out of the total of complement taking verbal constructions.

In order to provide a comparison of complement clitics and determiner use in the development of a normal child, Augustin's correct use of overt determiners and clitics is considered. Because placeholders had been excluded from the count of complement clitics, the comparison is made between his correct use of overt determiners and his correct use of complement clitics. Note, however, that a direct comparison of the two phenomena remains difficult because determiners are always obligatory in French whereas complement clitics and lexical complements may alternate according to the discourse environment.

Therefore, some information is given on the omission rates as well. As it is well-known from the literature that French-speaking children with SLI have considerably more difficulties with complement clitics than with determiners (see Section 2.2), it was considered sufficient to illustrate and corroborate the findings on complement clitics with data taken at some selected recordings of the two principal children with SLI.

For the important comparison of determiner omissions and the use of infinitives, a full longitudinal analysis was carried out, whereas in other cases only a few representative recordings were analyzed to make a point. In the case of the use of functional verbs only the two first recordings of Rafaelle and Loris were considered because their use of non-finite constructions or their determiner omissions are strongest at this time and a visible effect of a selective morphological difficulty might be expected. Once no such effect was found in these early recordings, no further analysis was attempted. The same reasoning was applied to the analysis for Table 3 because in later recordings the usual subject of finite constructions is a clitic subject and cases that warrant an analysis become extremely rare (see the later recordings in Table 2 for a similar lack of crucial cases).

Since there are not enough data points for each child to arrive at significance, no attempt was made to establish correlations on a statistical basis. Instead, "common sense" methods were used for comparisons. A function was considered to be very similar to another one, if two conditions were fulfilled: the values had to be close together (in a 20% range) and the slopes had to be similar (see the functions of determiner omission and non-finite utterances in Louis's development after the age of 24 months).

4. Determiner omissions and non-finite constructions

4.1 Normally developing French children

It can be observed in Figure 1a that from a certain point, between 23 and 24 months of age, the development of non-finite structures and determiner omission is very similar in Louis' speech, though before this age there appear to be some differences. The total absence of determiners in Louis' first two recordings seems to be due to his low MLU at this time (MLU 1.33 at the age of 1;9.26 and MLU 1.36 at the age of 1;10.5), which severely limits the probability of two word utterances. Note that determiner drop is more important than the use of non-finite structures throughout. The second child, Marie, corroborates this
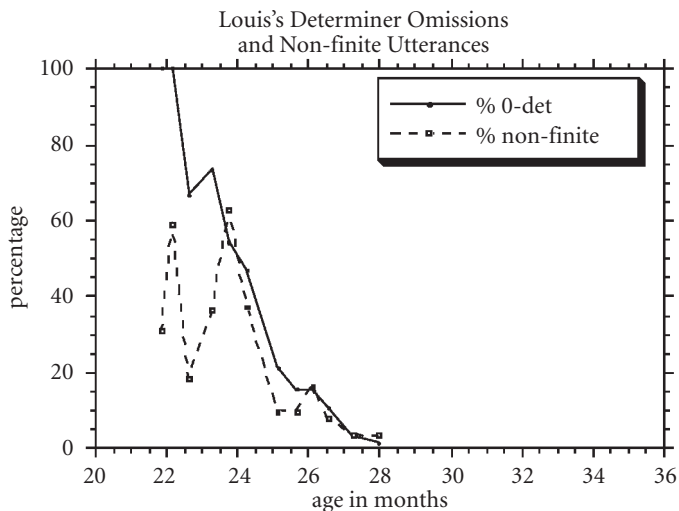
Figure 1a. Louis' determiner omissions and non-finite utterances
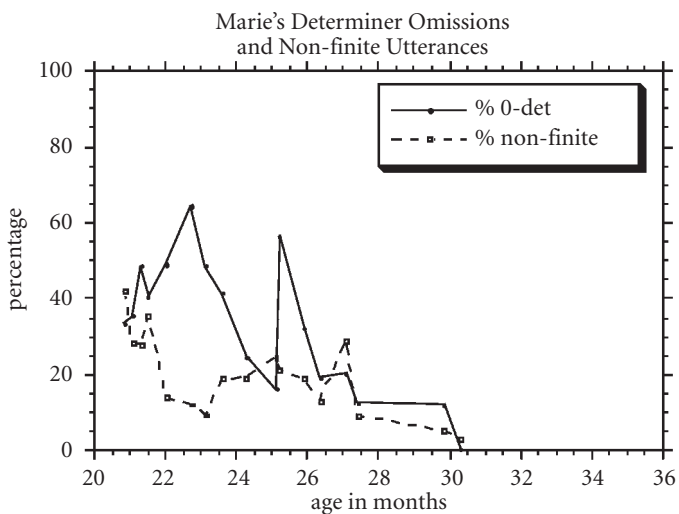

Figure 1b. Marie's determiner omissions and non-finite utterances

finding (see Figure 1b), though a parallel development can be observed only at a later age, from the 27th month. See also vd Velde (1999) on the child Hugo and Chierchia et al. (2000) for similar observations on other French children.

4.2 French children with SLI

As was reported in Section 2.2, previous studies on French children with SLI found practically no determiner omission, nor any important use of non-finite constructions in elicited production. A study of the first recordings of the spontaneous productions of the 11 children with SLI introduced in Section 3 corroborates this result for the older but not for the younger children. Determiner omission occurs at a rate of 11% in isolated DPs and at a rate of 18% on DPs that are part of a syntactic phrase in the speech of the children under 5 years of age. All of these young children produce more than 5% non-finite structures, and two of them produce near 70% non-finite structures in their first recordings. The children who are older than 5 years produce practically no non-finite constructions and do not omit many determiners. Given that Marie and Louis are younger than any of the SLI children, the first impression is that, again, we find parallel but delayed development. In comparison with Louis and Marie there are important differences, however, especially in the speech of Rafaelle and Loris.

Rafaelle has exceptionally high rates of non-finite constructions (70% at the age of 3;10 and still 44% at the age of 4;1), whereas she does not omit many determiners (15% at the age of 3;10 and close to 0% at the age of 4;1). Figure 2a shows Rafaelle's developmental profiles concerning her use of non-finite structures and her determiner omissions.

The examples in (9a, b, c) demonstrate Rafaelle's use of non-finite structures, where (9a, b) also show determiner drop (see Table 2 for the frequency of bare nouns in her non-finite utterances). Example (9c') shows one of her finite structures, which, with a strong pronoun for a subject, is not fully target like. The examples in (10) show her systematic use of determiners. She produces overt determiners in complement (10a) and subject DPs (10f), in isolated DPs (10b), and in dislocated DPs (10c). (Note that her systematic use of 't' for 's' leads to an interpretation of 'il t'appelle' as 'il s'appelle'.) She uses indefinite (10a–c), but also definite DPs (10d–f) in the appropriate contexts from the first recording. She also produces fully specified definite DP subjects in infinitival environments as in (10f), which is unexpected under some of the above hypotheses (see Table 2 for the frequency of this phenomenon).

Rafaelle's Determiner Omissions
and Non-finite Utterances
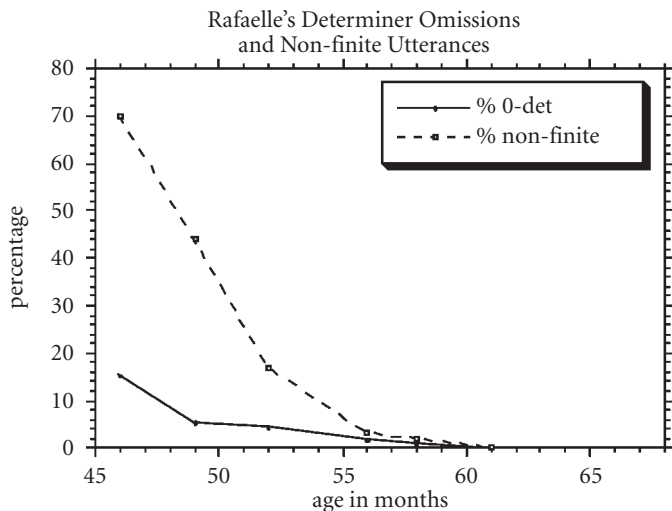
Figure 2a. Rafaelle's determiner omissions and non-finite utterances

(9) a. promener wouwou   Rafaelle 3;10
         walk-INF   woufwouf
         'walk the dog'
     b. garçon mettre petit short à   son papa   Rafaelle 3;10
         boy   put-INF small shorts on his daddy
         'the boy is dressing his daddy with the small shorts'
     c. après   toi partir   Rafaelle 4;1
         afterwards you go-INF
         'afterwards you go'
     c.' moi fais   pas la   même chose   Rafaelle 4;1
         Me   make:FIN   not the same thing
         'I'm not doing the same thing'

(10) a. apporter des   cadeaux   Rafaelle 3;10
         bring-INF DET:INDEF gifts
         'bring gifts'
     b. des   oiseaux   Rafaelle 3;10
         DET:INDEF birds
         'birds'
     c. un   lapin i(l) t'   appelle Edgar   Rafaelle 4;1
         a:INDEF rabbit, he   himself calls   Edgar
         'a rabbit, he is called Edgar'

d. et   puis les   chevaux   Rafaelle 3;10
    and then the:DEF horses
    'and then the horses'

e. dans la   baignoire   Rafaelle 3;10
    in   the:DEF bathtub
    'in the bathtub'

f. p(u)is la   maman laver   Rafaelle 3;10
    then   the:DEF mom   wash-INF
    'then the mom washes him'

In contrast, Loris has a high rate of determiner omissions (41% at the age of 4;7 and 35.3% at the age of 5;0), but does not use many non-finite constructions (12% at the age of 4;7 and already near to 0% at the age of 4;10). Figure 2b shows the longitudinal development of Loris' use of non-finite structures and determiner omissions.

The examples in (11) illustrate his use of verbal structures. (11a, b, c) show that he uses the French *Imparfait* and *Passé Composé*, with (11c) demonstrating a high complexity on the verbal level. (11d) shows bare participle use which sometimes occurs in Loris' speech and (11e) shows that, in his rare infinitival constructions, subject clitics may occur, which is very unusual in the speech of normally-developing children.
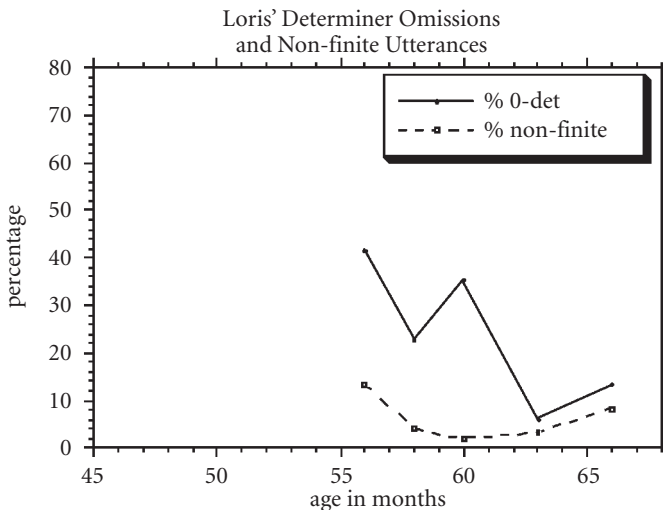

Figure 2b. Loris' determiner omissions and non-finite utterances

(11) a. il   était   content   Loris 5;3
          he   was:IMP happy
          'he was content'

      b. a   fait   peur à Blanche Neige   Loris 5;3
          has made:PC fear to Snow   White
          'frightened Snow White'

      c. j'étais   en rentrant   chez David   Loris 5;3
          I was:IMP in coming.back at   David's
          'Coming back, I stayed with David'

      d. demandé   à nona   Loris 5;3
          asked:PART to Grandma
          'asked Gramdma'

      e. non, je   mettre   dans bras   Loris 5;3
          no,   I.CLI put-INF in   arms
          'no, I put (it) in my arms'

The examples in (12) show Loris' use and omission of determiners. Loris omits
determiners on isolated DPs (12a, b), after overt prepositions, on complement
DPs and on subject DPs (12c, d, e). We find the use of a placeholder in (12f),
a correct overt determiner in (12g), and target use in a context where a bare
noun is required in (12h). Note, however, that (12h) is not target like as to the
use of complement clitics: the reflexive clitic is omitted. See (11e) for a similar
problem.

(12) a. Exa: une pipe, L: pipe   Loris 4;7
                a   pipe   pipe
          'a pipe, L: a pipe'

      b. gentil dragon   Loris 4;7
          good   dragon
          'good dragon'

      c. je vais   avec pistolet   Loris 4;7
          I   go:FIN with pistol
          'I go with my pistol'

      d. a   cassé   pied   Loris 4;7
          has broken foot
          'has broken her foot'

      e. tracteur est cassé   Loris 4;7
          tractor   is   broken
          'the tractor is broken'

      f. dans a   cheminée   Loris 4;7
          in   PL-H fireplace
          'in the fireplace'

g. c'est pour faire le   chien   Loris 4;7
   that's to   make the dog
   'that's for imitating the dog'

h. a   perdu pied et   fait   mal   Loris 4;7
   has lost   foot and made hurt
   'has lost his footing and hurt himself'

Summing up, we find a high rate of determiner drop in normal children in a first phase (over 60%) and the use of non-finite structures at rates of 30–60% at the same time. From the second birthday (or a little later), the two phenomena become similar in that they show about equal rates and equal slopes. In the two children with SLI we examined, we find no such parallelism for a long time in the use of non-finite structures and determiner omissions. Only at the very last recordings, where non-finite structures and determiner omission are practically at 0% for Rafaelle and between 0% and 10% for Loris, a certain similarity might be pointed out. However, the important point is that these two children show exactly opposite profiles: Rafaelle uses a high rate of non-finite structures but rarely drops determiners, whereas Loris has a high rate of determiner omissions but rarely uses non-finite structures. If these children's development can serve as a close-up for normal development, it emerges that the early phase, where certain, albeit not very striking, differences can be observed for Louis and Marie, should be taken as evidence for the existence of such differences even in normal development.

5.   Determiner drop and the omission of complement clitics

5.1 Normally developing French children

As for a developmental parallel in the omissions of determiners and complement clitics, results available in the literature on the acquisition of French (see Section 2.2) show that determiners are mastered long before complement clitics appear. This is corroborated by the data from Augustin.

Augustin uses complement clitics at a rate of only 3.9% of all complement contexts at the age of 2;6.16 (Hamann et al. 1996). A count of his determiner use reveals that at the same age he already produces 89.2% overt determiners. This number includes placeholders, which are easily recognizable in front of nouns. Figure 3 shows the profiles for Augustin's use of correct overt determiners in determiner contexts and his use of complement clitics in contexts where complements are required. However, the two phenomena cannot be di-
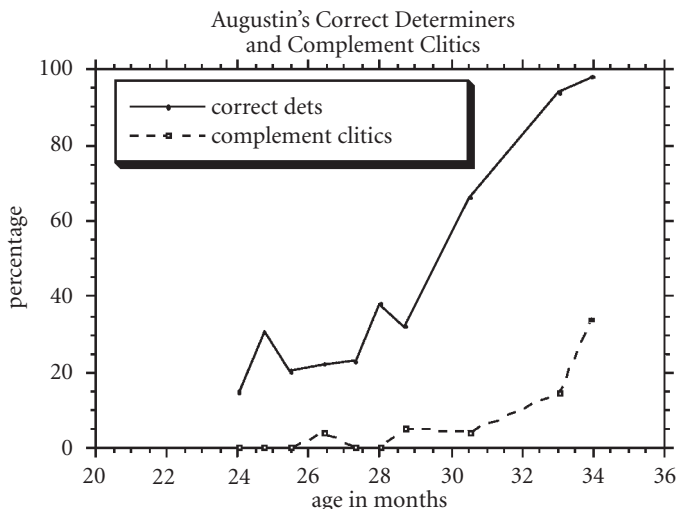
Figure 3. Augustin's correct use of overt determiners and complement clitics

rectly compared because of the contextual dependency of complement clitics (see Section 3.2) and so only a trend can be indicated. Since placeholders could not be included in the calculation (see Section 3.2), this lowers his rates of determiner use as compared to counts found in the literature, but nonetheless it appears clearly that the two phenomena are not closely related in Augustin's development. Note especially the differences in the development of the two phenomena: Whereas overt determiners are used correctly (around 20%) from the beginning of recording, there are no complement clitics at all initially. Augustin's use of correct determiners then dramatically accelerates at the age of 2;4.22 whereas his use of complement clitics increases only at the age of 2;6.16 (and this increase is not as steep as that of determiners).

Another comparison can be made between omissions of determiners and complement clitics. Between the ages of 2;0.2 and 2;6.16, Augustin has a mean of determiner omissions of 20.9% and his complement omissions are only slightly higher with a mean of 26%. In the last three recordings, however, determiner omissions show the rates of 8.9%, 4.9% and 1%, demonstrating mastery. This is different for complement omissions with rates of 20%, 14.4% and 20% at the same times.

5.2 French children with SLI

The extreme delay in the production of complement clitics as reported in the literature on French SLI was corroborated for the group of 11 children with SLI described in Section 3 (see Hamann et al. 2003 for their spontaneous and Chillier et al. 2001 for their elicited production). Here and in what follows, the term "omitted clitic" for an omitted verbal complement is adopted. If omitted arguments in child language normally correspond to unstressed pronouns, this simplification should not be misleading; notice that the ratio of overt clitics out of all verbal complements is in any event a reliable indication of the level of proficiency with clitics.

The development of complement clitics and determiners is clearly not the same for Rafaelle, who has a high rate of correct overt determiners, 84.8%, already in her first recording (no placeholders) but a total absence of complement clitics. At the age of 4;8 she produces only 10% overt complement clitics in her spontaneous speech compared to about 98% correct uses of determiners (and finite verbal forms). The examination of her omissions also shows a difference: there are only 15.2% determiner omissions in her first recording, compared to 47.1% omissions of complement clitics and there are still 9% clitic omissions compared to 1.4% determiner omissions at the age of 4;8.

Similarly, Loris produces 50% correct overt determiners (and 8.3% placeholders) at the age of 4;7 compared to only 15.7% complement clitics (accompanied by a fairly high rate of lexical complements, 63.1%). At the age of 5;0 he has 56.6% correct overt determiners (8% placeholders) and only 6.9% complement clitics. Note that Augustin has a much higher percentage of overt complement clitics (33.9%) even at the age of 2;10. (See also Hamann 2002 for figures on Augustin.) Interestingly, Loris's omissions show a different pattern from Rafaelle's in that he has fewer omissions of complement clitics than determiner omissions in his first recording. There are 21.1% clitic omissions compared to 41.1% determiner omissions, and at the age of 5;0 he has 18.6% clitic omissions compared to 35.3% determiner omissions.

The two children with SLI examined thus corroborate what has been reported in the literature (see Section 2.2): complement clitics are especially difficult for French children with SLI, whereas determiners cause less difficulty and are mastered early in the typical case.

Since the tendency to omit or otherwise avoid complement clitics appears to be a reliable and persistent marker of French SLI (Cronel-Ohayon et al., in preparation; Hamann et al. 2003; Jakubowicz et al. 1998; Paradis et al. 2002; Wexler, in press), we note here that clitic omission and determiner omission

appear to be quite independent in SLI. Initially, Rafaelle has about three times as many clitic omissions as determiner omissions, and Loris has about twice as many determiner omissions as clitic omissions. So both children manifest clitic omission to some degree. Nevertheless, Rafaelle has over twice as many clitic omissions as Loris in their respective first recordings, which suggests that an impaired functional structure in the verbal domain exacerbates the clitic problem.

The fact that clitic omission appears to be totally disconnected from determiner omission and partly related to the mastery of the verbal functional structure argues against analyses of the clitic problem in SLI in terms of the reduced phonetic salience of clitics as suggested by the surface hypothesis (see Leonard 1998, 1989), especially in view of the fact that some clitics and determiners are homophonous in French (*le, la*). In fact, this dissociation is in favor of a syntactic analysis of the problem (e.g., along the lines of Wexler, in press). See also Jakubowicz et al. (1998) for a similar argument.

The data presented in Section 4 and Section 5 clearly argue that determiner omission and the use of non-finite structures, on one hand, as well as determiner omission and complement omission or determiner and complement use, on the other hand, are not too closely related in the development of French children with SLI.

6.   Other observations on determiner omission

In what follows more detailed results on the determiner use of the two principal children with SLI are presented and examined, even if sometimes the numbers considered are very small (leading to the decision of using only the earlier recordings in some cases, as specified in Section 3.2). These results, bearing on the weaker predictions derived from the feature underspecification hypothesis and on the prosodic templates hypothesis, are included here in order to evaluate these approaches. The investigation concerns unexpected subjects, the use of determiners after overt prepositions and the use of determiners on subject and object DPs, as well as initial or non-initial DPs.

6.1 Unexpected subjects

In non-finite structures we expect null subjects, lexical subjects with determiner omission, and strong pronoun subjects. Nominative clitics and full DPs are unexpected. Clearly, null subjects are the preferred subjects in infinitives for

both normally-developing children and children with SLI. Eighty-eight percent null subjects occur in the infinitives of 6 normally-developing children studied by Rasetti (2000), and Rafaelle and Loris have a mean of 84% null subjects with infinitives.

However, the children with SLI show a variety of unexpected subjects as can be seen in examples (9) to (12), repeated below in (13) and (14). Examples (13a) and (14a, b) show that both children can use full DP subjects in non-finite constructions (about 6% throughout for Rafaelle and 16% in one of Loris' recordings), and at 5;3 Loris has 3 subject clitics in his 5 non-finite structures (see (13a)), an error which also occurs in Rafaelle's speech (see (14c) where 'elle' occurred unstressed) and which is extremely rare in normal children (1.3% in the 6 children investigated by Rasetti 2000). Table 2 gives a summary of these results.

(13) a. non, je   mettre dans bras   Loris 5;3
          no, I.CLI put   in   arms
          'no, I take him/it in my arms'

      b. le   chien rentré   Loris 4;10
          the   dog   return.PART
          'the dog (has) returned'

(14) a. son fils couper les bouts de le   tapis   Rafaelle 4;1
          her son cut-INF the ends of the carpet
          'her son is cutting off the fringe of the carpet'

      b. le   mari   (r)entrer   du   boulot   Rafaelle 4;1
          the   husband return-INF from   work
          'the husband is returning from work'

      c. elle   renverser le   lait   Rafaelle 4;1 (unstressed)
          she.CLI spill-INF the milk
          'she is spilling the milk'

In finite structures full DP and nominative clitic subjects are expected. They do indeed occur in the majority of the cases for normally-developing children and for children with SLI (see Jakubowicz 1998 and Hamann et al. 2003). Since there are so few full lexical subjects without an accompanying subject clitic, calculations on full DP subjects are difficult and inconclusive. However, there is a noticeable degree of "unexpected subjects", especially finite null subjects for the normally developing children (mean rate of 27% for Augustin, Marie, and Louis) and a variety of errors in the subject use by the children with SLI. Note that finite null subjects are counted as "unexpected" here, because the assumption that they are due to the underspecification of number in the verbal system

Table 2. Types of (preverbal) subjects with non-finite structures in French

child	null subject	non-nominative pronoun	lexical subject with 0-det	full DP	nominative clitic
6 normals					
Rasetti (2000)					
1;7–2;9	88.7%	1.7%	(together:	4%)	1.3%
Rafaelle (SLI)					
3;10	81.3% (13/16)	0	12.2% (2/16)	6.2% (1/16)	0
4;1	78.3% (47/60)	13.3% (8/60)	0	5% (3/60)	1.7% (1/60)
4;4	90% (27/30)	3.3% (1/30)	0	6.7% (2/30)	0
4;8	85.7% (6/7)	14.3% (1/7)	0	0	0
4;10	0	0	33.3% (1[a]/3)	0	66.7% (2/3)
5;1	0	0	0	0	0
Loris (SLI)					
4;7	87.5% (7/8)	0	12.5% (1/8)	0	0
4;10	83.3% (5/6)	0	0	16.6% (1/6)	0
5;0	100% (2/2)	0	0	0	0
5;3	40% (2/5)	0	0	0	60% (3/5)
5;6	100% (11/11)	0	0	0	0

a this is a postverbal subject

Table 3. "Unexpected" subjects in finite constructions in French

child	% null subjects	1st and 2nd person strong pronouns	lexical subjects with 0-det	total % 'unexpected' subjects
Marie (normal)				
Rasetti (2000)				
1;8–2;3,3	43.2%	0	no count	43.2%
Rafaelle (SLI)				
3;10	0/3	0	0	0
4;1	33% (26/80)	6.2% (5/80)	0	38.8% (31/80)
4;4	37% (42/113)	6.2% (7/113)	0	43.4% (49/113)
Loris (SLI)				
4;7	12% (12/51)	0	50% (1/2)	25.5% (13/51)
4;10	9.2% (13/141)	0	16% (1/5)	10% (14/141)
5;0	12.5% (21/168)	0	1[a]/2	13.0% (22/168)

a this is a postverbal subject

cannot account for the asymmetry found in their occurrence in declaratives and fronted Wh-questions, see also Section 2.3.

Rafaelle has a high percentage (33–37%) of null subjects in finite constructions at 4;1 and 4;4. She also uses first and second person strong pronouns (with default case) as preverbal subjects in finite constructions at a rate of 6.2% in both recordings (see example (9c')), but she has no determiner omissions in her few DP subjects on finite verbs in the first 3 files. Loris has 12% null subjects at 4;7, 9.2% at 4;10 and 12.5% at 5;0 so that there is not much development in this respect. He does not use strong pronoun subjects, but (taking the first three recordings together) he has 3 determiner omissions on his 9 preverbal lexical subjects, see (12e), which amounts to a rate of 33.3%. Table 3 gives a summary of these results.

6.2 The context of overt prepositions

Investigating only Loris, the child who shows substantial omission of determiners, we find 12 occurrences of prepositional phrases with overt prepositions in his first two recordings. Of these, 4 cases show determiner omission (see example (12c)), which amounts to 33.3%.

This result for Loris, and the occurrence of unexpected subjects in the speech of both children, suggest that even the weaker predictions derived from a hypothesis of joint underspecification in the verbal and the nominal domain are not corroborated for these two children with SLI.

6.3 Initial/non-initial and subject/object contexts

In Section 5.2 it was pointed out that an account of determiner drop appealing to the phonological weakness of certain functional elements cannot explain the distinctive development of determiners and complement clitics. We now investigate whether determiner drop is due to a preferred prosodic template leading to omissions in special prosodic environments. This leads to the question of whether an asymmetry in determiner drop from subjects or objects can be found in French, as is the case for other languages. Since lexical subjects unaccompanied by a subject clitic are rare in spoken French and become rarer with development, a preliminary analysis of subject and object contexts is difficult. At age 4;7, Loris uses only 1 relevant lexical subject, which shows determiner omission. He produces 9 relevant lexical objects with 5 determiner omissions (45%). At the age of 4;10, he produces 4 relevant lexical subjects with one determiner omission (25%) and 12 relevant lexical objects with 3

Table 4. Percentage of determiner omission in initial/non-initial contexts in the spontaneous productions of 11 French children with SLI

	Raf	Aur	Lor	Cor	Did	Mar	Fab	Noe	Lea	Can	Noa
age	3;10	4;2	4;7	4;9	4;9	5;0	5;7	6;9	7;7	7;10	7;11
MLU	1.91	3.20	3.57	1.78	3.04	3.74	3.86	5.01	2.78	5.19	4.28
initial contexts	7.7%	10.5%	71.4%	26.6%	8.9%	2%	12.5%	13.3%	5.5%	0	6.6%
non-initial contexts	15%	20.7%	42.8%	28.6%	10.1%	18%	2.0%	8.2%	1.5%	1.9%	1.4%

determiner omissions (25%). Clearly these figures are too small to allow any conclusions.

Bearing on the hypothesis of an initial adherence to a trochaic template, the group of 11 SLI children was investigated with special attention to determiner omissions in initial and non-initial determiner contexts. For this count, isolated nouns were taken to be cases of initial contexts. As placeholders and inappropriate uses were counted separately for each context, the percentages in Table 4 do not necessarily add up to a mean of determiner omission.

Table 4 shows that some SLI children drop determiners to the same degree in these different contexts, some children drop more determiners in initial contexts, and others drop more determiners in non-initial contexts. This clearly excludes an explanation of determiner omissions in the speech of French children with SLI that appeals to the hypothesis of trochaic templates. A similar investigation of normally developing children is in preparation.

7.   Problems with free or with bound morphology?

The dissociation between the verbal and the nominal functional systems shown by Rafaelle and Loris could also be looked at from a different angle: determiners are free functional elements, whereas verbal inflections are bound morphemes. So one could put forth the hypothesis that the observed dissociation really is between free and bound functional elements.

Rafaelle's problem could be mainly located with bound morphology in that she omits inflections but produces determiners rather systematically. In contrast, Loris' problem could be located in the use of free morphology in that he produces inflections but omits determiners. One crucial domain to test this is the domain of functional verbs, auxiliaries and copulas, which are free functional elements and so the closest parallel to determiners in the nominal

Table 5. Copula and Auxiliary use in the two first recordings of Rafaelle and Loris

child	+cop	–cop	+Aux Part.	–Aux Part.	Total % omissions
Rafaelle					
3;10	2	5 (71.4%)	0	3 (100%)	80% (8/10)
4;1	22	13 (37.1%)	0	9 (100%)	50% (22/44)
Loris					
4;7	8	3 (27%)	7	1 (12.5%)	21% (4/19)
4;10	38	3 (7.3%)	20	4 (16.6%)	10.7% (7/65)

system. The expectation would be that Loris should omit a very high number of functional verbs, whereas Rafaelle's production should not be particularly affected in this domain. Table 5 shows, however, that the opposite obtains (see Section 3.2 for more details on the analysis).

For Rafaelle high rates of copula and auxiliary omission are found, see examples (15a, b), so it can be concluded that her problem is not the use of bound morphology, but is centered on the verbal domain.

(15) a. où   des   boutons?   Rafaelle 3.10
          where   DET:INDEF   buttons
          'where are buttons?'
     b. après   trempés   Rafaelle 3.10
          afterwards   made.wet
          'afterwards they made themselves wet'
          (plural derived from the context and the investigator's follow-up
          question: Après ils se sont trempés?)

Although Loris has some auxiliary and copula omissions, he shows twice as many determiner omissions: 41% determiner omission compared to 21% omission of functional verbs at 4;7 and 22% determiner omission compared to 10.7% omission of functional verbs at 4;10. So, auxiliary and copula omission appears to pattern with the use of non-finite verb forms, not with determiner omission. The problem is much more severe in the child with other problems related to the functional structure of verbs, and the rates of auxiliary and copula omission in the two children are comparable to the respective rates of non-finite verb use, albeit slightly higher (80% vs. 70% for Rafaelle, and 21% vs. 13.3% for Loris in the first recording). We can conclude that the distinction between the verbal and nominal functional domain is a better key for understanding Rafaelle's and Loris' linguistic production than the distinction between free and bound functional morphology.

8. Conclusion

A longitudinal comparison of the productions of two French children with SLI showed that the development of the functional domains of nouns and verbs may diverge sharply. In her first recording at the age of 3;10, Rafaelle has a very high proportion of root infinitives (70%), and few determiner omissions (15.2%); her rate of root infinitives declines in the following months, while remaining substantial for some time (44% at 4;1), and one year later the phenomenon has virtually disappeared. On the other hand, in his first recording at the age of 4;7 Loris has many determiner omissions (41.6%), and few non-finite structures (13.3%); his rate of determiner omission also declines in the following months, while remaining substantial for a while (35.3% at the age of 5;0). The acquisition of the obligatory nature of determiners and of finite verbal inflections is clearly dissociated in our data. It looks as if these children with SLI work their way through functional structures of the verbal and the nominal domain by following quite independent paths, which all tend to lead to target consistency (at least, as far as determiners and finiteness are concerned). Note here that even if Rafaelle's development may be the more typical one (see Jakubowicz et al. 1998 or Paradis & Crago 2000, 2001), the mere existence of the opposite pattern allows us to speculate on a possible dissociation of the nominal and the verbal domain (see also Section 1.1 on this point).

As for the developmental pattern of complement clitics, we observe substantial clitic drop in both children with SLI, which is not surprising, as clitic drop, or the reluctance to use complement clitics, is a salient and persistent characteristic of French SLI (see Chillier et al. 2001; Hamann et al. 2003; Jakubowicz et al. 1998). Nevertheless, the substantively higher number of clitic omissions in Rafaelle's production suggests that a less developed functional structure in the verbal domain exacerbates the problem with complement clitics. The fact that clitic omission appears to be totally disconnected from determiner omission and partly related to the mastery of the verbal functional structure argues against analyses of the clitic problem in SLI in terms of the reduced phonetic salience of clitics. Rounding off the argument that phonetic weakness cannot be at the bottom of neither clitic nor determiner omission, it was shown that an appeal to prosodic templates cannot explain the phenomenon of determiner omission. Moreover, the 11 children with SLI examined showed cross-subject variation with respect to determiner drop in initial and non-initial contexts.

Before concluding that the observed dissociation should find its explanation in an appeal to differences in the verbal and the nominal functional do-

main, Rafaelle's and Loris' use of auxiliaries and copulas was investigated and it was shown that the assumption of a selective problem with free or bound morphology cannot account for the data. Moreover, it was shown that the results on Rafaelle and Loris may be taken to provide some counter-evidence for those grammatical accounts which closely link the nominal and the verbal domain in explaining the observed difficulties by a syntactic or interface (mis)analysis common to both domains. If such a (mis)analysis were part of a child's grammar, it would be expected that, given a common cause, both domains should be impaired to the same degree. Given that the two children with SLI investigated here each demonstrate a selective impairment, one in the nominal, the other in the verbal domain, it is unlikely that one and the same grammatical (mis)analysis is responsible for their different difficulties. Note that not even the weak predictions following from one of these "common cause"-hypotheses are fulfilled: our data show that unexpected subjects occur in these children's speech and that determiners can be omitted after overt prepositions.

Can any conclusion be drawn from these findings for normal development? Under the view that children with SLI show a parallel but delayed development with respect to normally-developing children, Rafaelle and Loris may provide an extreme case of the independence of the verbal and the nominal system which the rapidity of normal development may make harder to detect. Moreover, as was pointed out above, a common cause underlying difficulties in both domains should predict equal, not selective impairments. Under this view, these results are problematic for accounts of development that postulate a close relationship between the functional domains of D and I in the grammars of normally-developing children and of children with SLI.

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Note

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PART II

SLA and bilingualism

On the L2/bilingual acquisition of French by two young children with different source languages

Adriana Belletti and Cornelia Hamann

1. Introduction

This chapter deals with the acquisition of French by two young children whose "source" languages are Italian and German, respectively. Apart from a detailed discussion of data, we will particularly address the following general theoretical points.

Among the many questions related to L2/bilingual acquisition, the issue known as "UG accessibility" has received much attention in the L2 literature (see White 1996a, 2000 and the references cited therein). This issue appears to be particularly relevant as far as adult L2 acquisition is concerned. As for L2 acquisition by children under five years of age and bilingual acquisition (see Meisel 1990; Schwartz 1998a), access to UG appears to be rather uncontroversial.

Indeed, in the work that follows we will take access to UG for granted in the two young children under investigation as they are in an age range of 3;5 to 5;5. We will rather concentrate on two partly related questions. First, are there parallels to monolingual L1 acquisition of French in the children's use of infinitives and child null subjects? Can a truncation/Root Infinitive (RI) phase be detected in these children's French (Prévost 1997, this volume; Gavruseva 2000; Haznedar & Schwartz 1997; Meisel 1997)?[1] This issue is particularly relevant for the discussion about the maturation of grammatical principles in L1 acquisition: in what sense could grammatical maturation have taken place if older children (or adults) go through the same stages in their L2 as younger children acquiring their first language?[2] Another point particular to this issue is the problem of whether the infinitives produced by L2 learners resemble

the RIs characteristic for early L1 acquisition (see Rizzi 1994; Wexler 1994; White 1996b) or whether they are better explained by the Missing inflection hypothesis (Prévost & White 2000).[3] Second, we investigate the influence of the children's L1 by looking for possible transfer phenomena (Schwartz 1998a). This can contribute to the debate as to how much transfer is involved in L2 acquisition by children and in which areas to expect it (see White 2000 for an overview; Whong-Barr & Schwartz 2000).

Overall, our results show that the two children under investigation do not have Root Infinitives nor child null subjects in their French. The few infinitives present in their French do not share the properties of Root Infinitives in L1 acquisition (Rizzi 1994). In particular, as far as the German child is concerned, her infinitives rather share characteristic properties independently found in (adult) L2 productions of French (Prévost & White 2000), and which can be interpreted as indicating problems with adequate mastery of inflectional morphology, at least in early L2 acquisition stages (cfr. the Missing inflection hypothesis mentioned above, White & Prévost 2000; Schwartz 1998a, among others). As to the second question, we find that the German child's French shows patterns that may indicate transfer phenomena whereas the Italian child's French does not, or does so only to a very limited degree. The latter finding may be due to the parameter constellations and the type of evidence available in the respective L1s and the common L2. Another possibility is that the Italian child's acquisition of French rather systematically resembled bilingual acquisition more than the German child's did. This is especially indicated by proficient use of complex syntactic constructions either altogether absent in Italian or not displaying the same properties as in French. This leads us to raise the question of where to draw the line between very early L2 acquisition and bilingual (L1) acquisition (see Meisel 1990).

2.   A language comparison

2.1   Overview

We address in particular the areas of similarities and differences of the three languages summarized in Table 1 and illustrated below.

Only German has the V2-property (1a, b), and German is an SOV language whereas Italian and French are both SVO (2a, b, c).

Table 1. Similarities and differences of the source and target languages

| | Source languages | | Target language |
	German	Italian	French
V2	+	−	−
SOV	+	−	−
SVO	−	+	+
Null Subject	−	+	−
Weak subject pronouns	XPs	−	XPs
Que/qui	/	−	+
Object clitics	XPs	X^0	X^0
Proclisis/enclisis	(−)	+	−
wh-in situ	(+)	−	+

(1) a. Lorenzo liest   das Buch nicht
          L   reads the book not
          'L. doesn't read the book'

   b. Das Buch liest   Lorenzo nicht
          he   book reads L.   not

(2) a. … daß Lorenzo das Buch nicht liest
              that L.   the book not   reads

   b. … che Lorenzo non legge il   libro
              that L.   neg reads the book

   c. … que Lorenzo ne lit   pas le   livre
              that L.   neg reads not the book

With respect to the null subject property, only Italian is a true null subject
language. Neither German nor French have subject-drop and can be classified
as null subject languages as indicated in particular by the impossibility of a null
subject in a subordinate clause, (3a) vs. (3b):[4]

(3) a. … che _ sono venuto ieri
   b. *… que _   suis venu hier
               that (I) am come yesterday
        '…that I came yesterday'
   c. *… daß _   gestern   gekommen bin
               that (I) yesterday come   am

Another difference is that Italian has strong subject pronouns but lacks weak
subject pronouns, whereas German and French have subject pronouns, weak
or strong.[5] Following Cardinaletti and Starke (1999), Friedemann (1995),
Laenzlinger & Shlonsky (1997) and much recent literature, we take French

subject clitics to be weak pronouns filling an XP position in syntax (see also Kayne 1984; Rizzi & Roberts 1989; Haverkort & Weissenborn 2000). Both French and Italian have object clitics of the same kind, ultimately analyzed as syntactic heads (Belletti 1999; Sportiche 1996, among others), but differ as to the possibilities of enclisis and proclisis as discussed in detail in 4.2.2. In that section, we will also investigate two other properties exclusively particular to French, namely the *que/qui* alternation in relative clauses and the in-situ strategy for constituent WH questions.

2.2 German pronouns and clitics

As the acquisition of the French pronominal system seems to raise some problems for the German child, we briefly review some of the crucial differences between the German and the French/Romance system of strong vs. weak/clitic pronouns, illustrating with German examples. Whereas Romance pronominal clitics cannot be used in isolation (with stress), cannot be coordinated, and cannot be separated from the verb, German personal pronouns, which are ambiguous between strong and weak use, behave differently, according to whether they are used as strong or weak. As strong pronouns they can be stressed and coordinated but only when referring to [+human] subjects, as in (4a–b). In (4c–e) we have inanimate subjects, which cannot be strong and as such cannot be coordinated. German weak pronouns can cliticize to complementizers and nouns (5), (6). This differs from Romance clitics, which are exclusively verbal clitics.

(4) a. Hans und Grete sind verschwunden.
         H   and G.   have vanished
     b. Er und sie sind einfach weg.
         He and she are   simply gone
     c. Der Topf und die Pfanne sind verschwunden.
         the pot   and the pan   have vanished
     d. Er/sie war eben noch da.
         He/she was here just   now
     e. *Er und sie sind weg.
          He and she are   gone

(5) a. Ich hab'n   eben noch gesehen
         I   have'm here just   seen
         'I have just seen him'

b. … weil's   nicht stimmt
        because't not   is+true
    'because it is not true'

(6) a. … weil   die Mutter'm was   gegeben hat
        because the mother'm what given   has
    'because the mother gave him something'

b. … was   hat die Mutter'm gegeben
        what has the mother'm given
    '… what did the mother give him'

Furthermore, it is worth mentioning here that there is a partial resemblance between German and French/Romance in the pronoun systems, which may be partly responsible for some misbehavior in this area (see 4.2.1). German has a series of so called (demonstrative) d-pronouns (*der, die, das, den*) whose form is identical to that of the definite determiner; French/Romance display a similar ambiguity in the case of clitic pronouns, which also morphologically correspond to the definite determiner (for third person accusative clitics, *le, la, les*). However, whereas the ambiguous d-pronouns of German do not undergo the characteristic displacements of weak or clitic pronouns since they appear in the same position as full DPs (*Ich habe das gelesen / Ich habe das Buch gelesen*), French/Romance clitics necessarily do (*Je l'ai lu / J'ai lu le livre*); whence the very different syntactic behavior of the two pronominal series. See 4.2.1 for further discussion.

3. The method and first measure of proficiency

3.1 Exposure

Our method is a longitudinal study of the natural production of two young children interacting with each other in the target language, French. One child, Elisa, is German and was 4;0 when data started to be collected. The Italian child, Lorenzo, was 3;5. There are 5 recordings, spaced 1–2 months at the beginning and at longer intervals later. Both children attended a nursery school with French as the spoken language. Especially during the first recordings, both children also occasionally used their "other" language (German or Italian), apart from French, their common language. On this point, see Section 3.2.

We consider systematic exposure to French as beginning with the onset of nursery school attendance by the two children. Table 2 shows that the length of systematic exposure to French before recording was essentially the same. Simi-

Table 2. Recordings and exposure

Rec	Duration	Child	Age	Exposure
1	90 min	Lorenzo	3;5	13 months
		Elisa	4;0	14 months
2	90 min	Lorenzo	3;7	15 months
		Elisa	4;2	16 months
3	90 min	Lorenzo	3;8	16 months
		Elisa	4;3	17 months
4	45 min	Lorenzo	4;4	23 months
		Elisa	4;10	24 months
5	45 min	Lorenzo	4;11	30 months
		Elisa	5;5	31 months

larities can also be found in the home situation where German and Italian were spoken consistently during the first three years of the children's lives. However, contact with French before systematic exposure in the respective nursery schools was sporadic but did exist in the form of everyday language contacts of siblings and parents. Some differences must be noted: Elisa was 2;8 and Lorenzo was 2;4 when systematic exposure started; Elisa went to an international nursery school with a strong German peer group at the beginning of the period of systematic exposure, whereas Lorenzo went to a purely French school from the outset. Shortly before the fourth recording, Elisa changed her language environment and attended a purely French "maternelle" everyday of the week, with no German peer group.

3.2 Preference for target or source language

Tables 3a, b show the number of utterances from each language and especially the number of verbal utterances occurring in each language, where verbal utterance was any non-repetitive utterance containing a verb, including one-word utterances. The percentage of utterances from each language, calculated out of the total of utterances, can provide a rough measure of the proficiency and confidence in language use, even though it is also dependent on the requirements of the communicative situation. The percentage of verbal utterances (calculated out of the total of utterances) gives an independent measure of proficiency in a language, as has been repeatedly shown with respect to verbal development in L1 acquisition.

It is evident from Tables 3a, b that the two children have a rather different profile in their use of French. During the first three recordings, Elisa avoids

Table 3a. Elisa's number of utterances and verbal utterances in German and French

Rec	Utt	Lang	Utt.	% lang/utt	Verb. utt.	% v/u per lang
1	61	G	21	34.4	17	73.9
		F	40	65.5	27	67.5
2	179	G	84	46.9	58	69.0
		F	95	53.1	55	57.8
3	162	G	98	60.4	79	80.6
		F	64	39.5	28	43.7
4	146	G	18	12.3	17	94.4
		F	128	87.7	104	81.25
5	215	G	2	0.9	1	50
		F	213	99.1	160	74.4
Total	763	G	223	29.2	172	77.1
		F	540	70.7	374	69.2

Table 3b. Lorenzo's number of utterances and verbal utterances in Italian and French

Rec	Utt	Lang	Utt.	% lang/utt	Verb. utt.	% v/u per lang
1	112	I	2	1.8	0	0
		F	110	98.2	93	84.5
2	201	I	54	26.8	51	94.4
		F	147	73.1	115	78.2
3	191	I	5	2.6	2	40
		F	186	97.4	132	70.9
4	86	I	4	3.5	4	100
		F	82	96.5	61	74.4
5	214	I	0	0	0	0
		F	214	100	154	72
Total	804	I	65	8	57	87.5
		F	739	92	555	75

French in 35–60% of her utterances and her percentage of verbal utterances is consistently lower in French than in German.[6] Lorenzo uses more French than Italian from the beginning and his use of verbal constructions in French is more or less equal to his use of such constructions in Italian, with some variation. These differences in profile can serve as an indication that Elisa has the characteristics of an early L2-er, whereas Lorenzo could be considered truly bilingual.

4.   Results

4.1 Functional categories, root infinitives and null subjects

The first finding is that neither child uses infinitives nor null subjects in French. We also find that the two children produce subordinates and wh-questions from early on, thus indicating that Tense, Agreement and Complementizers are available to both. This holds from the beginning of recording for Lorenzo, and there is uncontroversial evidence for the Comp system in Elisa's French from recording 2, as discussed in connection with the examples in (7) and (7').

Note that neither child shows the use of root infinitives in their source languages anymore. For the Italian child there are no earlier analyzed data, but we can refer to the small Italian corpus available from the above recordings for relevant comparisons.[7] Elisa's acquisition of German has been analyzed when she was 3;1.5–3;4.13 of age (see Hamann 1996). No root infinitives were found at that time, and her use of null subjects (counting both child null subjects and legitimate topic-drop subjects) was at 5% at the age of 3;4.13. At that stage she also had subordinate clauses and fronted wh-questions, as well as the simple and complex form of the German past tense, and there were no word-order errors, neither in main nor in subordinate clauses.

4.1.1   *Elisa*

As for her French, Table 4a indicates that Elisa's quantitative production of subordinate clauses resembles that of French age matches. It is also quite similar to her use of German subordinate clauses: about 10% of her finite clauses are subordinates in her French and her German. Her subordinate clauses all have an overt complementizer, though some errors occur in the lexicalization, see (7a, b, c).

(7) a. Quand on   a   pas les mêmes…   rec 2
         when   one has not the same ones…
         'When one doesn't have the same ones'

     b. Regard, qu'est-ce que le   petite   a   fait   rec 2
         Look,   what is it that the:MASC small+one:FEM has done
         'Look what the small one has done'

     c. Regard, comme j'ai   fait   rec 3
         Look,   how   I have done (it)
         'Look how I've done it'

Her first French wh-questions are target-like in-situ questions (7'a) or *qu'est-ce que* constructions (7'b), but include the non-adult (7'c). Note that this type of

error, the use of an infinitive in a fronted wh-question, has never been documented for monolingual French acquisition.[8] The interrogative pronouns Elisa used in French were *quoi, qu'est-ce que, où*, and *pourquoi*.

(7')	a.	ça va par où?			rec 1
		that goes to where			
		'where does it go?'			
	b.	qu'est-ce que tu dis?			rec 2
		what is it that you say			
		'what do you say?'			
	c.	quoi… faire… la maman			rec 2
		what… do… the mommy			
		'what is the mommy doing?'			

Table 4a also shows that Elisa does not use null subjects (0-s) in French. A construction was counted as a null subject whenever it did not contain a subject clitic or a lexical subject. The colloquial '[S]ais pas' is a (target) contraction of 'je sais pas' and was not counted. The only remaining case is 'sort celà', which contains a postverbal subject and thus is not even a clear instance of a null subject.

There are 7 non-adult infinitives in Elisa's French (ad = adult). However, all of these are different from the infinitives produced in the RI phase of monolingual French children. In L1 French, we do not find infinitives in fronted wh-questions (see Crisma 1992; Levow 1995 and Hamann 2000), and we rarely

Table 4a. Elisa's finite constructions (FIN), infinitives (INF), Null Subjects (0-s), Wh-questions (Wh) and subordinates (Sub) in French*

Rec	0-s	FIN	INF	Sub	Wh
1	0	19	0	0	1 I-s
2	0	55	3	4	3 fr
3	1	25	1 (ad) 1	1	1 fr
4	0	105	1	9	3 fr 1 I-s
5	0	164	2 1(ad)	20	0
Total		368	7 2 (ad)	34	9

*For the purposes of this study we classified every verbal utterance as either finite (FIN) or non-finite (INF), considering in particular both root and subordinate clauses. So the one-word utterance "mange" would be counted as a finite utterance with a null-subject, whereas the one-word utterance "manger" would be counted as non-finite with a null subject.

find subject clitics with infinitives (see Pierce 1992; Hamann et al. 1996). Note
that Augustin (Hamann et al. 1996), who is clearly in the RI phase, uses the
subject clitic *on* in just 7% of his infinitives, whereas 57% of Elisa's infinitives
occur with varying subject clitics. This already indicates that Elisa's infinitives
are very different from true RIs as exemplified by Augustin's productions. The
exhaustive list of infinitives is given in (8).

(8) a. quoi faire … maman … la   maman   rec 2
         what do-INF mommy   the mommy
         'what is mommy doing'

    b. quand on   a   pas les mêmes on   faire   comme ça   rec 2
        when   one has not the same:PL one do-INF like   that
        'when you do not have the same (pictures) you do it like that'

    c. comme je boire   rec 2
        how   I   drink-INF
        'how I drink'

    d. si elle te   couper une pomme   rec 5
        if she   you:CL cut-INF an   apple
        'if she cuts an apple for you'

    e. pas besoin qu' on   me   dire   rec 5
        no   need   that one me:CL say-INF
        'it's not necessary that anybody tells me'

    f. Voir   rec 3
        See-INF

    g. tu   joues pas faire   sur le tambour   rec 4
        you play   not make-INF on   the drum
        'you should not play at hitting the drum'

We find only one bare infinitive, one infinitive used inappropriately as an in-
finitival complement of 'jouer' not introduced by the necessary preposition,
one infinitive with a lexical (postverbal) subject and 4 cases of infinitives with
subject clitics, two of which occur in embedded clauses. As noted above, in
monolingual acquisition of French, subject clitics practically never occur with
infinitives (Pierce 1992 and Hamann, Rizzi, & Frauenfelder 1996), and the oc-
currence of infinitives in subordinate clauses is not documented either. The
examples can be explained if one assumes a sort of spell-out difficulty with
morphology as proposed in Phillips (1995) for L1 acquisition and discussed by
Paradis and Genesee (1997) and Prévost and White (2000) for L2 acquisition.
This is particularly likely in the case of *boire,* which is irregular. So the difficulty
may be the retrieval of a form from a still unfamiliar irregular paradigm. The
same could hold for (8d) where Elisa may be confused as to what form to use:

conditional, subjunctive or the simple past which is the correct form in French. On the other hand, she may have simply mispronounced the simple past form *-ait*. (8a) is clearly a case of abandoning any syntactically coherent continuation of the sentence, probably due to the fact that an object question in French cannot start with the form *quoi* anyway, which is reserved for in-situ questions.

We can conclude from Table 4a and the analysis of the examples in (8) that first, Elisa's infinitives are too few to count as identifying a truncation infinitive stage and second, her infinitives differ sufficiently from true RIs not to be counted as such. They appear to be of the 'missing inflection' type. Also, functional categories appear to be present.

4.1.2   *Lorenzo*

For Lorenzo we get much the same picture as is evident from Table 4b. Subordination and constituent questions are present from the beginning, infinitives and null subjects are rare. Some particular aspects of question formation and subordination as well as the distribution of the few occurring null subjects will be discussed in 4.2.2.

As for Lorenzo's infinitives, they are too few to count as evidence for a RI phase.[9] The exhaustive list is given in (9a–d).

(9)   a.   ouvrir   rec 5
           open-INF
      b.   ne   bouger   rec 5
           NEG move-INF
      c.   pas partir   de   là   rec 5
           not leave-INF form there
      d.   … celui là.   S'   arreter.   Tututut …   rec 5
              that one there REFL stop-INF Tututut.
           '…that one there. Stops.'

Table 4b. Lorenzo's finite constructions (FIN), infinitives (INF), Null Subjects (0-s), Wh-questions (Wh) and subordinates (Sub) in French

Rec	0-s	FIN	INF	Sub	Wh
1	7	95	0	3	2
2	2	122	0	9	15
3	2	136	0	4	7
4	0	73	0	9	1
5	3	175	4	20	10
	4 inf				
Total	18	601	4	45	35

All the above sentences were pronounced in the same game situation (the children were playing with a small train) and they all seem to function as commands.[10] This might suggest that these cases are also different from RI examples that are typically declarative in nature (see Note 3).

4.2   Transfer phenomena

4.2.1   *Elisa*

If there are no parallels to L1 acquisition in Elisa's French, there still are errors. So, we investigate areas where a transfer of L1 parameters may be expected to result in errors. We first note that there is no transfer of the V2-parameter. Whenever a constituent is topicalized, there is no subject-verb inversion, see (10).

(10)   Ça   on   fait   pas
       That one   does   not
       'One does not do that – we won't do that'

However, we find some examples of OV-word order in Elisa's French as shown in (11a, b). It is interesting to note that one of four possible complement taking contexts in recording 1 shows OV word order, and one of 10 in recording 2. Due to the German V2- constraint for main-clauses, the difference between VO/OV in French and German can be observed in subordinate clauses and in main-clauses with infinitival or participial constructions. It must be noted that the OV order occurs in 100% of the French main clause complement contexts with infinitives and participles, but does not occur in the one subordinate clause with a complement construction, see (7a).

(11)   a.   est-ce que je peux ça   fini   rec 1
            Is it   that I can that finished
            'Can I finish that'
       b.   tu   peux pas ça   faire   rec 2
            you   can   not that do-INF
            'You cannot do that'

The emerging picture is not quite clear: the head-complement parameter (OV) seems to surface in the L1 setting, whereas V2 never occurs. In this connection we would like to draw attention to the fact that in all the OV cases the direct object is the strong pronoun *ça*. In the following, we discuss other problems with pronoun use so that not the word order parameter but a general confu-

sion about the status of pronouns may in fact be responsible for the non-target utterances in (11).

When analyzing Elisa's pronouns, we find that there are problems with subject and object clitics. Subject clitics occur from the beginning (96% of finite utterances) but not necessarily in clitic positions. This points to a certain confusion as to their status as strong or weak pronouns or clitics. First, we note that Elisa uses subject clitics with infinitives as shown in (8b–f) above. Second, example (12) shows that she can also use a subject clitic in isolation and with stress – even if this is an isolated example.

(12) mais JE maman   rec 2
      but I mommy
      'but I am the mommy'

As to object clitics, we note that they also occur from the beginning (rec 2: 40%), but are much rarer than subject clitics. In contrast to subject clitics, they all occur in non-clitic positions in the first recordings, e.g. recording 2 contains 4 occurrences of object clitics, which are all incorrect. (13a) shows the use of an object clitic in isolation which is particularly interesting because in the dialogue Lorenzo provides the only possible interpretation to the utterance: he assumes that *le* is an article and that the utterance is incomplete. (13b) and (13c) show the object clitic after a preposition and in argument position respectively. See Hulk (1997) and Hulk and Müller (1999) for similar findings for bilingual children.

(13) a. E: c'est à moi, le   rec 2 in isolation, with stress
              it's to me, him/the
              'it's mine, that one'
          L: le   quoi?
              'the what'
      b. alors, tu joues avec le   rec 2 after a preposition (2 occurrences)
          alors, you play with him
          'so, you play with him'
      c. non, on laisse le   rec 2 in canonical object position
          no, one leaves him
          'no, we leave him/it alone'

Table 5 reports the quantitative development, which seems to be different from L1 learners. From the beginning of data taking we find a high percentage of subject clitics and also a fairly high percentage of object clitics. In monolingual

Table 5. Elisa's quantitative development of clitic use

	% subjects in finite contexts				% complements in complement contexts			
	Lex-s	cl-s	0-s	Total	Lex-o	cl-o	0-o	Total
1	1/4.2	23/95.8	0	24	4/100	0	0	4
2	2/4.7	41/95.3	0	43	4/57.1	3*/42.9	0**	7
3	2/9.1	19/86.4	1/4.5	22	4/100	0	0	4
4	0	100/100	0	100	22/55.0	16/40.0	2/5.0	40
5	11/7.3	139/92.7	0	150	38/50.7	33**/44.0	4/5.3	75
Total	16/4.7	322/95.0	1/0.3	339	72/55.4	52/40.0	6/4.6	130

*the case of a clitic in isolation: *c'est à moi, le* was not counted here
**en and *y* were taken out here from the 'complement' contexts, so 38 clitics from Table 6 reduce to 33 in rec 5

French learners, the acquisition of object clitics is much more gradual, but is faultless as to the positioning of clitics, see Hamann et al. (1996).[11]

The abbreviations in Table 5 stand for lexical subject (Lex-s), clitic subject (cl-s), null subjects (0-s), lexical objects (Lex-o), clitic objects (cl-o), and object omission or null object (0-o).

For an interpretation of these results we look at the German pronoun system. German has demonstrative d-pronouns, whose form is the same as the article (14) and which are often colloquially used in place of personal pronouns (15):

(14) a. Nom: der, die, das
      b. Acc: den, die, das

(15) a. der/die   kommt nicht
          this:he/she comes not
          'this doesn't come'
      b. den/die/das   seh ich nicht
          this:he/she/it see I   not
          'I don't see that (him/her/it)'

In French, the (3rd person) object clitic has the same form as the article: *le, la, les.* This coincidence may lead to a misanalysis of these forms as possibly both weak/clitic and strong pronouns. We thus find an influence of morphological marking in the L1 on the L2 patterns which is reminiscent of Whong-Barr and Schwartz's (2000) recent findings. A similar morphological misanalysis may be going on for *ça*, which could provide a reason for the apparent word order errors noted in connection with (11) above, with *ça* treated as a weak/clitic pronoun.[12] Any misuse of both clitics and *ça* has vanished by recording 4, where

Table 6. Elisa's acquisition of particular object clitics

Rec	Total	me Acc	me Dat	te Acc	te Dat	le	la	lui	les	leur	nous	vous	en
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	4	0	0	0	0	4	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	16	3	2	1	3	2	2	1	1	0	0	0	0
5	38	5	4	4	8	3	0	0	5	0	1	0	4
Total	58	8	6	5	9	9	2	1	6	0	1	0	4

se: 1 in rec 4, 3 in rec 5; counted into the total 58
y: 1 in rec 5

we also find double-object clitic constructions and the complement clitic *en* as shown in Table 6.

4.2.2   *Lorenzo*

Lack of transfer from his L1, particularly interesting with respect to crucial parameters such as the null subject parameter, characterizes Lorenzo's French production. We first consider the different items of Table 7 on the distribution of subjects in detail. We will then discuss some properties of French in other syntactic domains, which are different from or altogether absent in Italian, and which are acquired easily by Lorenzo.

The overwhelming presence of subjects in the form of pronominal clitics in Lorenzo's production of finite clauses, which are non-existent in standard Italian, argues strongly for lack of transfer of his L1 settings, in particular for lack of transfer of the Null subject parameter. Moreover, Table 8 shows that the development of Lorenzo's different subject clitics significantly resembles

Table 7. Lorenzo's subjects in finite clauses

	Finite verbs	Subject clitics	Residue	Imperatives	Lex subjects	Null subjects	Que/Qui	S-invers.
rec 1	95	56 (59%)	39	29	1	7	2	0
rec 2	122	97 (80%)	25	14	2	2*	7	1
rec 3	136	105 (77.2%)	31	18	7	2	4	0
rec 4	73	64 (88%)	9	3	1	0	5	0
rec 5	175	146 (83.4%)	29	17	6	3	3	0
Total	601	468 (78%)	133	81	17	14	21	1

*also counted as subject inversion

Table 8. Lorenzo's acquisition of particular subject clitics

Rec	Total	je	tu	il	elle	on	ce	nous	vous	ils	elles
1	56	19	2	11	1	4	19	0	0	0	0
2	97	28	9	11	2	7	39	0	0	1	0
3	105	21	5	15	11	5	40	0	0	5	3
4	64	29	14	3	2	9	7	0	0	0	0
5	146	29	36	24	6	21	26	0	1	2	1
Total	468	126	66	64	22	46	131	0	1	8	4

French monolingual acquisition (cfr. Hamann et al. 1996 and the Appendix, Table A for comparison).

The distribution of null subjects is particularly interesting as shown by Table 7.[13] There are very few instances of uncontroversial null subjects in Lorenzo's corpus: We only find 4 clear null subject occurrences (out of 601 finite verbs, 1%). Of the remaining 10, there are 6 null subjects with *faut,* a possibility also allowed in colloquial adult French. There remain 4 unclear cases, of which 1 is a case of subject inversion. Examples from the corpus are given in (16a–c), where (16c) is the subject inversion case.

(16) a. prepare la   soupe
prepare the soup
'I am preparing the soup'
b. veux jouer avec ça
want play   with that
'I want to play with that'
c. a   fini   le bébé
has finished the baby
'he has finished, the baby'

Let us consider the distribution of subjects with *faut* in detail, as given in Table 9. There is no systematic absence of the expletive subject, but about equal occurrence and omission of *il*. This distribution closely resembles data from adult colloquial French where expletive *il* is omitted or present with *faut* (Rasetti 2000: 247). It should be noted that the presence of the expletive subject in Lorenzo's production is important by itself as no overt expletive exists in Standard Italian due to its genuine null subject nature.

Table 9. Distribution of subjects with *faut*

	Il	Null	Total
Faut	7	6	13

Table 10. Comparison with Italian

Finite verbs	Null subjects	Preverbal Lexical Subj.	S-inversion	Imperatives
57	44 (77%)	7	2	6

A comparison with Lorenzo's Italian, as given in Table 10, shows that Lorenzo has 77% null subjects in his L1. Moreover, of his 9 lexically realised subjects, 2 (22%) are in postverbal position. In his French corpus there is only one postverbal subject out of 18 lexical subjects, i.e. 5% (cf. Table 7). Though the Italian corpus is too limited to be statistically reliable, it provides quite clear indication of the fact that Lorenzo is not treating French and Italian in the same way. In particular, he does not treat French as a null subject language on a par with Italian, and, coherently, he does not extend to it the free subject inversion option.

In addition, a property related to the non-null subject setting of French is present in Lorenzo's corpus from the first recording: the *que/qui* alternation, illustrated in (17a, b). Note first of all that it appears that the alternation is faultlessly acquired, thus showing a complete mastery of the French complementizer system in relative clauses.[14] As this is an area where French and Italian considerably differ in that no similar alternation obtains in Italian as illustrated by the examples in (18a, b), this mastery indicates a direct acquisition of the relevant pattern.

(17) a. Marie m'   a   signalé   un livre qui   va   paraître le
          M.   me:DAT has indicated a   book which will appear   the
          mois   prochain
          month next
          'M. told me about a book that will come out next month' (subject
          relative)
      b. Marie m'   a   signalé   un livre que   Jean va
          M.   me:DAT has indicated a   book which J.   will
          présenter le   mois   prochain dans "Le Monde"
          present   the month next   in   "Le Monde"
          'M. told me about a book that J. will present next month' (object
          relative)

(18) a. Maria mi   ha segnalato un libro che   uscirà   il
          M.   me:DAT has indicated a   book which will appear the
          mese   prossimo
          month next

b. Maria mi   ha segnalato un libro che   Gianni
M.   me:DAT has indicated a   book which G.
presenterà il   mese   prossimo su "Le Monde"
will present the month next   in "Le Monde"

The mastery of the *que/qui* alternation is furthermore interesting not only because Italian does not have any pattern of the sort, but also because the alternation itself has been related in the literature to the non-null subject nature of French (Rizzi 1990, among others). The form *qui* of the complementizer *que* has been interpreted as the device adopted in order to license the vacated subject position, which would not be permitted in a non-null-subject language like French otherwise.[15] Hence this mastery is additional direct evidence for lack of transfer of the null subject parameter. Some examples from the corpus are given in (19a–g). Note that (19b, e, f) reveal that the alternation is not driven by any sort of animacy feature much as in the target language French (see Note 16). Examples (19c) and (20a, b) show that the complementizer *que* is also acquired and used correctly.

(19) a. Non, c'est pas moi qui devrais l'amener.   rec 1
        No, it's not me who should it take (with me)
    b. Non, j'ai   pas vu   des voitures qui   font comme ça   rec 2
        No, I have not seen any cars   which make like   that
    c. C'est la   maison que je habite   rec 2
        That's the house   that I live
    d. Non. Je fais le papa qui… fait   la cuisine.   rec 2
        No. I make the daddy who   makes the kitchen
    e. Mais il y a   quelque chose qui   ne va   pas dans celui là rec 3
        But   there is something   which NEG goes not work in that one
    f. Oui… si tu dis que je fais les choses qui sont pas drôles tu sais
        Yes   if you say that I do the things that are not funny you know
        qu'est ce que tu   prends   rec 4
        what   you take..?
    g. Non, c'est un outil qu'   on utilise, là.   rec 5
        No, it's a tool which we use   there

(20) a. Oui. Tu m'   as   dit que je ne   pouvais pas faire comme ça
        Yes you me:DAT have told that I NEG could   not do   like   that
        alors   rec 4
        then
    b. tu veux que je te   fais   rater, hein?   rec 5
        you want that I you:ACC make fail

Let us now consider other domains, beginning with object clitics. Object clitics are present from the first recording. They are always correctly located and appropriately used in an adult fashion. They are present in a smaller quantity than subject clitics, a pattern also manifested by French monolingual children (Hamann et al. 1996). See also the late occurrence of plural clitics and *en*, shown in Table 11.

Lack of problems in the acquisition of object clitics could be interpreted as due to transfer, since Italian has object clitics of the same nature as French. Although this consideration might be true, the pattern is still more revealing in that no problems arise in the domain of enclisis and proclisis where French and Italian differ considerably. As illustrated in (21a–d) and (22a–f), Italian has enclisis in non-finite contexts, whereas French has proclisis (abstracting away from imperatives). Lorenzo's French lacks enclisis as shown in (23a–c), all belonging to the very first recording.

	Italian Vfin (*proclisis*)			French Vfin (*proclisis*)		
(21)	a. *Lo*	conosco	c.	Je *le*	connais
	(I) him:CL	know		I him:CL	know
	b. *Mi*	ha salutato	d.	Il *m'*	a salué
	(he) me:DAT:CL	has greeted		he me:DAT:CL	has greeted
	Vnon-fin (*enclisis*)			Vnon-fin (*proclisis*)	
(22)	a. Vorrei	conoscer*lo*	d.	J'aimerais *le*	connaître
	(I) would like	know-him:CL		I would like him:CL	know

Table 11. Lorenzo's acquisition of particular object clitics

Rec	Total	me Acc	me Dat	te Acc	te Dat	le	la	lui	les	leur	nous	vous	en
1	4	0	1	0	0	3	0	0	0	0	0	0	0
2	14	0	5	0	0	8	0	1	0	0	0	0	0
3	4	0	0	0	0	2*	0	0	2	0	0	0	0
4	10	1	5	0	0	2	1	0	0	0	0	0	1
5	20	0	4	0	5**	5	0	0	4	0	0	0	2
Total	52	1	15	0	5	20	1	1	6	0	0	0	3

NB: *y* not counted in the several *il y a/y'a*
*1 in *le* voilà
**3 *te* (dat) in the same causative clause (not in immediate succession)

b.   Vorrei   aver*lo*   e. J'aimerais *l*'avoir   connu
     (I) would like have-him:CL   I'd like   him:CL have known
     conosciuto
     known
     'I would like to have known him'

c.   Salutando*mi*…   f. En *me*   saluant
     greeting-me:CL   in me:CL greeting

(23) a.   no, c'est pas moi qui devrais l'   amener   rec 1
           no, it's   not me who should it:CL take
           'no, it's not me who should take it'

      b.   faut le   mettre là   rec 1
           must it:CL put   there
           'one must put it there'

      c.   tu   me   donnes ça   rec 1
           you me:CL give   that
           'you give me that'

Wh-*in situ* is another area of crucial difference between French and Italian.
Italian does not allow a wh-element to remain *in situ* while French does; it also
requires it in the case of *quoi*. The obligatory *in situ* distribution of *quoi* in
French (see (24a, b)) is acquired without errors by Lorenzo and so is the op-
tional *in situ* or movement derivation of interrogatives involving *où*, see Table
12 and examples (25a–l). Note that Lorenzo's embedded *où* is always obliga-
torily fronted (25h), as is always the case in adult embedded questions; note
finally that the Italian equivalent of *quoi* is correctly moved (26).

(24) a.   *Quoi fais-tu?
           what do-you

      b.   Tu   fais quoi?
           you do   what

(25) a.   il est où   l'   autre?   rec 1
           he is where the other one
           'where is the other one?'

      b.   c'est quoi?   rec 2
           it's what
           'what is it?'

      c.   c'est pour faire quoi?   rec 2
           that's for   do   what
           'what is that for?'

    d. mon avion, il est où?   rec 3
        my   plane it is where
        'where is my plane?'

    e. ça   veut dire quoi, golf?   rec 4
        that wants say what golf
        'what does it mean, "golf"?'

    f. où   il est?   rec 5
        where he is
        'where is he?'

    g. il est où,   le   crayon?   rec 5
        he is where the crayon
        'where is the crayon?'

    h. tu   sais   où   j'ai   mis les crayons? rec 5
        you know where I have put the crayons?
        'do you know where I put the crayons?'

    i. où   je les   ai   mis?   rec 5
        where I them:CL have put?
        'where have I put them?'

    l. elles sont où   ces   feuilles?   rec 5
        they are where these sheets of paper
        'where are these sheets of paper?'

(26) Cosa fa?   rec 2
     What does
     'what is she doing?'

Table 12. Distribution of *quoi* and *où*

| | Main questions | | Indirect questions | |
	In situ	Fronted	In situ	Fronted
Quoi	20	0	0	0
Où	7	2	0	5

The data from the corpus discussed so far indicate that there are no problems in the acquisition of important areas. Lorenzo's French corpus, however, contains a number of misplacements of the lower adverb *bien* and of the quantifier *tout*. These are areas of "microvariation" between French and Italian that differ in the scope of syntactic V-movement in the non-finite morphology. It is currently assumed that the past participle raises to a higher functional position in Italian than in French (Belletti 1990; Cinque 1999), whence the contrasts in (27a) and (27b) and in (28a) and (28b) where Italian and French differ in word order, with the Italian word order impossible in French, and the French

word order excluded for Italian. Hence, examples (29a–e) reveal uncertainty in this area in the French corpus. The small Italian corpus contains the examples in (30a, b) which point to a similar insecurity in Italian with *tutto* located in a "French manner" in (30b) but not in (30a).[16] This seems to suggest that interference between the two parametric choices manifested by the two languages occurs in this domain of "microvariation".[17] Note furthermore the fact that misplacements occur in both French and Italian, as illustrated by the comparison between (29) and (30), which suggests that there is no prevalence of one language choice over the other.[18]

(27) a. Il   a   *bien* dormi
          he has well slept
      b. Ha   dormito *bene*
          (he) has slept   well

(28) a. Il   a   *tout* mangé
          he has all   eaten
      b. Ha   mangiato *tutto*
          (he) has eaten   all

(29) a. il   a   bien mangé tout   rec 2
          he has well eaten   all
      b. on a   tout fini   rec 2
          we have all   finished
      c. c'est toi qui m'   a   fait   tout rater   rec 5
          it's you who me:CL has made all   fail
          'it's you who have made me fail everything'
      d. c'est toi qui m'   a   fait   rater tout   rec 5
          it's you who me:CL has made fail   all
      e. elle (l)   a   fait   bien   rec 3
          she (it:CL) has done well

(30) a. Ah bene,   ho mangiato tutto bene
          oh good (I) have eaten   all   well
      b. Ha   tutto mangiato   rec 2
          (she) has all   eaten

5.   Conclusion

The analysis of two young children's production of French which is not their "mother tongue" has shown the following: at the time of recording none of the

children goes through a RI/(child) Null subject phase, nor does either of them show a lack of functional categories. This indicates that the relevant "maturational" stage must be over for both children. One of the children appears to show transfer phenomena, or manifests uncertainties in crucial domains that may be attributed to interference from her L1. The other child does not show transfer but a rather smooth acquisition of domains where the two languages differ in important respects. He shows uncertainties only to a limited degree in areas of parametric microvariation.

We are led to conclude that only the German child shows the behavior of an (early) L2-er; for her transfer could be the first step in the acquisition of her second language; this is consistent with the similarity of the findings in the French productions of the German child and of other adult French L2-ers recently discussed in the literature (e.g. those discussed in Prévost & White 2000). The Italian child shows the pattern of bilingual acquisition that is almost flawless.

This conclusion might be justified on the basis of various external factors: the seven-month age difference between the two children; the fact that systematic exposure started 4 months earlier for the Italian child. Another external factor might also be involved, i.e the impression that Lorenzo probably had a bigger total amount of exposure to French also through informal interaction (especially with peers) than Elisa, before the first recordings.[19] On the other hand, the conclusion cannot be too strong. As the drop in the errors in Elisa's last recordings indicate, a relatively easy shift appears to be possible at this young age from "early L2" to bilingual acquisition. Moreover, a further word of caution is in order. As we do not have previous recordings of Lorenzo's French, we cannot be sure that he did not undergo a similar L2-type stage in his earlier French.[20] As for the similarities in the early acquisition of French by the two children concerning the lack of RI and (child) Null subject, this indicates that a stage of this sort might be missing (although for possibly different reasons) in either type of second language acquisition.

Notes

1. The use of infinitives has also received attention as part of a stagnation phase as described by Klein and Perdue (1997) for adult L2.

2. The use of functional categories is also particularly relevant in this respect. See Vainikka and Young-Sholten (1994), Grondin and White (1996), White (1996b), and Paradis and Genesee (1997).

3. Whereas under the latter approach infinitival forms are not truly non-finite, following Rizzi (1994: 347), the striking fact about RIs in L1 acquisition is "the production of main clause declaratives with verbs in the infinitival form". Under the "truncation hypothesis" mentioned above these infinitival forms produced in monolingual acquisition crucially lack verbal functional structure and are thus truly non-finite forms.

4. On null subjects see among others, Rizzi (1982) for Italian (see also Friedemann 1995 on French). See also Rizzi (1994) and the literature cited there on the significance of subject drop in embedded contexts as indication of the real null subject property. Note that German has limited subject drop in topic contexts whereas subject drop is possible in French with the impersonal verb *faut*. See the discussion below.

5. In Standard Italian, overt pronominal subjects are strong pronouns only, except for the stylistically marked weak form *egli* (3rd pers. sing. masc.; Cardinaletti & Starke 1999).

6. Except for recordings 4 and 5 where French becomes the dominant language.

7. Moreover, no real RI phase has been documented in general for the Italian corpora analyzed so far, see Guasti (1992) in this regard.

8. It is possible that this is a copy of sentences like "Je ne sais pas *quoi faire*". But note the weird location of the lexical subject.

9. Note also that they are all concentrated in the last recording when the typical period should be over anyway (even in his L1; but see Note 5).

10. Note that use of the infinitive form for commands can be found in adult language as well.

11. Note also that contrary to Hulk and Müller's (1999) results on bilingual children, we do not find a high percentage of object drop.

12. It is worth noting that all occurrences of complement *ça* are correctly located in Lorenzo's production.

13. As for lexical subjects, there is nothing particularly interesting to note, except the fact that the majority is constituted by the demonstrative strong pronoun *ça*. We find 12 *ça*, 3 *cela*, 1 *celui*, 1 *le mien*, and 1 postverbal lexical DP.

14. The corpus contains the following occurrences of *qui*: Subordinate relative *qui*: 16; Interrogative *qui*: 1; *Qu'* in "qu'est-ce-que" interrogatives: 4.

15. That *qui* is a sort of "agreeing" version of the complementizer *que* and not a relative pronoun is a well established conclusion at least ever since Kayne's (1974) analysis of French relatives (see also the subsequent discussions in Pesetsky 1982; Rizzi 1990; Taraldsen 1999, among others). Straightforward empirical evidence to that effect is provided by the following two observations:

a.   the *qui* appearing in connection with subject extraction is not necessarily animate while relative pronoun *qui* is necessarily animate:

(i)   a.   L'homme   à   qui   je pense
          the man   to whom I   think

      b.   *La voiture à   qui   je pense
          the car   to which I   think

c. Voilà   la   voiture qui   partira   demain
    Here is the car   which will leave tomorrow

b. the form *qui* shows up in cases of long subject extraction in a C position which does not correspond to the one where the relative pronoun should appear:

(ii) a. L'homme que Marie dit   qui   parle   français
          the man   that Marie says that speaks French

      b. Le livre que Marie dit   qui   sortira   demain
          the book that Marie says that will come out tomorrow

16. Note that the negative adverb *pas*, which is located in the upper part of the clause, is not affected by this insecurity. It is always well placed as its location is not affected by verb syntax in the lower part of the clause.

17. On the basis of the overall shape of Lorenzo's corpora, one might speculate that interference is more likely to occur in the domain of "microparameters" than in the domain of core parameters, such as "null subject".

18. This also fits well with the bilingual style of acquisition which Lorenzo appears to undergo (cf. infra).

19. The exact amount cannot be precisely quantified, though.

20. We leave this remark at this rather inconclusive stage. Unfortunately, it will not be possible to settle this issue through the available data. We hope that our findings and the questions that they open and leave open will be suggestive for further research in this domain.

Appendix

Table A. Breakdown of different subject clitics in the Augustin-corpus

Age	*je*	*tu*	*il*	*elle*	*on*	*ils*	*c'*	TOTAL
2;0;2	0	0	4	0	11	0	2	17
2,0;23	0	0	3	0	0	0	1	4
2;1;15	0	0	0	0	4	0	0	4
2;2;13	0	0	4	1	9	0	2	16
2;3;10	0	0	5	0	7	0	0	12
2;4;1	0	1	4	0	1	0	4	10
2;4;22	0	0	10	0	0	0	1	11
2;6;16	0	0	10	1	2	0	12	25
2;9;2	18	12	13	12	3	1	21	80
2;9;30	22	11	13	18	7	1	27	99
TOTAL	40	24	66	32	44	2	70	278

adapted from Hamann, Rizzi, & Frauenfelder (1996)

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Explaining the acquisition and non-acquisition of determiner-noun gender concord in French and Spanish

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1. Introduction

Gender concord within the Determiner Phrase (DP) in languages like French and Spanish, illustrated in (1), appears to pose no acquisitional problems for native speakers:

(1) a. une   robe verte   / un   chapeau vert
    DET:FEM dress green:FEM DET:MASC hat   green:MASC
    'a green dress'   'a green hat'

    b. una   falda roja / un   sombrero rojo
    DET:FEM skirt red:FEM DET:MASC hat   red:MASC
    'a red skirt'   'a red hat'

While child first language (L1) learners of these languages have been observed to produce non-native concords in early development, for reasons discussed in Section 4.1, mature native speakers are highly consistent in producing correct gender concord. By contrast, English speakers who have learned French or Spanish as second languages (L2s) beyond childhood appear to show persistent inconsistency in producing gender-marked determiners and adjectives, even where they have had long exposure to the L2 and are highly proficient communicatively (Andersen 1984; Carroll 1989).

Our purpose in this chapter is to give an account of this L1-L2 difference in the acquisition of gender concord between determiners and nouns (specifically article-noun concord). It is assumed, following Carstens (2000), that gender concord is a morphophonological reflex of the 'checking' of uninterpretable gender features which occurs during the construction of derivations by the

syntactic-computational component. We argue that while native speakers of French and Spanish acquire uninterpretable gender features as part of the lexical entries for determiners in the course of development, older L2 learners of these languages with English as their L1 do not. It will also be shown that the ability or inability to represent uninterpretable gender features is consistent with observed behaviour in other contexts: language processing in native and non-native speakers, code-switching in natives and non-natives, and language impairment in natives.

The interest of the account, we claim, lies not only in its ability to explain the phenomena in question, but also in the support it lends to a particular view of the organisation of the language faculty and for the proposal that there is a critical period affecting some kinds of grammatical property (parametrized uninterpretable syntactic features) but not others (Smith & Tsimpli 1995; Hawkins & Chan 1997; Eubank & Gregg 1999).

The chapter is organised as follows. Section 2 briefly presents the facts of gender concord within the DP in French and Spanish. In Section 3 the generative model of gender concord which will be assumed is presented. Focussing on concord between D and N, Section 4 discusses how this model of grammatical knowledge is deployed, first in the context of the L1 acquisition of French/Spanish, then in the context of L2 acquisition, and what has changed to cause English speakers to have persistent difficulty in realising gender concord consistently in production. In Section 5 we discuss how the same model might offer an explanation for observed behavioural patterns in language processing, code-switching and language impairment. Finally, Section 6 discusses the implications of the account for general questions of the acquisition of the grammatical components of the language faculty, and whether it supports the hypothesis that there is a critical period for language acquisition.

2.   Gender concord in the French and Spanish DP

Nouns in French and Spanish fall into two classes, traditionally referred to as 'masculine' and 'feminine'. In a sizeable number of cases, the form of the noun provides no reliable cue to the class it belongs to, even though the phonological or semantic properties of some nouns correlate with one class or the other. For example, nouns which in spoken French end in a consonant are usually feminine (2a), but there are other nouns with similar final syllables which are masculine (2b):

(2) a.   plage (f) 'beach', glace (f) 'ice cream', gamme (f) 'scale'
     b.   fromage (m) 'cheese', espace (m) 'space', gramme (m) 'gram'

In Spanish, nouns ending in -*o* are typically masculine, and those ending in -*a* are typically feminine, but there are exceptions:

(3) a.   grano (m) 'grain', cima (f) 'summit'
     b.   mano (f) 'hand', clima (m) 'climate'

And in both languages there are nouns whose phonological forms provide no cue to their gender:

(4) a.   French: vallée (f) 'valley', musée (m) 'museum'[1]
     b.   Spanish: noche (f) 'night', coche (m) 'car'

Similarly, semantic properties are not invariably reliable cues to a noun's class. While nouns referring to males are typically masculine, and nouns referring to females typically feminine, in both languages there are nouns for which this expectation is not met. French *génie* and Spanish *genio* are both masculine, but can refer to geniuses of either sex. French *vedette/star* and Spanish *estrella* are both feminine, but can refer to male and female movie or popular music stars.

  More reliable cues to the gender of nouns in French and Spanish are provided by the items that co-occur with them: determiners, adjectives, possessive pronouns. These items typically have phonological variants for masculine and feminine which must agree with the gender of the noun. For example, compare the grammatical and ungrammatical choices of determiner and adjective with the feminine nouns *table* 'table' (French) and *mesa* 'table' (Spanish), and masculine nouns *tabouret* 'stool' (French) and *banquillo* 'stool' (Spanish):

(5) a.   la petite table blanche   'the little white table'
     b.   *le *petit table *blanc
     c.   la pequeña mesa blanca
     d.   *el *pequeño mesa *blanco

(6) a.   le petit tabouret blanc   'the little white stool'
     b.   *la *petite tabouret *blanche
     c.   el pequeño banquillo blanco
     d.   *la *pequeña banquillo *blanca

Thus while nouns in French and Spanish are specified as belonging to the masculine or feminine classes, this classification is only signalled reliably in the morphophonological form of items which agree with the noun. To distinguish this kind of agreement from other kinds of agreement, like subject-verb or

verb-object agreement, we follow Carstens (2000) in using the traditional term 'gender concord'.

3.   A generative model of gender concord in the DP

In generative grammar, there have been relatively few attempts to provide a detailed account of the mechanisms involved in gender concord (although see Lumsden 1992; Carstens 2000; Lumsden & Halefom 2000). Nevertheless, there appears to be a consensus that in languages with a nominal classification system, every noun has as part of its lexical entry a feature indicating the class it belongs to (Carroll 1989; Carstens 2000). In the case of French and Spanish we will call this feature [±fem] for expository purposes.

Since there is growing evidence that lexical items have representations which are 'distributed' across different components of the grammar (Lumsden 1992; Halle & Marantz 1993; Marantz 1997; Bobaljik 2000) we adopt that view, with the following specific assumptions. Lexical items belonging to the categories D, Adj, N have 'roots' which are the 'pieces' of those lexical items selected for manipulation by the syntactic-computational system and which drive the construction of syntactic derivations. These roots are assembled from features made available by Universal Grammar (Chomsky 1998, 1999). In French and Spanish (but not in English) [±fem] is selected as a feature obligatorily involved in the construction of N roots. Marantz (1997) refers to the set of roots as the 'narrow lexicon'. The expressions derived by the syntax from the lexical roots have terminal nodes devoid of phonological content, however. The phonological content is supplied by a second 'phonological' lexicon, referred to by Halle and Marantz (1993) as the 'vocabulary'. The 'vocabulary' component consists of lists of phonological forms which are partially specified for grammatical features, and which are inserted into the terminal nodes on the basis of feature identity.[2]

When an N root is selected from the lexicon to enter syntactic derivations, it is merged with other categories to give an extended nominal projection. Most accounts have argued that these other categories are at least Num(ber) and D(eterminer) (Abney 1987; Bernstein 1991; Ritter 1991, 1993). Carstens also suggests that lexical N merges with a functional head n to form an 'NP shell' where an Agent is generated in [spec, nP], and that adjectives are outer specifiers of projections within DP. A typical early stage of a derivation for the French phrase (5a) is illustrated below. (The orthographic representation of the

terminal nodes is for exposition only; terminal nodes are bundles of features to which vocabulary insertion has not yet applied):

(7)

```
          DP
         /   \
              D'
            /    \
          D        NumP
          l-      /    \
                AP       Num'
               /\       /    \
             petit-   Num       nP
                            /        \
                          AP          n'
                         /\          /   \
                       blanc-       n      NP
                                        /     \
                                              N'
                                             /  \
                                            N
                                          table
```
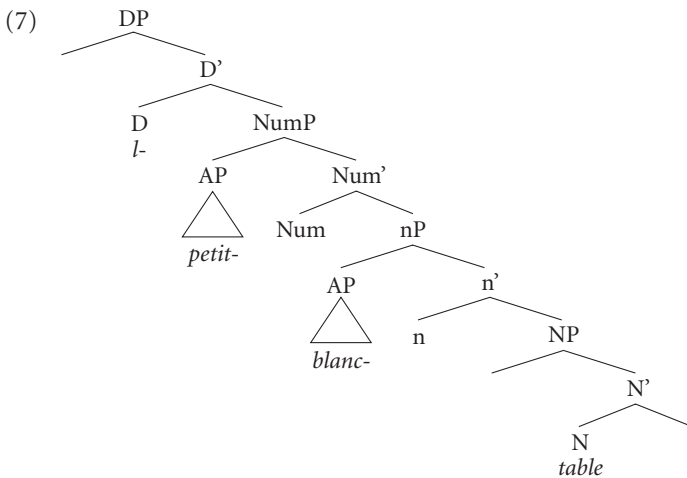
In both French and Spanish, N raises overtly to n and then to Num (but not to D). This ensures that adjectives in the outer specifier of nP end up in post-nominal position. We assume that pre-nominal adjectives originate in some higher projection, perhaps as an outer specifier of Num as in (7). (The details are not important for the current account.[3])

How is concord between the [±fem] feature of N and items belonging to D and A achieved? There are (at least) two competing views in the literature. One, outlined in Halle and Marantz (1993), proposes that concord takes place at the level of the 'vocabulary' component. Case-number morphemes associated with D and A are inserted at this level, and features of the N, including gender, are copied onto these morphemes (1993: 115).

Another possibility, using the 'feature checking' mechanism outlined in Chomsky (1995), and developed by Carstens (2000), is that items belonging to D and A have uninterpretable gender features, [$u$gender], as part of their root entries. These [$u$gender] features are removed from the derivation to LF as the result of 'checking'; the feature [±fem] which is part of the lexical entries for Ns, erases (checks) a matching uninterpretable feature on D or A within an appropriate configuration. This in turn has a surface reflex in the phono-logical forms that the 'vocabulary' component inserts (e.g. *blanc* with [–fem] nouns, *blanche* with [+fem] nouns).The 'appropriate configuration' is either head-head in an adjunction structure [$_X$ [Y] X [t_Y]], or specifier-head: [$_{XP}$ YP X [t_{YP}]].[4]

To illustrate, consider the (much simplified) tree diagram in (8). (Orthographic forms for the terminal nodes are again used for expository purposes only):

(8)

```
                    DP
                   /  \
                    D'
                  /    \
                D      NumP
                l-    /    \
              [±def] AP    Num'
             [ugender] /\   /  \
                      /  \ Num  nP
                   petit-     /   \
                   [size]    AP    n'
                  [ugender] /\    /  \
                           /  \  n    NP
                        blanc-      /   \
                        [colour]       N'
                       [ugender]      /  \
                                     N
                                   table
                                   [+fem]
                                   [3per]
```
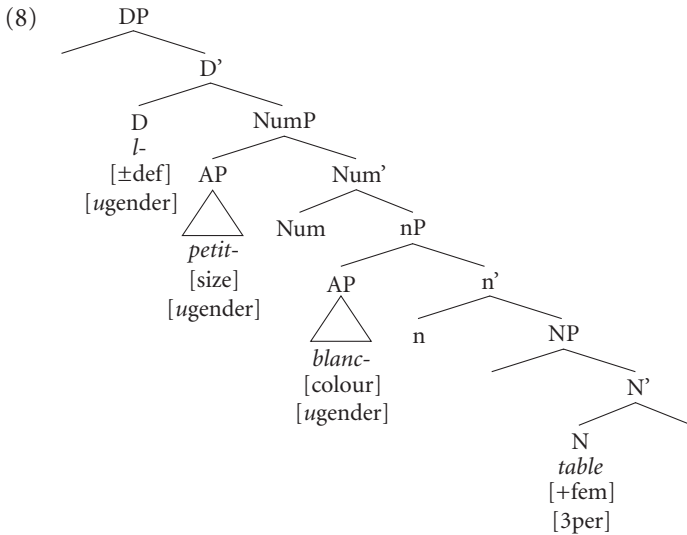
In (8), *table* has a [+fem] feature as part of its root entry. The adjectives *petit* 'small' and *blanc* 'white' have interpretable features (which we conflate simply as [size] and [colour]), but also an uninterpretable [ugender] feature. *Table* raises overtly to n and then to Num (to give the French surface word order *la petite table blanche*), and covertly to D. As a result of these movements, *table* appears successively in a specifier-head relation with *blanc* and *petit*, and in a head-head relation with D (by covert raising of features). In each of these configurations the [+fem] feature of *table* checks the uninterpretable features of the other categories.

The difference between the Halle and Marantz and Carstens approaches to gender concord is that the former proposes that it is a property of the 'vocabulary component' (the phonological lexicon) of the grammar, applying after the syntactic computational component has constructed a derivation. The latter approach proposes that it is a syntactic property: root Ds and As are assigned [ugender] features, and 'checking' is a syntactic operation. In what follows, we adopt the second of these proposals, and show how it provides the basis for an account of the acquisitional phenomena to be described below.

4.   Gender concord in the context of acquisition

While English displays some (interpretable) gender contrasts in cases like *actor/actress*, *usher/usherette*, and the third person pronouns *he/she*, it does not have a noun classification system partitioning Ns in the lexicon as French and Spanish do. Furthermore, English has no gender concord system within the extended nominal projection. Gender features, then, must be parametrized features made available by Universal Grammar (UG). Specific grammars may or may not activate them. Where they are activated they must be learned on the basis of experience by the language learner.

Focussing specifically on gender concord between D and N, in the first part of this section we argue, on the basis of results from previous studies, that child L1 learners of French and Spanish establish early in development that Ns fall into two classes. The evidence for this is their ability to make consistent gender choices of determiner for nonce Ns. We will also argue, however, that children do not establish uninterpretable [*u*gender] features on root Ds until later. Instead, the forms of D selected for insertion at the level of the 'vocabulary' component are determined by the phonology of the N and not features associated with D; e.g. whether a noun has a prototypically feminine ending like *-ette, -ienne* or *-sion* (in French), *-a* (in Spanish), or a prototypically masculine ending like *-on*, *-eau* (in French), *-o* (in Spanish) is what determines selection. A point in development comes, however, when uninterpretable [*u*gender] on root D is triggered. Thereafter the grammar is native-like. The evidence for this is a difference in the way that younger and older children treat novel Ns.

In the second part of the section we argue that while all post-childhood L2 learners go through a phase of development where [*u*gender] features are absent from root Ds, as children do, speakers of L1s which do not have uninterpretable [*u*gender] features, like English, do not establish them. By contrast, for speakers of languages with such features (like speakers of other Romance languages) the features of their L1s subsequently transfer to D, giving them target competence in this area.[5] We consider how this claim relates to the issue of whether there is a critical period for language acquisition or not.

4.1   The development of D-N gender concord in L1 French and Spanish

In Section 2 it was said that the forms of a sizeable number of nouns in French and Spanish provide no reliable cue to their gender class. While this is true, it was also observed that the phonological properties of some Ns correlate well with whether they are masculine or feminine. In Spanish the majority of Ns

ending in -*a* are feminine, and the majority of those ending in -*o* are masculine (Mel'cuk 1958). In French the situation is more complex, but there are also important phonology/gender-class correlations. For example, Tucker, Lambert and Rigault (1977) were able to establish probabilities for a noun's gender like the following (among others), based on the number of entries in the *Petit Larousse* dictionary (see Corbett 1991:58–61 for a review of this work):

(9) a. 99.6% of Ns ending in -*sion, -gion, -stion* are feminine (out of 1778 entries)
     b. 97.1% of Ns ending in -*on* are masculine (out of 629 entries)
     c. 97.2% of Ns ending in -*eau* are masculine (out of 865 entries)

The influence of such probabilistic correlations between noun-phonology and gender-class in the development of gender concord in child learners of French was one of the factors investigated by Karmiloff-Smith (1979). She tested the ability of child monolingual speakers of French to use appropriate gender-marked articles with invented, but possible, Ns in French. The Ns in question had typically masculine endings (*bicron, golicheau, maudrier*), typically feminine endings (*plichette, goltine, forsienne*) or gave no clue to gender (*coumile, chalique*). Children were shown pairs of drawings of invented persons, animals and objects, each picture identical except for the colour of the object in question. Children were tested individually, with an experimenter showing the child one of a pair of pictures, and saying (in French) 'Here is a picture of a *plichette*', where there is a gender cue in the indefinite article, or showing both pictures and saying 'Here are two *plichettes*', where there is no cue to gender. Where the experimenter provided a gender cue, the materials were designed so that sometimes an indefinite article whose gender was consistent with the ending of an N was used (e.g. *une* (+f) *plichette* (typically +f)), and sometimes there was a clash between the two (e.g. *un* (–f) *forsienne* (typically +f)). Following a further interaction to get the child to use the invented N, the experimenter hid one of the pictures under an object and asked 'What did I do?' The expected response was 'You hid *the* (colour) N' (e.g. *Vous avez caché le bicron vert*). This final response to each pair of pictures provides evidence on whether the child can make use of gender cues provided in the indefinite article, or in the absence of such evidence, whether the child uses the phonological properties of the N to determine gender. 341 monolingual French children took part in the study, aged from 3,2 to 12,5.

    Where informants were presented with an indefinite article which matched the expected gender of an N (based on its ending), they were all successful in using the correct definite article in the response, including the 3-year-olds. This

might initially be taken as suggesting that even 3-year-olds are sensitive to the gender cue provided by the indefinite article in the stimulus. However, this appears not to be the case. Where there was a clash in the stimulus between the choice of an indefinite article and a typical masculine or feminine noun ending, there was a greater than chance possibility that the children would select a definite article on the basis of the noun ending (up to the age of 5 with a feminine indefinite article and masculine ending N, e.g. *une* (+f) *plichon* (–f), and up to age 6 with a masculine indefinite article and a feminine ending N, e.g. *un* (–f) *goltine* (+f)). See Table 1 for a summary of Karmiloff-Smith's results.

That early child L1 learners of French are selecting gender-marked definite articles on the basis of the phonological shape of the N is confirmed by their performance where no cue to gender was given in the determiner (i.e. where the children were told 'Here are pictures of two *plichettes*'). Young children select the expected definite article forms with Ns like *bicron* (–f) and *plichette* (+f) with greater than chance frequency. However, 9-year-olds showed a greater than chance tendency to select the masculine definite article everywhere with these unknown Ns where there was no cue to gender in the determiner of the stimulus. See Table 2 for a summary of the results.

These results suggest that for young child learners of French the phonological shape of the N is the main determinant of gender classification, even where there is a conflicting cue in the D (hence the failure of children under 6 to draw the inference *un goltine* → *le goltine*). In contrast, by the age of 9 children are using the D as the primary cue to gender, and unknown Ns, even though they might have a phonological shape typical of feminine Ns, are treated as [–fem].

What might explain these results? Under an account where D-N concord in native grammars is a reflex of a 'checking' relation between a [±fem] feature represented in the lexical roots of nouns and an uninterpretable gender feature represented in the lexical roots of determiners, it might be claimed that young children have not established this checking relation. It appears that they

Table 1. Accuracy (%) in selecting a matching gender-marked definite article in response to an indefinite article in the stimulus (based on Karmiloff-Smith 1979: Table 31)

Age	Matching Art-N gender		Clashing Art-N gender	
	un chalois	*une bravaise*	*un goltine*	*une plichon*
3	100	78	44	46
4	89	100	43	37
5	100	100	19	93
6	100	100	74	78

Table 2. Accuracy (%) in selecting a gender-marked article matching N phonology in the absence of a cue in the stimulus (based on Karmiloff-Smith 1979: Table 30)

Age	Masculine ending *deux bicrons*	Feminine ending *deux plichettes*
3	100	100
4	100	71
5	93	91
6	100	94
7	100	69
8	100	86
9	100	38

have established that nouns fall into two classes, because they are systematic in selecting different forms of the article; but the selection is made on the basis of the phonological shape of the noun. Assuming the 'checking' operation to be an innately-determined part of the syntactic-computational component of UG, this means that they have not specified D for [$u$gender]. Thus experience with French has enabled them to determine that French has a binary nominal classification system, but not that Ds have a [$u$gender] feature. By contrast, the influence of phonological cues in nonce forms appears to be greatly reduced for 9-year-olds. Nouns with typical feminine endings are treated as masculine. One way of interpreting this is that a change has occurred in the grammars of older children. At some point a [$u$gender] feature has been established on D. For older children, where a noun is unknown its [±fem] feature is also unknown, and assumes a default value, which appears to be masculine in French. Since the [$u$gender] feature needs to be removed from the derivation going to LF, it is checked by the default feature on the N, and the article chosen is masculine. The default choice is clearly not the only possibility, though, as some 9-year-olds select the feminine article. This might imply either that some children have still not specified D for [$u$gender], or that nonce forms like *plichette* are specified as [+fem] by some children by analogy with existing Ns ending in -*ette*.[6]

   Naturalistic production data from child learners appear to be consistent with this model. Müller (1994) examined longitudinal data from two German-French bilingual children, Ivar and Caroline, between the ages of roughly 18 months up to 5 years. She observes that in the French of both children, when definite articles emerge, 'the phonological shape' of the N plays an important role in the selection of the form of the article (1994: 72). For example, both children use *le* in the context of Ns ending in a nasal vowel, whether

they are masculine or feminine in the adult grammar (e.g. *main* (+f) 'hand', *dent* (+f) 'tooth' and even *maman* (+f) 'mummy'). Significantly, the use of indefinite articles does not match that of definite articles. Prior to the age of 3, each child shows considerable optionality in the use of *un/une* with the same N (e.g. *un/une dame* 'a woman', *un/une pont* 'a bridge', *un/une avion* 'a plane'). Müller argues that the reason for this is that initially *un/une* are analysed only as the numeral 'one', not as an indefinite article, and she goes on to claim that the recategorisation of these forms as indefinite articles is what triggers the emergence of gender as a grammatical feature associated with D (1994:78). Whether this is correct or not, the naturalistic data parallel the results of Karmiloff-Smith's study of monolinguals' treatment of nonce Ns: the choice of the gender-marked definite article is initially determined by noun phonology in L1 acquisition, and at some point of development grammatical concord between D and N is triggered (in our terms: the appearance of a [*u*gender] feature associated with D).

In child L1 Spanish a similar pattern also emerges. Pérez-Pereira (1991) carried out a study similar to Karmiloff-Smith's by presenting children with nonce Ns like *linolo* (typical masculine ending), *lodena* (typical feminine ending) and *talaz* (ambiguous ending), and varying the stimulus in terms of a congruent indefinite article (*una lodena*), an incongruent indefinite article (*una linolo*) or no cue to gender in the determiner (*dos carepos*). 160 children aged 4 to 11 were studied (20 informants for each chronological year). The results tend in the same direction as those of Karmiloff-Smith in that the youngest children were more likely to pay attention to the phonological shape of the N in determining the selection of a definite article in their responses than older children. To illustrate, presented with *una lampo, una rebo* and *una linolo*, the 4-year-olds responded with a masculine definite article on average 52% of the time, whereas the 9-year-olds did so only 30% of the time. Where there was no cue to gender in the input, but the N had a feminine ending (e.g. *dos danitas*) the 4-year-olds responded with a masculine article in only 17% of cases, whereas the 9-year-olds did so 33% of the time.

The data from L1 learners of French and Spanish are compatible with the claim that from very early contact with the language in question, children are aware that Ns fall into two classes and this determines the definite article they can appear with. The evidence for this is the absence of randomness in the choice of gender-marked definite articles, and the lack of evidence for a default choice in the productions of the youngest speakers. However, for some years the grammar for D-N concord of the youngest speakers is different from that of older, mature speakers. It is located in the 'vocabulary' component. Young

child speakers select forms of the definite article on the basis of probabilistic correlations with the phonological shape of Ns. By contrast, D-N gender concord in the mature native grammar is syntactic in nature, determined by an inherent [±fem] feature of N 'checking' the uninterpretable [$u$gender] feature of root Ds.

At some point in development, then, something triggers the establishment of [$u$gender] as a feature of root Ds, which leads to restructuring of the entries for Ds in the 'vocabulary' component. While it is not clear what this trigger might be, there are at least two possible candidates: (a) Müller's proposal that children realising that *un/une* in French are indefinite articles (rather than numerals) establishes the connection *la-une* = [+fem]/*le-un* = [–fem]. This in turn provides the evidence for a [$u$gender] feature on root Ds; (b) The frequency of contrasting masculine/feminine Ns in the input is initially insufficient evidence for the child to establish that gender classification in French/Spanish is syntactic in nature. Early evidence is consistent with selection of articles on the basis of phonological conditioning. There would then have to be some threshold of D-N pairs that a child needs to encounter to determine that the phonological conditioning hypothesis is untenable, triggering a syntactic solution to the gender concord problem.

Whether these are plausible explanations or not for the shift from D-N gender concord in the 'vocabulary' component to concord in the syntax, the pattern of development is consistent with gender being a parametrized feature of UG. It is activated only on the basis of experience with a specific language. Initially child learners establish D-N concord on the basis of probabilistic correlations between noun phonology and determiner form in the input. At some point, however, associations established in the vocabulary component activate uninterpretable [$u$gender] on D.

In concluding this section, we would like to address an issue raised by a reviewer. The reviewer questions whether the elicitation tests used by Karmiloff-Smith and Pérez-Pereira can in principle tell us anything about the syntactic knowledge of language learners. The argument is that nouns used in the tests are invented, with no pre-determined gender, and therefore the experimental subjects will assign them gender in exactly the same way that the researchers do: probabilistically on the basis of noun phonology. There are two factors, however, which in our view allow inferences about the syntactic representations of language learners to be drawn from the results. The first is that there is no reason to assume that encountering new nouns in the test instrument is any different for the children than encountering new nouns in 'real life'. The invented words in the test have referents, and the associated pictures allow the infor-

mants to identify properties of these referents. In 'ordinary' language acquisition it is plausibly assumed that the way children treat new words is a source of information about their syntactic knowledge (Bloom 2000: Chapter 8). If the informants in these studies are simply treating the invented forms as 'new words', then their responses to them are a potential source of information about their syntactic representations. The second factor is the difference in the responses to the test items of the younger and older children in the studies. It is not clear how one could explain the apparent shift from younger children tending to ignore the determiner in deciding a noun's gender to older children paying attention to it, nor (when no determiner is present), the shift from younger children using noun endings to older children tending to choose just the masculine gender, if articles were chosen on the basis of noun phonology by everyone. Children process nouns they encounter for the first time differently at different stages of development. Hence our claim that there is a shift from a phonologically-based concord system to a syntactically-based one.

4.2 The development of D-N gender concord in L2 French and Spanish

To summarise the discussion so far: our assumption is that the 'inherent' [±fem] feature assigned to root Ns, and the uninterpretable [*u*gender] feature assigned to root Ds, are parametrized options made available by UG. French and Spanish are languages which instantiate these options. In the L1 acquisition of French/Spanish, for a time the forms of D are selected on the basis of noun phonology in the 'vocabulary' component. At some point the association of the [*u*gender] feature with root D is triggered.

In the case of post-childhood L2 acquisition of French and Spanish, we will argue in this section (again focussing on D-N concord) that if [*u*gender] features are absent in the L1, as in English, learners will not proceed beyond the stage of probabilistic selection of determiner forms on the basis of noun phonology. Although speakers of L1s with [*u*gender] features will also go through this phase of development (like English speakers and L1 learners of French and Spanish), at some point influence of their L1 will trigger [*u*gender] on root D. Afterwards such L2 speakers should be indistinguishable from native speakers.

Hawkins (1998) found inconsistency in marking gender concord between D and N in the spoken French of L1 English speakers compatible with a grammar where determiners are selected on the basis of noun phonology. The group consisted of 20 informants, 10 in the UK and 10 in Canada, all with high proficiency French (UK group: age range 21–22, average of 10 years of class-

room French, and at least 6 months immersion. Canada group: mean age 18, secondary education in a French immersion programme). The data were approximately 3-minute transcripts of participants describing an animated film. Unambiguous cases of *le, la, un, une* were counted in the transcript of each informant.[7] Overall gender errors (wrong choice of definite/indefinite article for target gender) are given in Table 3.

Furthermore, if the performance of individual speakers is examined, it turns out that while some were target-like in their use of articles, those who made errors used one member of a gender-distinguished article pair in a target-like or near-target-like way, while the other member was overgeneralised. So a speaker might use *la* only with feminine Ns (hence be correct in target terms) but use *le* both with masculine and feminine Ns. Individuals varied, though, in which member of a pair was target-like and which overgeneralised. For some speakers *le* was overgeneralised, while for others *la* was the overgeneralised form. Additionally, there was no necessary connection between an individual's target-like definite article form and target-like indefinite article form. Some individuals treated *la*[+fem]/*un*[−fem] as target-like, but overgeneralised *le*[−fem]/*une*[+fem], while others did the opposite. Table 4 reorganises the data of Table 3 to display informants' accuracy on the most target-like member of an article pair, and the extent of overgeneralised use of the other form (measured as the proportion of native-like concord over the total number of times the article was used).

Two-tailed matched-sample t-tests show that taking the total scores for both groups together there is a significant difference between the target-like

Table 3. Total gender errors made by L1 English/high proficiency L2 French speakers

Group	Def article errors	Indef article errors
Canada (n = 10)	23/212 (11%)	42/155 (27%)
UK (n = 10)	16/221 (7%)	29/211 (14%)
Total (n = 20)	39/433 (9%)	71/366 (19%)

Table 4. Overall accuracy in the choice of gender-marked articles organised as 'target-like' (TL) and 'overgeneralised'

Group	Def article		Indef article	
	TL	Overgen.	TL	Overgen.
Canada (n = 10)	100/104	89/108	55/59	58/96
UK (n = 10)	88/88	117/133	73/76	109/135
Total (n = 20)	188/192 (98%)	206/241 (85%)	128/135 (94%)	167/231 (72%)

use of one form versus the overgeneralised use of the other (t = 3.72, p < .01 for the definite article; t = 5.31, p < .001 for the indefinite article). Treating each group separately (UK versus Canada) there is a significant difference between pairs of articles, except for the UK speakers on definite articles, although the result is close to significance (t = 2.23).

It appears, then, that unlike mature native speakers, who do not make D-N gender concord errors, speakers of English (a language without gender concord) persistently overgeneralise one member of each pair of article forms. Our interpretation of these results is as follows: (a) If the selection of the forms *le/la* and *un/une* in the vocabulary component is determined on the basis of noun phonology for these L2 speakers, then we would expect them to be (near-)perfect in selecting one member of each pair. This is because one member is selected on the basis of a specified set of N endings; e.g. 'if the N ends in *-ette, -ine, -ienne* select *la*'. However, the other member is the form used 'elsewhere'. Hence it will be used with any other N. Since the target language has many Ns whose gender cannot be established in terms of their phonological shape, this form of the article will be overgeneralised by comparison with the target language. (b) The presence of a [*u*gender] feature on D determines the consistent pairing *le/un* and *la/une* for Ns. If there is no [*u*gender] feature on D for the English speakers, there would be no such necessary connection. Speakers would establish entries for each form *le, un, la, une* independently on the basis of frequency of occurrence with Ns of particular phonological shape in the input. If the Ns encountered with definite articles are different from those encountered with indefinite articles, the English speakers would set up different specifications for each in their vocabulary component. (c) By the same token, since the experience of individuals is different, if there is no unifying [*u*gender] feature on D, it might be expected that individuals would differ in which member of article pairs is more highly specified.

These factors together lead us to think that these advanced-proficiency L2 speakers of French have grammars for D-N gender concord similar to those of early child L1 learners; i.e. they have not established an uninterpretable [*u*gender] feature on D.[8]

Bruhn de Garavito and White (2002) found a similar pattern to our L2 speakers of French in the much less advanced L2 Spanish of native speakers of French. These were high school students who were either finishing the first year of classroom Spanish (group 1) or the second year of classroom Spanish (group 2), with apparently no contact with Spanish outside the classroom. Production data similar to those of Hawkins were elicited from a game where there was

Table 5. Article-N gender concord: overall error rates (from Bruhn de Garavito & White 2002)

Group	Def article errors	Indef article errors
1 (n = 30)	68/469 (14.5%)	97/415 (23.4%)
2 (n = 12)	19/241 (7.9%)	29/190 (15.3%)
Total (n = 32)	87/710 (12.3%)	126/605 (20.8%)

an emphasis on communication. The total gender errors made are displayed in Table 5.

Although Bruhn de Garavito and White do not give figures comparing 'target-like' and 'overgeneralised' use of members of each article pair (so that we cannot compare the results directly with Table 4), they observe that 'some individuals in all groups adopt masculine as a default (overgeneralising masculine determiners to feminine contexts), while others adopt the feminine (overgeneralising feminine determiners to masculine contexts)'.

The surprising result here is the similarity in distribution of the errors in these French speakers with low proficiency in L2 Spanish and the English speakers with high proficiency in L2 French. This pattern would be compatible, however, with both groups having a grammar for D-N gender concord where article selection is determined in the 'vocabulary' component in terms of the specification of N phonology. This predicts similarity in behaviour of early child L1 learners of French, high proficiency English speakers of French, and low proficiency French speakers of Spanish.[9]

However, our claim is that if [$u$gender] features are present in a speaker's L1, this will potentially allow that speaker to establish a [$u$gender] feature on D in the L2, just as later L1 learners do. By contrast, speakers of English exposed to a gender concord language beyond childhood will not be able to do so. To test this we need evidence from high proficiency speakers of a gender concord L2 whose L1 also has gender concord.

We examined transcripts of the spontaneous Spanish of 6 high proficiency L2 speakers, 3 with L1 English and 3 with L1 Italian, a language with gender concord, and hence on our assumptions a language with an uninterpretable [$u$gender] feature on D. All informants had spent considerable time immersed in Spanish in Argentina. The age range of the English speakers at first immersion was 17–20 years, the range of length of exposure 17–24 years. The age range at first immersion of the Italians was 23–25 years, and range of length of exposure 42–50 years. The experience of Spanish of both groups was quite similar. All the informants were immigrants who had become fully integrated in

local Argentine communities through work and the education of their children. They used Spanish at work (except one Italian informant who is a housewife). Two of the L1 Italian informants and two of the L1 English informants were married to Argentines. The interest of the data from these informants, then, was whether the Italian speakers would achieve native-like consistency in marking gender concord, and whether the English speakers would show problems similar to the English speakers of French. The Italians produced 95 unambiguous contexts for D-N gender concord in the sample, all of them displaying native-like concord. The English speakers produced 119 unambiguous contexts, 10 of which were non-native concords (i.e. 8%). For example: *una sistema* 'a system' (native *un sistema*).

The number of errors here is small, but we still wish to claim that they reflect a difference in the underlying grammatical representation of D-N gender concord.[10] Speakers with long immersion in an L2 are presumably likely to get close to native-like D-N gender concord with nouns which they use actively in production, even if they have a concord system based on selecting articles probabilistically in terms of noun phonology. This is because extensive exposure to primary linguistic data would allow them to learn exceptions to semi-productive rules. However, a speaker with a grammar for concord based on noun phonology can potentially ignore the determiner in establishing a noun's gender. Hence, although we might expect such a speaker with long experience of the L2 to list exceptions to productive phonologically-based rules, there is potential for residual overgeneralisation of the phonological patterns. This, we claim, is what one finds with the English speakers in the sample.[11] By contrast, a grammar for concord based on the 'checking' of syntactic features greatly reduces the influence of noun phonology in the way a speaker parses input; whether the determiner is masculine or feminine is what is crucial for determining a noun's gender, not the form of the noun. This means that speakers with long exposure to the L2 who have representations for D with a [*u*gender] feature are expected to be (close to) perfect because Ds in the input provide the main evidence for nominal gender, not the form of the N.

Given the claim that L2 learners of French/Spanish go through the same early phase of development as L1 learners, basing the selection of articles on noun phonology, and are only distinguished in later development in terms of whether they can represent [*u*gender] on D or not, a question arises as to how this account might relate to existing theories of access to UG, such as Schwartz and Sprouse's (1996) 'full transfer/full access' (FT/FA) theory or Epstein, Flynn and Martohardjono's (1996) 'full access' (FA) theory. The present account is different from both. FT/FA proposes that in initial and transitional stages of

L2 development features of grammatical categories transfer into the L2 grammar, but will be restructured/reanalysed on the basis of positive evidence. The prediction of this account is that in initial/transitional stages of development, L1 French learners of L2 Spanish would be quite different from L1 English speakers in their treatment of D-N gender concord, because they transfer a [*u*gender] feature and have an L1 grammar for concord which is syntactic in nature. At advanced levels of proficiency, FT/FA predicts that L1 English speakers of L2 French/L2 Spanish should not be different; full access to UG would allow them to access [*u*gender] on the basis of positive evidence. We have argued that this is not what one finds. FA predicts something very similar, with the difference that even in early stages L1 English speakers might be expected to have a syntactically-based concord system, given positive evidence both in French and Spanish for such a system and given that L2 learners are assumed to have full access to UG. The crucial factor here is that any version of 'full access' predicts that L2 learners will acquire native-like competence on D-N gender concord, but this appears not to be reflected in the facts.

5.   Further evidence for the proposal from language processing, code-switching and language impairment

Results of a study by Guillelmon and Grosjean (2000) of the processing of grammatical and ungrammatical concord in D-Adj-N expressions in French by monolinguals, early English-French bilinguals and late English-French bilinguals appear to be consistent with the claim we have made about the availability of an uninterpretable [*u*gender] feature on D. The mean age of 'onset of bilingualism' (i.e. start of use of both languages on a regular basis) in the early bilingual group was 5,4 years, and mean age at time of testing was 24,4 years. The mean age of onset of bilingualism in the late bilingual group was 24,8 years, while mean age at the time of testing was 48,5 years. Thus in both cases speakers had had long and regular exposure to French. There were two monolingual control groups, each matched for age with the respective bilingual group (group A with the early bilinguals, and group B with the late bilinguals). There were 32 participants in each of the 4 groups.

Test items like the following were presented to informants over headphones:

(10)   a.   *le (m) joli bateau (m)* 'the nice boat' (congruent gender concord)
     b.   *la (f) jolie bateau (m)* (non-congruent gender concord)

c. *leur (m/f) joli bateau (m)* 'their nice boat' (no gender concord (neutral))

Half the nouns used in the experiment were masculine and half feminine. Stimuli were grouped so that informants heard either sets of congruent + neutral, or neutral + non-congruent phrases. They were asked to repeat the word after *joli* as quickly as possible, and their reaction times were measured. Results are displayed in Table 6.

The results show that for both monolingual groups, and for the early bilingual group, reaction times to the congruent gender cases are significantly faster than to the neutral cases, and significantly faster to the neutral cases than to the non-congruent cases (measured by chi-square tests). By contrast, the late bilinguals show no significant difference in reaction times. Guillelmon and Grosjean interpret this as evidence that the gender-marked article facilitates or inhibits the processing of Ns for the natives and early bilinguals, but for late bilinguals it plays no role in processing: 'it is as if they just cannot use the masculine *le* cue or the feminine *la* cue during the processing of the noun phrase' (21).

We interpret these results as compatible with our claim that English speakers who acquire French after childhood will not establish an uninterpretable [*u*gender] feature on D. The absence of such a feature means that in parsing, when late bilinguals have assigned *le, la* or *leur* to the category D, that is the end of the parse; there are no consequential effects on the parsing of N. However, when monolinguals encounter *le* or *la*, not only do they assign them to D, but that assignment calls up a [*u*gender] feature with either a [+fem] or [–fem] value, which activates the appropriate set of root Ns in the narrow lexicon, [+fem] or [–fem]. This speeds up lexical search for the N because only those Ns with appropriate gender features need to be accessed. If there is a clash be-

Table 6. Mean reaction times in naming the N following joli under 2 conditions: (1) congruent + neutral; (2) neutral + non-congruent (based on Guillelmon & Grosjean 2000)

	Monol. A	Early biling.	Monol. B	Late biling.
Condition 1				
congruent	479ms	481ms	521ms	620ms
neutral	498ms	525ms	545ms	620ms
Condition 2				
neutral	483ms	519ms	547ms	632ms
non-congruent	513ms	574ms	594ms	626ms

tween the feature of D and the feature of N, however, this will slow the search down, because the parser has initially activated the wrong set of Ns. Since the early English-French bilinguals in Guillelmon and Grosjean's study show the same pattern of behaviour as the monolinguals, they must have established a [$u$gender] feature on D. Thus processing in this study reflects an underlying contrast in grammatical knowledge between monolinguals/early bilinguals on the one hand, and late bilinguals on the other.

Code-switching by bilinguals involving Ns provides further evidence bearing on the claim we are making. In a situation where a language that has D-N gender concord provides the matrix language frame (i.e. the dominant language in an interaction) and English is the embedded language supplying the code-switched Ns,[12] it appears that native speakers of the matrix language, who are also proficient speakers of English, maintain gender-marking in accompanying determiners consistent with the equivalent N in the matrix language. For example, Fuller and Lehnert (2000) found such a pattern in the code-switching of German-English bilinguals where German was the L1. Summarising the results of one of the groups they studied, with at least 5 years residence in the United States, their corpus produced 97 relevant code-switched contexts for D-N concord, in 61% (59/97) of which the gender of the determiner matched a German equivalent N (for example, *die fraternity*, where the German equivalent is the feminine *die Bruderschaft*). By contrast, native speakers of English who are highly proficient speakers of the matrix language do not select determiners on the basis of the gender of the equivalent matrix N. Rather, they use a default article. For example, in the transcripts of a conversation between a native speaker of Spanish and one of the L1 English informants described in Section 4.2, there were 8 D-N concord code-switched contexts for the native Spanish speaker. Of these, 3 induced feminine article forms and 5 masculine forms, compatible with the gender of equivalent Ns in Spanish, e.g. *es cuando hacias lo de la **cadet force*** 'It was when you did that about the cadet force'; the article here is feminine, and *fuerza* 'force' is feminine in Spanish. By contrast, there were 31 code-switched D-N gender concord contexts for the English speaker, all 31 produced with masculine articles, although 12 of the Ns had Spanish equivalents which are feminine.

Myers-Scotton and Jake (1995) propose that the matrix language supplies morpheme order and determines functional categories, and the embedded language the content morphemes. If this is correct, D elements in matrix languages with gender concord are specified for [$u$gender] which must be valued and eliminated from the derivation to LF. A reflex is the selection of the appropriate gender-marked article by the vocabulary component. For English speakers

who have acquired the matrix language as an L2 beyond childhood, D does not have the [*u*gender] feature, and the selection of the article form by the vocabulary component will always be the default since the specified form is selected on the basis of the phonology of Ns in the matrix language. Although our evidence here is limited, it is suggestive.

A final area of support that we wish to adduce for our claim comes from a particular case of language impairment in adult native speakers of French. If D-N concord in mature, native French/Spanish is the effect of a parametrized [*u*gender] feature established on the basis of experience with samples of the language, and hence different in kind from the hard-wired properties of the linguistic computational system, then it is possible that this area of linguistic knowledge could be selectively impaired. A study by Jarema and Friederici (1994) of 5 monolingual French agrammatic aphasics suggests that this might be the case. Informants in this study had some difficulty generally interpreting ambiguous Ns on the basis of the gender cue provided in sentences like the following:

(11) a. Le soldat quitte le poste
          'The soldier is leaving the (sentry) post'
      b. Le soldat quitte la poste
          'The soldier is leaving the post office'

(12) a. Le   soldat le   quitte
          The   soldier it[−fem] leaves
          'The soldier is leaving it'
      b. Le   soldat la   quitte
          The   soldier it[+fem] leaves
          'The soldier is leaving it'

In (11) the N *poste* has two meanings distinguished by gender. In (12) *le/la* are object clitic pronouns, with *le* referring to [−fem] antecedents, and *la* to [+fem] antecedents. Jarema and Friederici presented their informants with a series of single sentences like those in (11)–(12), and simultaneously with two pictures, only one of which corresponded to the presented sentence (for example, one picture of a soldier leaving his post, and another of a soldier leaving a post office). The task was to choose the picture that matched the sentence. While 5 native speaker controls were 100% correct in the task, the aphasic patients performed as in Table 7.

Jarema and Friederici interpret their results as showing the patients having problems with the referential coindexing of pronouns with their antecedents. Their better performance on D-N phrases is because 'they are able to determine

Table 7. Errors made in selecting the appropriate picture in response to sentences involving ambiguous D-N and Object Pronoun constructions disambiguated by gender (based on Jarema & Friederici 1994)

Patient	D-N (k = 16)	Obj Pron (k = 16)
P1	4 (25%)	10 (62.5%)
P2	1 (4%)	8 (50%)
P3	1 (4%)	7 (43.8%)
P4	2 (6.3%)	4 (25%)
P5	2 (6.3%)	10 (62.5%)

the lexical identity and syntactic category of words' (1994:691). An alternative, consistent with the model of gender concord that we are proposing here, is the following. Suppose that object clitic pronouns are Ds with null N complements (Panagiotidis 2000:67–76), and that in normal native grammars for French, object pronouns are specified for uninterpretable [*u*gender] just like their determiner equivalents. Further, suppose that the damage suffered by the patients studied by Jarema and Friederici has impaired the uninterpretable [*u*gender] feature associated with D, but neither the inherent [±fem] features of Ns, nor the features of phonological forms stored in the 'vocabulary' component which in normal speakers allow *la* to be inserted in a terminal definite D node specified for [+fem], and *le* elsewhere. When Jarema and Friederici's patients are presented with D-N phrases where the N is overt, as in *la poste*, the features of *la* at the 'vocabulary' level allow them to determine that *poste* is feminine, and to access the appropriate root interpretation. By contrast, in parsing object clitic pronouns there is a phonologically empty N complement; i.e. the N has no entry in the 'vocabulary' component; *la* (or *le*) must activate the [*u*gender] features of root D so that the checking operation can determine that the root N is feminine (or masculine), and the search for an appropriate antecedent can begin. Disruption of the [*u*gender] feature of D means that 'checking' cannot be activated, hence null Ns remain without a gender specification, and cannot distinguish antecedents which are different only by virtue of gender.

A converse situation to the one reported by Jarema and Friederici arises in a study by Karmiloff-Smith et al. (1997) of gender concord in French speakers with Williams Syndrome (WS), a neuro-developmental disorder. Using a similar experimental design to Karmiloff-Smith's (1979) study (described in Section 4.1), Karmiloff-Smith et al. compared the sensitivity of 14 monolingual French informants with WS (mean age 15,9, mean IQ 57) and 18 unimpaired monolingual French children (mean age 5,1) to gender concord involving real and nonce Ns. When real Ns were involved, both groups produced few concord

errors (under 10% in the case of the unimpaired children, and under 15% in the case of the WS informants). But when nonce Ns were involved the error rate of the WS speakers rose to 38% compared with 15% in the unimpaired children. Where stimuli were presented with no cue to gender in the determiner (e.g. *Voici deux plichettes*), but the N ending was either typically feminine or masculine, the unimpaired children made around 20% errors but the WS informants performed only at chance level. Clahsen and Almazan-Hamilton (2000) have interpreted these results as showing that the WS informants have access to the morphosyntactic rules governing gender concord in words that they have already acquired, but have an impairment in their ability to use the phonological shape of Ns to make probabilistic choices of determiner in new words. In terms of the model we have outlined, they have been able to establish a [*u*gender] feature on D, but do not have access to the mechanism which allows unimpaired speakers to make associative links between N phonology and determiner choice in the vocabulary component of the grammar.

If this analysis is correct, uninterpretable [*u*gender] associated with Ds and As is a property of grammars which is 'doubly dissociated' from the other components (the computational systems and interpretable features). That is, the capacity to establish [*u*gender] can be impaired without other components of the grammar being affected, and [*u*gender] can remain intact while other components of the grammar are defective: an example of 'double dissociation' (Smith 1999: 21–25).

6.   Discussion

In this study we have assumed a theory of D-N concord in mature, native grammars of French and Spanish that is primarily syntactic in nature. An inherent [±fem] feature of Ns 'checks' an uninterpretable [*u*gender] feature of D, removing it from the derivation going to LF. The checking operation simultaneously provides D with a value which is interpretable by the 'vocabulary' component, and an appropriate determiner form with matching features is inserted into the terminal node.

We have also assumed that while UG makes gender features available as part of genetic endowment in the initial state, these are not obligatorily selected by languages in the assembly of lexical items. English, for example, has not selected them, while French and Spanish have. Hence gender is a parametrized property of UG. Language learners need positive evidence to incorporate [*u*gender] into their grammars.

We have claimed that child language learners of French and Spanish can establish [*u*gender] on D, whether they are learning the language as an L1 or L2. They go through an early stage of development where article selection is determined probabilistically by the phonological shape of Ns; but a change occurs at some point in development when the influence of noun phonology is reduced. This was reflected in the differences in responses to nonce Ns between young children and 9-year-olds in the studies of Karmiloff-Smith (1979) and Pérez-Pereira (1991). We interpreted this as a restructuring of the grammar when [*u*gender] becomes established as a feature on root Ds.

Native speakers of English who acquire French as an L2 in childhood also appear to establish [*u*gender] on D. Evidence from a parsing study by Guillelmon and Grosjean (2000) suggests that gender clash between articles and Ns slows down parsing both in adult monolinguals and adult English-French bilinguals who acquired French in childhood. Our interpretation of this was that [*u*gender] plays a role in facilitating or inhibiting speed of access to the lexicon. This was in contrast to late English-French bilinguals who showed no parsing effect of gender clash.

We have also claimed that post-childhood L2 learners whose L1s do not have [*u*gender], like English, appear to have persistent difficulty making consistent gender concords in French and Spanish, even when they are advanced speakers. That this might be the effect of the inaccessibility of [*u*gender] is suggested by three pieces of evidence: (a) the fact that very advanced L2 speakers of Spanish with L1 Italian who we studied do not appear to display the same kind of persistent difficulty; (b) the fact that gender clash between articles and Ns does not appear to affect parsing in late English-French bilinguals, but it does affect parsing in early English-French bilinguals (Guillelmon & Grosjean 2000); (c) the fact that in code-switching where the matrix language is Spanish and the embedded language English, a native speaker of Spanish who we studied continued to select articles as if an underlying [*u*gender] feature were present, while a native speaker of English, who was a late learner of Spanish, consistently selected the masculine article.

Finally, we suggested that observations of the language behaviour of speakers of French with acquired or developmental language disorders reported by Jarema and Friederici (1994) and Karmiloff-Smith et al. (1997) are consistent with the kind of model of gender concord we have assumed to be operative in L1 and L2 acquisition. Jarema and Friederici's informants have grammars where [*u*gender] on D is impaired, while the children studied by Karmiloff-Smith et al. have an impaired capacity in the 'vocabulary' component for selecting determiners on the basis of noun phonology.

In our view, these different pieces of evidence together support the claim that D-N concord in mature, native grammars is syntactic in nature, that the features involved are parametrized (i.e. made available by UG in the initial state, but optionally selected by a given language) and that their availability is subject to a critical period. If a speaker does not activate [*u*gender] in his/her mental grammar in the early years of life, it will cease to be available. This view falls within a tradition which sees language acquisition in childhood and beyond childhood as different in characterisable ways (Tsimpli & Roussou 1991; Smith & Tsimpli 1995; Hawkins & Chan 1997). Learners are broadly constrained by UG in both conditions, but older learners have difficulty accessing some properties of UG because they are beyond the critical period. The claim here is that the characterisable properties are parametrized uninterpretable features. An important question for ongoing research is whether this can be maintained more generally, beyond the particular case of gender concord. If it can, an ambitious further question would be: what might the benefits of a critical period affecting (just) parametrized uninterpretable features be for the human species?

Acknowledgements

Notes

1. One reviewer suggests that the 'vast majority of nouns ending in *-ée* in French are feminine', and another that *mano* is the only real exception to the observation that nouns ending in *-o* in Spanish are masculine, because the others are abbreviated forms of expressions with *-a* endings, e.g. *la moto* (*cicleta*)*, la radio* (*emisora*). The implication is that noun phonology can provide unambiguous cues to gender class.
The point is, though, that one can no more say that masculine nouns in Spanish invariably end in *-o* (because there are many counterexamples: *actor*, *fumar* 'smoking', *barón*, *padre* 'father', *rey* 'king', *análisis*, etc.), than one can say that *-o* marks the class of masculine nouns (because *-r, -n, -e, -y, -s* are also found ending masculine nouns). And the same observation

applies to French. Hence phonology provides no reliable cue to which nouns belong to the masculine and feminine classes in either language.

2. Strictly speaking, sets of phonological forms compete for insertion into a terminal node. The form that 'wins' must have a feature specification which is non-distinct from that of the terminal node, and is the most highly specified of all the competing non-distinct forms (Lumsden 1992).

3. Although there have been several studies presenting arguments for the organisation of the DP as outlined in the text (Bernstein 1991; Cinque 1994, 1995; Picallo 1991; Valois 1991), it should be pointed out that there are alternatives, including the non-raising of N (for example, Giorgi & Longobardi 1991; Kayne 1994; Lamarche 1991; Radford 1993).

4. In more recent work from a minimalist perspective, Chomsky (1998, 1999) proposes a different mechanism for handling agreement phenomema: the operation 'Agree'. While this has a number of conceptual advantages (in particular, the elimination of invisible feature movement), it is not clear whether it can handle gender concord (Carstens 2000: 349–352). This means either that an appropriate account of gender concord requires departure from strictly minimalist assumptions, or that gender concord is indeed a PF phenomenon, contrary to our assumptions here. Consideration of this matter is beyond the scope of the present chapter.

5. Carroll (1989) also argues that English-speaking post-childhood L2 learners of French fail to establish native-like gender concord, and proposes that speakers of other Romance languages will be able to do so. However, in her account English speakers fail to establish the inherent gender feature on N. Our account claims that the problem lies in the uninterpretable [*u*gender] feature of D.

6. In Section 2, it was observed that in a sizeable number of cases the phonological form of an N provides no reliable clue to the gender class it belongs to. Given this, a reviewer asks how we can explain 'the almost non-existent errors in gender made by children after the age of 3, if word ending is what is guiding them.' Under the account proposed in the text, a difference might be expected in error rates between Ns whose phonological shape provides a clue to gender and those which do not. The reviewer continues: 'As far as I know, nobody has found this.' Our response to this is that the results of the Karmiloff-Smith study provide evidence that the claim that children do not make errors in gender after the age of 3 cannot be correct. Assuming that word learning in the task used by Karmiloff-Smith is no different from 'real world' word learning by children (see the final part of Section 4.1 for discussion), children up to the age of 5 make mistakes where the form of the N does not provide them with a phonological clue to gender.

If the reviewer is correct that in observational studies of L1 learners (as opposed to experimental studies) D-N gender concord errors in children over the age of 3 are almost non-existent, this clearly requires some explanation. One possibility is that, by accident, in the observational studies which have been conducted, children simply have not produced the Ns which would provide evidence that they make gender choices on the basis of form. Another possibility is that in those cases where errors might be expected (e.g. **la fromage*, **la musée*) the Ns in question are frequent in the child's input and listed as exceptions to the main N-phonology-based patterns.

7. Ambiguous cases excluded from the count were elided forms (*l'autre carré* 'the other square'), plurals (*les carrés*), and articles separated from an N by pause (*la ... le film* – here *le* was counted but not *la*). Included in the count were *au* 'to the' and *du* 'of the' as tokens of *le* because *la* was counted in *à la, de la.*

8. A reviewer questions whether there is evidence to support the claim that L2 learners use noun phonology in determining article selection in French and Spanish, and cites an unpublished study of initial learners of L2 Spanish which found that more gender errors were made with nouns ending in *-o* and *-a* than with nouns with other endings, suggesting that *-o* and *-a* are not being used to determine gender (Garavito-Bruhn 1986). In contrast to this, however, there are studies which show clear evidence that L2 speakers use noun phonology to determine gender. Hardison (1992:304) provides detailed evidence from three studies 'that L2 learners utilize gender-noun ending correspondences ... to formulate rules of association based on the most salient member of each phonetic ending category'.

9. The difference in proficiency levels between the two L2 groups needs to be stressed here. One reviewer suggests that the similarity of gender concord errors between the L2 French and L2 Spanish speakers means that the presence of a [*u*gender] feature in the L1 cannot be a factor in L2 acquisition. However, given that the L2 Spanish speakers have had less than two years classroom exposure to Spanish, one cannot determine whether they will subsequently have access to a [*u*gender] feature on the basis of this evidence alone. What can be concluded is that at this stage of development they are behaving identically to L1 English speakers with much greater proficiency in L2 French. In subsequent discussion we argue that advanced speakers of L2 Spanish with [*u*gender] L1s do access that feature, with the result that they behave differently from L1 English speakers with high proficiency in L2 Spanish.

10. A reviewer questions whether the English speakers can be regarded as non-native given that their performance is over 90% target-like, and accuracy above 90% is usually considered in the literature to fall within the native range. A problem with taking thresholds like 90%, 80%, 70% etc. as criteria for the 'acquisition' of properties or the 'emergence' of properties in development is that they are arbitrary analysts' fictions, as has been observed in several recent studies. For example, Epstein, Flynn and Martohardjono point out that ' ... it is simply not clear whether there is a correlation between any percentage of correct usage of a particular aspect of grammar and knowledge of that aspect' (1998:64–65). The problem is that we know that spontaneous production data may only be indirectly associated with underlying representations. In the case of the emergence of properties, some researchers have argued that the absence of forms in production may underrepresent underlying grammatical knowledge (for example, Lardiere 1998a, 1998b). By the same token, in advanced speakers the possibility exists that the presence of properties in production data is misleading about the extent to which native and non-native grammars converge. The decision about what weight is to be given to non-target-like properties is ultimately determined by the theory one holds about the representation of the property in question. In our case the claim is that these errors follow from a grammar where D has a representation lacking the feature [*u*gender].

11. A reviewer asks whether the 10 errors would be of the kind predicted if the informants were using word endings to determine gender. In answering this question it is important to stress that the way in which N phonology determines the choice of determiner is not ab-

solute, but can vary across individual grammars. Hence in the case of the English speakers studied by Hawkins (1998), for some speakers it was *la* that was selected on the basis of N phonology with *le* being the default, while for others *le* was selected on the basis of N phonology with *la* being the default (and for the same individual, whether *un* or *une* was selected by N phonology could be independent of the choice in the case of the definite articles). Bruhn de Garavito and White (2002) found a similar (although less marked) tendency in their study of L2 Spanish.

Furthermore, the long exposure of advanced speakers to primary linguistic data allows them to learn exceptions to the selection of determiners on the basis of N endings, as we suggest in the text. These two factors make it difficult to answer simply that the 10 errors are ones we would expect, given the small numbers. The errors in question are these:

	Utterance	Target form	
Subject 1	una reportaje	un reportaje	'an interview'
	el visa	la visa	'the visa'
	una sistema	un sistema	'a system'
	del crisis	de la crisis	'of the crisis'
	los discusiones	las discusiones	'the discussion'
	el último (revista)	la última (revista)	'the last (magazine)'
Subject 2	un montaña	una montaña	'a mountain'
	un heladera	una heladera	'a fridge'
Subject 3	los haches	las haches	'the h's'
	un clase	una clase	'a class'

12. See Myers-Scotton and Jake (1995) and Muysken (2000) for discussion of these terms.

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Functional categories and the acquisition of object clitics in L2 French

Julia Herschensohn

Introduction[1]

Rizzi (2000: 269–70), in describing how studies of language acquisition have added new dimensions to the basis of comparative work in the generative framework, points out:

> We can reasonably hope that development will allow us to see properties that are not immediately accessible to observation in adult systems, thus allowing us to identify and explore neglected areas of the grammatical space defined by Universal Grammar.

Rizzi's comments on first language acquisition (L1A) can be tested with respect to second language acquisiton (L2A) as well, for the development task is the same, even if the results differ for L1 and L2.

The acquisition of L2 functional categories is a topic of importance to both syntax and morphology, for in minimalist terms morphological features of functional categories are the motivating force of the syntax. The topic raises two questions: first, whether L2 learners can acquire categories that are not morphologically in evidence in the L1; and second, how the acquisition proceeds. The first question relates to the issue of UG availability in L2A since scholars who espouse no access predict that L2 learners cannot acquire functional categories. The second question contrasts two approaches to L2 functional categories put forth in recent work, the Full Transfer / Full Access or FT/FA (Schwartz & Sprouse 1996; White 1996) and the Structure Building one (Vainikka & Young-Scholten 1996, 1998).

In order to investigate the issues of access to functional categories and path of acquisition in L2A, this paper examines the parametric variation between French and English involving the functional category associated with object

agreement. While French and English show identical word order and no agreement with lexical DP objects (i.e. full lexical items that follow the verb, not pronouns), the two languages differ with respect to pronouns. English pronouns follow the lexical DP pattern, while French pronouns are clitics attached to the inflected verb. I report on the development of L2 French clitics by two anglophone subjects, showing how the data confirm previous studies of both L2 and L1 clitic acquisition. In the first section I present analyses of pronouns and English/French parametric variation; I then discuss the theoretical issues relating to L2 acquisition. In the next section I review earlier studies of L2 and L1 acquisition of clitics before presenting the new data. In the last section, I test the theoretical hypotheses in terms of the empirical data. I conclude that the eventual mastery of object clitics and the path of acquisition argue for a full access approach.

1.   Theory

1.1   French and English pronouns

Cardinaletti and Starke (1999) propose a three-way cross-linguistic division of pronouns into strong, weak and clitic classes. The classes seen most clearly in French are the strong (also called tonic, disjoint, or independent) and clitic pronouns, two groups that manifest paradigmatic morphological differences (Table 1).[2] As Table 1 indicates, case is only marked on clitic, not strong forms, and the *nous*, *vous* and *elle(s)* forms show morphological syncretism. Cardinaletti and Starke propose that strong pronouns are least, weak pronouns are more, and clitics are the most deficient of pronouns; these deficiencies are represented by progressively smaller trees (cf. Granfeldt & Schlyter, this volume, for illustration and discussion). Whereas strong pronouns act as DPs in terms of semantic, phonological and other properties, clitics must compen-

Table 1. Clitic and strong pronouns in French

Person	Clitic-nominative	Clitic-objective	Strong
I	Je	Me	Moi
II	Tu	Te	Toi
III	Il/Elle	Le/La	Lui/Elle
IV	Nous	Nous	Nous
V	Vous	Vous	Vous
VI	Ils/Elles	Les	Eux/Elles

sate for their deficiencies by establishing anaphoric binding, gaining prosodic grounding, etc.

As Kayne (1975) amply documents, French clitic pronouns (1) are dependent on a verb, usually precede it, are strictly ordered, phonologically unstressed, subject to liaison/elision, and in complementary distribution with their stressed counterparts (see also Kayne 1994, 1991; Auger 1995; Brousseau & Roberge 2000; Herschensohn 2000).

(1) a. Tu ne   me la/*elle rends pas *la/*elle
          you NEG me it   give not it
          'You don't give it to me.'
     b. *Tu ne   la me rends pas
          you NEG it me gives not

English, on the other hand, has pronouns that resemble DPs syntactically and phonologically – they receive stress and are placed in the same positions as full DPs.[3] Cardinaletti (1999: 60–62) also describes English clitic-like pronouns that parallel French clitics (2) in ordering, lack of stress and other traits.

(2) a. I took'm in *'m.
     b. *IT is implausible, not that one.
     c. *It, I think, is implausible.

Descriptively, French and English pronouns differ on several dimensions. Phonologically, the default pronominal form in English is strong and usually remains in situ if cliticized. In French the default form for the most frequent pronouns (nominative, objective and dative) is clitic, yet the strong forms are quite evident in doubling and other disjoint uses. The clitic forms are never in situ. Morphologically, there are overlapping features such as gender and number between French and English, but there is no one to one match, so both morphological features and realization constitute distinct systems. Finally, syntactic features and movement involving pronouns are starkly different in French and English. As Emonds (1999: 317) notes, "the features of Romance verbal clitics are thus not canonically positioned and [...] must result from stipulated alternative positioning in the lexical entries for clitics [...]; corresponding stipulations are entirely absent in say the English lexicon".

1.2 Theoretical analysis

The minimalist assumptions that UG provides a syntactic template that is universally shared and that cross-linguistic variation of word order can be char-

acterized as overt vs. covert movement give a framework in which to situate French/English syntactic distinctions (Chomsky 1995; Herschensohn 2000). The conception of a universal base includes a full set of functional projections as well as principles of combination and movement. Parametric differences among languages are minimal, and can be characterized as differences in the value of uninterpretable features in functional categories. For example, for verb raising (V to T), French has a strong uninterpretable verbal feature in T requiring overt raising of the lexical verb to check off the strong feature before Spell-out; otherwise the derivation will crash. English, on the other hand, has a weak verbal feature that requires no overt raising (but involves covert raising at LF to check agreement). The V to T parametric difference (Pollock 1989) between French and English is thus expressed in terms of strength of uninterpretable features.

Given the assumption that functional projections are the locus of feature checking, English and French subject DPs raise overtly to Spec AgrSP (via TP) to check nominative case, since these two languages require overt raising of the subject because of the strong nominal feature of Tense (related to the Null / Overt Subject Parameter). I use the terms AgrS (subject agreement phrase) and AgrO (object agreement phrase) to indicate the functional projections that permit agreement and checking of the subjects and objects in order to highlight the focus of the parametric variation between English and French.[4] I assume that full DPs that are direct objects raise covertly (at LF) in both English and French to Spec AgrOP to check objective case, since they superficially remain in situ. French and English pronouns show distinct behavior. French clitics can be analyzed as case spell-out (Suñer 1998, 1988) generated in AgrO and AgrS, and licensing *pro* in the argument position, identified by the phi-features of the clitic, so it is licensed and identified as required (Rizzi 1986a; Roberge 1990; Sportiche 1996).[5]

Emonds (1999), who rejects "covert syntax," proposes an alternative universalist analysis of French and English pronouns. Rather than appealing to strong and weak uninterpretable features of functional categories, Emonds argues that in situ realization results from "nothing happening". Constituents just remain where they are, as English lexical DPs and pronouns in object position. In contrast, languages may permit Alternative Realization of strictly grammatical morphemes under a category C. The grammatical morpheme may license a null XP sister to C. He proposes that Romance clitics alternatively realize the phi features of the verb's complement-sister (usually DP), allowing it to be null (French) or doubled (Spanish). He assumes that clitics, as auxiliaries, are spelled out at PF (cf. Bonet 1995). More recent minimalist analyses within

the bare phrase structure framework (cf. Chomsky 2000) advocate a similar approach in using long-distance agreement rather than covert movement.

Sentence (3) exemplifies the earlier minimalist analysis outlined above.

(3) a. Il   le   mange.
         he   it   eats
         'He is eating it.'

     b.

```
                        AgrSP
                       /     \
                   Spec       AgrS'        [...]
                   pro_j     /      \
                          AgrS
                   il_j + le_i + mange_v
                                        AgrOP
                                       /     \
                                   Spec       AgrOP'
                                   [pro_i]   /      \
                                         AgrO        VP
                                         t_i + t_v  /   \
                                              Spec       V'
                                              t_j       /  \
                                                       V    DP
                                                       t_v  pro_i
```
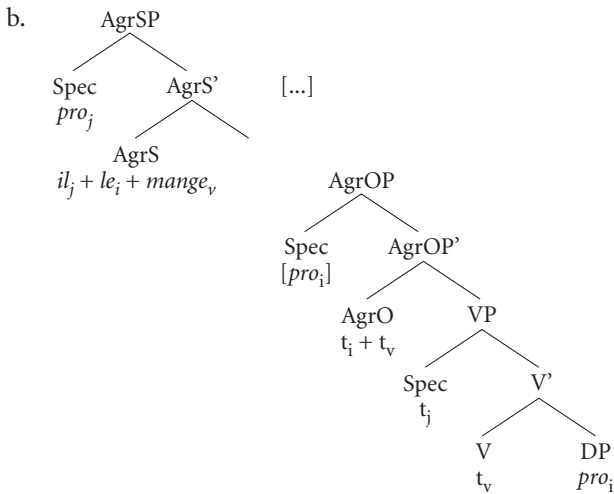
The verb, whose sister DP contains the direct object *pro*, raises by head movement from its position in VP (Pollock 1989). The *pro* forms a chain linking its base position to the Spec of AgrOP where its features are checked for case and agreement with the clitic *le* originating in the head AgrO. Object *pro* raises covertly at LF to check features in AgrO. The clitic, attached to the verbal head, is linked in the chain that is depicted here. The subject clitic *il* licenses subject *pro*, originally VP internal, but forced to raise to Spec AgrSP to check nominative case and phi features against the verb and its clitic *il*. In the case of auxiliary verbs I assume that *avoir* and *être* originate in VP and raise to higher functional categories to check agreement features (Emonds 1999:330). Clitics attach and raise as in the case of lexical verbs. English pronouns can be assumed to be in determiner position and to project as full DPs (Reinhart & Reuland 1993:658).

(4) [$_{DP}$ pronoun [$_{NP}$ ....e ....]]

There are then significant differences between French and English in the realization of pronouns and their checking in functional categories. English uniformly has covert movement of object DPs (including pronouns) and LF checking of their features; pronouns are strong. French has overtly raised agree-

ment markers, clitics that are verb dependent, in addition to strong pronouns. The anglophone French L2 learner must learn the phonological, morphological and syntactic differences between English and French. I now turn to a discussion of generative approaches to L2 acquisition.

1.3   L2 Functional categories

In this section I consider generative approaches to UG availability in L2A and the acquisition of L2 functional categories. As object agreement demonstrates, functional categories are important because their morphological features are the motivating force of the syntax (Chomsky 2000). Mastery of functional categories is diagnostic of UG availability in L2A according to three recent theoretical approaches that have been put forth, *No Access*, *Structure Building*, and *FT/FA*, which I will examine below. The first approach permits no UG access, attributing second language acquisition exclusively to cognitive strategies (Clahsen & Muysken 1996; Meisel 1997). *Structure Building* assumes the early L2 grammar has initially only lexical projections that correlate with incomplete morphology (Eubank 1993/1994; Vainikka & Young-Scholten 1998, 1996). For *FT/FA* the early L2 grammar may access all functional projections, which are not directly dependent on the mastery of morphological inflection (Grondin & White 1996; Lardiere 1998; Schwartz & Sprouse 1996).

White (1996: 336) describes the significance of mastering functional categories for the L2 researcher:

> If an L2 learner of French shows early evidence of syntactic clitics and their projections, this suggests that potential functional categories made available by UG but not instantiated in the L1 can be triggered on the basis of L2 input. Furthermore, if clitic projections are available from the earliest stages, it would support the hypothesis that there are no qualitative changes in the IL grammar with respect to properties of functional categories.

On the assumption that clitics head functional projections, White argues convincingly that anglophone children learning French acquire clitic projections early and are thus not restricted to their L1 inventory of functional categories.[6] The concept of a universal base might appear to obviate White's line of argumentation since the functional categories of agreement would be available in both L1 and L2. However, the existence of a cluster of functional differences relating to the parametric value of object agreement permits an analysis parallel to White's.

The differences between English and French pronouns relate to morpho-syntactic distinctions in functional categories and morpholexical variation between the two languages. As opposed to L1 English, L2 French object pronouns entail the following characteristics whose locus is a functional projection:

(5) a. phi features: masc, fem, sg, pl, pers, +/–goal, case (Emonds 1999)
     b. placement, cliticization (Roberge 1990; Sportiche 1996)
     c. levels of deficiency (Cardinaletti & Starke 1999)
     d. morphological realization (Kayne 1975)

These factors demonstrate the complexity of functional category revision in that the anglophone learner of L2 French must achieve a revision of all four characteristics. In French, the realization of object pronouns as clitics on the inflected verb, as opposed to English in situ pronouns, gives the superficial appearance of an overt functional category in French, and its lack in English. In fact, however, the differences between French and English are more far-reaching for pronouns than simply the acquisition of an extra functional category to accommodate clitics. French has in its nominal system interpretive morphological features (m/f, sg/pl) that do not exist in English. The category of these features is the functional D node regulating agreement of the head noun or pronoun in French. Word order of pronouns differs for the two languages, a distinction related to parametric differences of agreement, binding of null elements, and distribution of pronominal levels of deficiency. Finally, the morphological forms and their phonological correlates (related to deficiency) differ. The anglophone L2 learner of French must master these somewhat disparate kinds of information relating to syntactic, morphological and phonological features of D and Agr functional categories.

Within the minimalist conception of universal syntax, the parametric differences between English and French are related to featural and value distinctions, not to the presence or absence of a particular functional category (e.g. Sportiche's clitic voice) in one of the languages. In order to revise functional features (interpretable and uninterpretable) and morpho-syntax, the anglophone L2 learner of French must make radical changes in various aspects of the L1 pronominal system in order to master the L2 system. In the spirit of White's argumentation, I suggest that this mastery indicates access to UG, since limitation to L1 values would prohibit acquisition of L2 features of functional categories.

The No Access approach to L2A highlights the difference between first and second language acquisition in terms of availability of UG: according to this theory, LIA is guided by UG and therefore proceeds in a rapid and consistent

fashion, whereas L2A is slow and variable in its results, pointing to lack of UG guidance. As Meisel (1997: 228) puts it, "L2 learners resort to different kinds of strategies of language use. My hypothesis, furthermore, is that in L2 acquisition the objects of learning are primarily linear strings of elements encountered in utterances, not hierarchical syntactic sentence structures". In this view, interlanguage (IL) use of agreement and other grammatical features identified with functional categories is illusory since such knowledge is semantic-pragmatic "grammar-ersatz". No Access approaches (Clahsen & Muysken 1996) assume that only cognitive strategies, not UG, guide L2A; and that L2 learners cannot acquire target functional categories, despite robust input.[7] These assumptions make three testable predictions about L2 grammars: interlanguage grammars may be "wild," not UG constrained; interlanguage should resemble the input since there is no other (innate) source for guidance in acquisition of the L2; L2 learners' knowledge is not grammatical or hierarchical. The approach allows for some L1 transfer, but presumably only on a level of superficial strings, not underlying grammatical structure. The No Access approach is particularly relevant in the light of poverty of the stimulus, since it strongly claims that UG is available in L1A precisely because it is the main explanation for the rapidity and systematicity of acquisition in light of the impoverished input. The No Access approach denies the possibility that functional categories can be developed in the L2 at all, unlike two other hypotheses.

The second approach, Structure Building, allows access to UG, but assumes an initial minimal syntactic projection and a close linking of morphological with syntactic development. Hawkins and Chan (1997) and Hawkins (2001) suggest that the interlanguage grammar is restricted to features available in the L1, while Smith and Tsimpli (1995) propose that features of functional categories cannot be modified after the Critical Period. The Structure Building (or Minimal Trees) approach of Vainikka and Young-Scholten (1998, 1996) holds that functional categories in L2 are initially underspecified and that their activation is linked to the specification of morphology. They propose that the initial L2 grammar is incomplete with respect to functional categories and that syntactic movement doesn't occur. At a subsequent stage IP, CP, agreement, complementizers, verb raising and overt subjects develop. The early L2 grammar has initially only lexical projections linked to incomplete morphology. Eubank and Grace (1998), in a complementary vein, also propose a "defective" L2 initial grammar and relate syntactic movement to the morphological specification of L2 functional categories. Summarizing the common themes of these proposals (that do not necessarily all agree on all points), three important assumptions underlie this approach: functional categories in L2 are initially

underspecified; their activation is directly linked to the specification of morphology; and activation takes place in structure building stages from VP up.

In contrast to Structure Building, FT/FA assumes transfer of L1 functional values, no linking of morphology and syntax, and morpholexical stages of development. This approach maintains that the L2 grammar begins with the entirety of L1 functional categories and morphological values (i.e. Full Transfer), and that the L2 learner has Full Access to all UG possibilities although they are not necessarily employed (Schwartz & Sprouse 1996). Activation of functional categories is not dependent on acquisition of L2 morphology, for they develop independently; rather, L2 learners' production of morphological errors is attributed to problems in mapping between syntax and morphology. Lardiere (1998) argues that the missing overt inflection may be phonetically unrealizable in fossilized grammars with impoverished morphology, rather than representing a mismatching of phi features in the syntax. Finally, the process of acquisition is related to differential learning based on morpholexical constructions. L2 learning is not a random collection of utterances gleaned from the input, but rather a systematic mastery of syntax through the progressive acquisition of construction types. For example, learners of L2 French gradually acquire the French value of the Verb Raising Parameter by setting the value correctly first in the negative construction and later in adverbial constructions (Herschensohn 2000).

FT/FA and Structure Building differ according to three empirical predictions involving L1 transfer, morphological mastery and stages of development (Table 2). Realization of morphological features and syntactic movement are diagnostics of transfer of L1 functional values. Tandem development of syntax and morphology is a diagnostic of the morpho-syntax link. Systematic progression in the production of functional projections by the L2 learner can diagnose the stages.

On the other hand, FT/FA and Structure Building make three empirical predictions that clearly contrast with No Access (Table 3).

Table 2. Predictions of two access hypotheses

	Structure Building	FT/FA
L1 functional transfer	No	Yes
Morpho-syntax link	Yes	No
Stages	VP → CP	Morpholexical

Table 3. Predictions of No Access and Access

	No Access	Access
IL = input alone	Yes	No
Wild grammars ok	Yes	No
Final L2 = grammar	No	Yes

Table 4. Theoretical assumptions of L2A Approaches

	No Access	Structure Building	FT/FA
UG guidance	No	Yes	Yes
L1 funct. transfer	No	No	Yes
L2 funct. cat.	No	Gradual	Yes
Morpho-syntax link	No	Yes	No
Stages	Cognitive only	VP → CP	Morpholexical

According to the access positions, it is not input alone that is responsible for the interlanguage (IL) grammar, so IL may differ from the input; intermediate stages are UG constrained, not wild; the final state L2 grammar may be target-like in containing L2 parameter settings and functional categories. The theoretical assumptions of the three approaches are outlined in Table 4. FT/FA and Structure Building approaches contrast with respect to the process of acquisition, particularly the relationship of syntax and morphology, although they agree on the availability of UG. The three approaches make quite distinct claims and predictions. After a presentation of the empirical data in the next section, the predictions summarized in Tables 2 and 3 will be reexamined.

2.   Empirical data

2.1   Previous L2 studies

In this section I review earlier work on French pronouns, and I provide a theoretical analysis of error types in terms of the minimalist model adopted in the first section.[8] Subject clitics are acquired well before object clitics in both L2A (Grondin & White 1996) and L1A (Hamann et al. 1996).[9] As for object clitics, previous studies of L2 learners provide data that show four varieties of intermediate use of object clitics, four classes that I will confirm with my own data. Towell and Hawkins (1994) and Hawkins (2001) delineate four stages of acquisition of French object clitics by anglophone learners exemplified by 'I see / have seen her': Type One, in situ pronouns (6); Type Two, null pronouns

(7); Type Three, cliticization to past participle (8); Type Four, cliticization to inflected verb (9).

(6) Je vois elle / J'ai vu elle
I see her I have seen her

(7) Je vois [e] / J'ai vu [e]
I see I have seen

(8) J'ai la vu
I have her seen

(9) Je la vois / Je l' ai vue
I her see I her have seen

Examples of the four types are found in the extant studies; there are no other varieties attested. Selinker et al. (1975) and Adiv (1984) – whose articles only provide anecdotal, not statistical evidence – both study anglophone children in French immersion school settings in Toronto and Montreal respectively (10)–(11).

(10) Sample L2 clitic errors, in situ (Selinker et al. 1975)
a. Je vais *manger des pour souper (= en manger)
I go to eat some:ART for supper (= some:PRON to eat)
'I'm going to eat some for supper.'
b. Le chien *a mangé les (= les a mangés)
the dog has eaten them (= them has eaten:PL)
'The dog has eaten them.'
c. Il *veut les encore (= les veut)
he wants them still (= them wants)
'He still wants them.'

(11) Null pronoun (Adiv 1984)
La maman demande qui a mangé le gâteau et la petite
the mom asks who has eaten the cake and the little
fille répond: J'ai mangé [e] (= je l' ai mangé)
girl answers I have eaten [e] (= I it have eaten)
'The mom asks who ate the cake and the little girl answers: I ate [it].'

The sentences in (10) appear to show L1 transfer, an influence that Schlyter (1999, 1997) also notes for her suedophone L2 learners of French who produce sentences such as *il prend nous* 'he takes us' (1997: 283). She points out that hispanophone learners have less difficulty with object clitics, presumably because their L1 also has them. Véronique (1984) notes the same kinds of errors in his

subjects whose L1 is Arabic, but he doesn't discuss the L1 order. Granfeldt and Schlyter (this volume) document in situ placement of strong pronouns as a clear first stage phenomenon in the development of their nine L2 subjects. I assume that theoretically in situ pronouns can be accounted for with the English pronoun account outlined in the first section of this article.

The sentence in (11) shows object pronoun omissions – unacceptable in the mature grammars of both L1 and L2. For the null object sentences, Towell and Hawkins (1994:137) propose that L2 learners "hypothesize, on the basis of the absence of phonetically specified pronouns in this position, that French has object *pro*". They suggest that the French licensing of object *pro* described by Authier (1991) as in (12) is a kind of trigger for the null object stage.

(12)   Cet entraineur force [pro] [à [[PRO] [se   lever   tôt]]]
       this trainer   forces   to   REFL to raise early
       'This trainer forces [people] to get up early.'

While this explanation is theoretically appealing, it seems questionable that sentences such as (12) trigger this stage since such relatively infrequent constructions are not likely input to the L2 learner at this point. I do, however, adopt their proposal that *pro* is the in situ null object that is usually licensed in French by the clitic. In the examples such as (11), the clitic is not realized either, it is null. I attribute this lack to the idea of missing inflection (Lardiere 1998) in that the learners are not able to produce the clitic consistently at this point, just as L2 speakers produce non-finite forms in place of finite verbs (Herschensohn 2001).

Another account of null clitics is the empty operator analysis proposed by Huang (1984) for Chinese null objects. Müller et al. (1996) follow this line of thought in their detailed discussion of various options to account for the null objects of their L1 learner. They conclude that their two year old subject Ivar's null objects are A' bound by IP adjoined PRO. The authors argue that maturation of the morphological licensing of *pro* by clitic pronoun is linked to the development of the child's C system, since Ivar stops producing null objects once his C system is developed. Such an analysis is not compatible with much of the L2 data since the learners usually appear to have a developed C system. Furthermore, the L2 null objects are not pragmatically (discourse) licensed as Huang argues.

The third type, attachment to the past participle, is cited by Towell and Hawkins and by Granfeldt and Schlyter who also attest ample data documenting this as the second stage of development of their L2 learners.[10] Attachment of the clitic to the past participle (i.e. to the verb that selects it, rather than

the inflected one) can be accounted for as differential learning of different morpholexical constructions. Attachment to the non-finite past participle is similar to attachment to the infinitive. Schlyter (1997: 280) notes that learners generalize an intermediate placement of the clitic between the auxiliary or inflected verb (e.g. modal) and the non-finite form (past participle or infinitive). She groups the sentences in (13) which could be processed, she says, in a parallel manner.

(13) Interposed clitics

    a. Il   veut   le voir
       he wants it see-INF
       'He wants to see it.'

    b. *Il a   le vu
       he has it seen
       'He has seen it.'

    c. Il   va   manger la   pomme
       he goes eat-INF the apple
       'He is going to eat the apple.'

    d. Il   a   mangé la   pomme
       he has eaten   the apple
       'He has eaten the apple.'

(13a, c, d) are grammatical, whereas (13b) is not. Since the past participle and infinitive are homophonous for the very numerous verbs of the *-er* class, a linking of the two structures is reasonable on perceptual grounds.

Emonds (1999: 319ff.) describes the clitic host in terms of restructuring: the vast majority of Romance verbs allow no restructuring, so clitics attach to the main verb. However, the auxiliaries *être* and *avoir* require obligatory restructuring, hence clitic attachment. His analysis, in which auxiliaries are syntactic feature complexes spelled out at PF, provides a nice framework for Schlyter's observations. The Type 3 mistake can be seen as an example of differential mastery of French clitic placement for main and auxiliary verbs. The learner may be able to cliticize to the main verb, but not the auxiliary. At this point the learner would have *pro* in VP object position with a clitic to license it, but would not yet have mastered the requirement that inflected verbs (either main or auxiliary) be the clitic host. Under this analysis, the clitic and lexical verb remain in AgrO while the auxiliary raises to T and AgrS.

The final type – correct target usage of object clitics with conjugated thematic verbs, auxiliaries and infinitival forms – is well documented in the work of Towell, Hawkins and Bazergui (1996) as well as other works cited. In their

article, they provide numerous examples of the development of obligatory clitic mastery by their longitudinal subjects. This type of clitic use is described theoretically by the standard analysis of French clitics that I presented in the first section.

2.2 L1 studies

It is instructive to compare the L2 patterns with L1 development of clitics.[11] White's (1996) and Prévost's (1997) analyses of child L2 acquisition of subject and object clitics argue that early child L2 acquisition mimics L1 acquisition, for their subjects show developmental patterns similar to the L1 subject of Hamann et al. (1996). The L1 learner, Augustin, acquires subject clitics well before object clitics, a pattern also found by Jakubowicz et al. (1996). For Augustin, at age 2;0.2 subject clitics represent 17/57 (29.8%) of verbal utterances and object clitics are at 0. At 2;6.16, subject clitics are 25/116 (21.6%) while object clitics are 2/116 (1.7%) (Hamann et al.: 320). The authors do not, however, believe that the asymmetric acquisition of subjects and objects is due to adult input alone. In the adult corpus (3051 tokens) collected from Augustin's family, subject clitics (2332) constituted 76.4%, while object clitics (719) were 23.6%. We might assume that this is representative of normal discourse input for all the subjects under consideration. Jakubowicz et al. point out that the early acquisition of subject clitics (over strong pronouns) and the asymmetry of subjects and objects contradict Cardinaletti and Starke's proposed primacy of strong pronouns. On the other hand, the adult L2 evidence does suggest that adults favor the strong forms at initial stages (Granfeldt & Schlyter, this volume).

Null objects and past participle attachment are attested in L1 acquisition. Müller et al. (1996) and Hulk (1997, this volume), who study the development of object clitics in bilingual children, note that these children (as monolingual L1ers) use object drop during a period of several months (14). In fact, they note that the French-German bilingual children more frequently produce object drop than monolingual French children.

(14) Examples of Ivar's null objects   (Müller et al. 1996)

    a. Non maman prend [e]
        no   mommy take   [e]
        'No, mommy takes [it].'

b. Veut   [e] Ivar
    wants [e] Ivar
    'Ivar Wants [it].'
c. Remets   [e] ici
    put back:2s [e] here
    'Put [it] back here.'

Hulk (1997:521) observes that Anouk – a French/Dutch bilingual – acquires clitic objects in the same stages as monolingual L1 learners, noting that "in the first recordings, until age 2;07.5 Anouk uses very few transitive verbs, and with 55% of these verbs the object is missing". Both articles adopt Huang's (1984) analysis of null objects as variables bound by empty operators and dependent on discourse context. Hulk also observes clitic attachment to past participle in Anouk's French (15), although it is less frequent than the null objects.

(15) Examples of Anouk's past participle cliticization
    a. T'   as   le mis trop chaud = tu   l'as   mis trop
        you:SG have it put too   hot   = you:SG it have put too
        chaud
        hot
        'You put it too hot.'
    b. Il a   le mis à l'envers = il l' a   mis à l'envers
        he has it put backwards = he it has put backwards
        'He put it backwards.'

I now turn to my own data.

2.3 Current study

The data I examine are produced by two anglophone subjects, 16–17 years of age, one of whom, "Emma," continues her study of French in an American academic setting, while the second, "Chloe," spends six months in France as a student in a French lycée. In Herschensohn (2001) I describe the development of verb inflection of the two subjects and provide greater detail concerning their environments and input. The corpus consists of three tape-recorded interviews with each subject that I conducted over the six-month period of Chloe's stay in France. The format of the interview includes present and past tense topics as well as activities that elicit use of object pronouns. The transcriptions were verified by a phonologist who specializes in French. The two teenage subjects are intermediate, even in the first interview, in that they productively use verbal inflection and use movement to CP in both questions and relative clauses.

Their interlanguage grammars contain a range of finite forms, including even from Interview I, past and future tense, and by the third interview their accuracy of verbal inflection is at 89% for Emma and 98% for Chloe.[12] The length of each interview increased during the six month period, varying from approximately 300 to 700 words spoken by the subjects (specifically, Emma 337, 525, 839; Chloé 465, 639, 789).

In addition to the interviews, each subject completed two written tasks, a "Verb Raising" one (not relevant to the present study) and a "Grammaticality Judgement (GJ)" one. The latter, adapted from Hawkins et al. (1993), comprised 50 sentences, 25 containing mistakes related to verb raising or pronouns. I revised the task for each interview, retaining the basic distribution of grammatical structures, but changing the vocabulary and the singular/plural feature of the DPs and verbs. The GJ task included nine sentences with pronouns; Appendix 2 gives a representative list of the pronoun sentences that constituted JG III (roman numeral indicates interview number). Emma and Chloe were asked to indicate the offending items in ungrammatical sentences, and to correct them.

Both subjects showed a U pattern in correct responses across the three interviews, with Emma at 7/9 or 78% (I), 6/9 or 66% (II), 7/9 or 78% (III); and Chloe at 6/9 or 66% (I), 5/9 or 56% (II), 6/9 or 66% (III). Overall, they made equally correct judgements on grammatical (Emma 10/27 or 37%; Chloe 9/27 or 33%) and ungrammatical (Emma 10/27 or 37%; Chloe 8/27 or 30%). Their errors were focused on four problems, as the misjudged sentence types in (16) and (17) indicate.[13]

(16)   Grammatical judged as ungrammatical

    a.   Est-ce que vous   lui avez parlé?   (Emma I, II; Chloe I, III)
        Question you:PL to him have   spoken
        'Have you spoken to him?'

    b.   Eve-Anne s'   est brossé les cheveux   (Chloe I, II)
        Eve-Anne REFL is brushed the hair
        'Eve-Anne brushed her hair.'

(17)   Ungrammatical judged as grammatical

    a.   *Est-ce que tu   as   vu   la?   (Emma I; Chloe II)
        Question you:SG have seen her
        'Have you seen her?'

    b.   *Ils   deux sont partis à midi   (Emma II, III; Chloe II, III)
        they two are gone at noon
        'The two of them left at noon.'

c. *Cette visite à la   bibliothèque a   le
   this   visit   to the library   has him
   vexé   (E. II, III; C. I, II, III)
   bothered
   'This visit to the library bothered him'

Initially the two subjects had difficulty with reflexives (two errors, 16b) and an in situ clitic (two errors, 17a), and they misjudged the dislocated subject clitic (four errors, 17b) through the third interview. The most prevalent error, however, was attachment of the clitic to the past participle (17c), also attested in (16b) where the indicated "correction" was to change the grammatical sentence into the ungrammatical *vous avez lui parlé*. This error type constitutes 9/17 or 53% of the errors.

The GJ tasks reveal that by the third interview, Emma and Chloe had a fairly good ability to make correct judgements of the placement of object clitics in French. Of the three types of interlanguage production errors cited above, past participle attachment is the mistake that Emma and Chloe are most prone to accept. This misjudgement corroborates production mistakes of this type made by Emma and other learners discussed in the earlier section.

With respect to pronoun production, Emma and Chloe have mastered subject clitics by the first interview, but do not master object clitics by the third. In the three interviews, there is only one example of a null subject, and the two young women correctly cliticize subjects to the verb from the first interview, even when the verb is non-finite (Herschensohn 2001). The subject/object asymmetry noted in the L1 studies is borne out in this one. For the more limited corpus of object pronouns, the two subjects furnish a total of 26 contexts of obligatory use (Appendix 1), with the four different types of realization first outlined by Towell and Hawkins and described in the last section. These types are exemplified in (18)–(21) (the Roman numeral refers to the interview).

(18) Type One: in situ pronouns
  a. J'ai   vu   elle = Je l'   ai   vue   (Emma I)
      I have   seen her = I her have seen:FEM
      'I have seen her.'
  b. Il a   demandé à moi = Il m' a   demandé   (Chloe II)
      he has asked   to me = he me has   asked
      'He has asked me.'

(19) Type Two: null pronoun

    a. T'   as   placé [e] sur le lit = Tu   les   a
        you:SG have placed   on the bed = you:SG them have
        placées   (Chloe II)
        placed:FEM
        'You have placed [them] on the bed.'

    b. Je n' ai   pas vu [e] = Je ne l'ai   pas vu   (Emma II)
        I NEG have not seen   = I NEG it have not seen
        'I haven't seen [it].'

    c. Vous   avez pris [e] dans votre tête = Vous   les   avez
        you:PL have taken   in   your head = you:PL them have
        prises   (Emma II)
        take:FEM
        'You have taken [them] in your head.'

(20) Type Three: attachment to past participle

    a. Vous   avez la   pris = Vous   l'avez prise   (Emma II)
        you:PL have it:FEM taken = you:PL it have taken:FEM
        'You have taken it.'

    b. Il a   les   fini   = Il les   a   finies   (Emma III)
        he has them finished = he them has finished:FEM.PL
        'He has finished them.'

    c. Elles   ont le   quitté = Elles   l' ont
        they:FEM have it:MASC left   = they:FEM it have
        quitté   (Emma III)
        left
        'They (f.) left it.'

(21) Type Four: target production

    a. Je l'ai   ruiné   (Chloe III)
        I it have ruined
        'I have ruined it.'

    b. Je vais le   monter   (Emma III)
        I go it:MASC to climb
        'I'm going to climb it.'

    c. Nous nous   réveillons à 2h   (Emma III)
        we   ourselves wake up at 2 a.m.
        'We get up at 2 a.m.'

The breakdown of the total is as follows: six tokens (23%) of in situ pronouns; nine tokens (35%) of null pronoun; four tokens (15%) of a clitic attached to a past participle; and seven tokens (27%) of target clitic usage, attachment of

the pronoun to the appropriate verb.[14] Table 5 provides a display of each error type for each interview.

As the accuracy rate indicates, Emma and Chloe are not performing randomly since their accuracy is well below 50% for all but Chloe's final interview. When we compare their production accuracy to the GJ task accuracy (Table 6), it is clear that their production is far less accurate than their competence to make grammaticality judgements. This competence/performance gap is a further indication that the learners know more than they are able to realize in production, particularly because they make a limited number of mistakes in both GJ and production. These errors also strongly suggest that the learners have systematic knowledge, that is, an interlanguage grammar with rules of its own.

The data is too scanty to draw inferences concerning development, although the two subjects show an increase in accuracy over the six-month period. The higher accuracy level of Chloe by Interview III might be attributed to her more enriched target language input. Emma, for her part, produces several tokens of attachment to past participle, while Chloe produces none. The reasons for the differences could be either primary linguistic input or individual differences between the two subjects. There is not a clear chronological

Table 5. Pronoun use, Emma and Chloe

	In situ	Null pronoun	PP attach.	Target clitic	Accuracy
Emma I	*1	0	0	0	0/1 = 0%
Emma II	*2	*3	*1	2	2/8 = 25%
Emma III	0	*2	*3	2	2/7 = 29%
Chloe I	0	0	0	0	NA
Chloe II	*2	*3	0	0	0/5 = 0%
Chloe III	1	*1	0	3	4/5 = 80%
Total	6	9	4	7	

* = ungrammatical

Table 6. Accuracy of pronoun use and GJ of pronouns

	Pronoun use	GJ
Emma I	0%	78%
Emma II	25%	66%
Emma III	29%	78%
Chloe I	NA	66%
Chloe II	0%	56%
Chloe III	80%	66%

distinction between the types – for example in the second interview Emma produces tokens of all four types – as Table 5 shows. From a purely quantitative perspective, there isn't a lot of data, as one reviewer notes. What is significant to my view is that the Emma/Chloe errors are exactly those attested in other acquisition studies. I turn now to a reconsideration of the theoretical issues of L2A.

3.   Discussion

In contrast to French, the L1 English grammar has in situ pronouns that raise covertly to check case and features at LF. Anglophone learners then need to acquire the morphological features of French clitics (which span morphology, syntax and phonology), and need to adjust their object agreement parameter to include object cliticization to the inflected verb in French. The fact that French has a mixed system, with in situ object for lexical DPs, may increase the complexity of the acquisition task. I will first contrast the two access approaches, FT/FA and Structure Building, and then I will examine the question of UG availability.

3.1 Structure Building vs. FT/FA

In this section I examine the two access approaches in terms of the empirical data, for which I will argue that FT/FA is better able to account. The two hypotheses agree that the L2 learner has access to aspects of UG and that the learner passes through stages, but they disagree on the initial state, the relationship of syntax to morphology, and the nature of the acquisition process. I will adopt the four types and sequence of stages proposed and documented by Towell and Hawkins, Granfeldt and Schlyter.[15]

The question of initial state is a moot one in the present case, since both learners are already intermediate, as is evidenced by their use of TP and CP level syntactic phenomena (Herschensohn 2001). A reviewer agrees to this assessment, noting that their use of subject clitics is another indication of higher functional projections. Since Emma and Chloe are beyond the initial state, I cannot compare FT/FA and Structure Building in those terms. I adapt my comparison of the two hypotheses with the following assumptions. L1 transfer of functional as well as lexical features is in principle a factor in the initial state for FT/FA, but it does not end in post-initial states and may persist for some time (Herschensohn 2000). Recall that the Structure Building approach

assumes that L1 transfer relates to lexical, not functional categories. The apparent L1 transfer of strong in situ pronouns relates not to a lexical category N, but to functional features of D and Agr. This persistent English L1 error that Emma and Chloe make cannot be attributed to the lexical transfer posited by Structure Building, but is in keeping with functional transfer posited by FT/FA.

FT/FA assumes that the L2 learner starts with full transfer, including morphological and syntactic predispositions. While a good amount of research has been devoted to the initial state, it is virtually impossible to draw a line between the absolute initial state and the immediately post-initial state (Herschensohn 2000: 219–220). A restructuring may occur at an early stage, modifying to some degree the L1 nature of the initial state or L1 transfer may persist for an indefinite time in the L2 grammar (forever in the case of fossilization). The assumption of a universal base obviates many of the differences between L1 and L2, in this case English and French, with respect to functional category inventory.

In the case under consideration, Full Transfer predicts that the anglophone L2 learner will transfer correctly the covert object checking for full DPs as in English, and will likewise assume that French pronouns are strong pronouns (not clitics) that follow the verb. She will have to learn the morphological characteristics which relate to the differences between clitics and full DPs in French. The grammar will be modified in this view as a function of mismatching between the input and the interlanguage. The syntax may develop at a different pace than the morphology, which will be subject to production difficulties and missing inflection. The interlanguage grammars may resemble neither the L1 nor L2, but should be UG possibilities.

On the other hand, Structure Building assumes that the L2 learner starts with a deficient grammar from both the morphological and syntactic perspective. The initial state has only lexical but no functional categories. In the case of clitics, a progressive structure building of functional categories should be as in (22).

(22)   VP $\rightarrow$ AgrOP $\rightarrow$ TP $\rightarrow$ AgrSP $\rightarrow$ CP

The acquisition of each higher functional projection should be dependent on mastery of the next lower functional category. The mastery of the syntax is directly linked in this view to the mastery of the morphology. The early incompleteness of clitic morphology might be taken as support for this approach.

Looking at the data from Emma and Chloe, an application of the Structure Building approach might attempt a VP account of Types One and Two, pre-

suming that all elements remain VP internal. These types require a truncation of projections to a VP, as sentences (23) from the corpus illustrate.

(23) Types One and Two in terms of minimal trees

    a. Type One 'I see her'

```
              VP
            /    \
         Spec     V'
          je     /   \
                V     DP
              vois   elle
```

    b. Type Two 'We looked at it.'

```
                 VP
               /     \
             VP       Adv
            /   \    seulement
         Spec    V'
         nous   /   \
               V     DP
           regarder  [e]
```
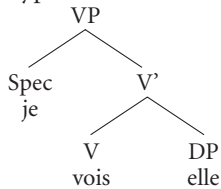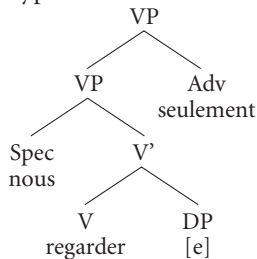
The proposal of the minimal trees outlined in (23) is only adequate for (23b) which has a default infinitive (no tense), but should be impossible for (23a) where the verb has tense, and for the examples that include auxiliary verbs such as (24).

(24) Types One and Two with auxiliaries

    a. J'ai   vu   elle
        I have seen her
        'I have seen her.'

    b. Je n'   ai   pas vu [e]
        I NEG have not seen
        'I haven't seen [it].'

The two sentences in (24) require higher functional projections for auxiliaries, negation and subject clitics. Similarly, while Type Three (e.g. *il a les fini*) might be considered VP cliticization, it still requires the projection of the auxiliary in a higher functional category, contradicting the assumption of "only lexical" projections. Emma and Chloe do appear to be beyond the initial state, so in that sense they should already have higher functional projections, but for Structure Building, in order to account for lack of cliticization one must assume non-projection of the object agreement node. Given the fact that Emma and Chloe

already give evidence of CP and TP projection in the first interview, we would not want to propose that they are at the initial VP stage. However, the Structure Building approach does not provide a reasoned explanation for post-structural addition of intermediate functional projections after structure has been built up to the CP level.

Finally, the developmental pattern of Emma and Chloe indicates a lack of connection between syntax and morphology mastery. Emma and Chloe accurately distinguish between strong and clitic pronouns and seem to have a correct conception of the morphological forms of the six persons. Their ability to distinguish phonologically between clitic and strong pronouns is evidenced in all interviews where they accurately attach clitics phonologically to the verb (Herschensohn 2001) and make free standing pronouns strong. They have acquired the six persons and use the distinction between nominative and oblique correctly. Their GJ tasks indicate that they know what the most frequent objective pronominal forms (e.g. non-reflexive direct objects) are supposed to be, although their production accuracy lags far behind their grammaticality judgement. In reviewing the characteristics outlined in the first section, Emma and Chloe have mastered phi features, morphological realization and levels of deficiency from a productive standpoint. They have not mastered clitic placement and the binding of the overt clitic agreement with the null object position productively, although they are accurate in their GJs. Their lack of accuracy in producing clitics suggests that they have the morphological forms and the correct syntax, they are just having a lot of difficulty getting all factors to work together at once. Recall that by the third interview their verbal morphology accuracy is at about 90%, a fact that shows that they do not master all morphological categories at the same rate. The difference between subject and object clitics also indicates that the development of the morphology and the syntax seem to proceed separately, since they master the subjects well before the objects.

The FT/FA approach, as I interpret it to include Lardiere (1998) and Herschensohn (2000), predicts L1 transfer, access to L2 functional categories (which are the same as L1 in terms of the universal base), defective morphology (missing inflection), and differential mastery of different morpholexical constructions.[16] Assuming initial transfer, the Type One in situ pronouns are all of the strong variety. The L1 placement and strength confirm the transfer proposal of FT/FA. No strong forms are attested in clitic position in the Emma-Chloe corpus, and their clitics are always phonologically accurate (both object and subject clitics). Emma and Chloe make appropriate obligatory liaison and elision between clitics and following initial vowel.[17] Even though

Emma and Chloe are beyond the initial state, the use of strong pronouns supports FT/FA over Structure Building since the former assumes transfer of L1 functional features and settings whereas the latter only posits transfer of lexical category features and settings. Pronouns, as clearly grammatical (as opposed to contentful lexical) items, involve the functional categories of D and Agr.[18]

For Types Two and Three errors, FT/FA posits an AgrO node that hosts the clitic, which is in Type Two null. The missing inflection hypothesis attributes the null pronoun to production deficiencies on the part of the L2 learner. For Type Three, attachment of the object clitic to the past participle can be interpreted to mean that the interlanguage grammar has correctly generalized the crucial features of the clitics (phi features, ability to license *pro*, phonological dependence) for main verbs, but has not yet extended the analysis to all morpholexical constructions (viz. auxiliaries). For Type Three, the clitic attaches to the past participle in AgrO while the auxiliary raises to T and AgrS. Type Four can be analyzed by the standard treatment. FT/FA can account theoretically for each of the pronominal types, whereas the Structure Building approach does not explain the transition from one type to the next or the final mastery of L2 clitics. FT/FA posits intermediate types that follow directly from the account of French clitics independently motivated in the first section of this article.

The development of object clitics appears to be linked to the specific morpho-lexicon of the target language, with different morphological classes mastered at different periods. Emma and Chloe acquire present tense verb morphology before past, and they are consistently more accurate in producing verb morphology than object clitics. They master subject clitics completely from Interview I, but have not mastered object clitics even by Interview III.[19] Table 2 shows that FT/FA predicts L1 transfer, full availability of all functional categories (with no guarantee that they are used), separate development of syntax and morphology, and differential mastery of different morpholexical constructions (e.g. subject clitic pronouns before object clitics, main verbs before auxiliaries). FT/FA is preferable to Structure Building to account for French pronoun acquisition by anglophone L2 learners, as a review of the three points indicates. I now turn to the question of UG availability.

3.2 Availability of UG

Superficially, the deviant forms produced despite the wealth of both positive input and instruction, might appear to support No Access, since L2 learners seem to be resistant to primary data and tutoring. Emma and Chloe fail to produce correct forms consistently, even by the last interview. However, the interlan-

guage errors and process of clitic development seen in the range of L2 studies examined cannot be explained by the No Access approach. I will argue that only FT/FA adequately describes L1 transfer of functional features, defective morphology, availability of L2 functional category values, and process of acquisition. Recall that the access approaches, while maintaining the availability of UG to the L2 learner, also assume the necessity of primary linguistic data (input), cognitive strategies and instructional bootstrapping (Herschensohn 2000).

The No Access approach assumes that all four types produced by Emma, Chloe and other learners are manifestations of utterances reworked from input and aided by cognitive strategies. Under this hypothesis, there is no hierarchical structure of any of the four types, there is no systematicity to the acquisition procedure and wild clitic distributions should be possible. Final state mastery of the correct version must be attributed to a realization on the part of the speaker that her production matches that of target language speakers, so she consistently continues to produce sentence types that match native strings.

The L2 clitic data is, however, problematic for this approach. First, it is not the case that the process of acquisition is random. Quite to the contrary, my evidence and all other studies demonstrate the same range of mistakes, indicating a systematicity to the L2 learner's pattern with this phenomenon. The mistakes produced are not randomly wild, but are UG possibilities that can be explained in terms of a hierarchy using the standard syntactic analyses of pronouns – strong, null and clitic forms of pronouns. Not only are the mistaken forms quite limited in number, but they are also attested in L1A and in mature grammars in other languages of the world. Portuguese and Chinese for example allow null objects in the mature grammar. If wild mistakes were permitted, one could presumably expect any form anywhere, an impossible hypothesis to test. A not implausible possibility might be the use of wrong-case pronouns (e.g. *je* for *me*), for example nominative clitics for objective. There are no such examples. Evidence of wild pronouns would provide support for the No Access position, but such data is not seen in the corpus.

Furthermore, the output of the L2 learners cannot be explained in terms of the input, since both the prevalent stimulus and the enrichment of pedagogical support furnish only the correct forms. Types Two (null pronoun) and Three (past participle clitic) are totally non-existent in the input and don't exist in the L1 either. The IL mistakes that aren't of the transfer variety appear to be systematic and limited, yet could not have come from the input. The systematicity appears much more linguistic that semantic-pragmatic, since it's difficult to construct a justification for Types Two and Three based on cognitive learning strategies and pragmatic conditioning. For example, a plausible pragmatic

strategy might be left dislocation of the object pronoun to bring attention to the object (e.g. *moi, il voit* 'me he sees'). None of the data reports any such alternative.

A reviewer provides an alternative no-access cognitive analysis: "(a) target-like placement of clitics can be explained by mimicking what is heard in the input, (b) object omission can be explained by incomplete learning of object clitics, (c) clitic attachment to the past participle can be explained by mimicking a V-cl-V pattern in the input (cf. Schlyter 1997), (d) in-situ clitics can be explained by L1 influence." Primary input is by any theory necessary to acquisition, but "mimicking" does not provide an adequate analysis of what is done with the input. Given the premises of no-access, we must assume that the term "mimic" means repetition of a string of phones that have no morphological features and no syntactic role. If that were the case, then it is difficult to understand why certain grammatical phenomena are more resistant than others and are late acquired, for example, object clitics as opposed to subject clitics. "Incomplete learning of object clitics" could presumably result in any kind of error, for example a dislocated pronoun, very common in spoken French input. This no-access proposal does not provide a reasoned explanation of why null objects, but not other error types (e.g. dislocated pronoun, case mistake), result from "incomplete learning". Furthermore, the error types that are discussed here are found repeatedly in both L1 and L2 development data; this fact is not addressed by this no-access proposal. As for the Schlyter account, I support it (see discussion in 2.1), but once again I take issue with the notion of "mimicking." Moreover, the very proposal of the "V-cl-V" pattern presupposes morphological features and syntactic hierarchy, two characteristics eschewed by Meisel.[20] Finally, in situ clitics have been argued to result from transfer, but specifically transfer of functional category features and values. The very systematic object clitic errors that have been observed cannot be explained by an imitation plus incomplete learning account that completely denies an interlanguage grammar.

In contrast, FT/FA predicts transfer as in Type One, defective morphology as in Type Two, and restricted morpholexical constructions as in Type Three. Assuming initial transfer, the French production in Type One continues to use the English in situ pronoun pattern with features checked at LF as in *J'ai vu* [$_{DP}$ *elle*] 'I saw her.' The attribution of this word order to L1 transfer is corroborated by the fact that French L2 learners who have clitics in the L1 (e.g. Spanish) are more adept at acquiring clitic as opposed to in situ order (Duffield et al. 1997; Schlyter 1997).[21] For Types Two and Three (25) and (26), FT/FA

posits an AgrO node that hosts the clitic (null in (25), overt in (26)) licensing *pro*.

(25) Je n'   ai   pas [$_{Agro}$ e]$_i$ vu [pro]$_i$ = Je ne   l' ai   pas vu
      I NEG have not   seen   = I NEG it have not seen
      'I haven't seen [it].'

(26) Il a [$_{Agro}$ les]$_i$ fini [pro]$_i$ = Il les   a   finies
      he has   them finished   = he them has finished
      'He has finished them.'

The null clitic (25) is an example of missing inflection due to production deficiencies on the part of the L2 learner and attested in numerous L2 studies (Lardiere 1998; Prévost & White 2000a, b). Examples of defective morphology may constitute conscious or unconscious performance errors or systematic mistakes in the interlanguage; they are not random since they are well documented and limited in type. The mistake in (26) shows a mastery of phi features, cliticization and licensing of a null object position (different from L1), characteristics that point to a grammatical account, not a random pragmatic account. The final type (27) resembles that of the mature French grammar described in the first section.

(27) Je [l]$_i$' ai [$_{Agro}$ t$_i$] ruiné [pro]$_i$
      I it   have   ruined
      'I've ruined it.'

Theoretically the No Access approach cannot explain the transition from one type to the next or the final mastery of L2 clitics, whereas FT/FA posits UG constrained intermediate types that lead directly to a standard account of French clitics. If the interlanguage constitutes a grammar (i.e. the universal base but with a developing French lexicon), the intermediate types should not be random possibilities, but options predetermined by the functional projections. According to this view, the IL grammar contains functional categories to produce the deviant forms that are neither L1 nor L2 correct. It is not an a priori ersatz-grammar.

    The No Access approach cannot explain the interlanguage errors and process of clitic development, since the output differs systematically from the input. FT/FA, on the other hand, describes L1 transfer, defective morphology, and availability of L2 functional category values. Furthermore, it predicts UG constrained interlanguage that may differ from the input, as Table 3 illustrates.

It cannot be the superficial wealth of the stimulus that permits acquisition (only indirectly effected by input). Rather, it is an internal and abstract ability, UG, that must constrain L2A.

4.   Conclusion

The clear indication of systematicity of acquisition that goes beyond the input given, and the fact that non L1/L2 interlanguage forms are UG possibilities argue for the influence of UG in L2 acquisition (against No Access). As for Structure Building and FT/FA, the persistence of L1 syntax in the form of postverbal strong pronouns in my data favors Full Transfer. The early availability of both accurate and inaccurate (but UG possible) functional morphology and syntax also favors FT/FA over Structure Building. The intermediate stages of clitic production indicate neither a direct link between morphological knowledge and syntactic production nor a systematic building of functional categories from VP to CP. Quite to the contrary, the higher functional categories of tense and object agreement are evident much earlier than the consistent mastery of object clitic placement. Finally, the stages of development are linked to specific morpholexical constructions, not to progressively higher functional categories. Subject clitics associated with the higher AgrS node are acquired much earlier than object clitics associated with AgrO, an order that can be explained both by L1 transfer (subject order) and parameter shifting of the Agr nodes to accommodate the cliticization of both subjects and objects in L2 French. The stages of acquisition shown by types Two and Three demonstrate missing inflection and learning of specific morpholexical constructions. FT/FA is the only approach that accounts for the data while providing a reasoned explanation for it. The L2 learners in my study, Emma and Chloe, are able to master the clitic and strong pronoun distribution of French even though the English L1 pronominal system operates quite differently, an indication that they are able to acquire new settings for functional categories as well as new syntactic and morphological realizations of anaphoric elements. The longitudinal data support FT/FA over Structure Building, while furnishing evidence of UG access in L2A.

Notes

helpful discussions of this topic. I also wish to thank the audiences of the University of Washington, the University of British Columbia, the Linguistic Symposium on Romance Languages (1999) and the Tokyo Conference on Psycholinguistics (2001) for useful comments on earlier versions of this paper. Two reviewers and the volume editors generously provided close and incisive readings that led to what I hope are substantial clarifications. All mistakes remain my own.

2. The authors point out that the stressed enclitic pronouns of French need to be considered weak. I will ignore weak pronouns in French in this article. I assume subject pronouns to be clitics and heads (cf. discussion in Rizzi 1986b; Jakubowicz et al. 1996; Cardinaletti & Starke 1999).

3. Schwartz (1999) discusses English clitic pronouns which serve as "transfer models" for French clitics in the corpus analyzed by White (1996). See Herschensohn (2000: 168–171) for discussion.

4. Alternative nomenclature and analyses have been proposed (see, for example, Chomsky 2000; Emonds 1999 for discussion), but do not affect the theoretical questions addressed in my study.

5. Cf. Auger (1995), Bonet (1995), Sportiche (1996), Herschensohn (1996) for discussions of morphology and of two object agreement nodes (accusative and dative) to accommodate case checking for direct and indirect objects. See Cardinaletti and Starke (1999) and Kato (1999) for further discussions of pronoun types cross-linguistically.

6. Duffield et al. (1997) present experimental data supporting White's (1996) proposal for adult L2 learners.

7. Bley-Vroman (1990) is often cited as a No-Access proponent (e.g. Mitchell & Myles 1998: 65), but it's unclear that he assumes no functional categories in L2 grammars, as a reviewer points out.

8. A preliminary presentation of some of this data is made in Herschensohn (2000: 167–176).

9. A reviewer suggests discussing the importance of this difference between subject and object clitics; see Hamann et al. for such a discussion. Subjects (obligatory) are far more frequent in the input than objects (not obligatory). Subjects serve as nominative case markers in French and so can be perceived as morpho-syntactically very salient.

10. Roger Hawkins (p.c.) has kindly shared his unpublished data showing this pattern by anglophone French L2 learners both in production and in grammaticality judgement tasks.

11. Clark (1985) anecdotally describes L1ers' errors with clitics as those of clitic order, substitution of strong pronouns as subjects, and generalization of postverbal clitics to negative imperatives.

12. VanPatten's (1987) study of clitic acquisition by two anglophone learners of Spanish also contrasts instructed vs. naturalistic learning. His two subjects are, however, quite different in many respects (age, amount of exposure, background, etc.). The data he reports is not relevant to the present study.

13. Recall that the sentences were not identical from interview to interview, but represent the same structural problem.

14. Among the in situ count are Chloe's (III) correct "je reste avec eux" and Emma's (II) incorrect "elle veut pour me rester". Emma's sentence is syntactically wrong because *vouloir* is not an ECM verb in French. Phonologically, however, it exemplifies cliticization of the pronoun to the infinitive.

15. My limited data does not contradict this order and appears to conform to it although the types overlap in my corpus.

16. A reviewer questions whether FT/FA really predicts defective morphology. It is conceivable that a learner could acquire a given morphological phenomenon perfectly on the first try, but that seems highly unlikely. The important contrast between FT/FA and Structure Building is that the former assumes a disconnection between syntax and morphology, whereas the latter assumes a co-dependence between the two.

17. Other corpora (e.g. Selinker et al. 1975; Schlyter 1997) do attest postverbal use of clitic forms, but there is no indication of the actual phonetic production, so it's impossible to comment on these data. Granfeldt and Schlyter give convincing evidence that their subjects initially treat subjects as XPs, not heads/clitics.

18. A possible interpretation that Structure Building could make of the L1 pronoun transfer from English would be to assume that the pronouns were lexicalized as proper nouns and then transferred in situ as such.

19. The paucity of data and the subjects' mixing of various clitic types even within a single interview make it impossible to distinguish stages such as Hawkins' or Schlyter's for the object clitics. One has the sense that a greater data base would corroborate other findings on longitudinal development.

20. See White (1991) for a related discussion of "processing strategies".

21. An alternative interpretation would be that L2 learners may be generalizing the DP object position to the pronoun regardless of the L1. Thanks to the audience of UBC for this observation.

Appendix 1: Tokens of object pronouns/clitics, Emma and Chloe

Emma I
J'ai vu elle en septembre prochain. 'I saw her in next September.'

Chloe II
Il a donné à moi… 'He gave to me…'

Il a demandé à moi… 'He asked me…'

T'as placé tes lunettes sur la table. T'as, T'as ré-, réplacé [e] *dans la tête, dans ta tête.*
'You placed your glasses on the table. You have re-, replaced [e] in the head.'

T'as placé [*e*] *sur le lit.* 'You placed [e] on the bed.'
T'as placé [*e*] *dans un sac de quelque sorte.* 'You placed [e] in a bag of some sort.'

Emma II

Oui, je l'aime beaucoup. 'Yes, I like it a lot.'

Ma petit soeur elle ne veut pas pour … elle veut pour me rester ici.
'My little sister she doesn't want for … she wants for me to stay here.'

[*plantes ramassées?*] *Nous regarder* [*e*] *seulement.*
'[plants collected?] We look at [e] only.'

[*études de biologie marine?*] *Je veux les continuer.*
'[marine biology studies?] I want to continue them.'

Je ne n'ai pas vu [*e*] *"yet".* 'I haven't seen [e] yet.'

Elle a dit à moi que sa professeuresse est une femme qui est très grande…
'She told me that her professor is a woman who is very tall…'

Vous avez la pris. 'You have taken it.'
Vous avez pris [*e*] *dans votre tête.* 'You have taken it in your head.'

Chloe III

Je l'ai ruiné mon maillot de bain. 'I ruined it my swimsuit.'

Et je reste avec eux pour une semaine. 'And I stay with them for a week.'

Et après ma mère me rejoindre. 'And afterward my mother rejoin me.'

Tu as placé [*e*] *par terre.* 'You put [e] on the ground.'

On ne me dit rien. 'One tells me nothing.'

Emma III

Mais il va quitter [*e*] *bientôt.* 'He is going to leave [e] soon.'

Nous nous réveillons à deux heures. 'We get up at 2 a.m.'

Je ne sais pas si je vais le monter, mais je souhaite [*e*].
'I don't know if I am going to climb it, but I want [e].'

Elles ont le quitté aussi. 'They have left it also.'

[*ses études?*] *Il a les fini.* '[his studies?] He has finished them.'

Vous avez me donné le cassette. 'You have given me the cassette.'

Appendix 2: Grammaticality judgement sentences with pronouns/clitics

1. *La télévision? Nous la regardons tous les jours.*
    'The television? We watch it every day.'

2. **Marie et Paul, je la et le vois.* (=*Je les vois, elle et lui.*)
    'Marie and Paul, I see her and him.'

3. *Eve-Anne s'est brossé les dents.*
    'Eve-Anne brushed her teeth.'

4. **Marie? Est-ce que vous avez vu la?* (=*Vous l'avez vue?*)
    'Marie? Have you seen her?'

5. *Le livre de cuisine? Elle le lit.*
    'The cookbook? She's reading it.'

6. **Marc a lavé se avec du savon de Marseille.* (= *Marc s'est lavé.*)
    'Marc washed himself with soap from Marseille.'

7. *Est-ce que tu leur as parlé?*
    'Did you speak to them?'

8. **Ils deux ont quitté Paris à midi.* (= *Tous les deux, ils ont quitté Paris.*)
    'The two of them left Paris.'

9. **Cette visite à la bibliothèque a le vexé énormément.* (= *La visite l'a vexé.*)
    'This visit to the library troubled him tremendously.'

*indicates ungrammaticality; the correct sentence follows.

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The acquisition of the French
DP in a bilingual context

Aafke Hulk

1. Introduction

Consider the following short dialogue between Anouk, a Dutch/French bilingual girl, and her francophone mother:

(1) Mother: qu'est-ce que tu   vas manger?
              what   you go   eat
      Anouk: pain   Anouk 2;3.13
             'bread'

In answering her mother's question, Anouk uses a bare noun, a noun without determiner. This is possible in Dutch, but not in French, where the noun has to be preceded by a determiner. Monolingual French children also leave out the determiner in the early stages of acquisition (Clark 1986). Since Abney (1987), most linguists adopt the hypothesis that Noun Phrases are dominated by Functional Projections in the nominal domain, just as Verb Phrases are dominated by Functional Projections in the clausal domain. This analysis is known as the DP-hypothesis, with the D(eterminer) occupying the head position and the NP being in complement position. It has furthermore been claimed that in between DP and NP there are other functional projections, such as Num(ber)P, Q(uantifier)P, which we will not discuss in detail here (cf. Bernstein 1993; Valois 1991 among others; see also Hawkins, Franceschina, Paradis, & Crago, this volume). The following tree illustrates the internal structure of the DP.

(2)

```
                    DP
              ┌──────┴──────┐
            Spec           D'
                      ┌─────┴─────┐
                      D           FP
                            ┌──────┴──────┐
                          Spec           F'
                                   ┌──────┴──────┐
                                   F            NP
                              ┌────┴────┐
                             le        pain
```
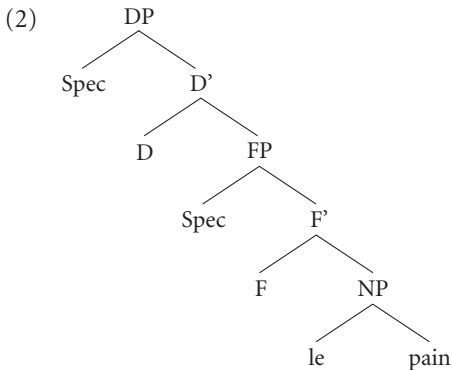
The N-head moves to a higher functional head to check its Num or Q-features. Adjectives are also generated in the functional projections between DP and NP. In Romance languages such as French, where adjectives usually follow nouns, the N-A order arises through movement of the N-head across the adjective to a higher functional projection. At LF, every N has to move to D in order to get its referential value.

It is generally assumed that DPs can be arguments, but NPs cannot. However, languages vary widely in the possibility of omitting an overt determiner (cf. Longobardi 2001 for an overview). French is one of the most restrictive languages in that respect. In French, NPs without determiners are found only as predicates (*je suis professeur*), idioms, exclamations, vocatives and as complements of certain prepositions (*avec plaisir, sans problème*). Dutch, on the contrary, allows a much wider range of bare nouns: in Dutch we find bare mass and bare plural argument-nouns which may be interpreted either existentially or generically. It is usually assumed that bare noun-arguments (in adult language) are DPs with a null D, which may bear certain features and have to be licensed.

Under the hypothesis that nominal phrases are embedded in a DP, their acquisition crucially involves the acquisition of one (or more) functional projection(s). Since it is well known from the literature that children in the early stages of acquisition omit determiners and mainly produce bare nouns, the question arises whether these functional projections are nevertheless present in the child's early grammar. This question forms part of the more general problem concerning the availability of UG as a whole from the start and was at the heart of the debate between adherents of the (strong) Continuity Approach and those of the Maturation Hypothesis in the 1990s. Our main goal, however, is not to answer this more general question. In this chapter, we will be examining the emergence and development of determiners and the internal

structure of the nominal phrase in French longitudinal data of children who are raised bilingually from birth and who acquire French and a Germanic language. We assume, following the general line of studies in this domain, that these bilingual children separate their two languages from very early on and that their acquisition pattern qualifies as *first* language acquisition. This does not exclude, however, the possibility of one language influencing the other, i.e. cross-linguistic influence. In my work with Müller (Hulk & Müller 2000; Müller & Hulk 2001) we showed that, for the phenomena studied, such influence resulted in a quantitative rather than a qualitative difference with respect to monolingual acquisition. Here, we focus on one of the two languages acquired by the bilingual children, i.e. French, and compare the development of their French not with that of their Germanic language, but with that of monolingual French children. We will be addressing the following questions:

1. What do the bilingual French data tell us about the development of functional projection(s) in the nominal domain? More specifically: What is the order of emergence and the frequency of use for the different determiners? What about gender and number errors?
2. Is there a link between the development of functional projections in the nominal domain and in the clausal domain, as has been claimed by some linguists (Hyams 1996; Schaeffer 1997)?
3. In what way does the acquisition of functional projections in the nominal domain in the French of bilingual children resemble or differ from the acquisition of monolingual French children? Do we find any signs of cross-linguistic influence?

After a brief methodological section, each of these questions will be treated in a separate section, followed by a conclusion that summarizes the main findings and relates these to the general theme of the book.

2. Methodology

Most of the bilingual data we study in this chapter are produced by Anouk, a bilingual Dutch/French girl. Anouk has been living in Amsterdam from birth and is being brought up bilingually by her French mother who speaks only French to her and her Dutch father, who speaks only Dutch to her, following the strategy of "une personne, une langue". Anouk's mother understands Dutch and speaks it reasonably well. Anouk's father understands French but speaks it poorly. From about 6 months of age onwards Anouk attended a Dutch

kindergarten for three days a week. The corpus was collected by making audio recordings of both languages. The recordings were made by the mother for French, and by the father – and a native Dutch student – for Dutch, at approximately three week intervals, starting at age 2;3.13, when Anouk first produced intelligible utterances of more that one word, until the age of 3;10.7.[1] All data were transcribed by a native Dutch student of French in the CHAT-format. No phonetic transcription was made. The MLU is counted on the basis of the number of words, not morphemes. We distinguished 4 stages in Anouk's data, corresponding to a mean MLU of respectively 2 (age 2;3.13–2;7.5), 3 (age 2;7.28–3;1.4), 4.5 (age 3;3.17–3;4.28) and 5 (age 3;6.25–3;10.7).

Where possible we will complement Anouk's data with data from other French/Germanic bilingual children found in the literature, in particular from Ivar and from Caroline, two German/French bilingual children from the Hamburg-DUFDE project studied in Müller (1994, 1990) and Koehn (1994), from three Swedish/French bilingual children (Mimi, Anne and Jean) studied in Granfeldt (2000a, b),[2] and from Yann and Mathieu, two English/French bilingual children studied in Paradis and Genesee (1997).

In counting the production of nouns and determiners, the following decisions were made. We excluded proper names, and nouns such as *papa, mama(n)* unless preceded by a determiner, incomprehensible utterances of the type *le xxx*, and complete repetitions within the same utterance of the child. Repetitions of adult utterances by the child, however, were counted.[3] We counted as determiners not only articles, but also possessives, numerals, quantifiers and demonstratives. Unfortunately, the transcriptions of Anouk's data did not allow us to consider the production of so-called proto-articles (cf. Bassano 1998; Bottari et al. 1993/1994): schwa-like sounds were not transcribed systematically and the audio-material has been lost.

We examined the presence of determiners versus their absence, and did not distinguish between correct and incorrect form or choice of determiner.

3.   The development of lexical determiners

3.1   Frequency

We will start by considering the frequency of use of lexical determiners. The first occurrence of a determiner in Anouk's data is found in the first file:

(3) des   bateaux   Anouk 2;3.13
     DET.PLUR:INDEF boats

However, this is the beginning of a song. Therefore it is plausible to assume that this does not yet represent the productive use of a plural indefinite determiner. The next occurrence of a determiner is found in the second file:

(4) dans l'eau   Anouk 2;4.9
     'in the water'

This utterance constitutes an answer to the question *on a nagé où Anouk?* 'we swam where?'. Here again it is not entirely clear whether Anouk is productively uttering an article when she says *l'eau*. It is well known from the literature on monolingual French children that they seem to consider the whole expression (*l'eau)* as an unanalysed form. From the third file onwards, Anouk produces clear cases of determiners, although most of her nouns are still bare. Figure 1 represents the emergence of lexical determiners and the disappearance of bare nouns in Anouk's data.

   The percentage of bare NPs decreases gradually, from 90% to 50% in the first stage (mean MLU 2) and from 53% to 16% in the second stage (mean MLU 3). There is a rather sharp drop between age 2;8.22 and 2;11.27, when
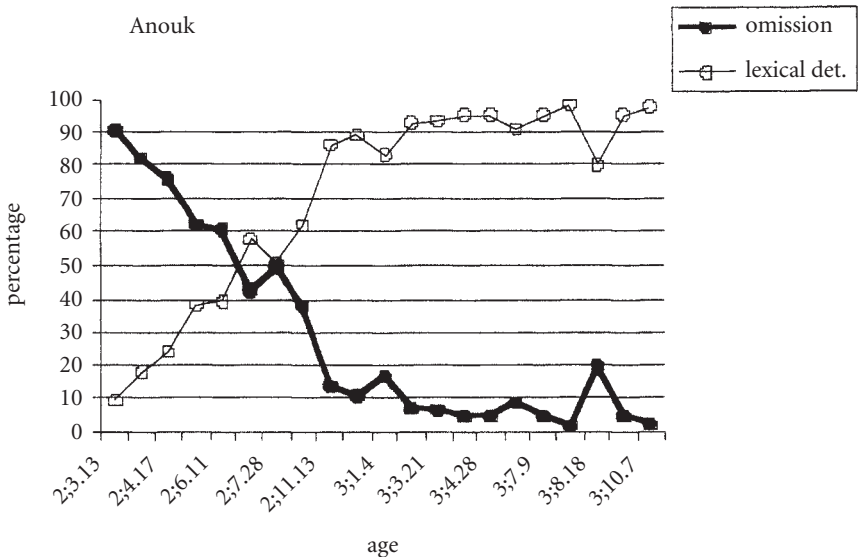
Figure 1. Production and omission of determiners in Anouk

the percentage of bare nouns goes from 48.6% to 12.3%. At the same time her MLU exceeds 3. It is, however, only at age 3;3.17 (when her MLU > 3.5) that 90% of the nouns appear with a determiner and that we can conclude, following Brown (1973), that the DP is really acquired.

Globally-speaking, the emergence of lexical determiners from their first appearance (age 2;4.17) to their 90% target-like occurrence (age 3;3.17) takes about 11 months in Anouk's spontaneous production. This is comparable to what has been found by Granfeldt (2000a) for the bilingual French/Swedish children Jean and Anne:[4] in Anne the number of bare nouns also decreases gradually from age 2;3 (85%) to age 2;11 (33%), then there is a sharp drop to 8% at age 3;1 (MLU in the whole period between 1.4 and 2.9). In other words, it takes Anne about 10 months to become more or less target-like. For Jean, there is an increase between the first two files (age 1;10 and 2;0) from 64% to 85% of bare nouns. After that, the decrease of bare nouns is gradual just as in the other children, with a sharp drop between age 2;6 (34%) and 2;9 (17%). The 90% level is only reached at around age 3;7 for Jean. The whole period from emergence to almost target-like usage takes more than 12 months (MLU from 1.3 to 3.5). Table 1 gives an overview of the different children.

Table 1. Frequency of lexical determiners

	First appearance	50%	90%	Interval
Anouk	2;4.17	2;7.28	3;3.17	11 months
Anne	before 2;3	between 2;3 and 2;6	3;7	over 12 months
Jean	around 1;10	NA	around 3;7	over 12 months

There are no percentages for the frequency of lexical determiners available for the other bilingual children in the literature.

3.2 Order of appearance

We now take a closer look at the emergence of lexical determiners and examine which determiners emerge when and in which order. The first determiners that appear are masculine singular articles, in all the bilingual children considered.[5] In Anouk's data, the definite and indefinite article both appear for the first time at age 2;4.17 (MLU 2).[6] Here are some examples:

   (5)   le coteau
         'the knife'

(6)   un petit bout
      'a small part'ar

At age 2;4.23, we find the first feminine determiner *une* in Anouk:

(7)   une tarte (=carte)
      'a card'

We also find in this file four occurrences with numerals (singular + plural) which are used correctly:

(8)   une main, deux mains
      'one hand, two   hands'

(9)   nee, une, deux joues
      'no, one, two   cheeks'

At age 2;5.20 (MLU 2.5), we find six occurrences with definite determiners, partly inside a PP, as illustrated in the following examples:

(10) au cheval
      'to the horse'

(11) sur le   cheval
      'on the horse'

(12) dans la   bouette
      'in   the wheelbarrowe'

The question arises about what the status is of *au,* which in adult language is the spell out of the incorporation of the definite masculine article *le* into the preposition *à*. We do not yet find the preposition *à* with other determiners, but we do find the definite article *le* with the same noun, preceded by another preposition, in (11).

   In this file we also find the first plural definite article *les* and the plural indefinite/partitive *des*:

(13) les   feuilles
      'the leaves'

(14) des   cérises
      DET.INDEF:PLUR cherries

In the last file of the first stage, at age 2;7.5, quantificational determiners other than numerals appear for the first time, as illustrated in the following examples:

(15)   quelques courses
       'some errands'

(16)   beaucoup pommes de terre[7]
       'many potatoes'

(17)   beaucoup crayons
       'many pencils'

In the second period under consideration, when Anouk is between age 2;7.18 and 3;1.4 (mean MLU 3), other determiners emerge and develop: the first (masculine, singular) demonstrative occurs at age 2;7.28:

(18)   pas ce verre
       'not this glass'

The first feminine demonstrative is found at age 2;11.13:

(19)   cette itoire
       'this story'

Possessives emerge from age 2;8.22 onwards:

(20)   dans ta bouche   Anouk 2;8.22
       'in your mouth'

(21)   ma langue   Anouk 2;11.13
       'my tongue'

(22)   mes fleurs   Anouk 3;1.4
       'my flowers'

In the last file of the second period (age 3;1.4) we find the first interrogative determiner, albeit in an incorrect form (*laquelle* instead of *quel*):

(23)   laquelle supermarché
       'which supermarket'

Paradis and Genesee (1997) found no examples of plural determiners in Yann, one of the bilingual children they studied, between age 1;11 and 3;0 (MLU 1.4–1.96). They took this to imply that Yann's DP did not include number distinctions at this stage.[8] The other boy they studied, Mathieu, began to use both number and gender distinctions in the first period under examination (age 1;9, MLU 1.58). The bilingual German/French boy Ivar studied by Müller (1994) and by Koeler (1994) produced his first plural determiner *les* at age 2;5.21 and the first plural indefinite/partitive determiner *des* at age 2;8.15. He is reported to use demonstratives infrequently. For the bilingual French/Swedish children,

Granfeldt found that Jean produced indefinite (singular) articles before definite ones. The first plural definite article in Jean's data appeared at age 2;9 (MLU 3.5). For Anne and Mimi these plural determiners appeared a bit earlier. Granfeldt found that *des* emerges rather late in the children he studied, after quantificational and possessive determiners: in Anne's data, it was productive at age 3;3 (MLU 2.9), in Jean's data at age 2;11, (MLU 2.8), and in Mimi's data at age 2;6 (MLU 3.2). Granfeldt did not find any demonstratives in Jean and Anne's data, and only two in Mimi's.

To summarize, articles are the first determiners to be produced, singular ones before plural ones and masculine ones before feminine ones. Definite and indefinite articles appear more or less at the same time. Demonstratives and possessives are the last to appear. Four months after the first appearance of an article, Anouk had produced all types of determiners discussed here. The order of emergence is not very different from what we know about the emergence of determiners in monolingual French children (Clark 1986; van de Berg 2001; van der Velde 1999).

3.3 Number and gender errors

We did not find any number errors in Anouk's data.[9] As for gender errors, these were a bit more frequent, but do not seem to exceed 10%. She makes some gender errors with both indefinite and definite determiners:

(24) un   auto   Anouk 2;6.11
      a:MASC car:FEM

(25) une   maché
      a:FEM   market:MASC

(26) la   zebra   Anouk 2;11.27
      the:FEM zebra:MASC

Once she also seems to hesitate with respect to the gender of a definite article (age 2;6.11), as shown by the following example:

(27) aller au   crèche
      go   to+the:MASC   day care centre:FEM

(28) aller à la   crèche
      go   to the:FEM   day care centre:FEM

As for the bilingual Swedish/French children studied by Granfeldt (2000a), they are said to have gender marking correct in 90–96% of the cases. Gran-

feldt also mentions some cases where the children seem to hesitate with respect to gender:

(29) une   glace   – un   glace   Jean 1;10
      a:FEM ice-cream   a:MASC ice cream

(30) le   culotte – la   culotte   Anne 2;3
      the:MASC pants   the:FEM pants

According to Müller (1994), Ivar's first indefinite articles are elements serving a referential but not a grammatical function – they do not agree with N. She cites examples where Ivar uses *un* with a plural noun:

(31) un autre zenfant   Ivar 2;11.21
      a   other PLUR:child

Moreover Ivar uses *un* with feminine nouns (but not *une* with masculine ones).

(32) un   dame   Ivar 2;0.29
      a:MASC lady

Caroline, another bilingual German/French child, also makes more gender errors with indefinite determiners (36%) than with definite ones (17%) at MLU 2.6. Müller also notes that Ivar sometimes uses the plural determiner with a singular noun. She argues that both children, Ivar and Caroline, pass through a developmental stage where the relevance of the grammatical features "gender" and "number" has not been discovered yet. In Caroline this phase covers the age range from 1;5 to 1;9 for French; in Ivar this period lasts from 1;6 to 2;4. Since Müller assumes that these features are generated under the nominal functional category DET in adult grammar, she assumes that this category has not yet been developed at this stage of child grammar.

To summarize, gender errors seem to be more frequent than number errors, at least in Anouk. For the French/German bilingual children studied by Müller, indefinite determiners initially behave differently from definite determiners with respect to both gender and number. The exact role of the acquisition of number and gender features of determiners in relation to the acquisition of the functional projections in between DP and NP is something to be studied in further research.

Gender-agreement between adjectives and nouns will be briefly discussed in the next section.

3.4 The internal structure of the DP

Above we have seen that lexical determiners emerge gradually and that for quite some time determiners seem to be optional for all bilingual children. Without discussing the issue in any detail, we could say that this emergence and development of the French determiner system supports an analysis in which the DP structure is acquired incrementally, lexically driven. Let us now consider if we can say something more about the internal structure of the 'emerging' DP.

Granfeldt found in all three bilingual children he examined that if there was an adjective present, the determiner was more often null. For example, in the case of Mimi, 45% of the nouns had a null determiner overall, but this was true more specifically for 75% of the nouns preceded by an adjective. Grandfeldt takes this to support the hypothesis that the (functional) structure of the noun phrase is acquired incrementally: first there is only one position available outside NP which can be occupied by either a determiner or an adjective, later this structure is re-analysed to allow both pre-nominal elements. The same was argued for by Müller who notes that Ivar does not produce constructions such as *un petit garcon* until age 2;5.7, whereas he does produce A + N without a preceding determiner. This suggests, according to Müller, that in the beginning only one position is available apart from the noun.

What about the co-occurrence of lexical determiners and adjectives in Anouk's data? On the one hand, the mean percentage of bare nouns in Anouk's first period is 70%. The mean percentage of nouns preceded by an adjective, but not by a determiner is 80%. This suggests that there is only one position available preceding the noun in Anouk's grammar at this stage. On the other hand, as early on as the third file, we find an adjective between the indefinite article (*un*) and the noun (*bout/magasin*):

(33)   un petit bout   Anouk 2;4.17
       'a   little part'

(34)   un autre magasin
       'an other shop'

It could be the case that for Anouk, at this age, the adjective + noun sequence forms an unanalysed unit in the lexicon. However, in the same file Anouk also uses the same adjective *petit* with another noun, without article (35), suggesting that the adjective occupies a position separate from the noun:

(35)   petit poisson
       'small fish'

Utterances such as (33)–(34) could then be taken to indicate that there are two positions available to the left of the noun. Such utterances show the emergence of a next step in the development of the internal structure of the nominal phrase. We could hypothesize that two "grammars" co-exist in Anouk for some time: an early one with two positions and a later one with three positions in the nominal structure, as in (36) and (37), both created through *Merge* (or *Adjoin*):

(36)

```
            N
           / \
    {Det}     N
    {Adj}
     le      poisson
     petit
```

(37)

```
           N
          / \
      Det     N
             / \
          Adj    N
     le   petit  poisson
```
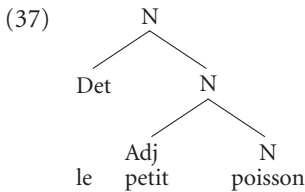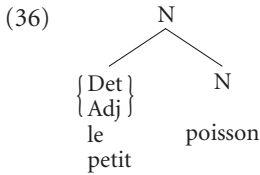
Granfeldt (2000a) argues that the appearance of post-nominal adjectives in the child data indicates the next step in the structural development of the DP: the position of the adjective suggests that the N has moved across the adjective to a higher functional projection, as in (38).

(38)

```
            F
           / \
       le     F
             / \
      chapon_i   N
                / \
             Adj    N
             rouge  t_i
```
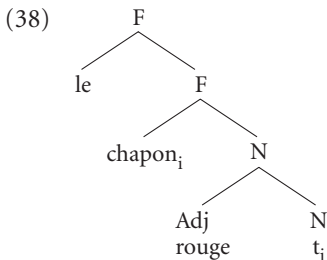
Granfeldt reports that of the three Swedish/French bilingual children, two produced a construction with a postnominal adjective at a rather late age: Jean at age 3;9, Anne at age 4;2 (MLU 3.5). Only Mimi used this construction earlier, at age 2;6 (MLU 3.5). Granfeldt also mentions some position errors with adjectives: in the following examples the adjectives incorrectly precede the nouns, instead of following it.

(39)   une rose papillon   Mimi 3;7
       'a rose butterfly'

(40)   il joue avec l'orange ballon   Mimi 4;2
        'he is playing with the orange balloon'

Granfeldt interprets these as indicating that movement of the noun to a higher functional projection has not yet taken place.

   At age 2;6.11, Anouk produces the first occurrence of a noun followed by an adjective, which could be taken to indicate N-movement to a higher functional projection. Interestingly in this case there is also a pre-nominal adjective:

(41)   petit   pou   rouge   Anouk 2;6.11
        small louse red

At age 2;7.5 we find another example of a post-nominal adjective. This time the noun is preceded by a definite article:[10]

(42)   le   chapon rouge   Anouk 2;7.5
        the   capon   red

At age 2;8.22 and 2;11.13, she incorrectly produces an adjective in pre-nominal instead of post-nominal position, suggesting that she fails to raise the noun to a higher functional projection across the adjective:

(43)   jaune serviette   Anouk 2;8.22
        'yellow towel'

(44)   une verte léchappe   Anouk 2;11.13
        'a green scarf'

Adjectives not only have to appear in the correct position, they also have to agree in number and gender with the noun in French. We do not want to discuss the exact mechanism involved in agreement here, but simply assume that in order to agree the adjective and the noun have to be in a structural relation other than adjunction and that at least one functional projection other than D has to be involved. Therefore, the fact that the child correctly makes the adjective agree with the noun may indicate yet another stage in the development of the functional projections inside the DP. Before age 2;7.5, Anouk's adjectives all have the (default) masculine form and appear with masculine nouns; this does not tell us anything about agreement. At age 2;7.5, Anouk produces the first adjective that explicitly shows agreement with a feminine noun:

(45)   grande   chaise   Anouk 2;7.5
        big:FEM   chair

Initially, agreement of the adjective is optional: next to examples such as (45), she also produces adjectives in the default (masculine) form with feminine nouns:

(46)   une   petit   mouche
        a:FEM   small:MASC   fly:FEM

The last example of a non-agreeing adjective is found at age 2;11.13:

(47)   petit   chemise   Anouk 2;11.13
        small:MASC   shirt:FEM

From that age onwards the adjectives accompanying feminine nouns show gender-agreement.

   Granfeldt reports a few agreement errors with adjectives in his children. He gives one example where the determiner has the incorrect gender:

(48)   un   petit   souris   Anne 3;3
        a:MASC   small:MASC   mouse:FEM

To summarize, we saw that the internal (functional) structure of the DP in French is gradually deployed/activated in the bilingual children. Several stages can be distinguished which do not strictly follow each other, but show considerable overlap. In the first stage, only bare nouns appear. In the second stage, the noun is preceded either by an article or by an adjective, suggesting the availability of only one pre-nominal position (cf. (36)). Around age 2;4.17 in Anouk and 2;5.7 in Ivar, we find evidence for a third stage where both an article and an adjective precede the noun, suggesting the activation of two pre-nominal positions (cf. (37)). These structures could be created through adjunction or Merge. When adjectives start to appear in post-nominal position as well, around age 2;6.11 for Anouk, age 2;6 for Mimi, age 4;2 for Jean and Anne, this indicates the availability of a functional projection to which to noun has moved across the adjective (cf. (38)). Finally, when the adjective shows gender-agreement with the noun, from age 2;7.5 onwards for Anouk, we can assume that the adjective is no longer adjoined to the noun, but is in a structural (functional) position in which it can agree with the noun.

4.   Developmental links

4.1   Specificity in the clausal and the nominal domain

Hyams (1996) points out certain parallels between the behaviour of the INFL and D systems in early child syntax. She notes that just as nouns surface without determiners, verbs often surface in root contexts without finite morphology. She argues that what finite morphology and determiners have in common is that they are "anchor" points, points at which the sentence/noun fixes itself with respect to the discourse. What is lacking in the early grammar is the temporal specificity in the clause and the nominal (referential) specificity in the nominal domain. She proposes that the parallel pragmatic function of INFL and D suggests the possibility that the optionality of these functional elements in early child language is an effect of the pragmatic system, rather than of the syntax. Her analysis predicts temporal and nominal specificity will arise at the same time in the child's grammar. Schaeffer (1997) also relates the optional marking of specificity in the child's grammar to a pragmatic principle, called the Discourse Rule. Her hypothesis predicts that definite determiners and object clitics should emerge at the same time since they both involve (acquisition of) the Discourse Rule. This prediction was borne out in data from (monolingual) Italian children. First, we will briefly consider Anouk's data in the light of Schaeffer's hypothesis. This discussion will be based on previous work concerning the disappearance of null objects and the acquisition of object clitics (Hulk 1997, 2000; Müller & Hulk 2001).

4.2   Object clitics and definite determiners in Anouk

In the first two periods, Anouk produces very few object clitics: in the first section (age 2;3.13–2;7.5, mean MLU 2.0) of Anouk's data, we find only two clitic objects:

(49)   met (l)a aussi   Anouk 2;04.23
      put   it   also

(50)   m' aider maman   Anouk 2;7.5
      me help mummy

In the first example we find the feminine object clitic *la* in a postverbal position – the verb probably is an imperative. However, it could also be the case that *la* is not a clitic but the adverb *là* (*there*) and that the object is missing.

Table 2. Mean percentages of null objects and null nouns in Anouk

Anouk age	Mean MLU	Mean % null objects	Mean % bare nouns
2;3.13–2;7.5	2	50%	70%
2;7.28–3;1.4	3	41%	32%

In the second period (mean MLU 3.0), we find three more object clitics, all in front of an infinitive. Here is one example:

(51) faut   leur   donner   de   l'   eau   Anouk 3;1.4
      must them   give   some the water

These numbers sharply contrast with what we have seen above for definite determiners: definite determiners appear productively from age 2;4.17 onwards. In the whole first period we find 34 definite determiners, in the second period 136.

Moreover, as Table 2 (globally) shows, the rate at which bare nouns (i.e. null determiners) disappear is much faster than the rate at which null objects disappear, suggesting that, at least in Anouk's data, object clitics and determiners develop independently.

If we try to make a similar comparison for Ivar, based on figures given in Müller and Hulk (2001) and in Müller (1994), we get the same picture: Ivar does not produce any object clitics (except a few *se* 'self') before age 3, whereas he is said to productively produce determiners from age 2;4 onwards. In other words, we do not find any evidence in the bilingual French data from Anouk and Ivar that confirm the predictions made by Schaeffer.

In the next section, we will briefly consider Anouk's data in relation to Hyams' hypothesis.

4.3 Root Infinitives and determiners in Anouk's data

We saw above that Hyams (1996) claims that children go through a stage in which the functional heads INFL and D (which she assumes to be present from the beginning) may be underspecified for a "specificity" feature.[11] Underspecification has morphosyntactic reflexes in the form of the absence of (lexical) determiners and finite morphology. On the basis of this hypothesis the prediction could be made that R(oot)I(nfinitives) and bare nouns will disappear at the same time and and the same rate. Anouk's data show that for her, this is not the case, as globally illustrated in Table 3 (see Hulk & Müller 2000; Müller & Hulk 2001 for details).

Table 3. Mean percentages of RIs and of bare nouns in Anouk

Anouk age	Mean MLU	Mean % RIs	Mean % bare nouns
12;3.13–2;7.5	2	20%	70%
2;7.28–3;1.4	3	24%	32%

Whereas the mean percentage of bare nouns between the first and the second period has diminished by half, the mean percentage of RIs has stayed more or less the same. This suggests that IP and DP develop independently (see Hamann, this volume, for similar findings for French SLI).

However, as has been pointed out by Hoekstra et al. (1996) and van der Meulen (1999), this does not necessarily contradict the hypothesis that the number/specificity features of D and INFL are acquired at the same time. Hoekstra et al. (1996) argue that children generally observe the requirements of Spec-Head agreement, and that consequently, the presence or absence of finiteness in a verb is related to the functional specification within the subject DP with which it agrees. This hypothesis makes very clear predictions as far as which subject DP should appear with finite verbs and which with root infinitives: specified DPs (pronouns and DPs with determiners) can license an inflected verb, but they should not occur with RIs. Similarly, as Van der Meulen (1999) points out, under Hoekstra and Hyams' hypothesis a DP object (NP with a determiner or an object pronoun) has to agree with a finite verb within the functional projection AgrOP, predicting the impossibility of DP objects/pronouns with root infinitives.[12] Moreover, following Grimshaw (1991), she argues that as far as PPs are concerned, one would expect to always find a determiner when P is present. The absence of D would only be possible when P is not realised.

Paradis and Genesee (1997) argue that for the two bilingual English/French children they studied, IP and DP seemed to be independent of each other, since a determiner could be omitted in a finite context and a non-finite utterance could contain a determiner:[13]

(52)   Me a fait booboo   Yan 3;0

(53)   The birdy fall là   Mat 2;1

Let us now look at Anouk's data in the light of this hypothesis. In the whole first period, between age 2;3,13 and 2;7.5, mean MLU 2.0, we find 34 nouns with a definite article. Interestingly, no noun with a definite determiner is found as the subject of a Root Infinitive, although Anouk produces 29 RIs in this first period.[14] In the data of the second stage (mean MLU 3.0) we find the same

pattern as in the first period. Although Anouk produces 118 RIs in this period, none of these take a definite DP subject.[15] Table 4 summarizes these findings.

Table 4. Root Inifinitives and "specified" DPs – raw numbers

Anouk age	RIs	DP	DP subject + RI
2;3.13–2;7.5	29	34	0
2;7.28–3;1.4	118	136	0

We found no cases of a noun with a determiner in a so-called small clause with a non-verbal predicate either.[16] These findings support the hypothesis of Hyams et al who argue that "specified" subject DPs cannot be licensed under Spec/Head agreement with "underspecified" RIs.

We also looked at the co-occurrence of prepositions and determiners, in order to verify the prediction made by van der Meulen, based on Hoekstra et al., that no null determiner should occur inside a PP with a lexical P. Disregarding all cases where the following noun was a proper name, we found that for Anouk, in the first period, 27 prepositions are present and 15 are missing. In all of these occurrences, it is the case that when the preposition is missing the determiner of the following noun is also missing. Here are some examples:

(54)   atelier   pati   Anouk 2;4.9
       [for the] studio left

(55)   Mother: vous êtes où?
                'where are you?'
       Anouk: magasin   Anouk 2;5.20
               [in the] shop

In the second period, we find a few definite DPs inside a PP with a null P, mainly when the PP is complement to a noun, as in the following example:

(56)   bord   la   tasse   Anouk 2;8.22
       edge[of] the cup

There are a few cases where the preposition is lexically realised but the determiner is missing, which is ungrammatical both in adult French and in Dutch (in these cases):[17]

(57)   opa,   oma   pas à   maison   Anouk 2;6.11
       grandpa, granny   not at home

(58)   sur tête   Anouk 2;5.20
       on   head

(59) pour petit canard   Anouk 2;7.28
      for   little duck

However, in the second period, and later, most bare nouns occurring inside PP
are correct also in adult French:

(60) en voyage   Anouk 2;8.22
      on trip (=away)

(61) en voiture   Anouk 2;8.22
      by car

(62) par terre   Anouk 3;3.17
      on   floor

These data support the hypothesis proposed by van der Meulen, based upon
ideas of Hoekstra et al., suggesting a (developmental) link between the "speci-
ficity" of a noun and the functional head with which it is in a Spec-Head
agreement relation. We did not find any information concerning this issue in
the literature about other bilingual (French) children.

   To summarize, we have seen that, at least in Anouk's data, the (strong) pre-
dictions that can be made on the basis of Schaeffer (1997) and Hyams (1996)
are not verified: null objects, null determiners and Root Infinitives disappear
at different rates, independently of each other. In that respect, there appear to
be no direct links between the emergence/activation of functional projections
in the nominal domain and in the clausal domain. However, we have also seen
that this cannot be the complete story, since there appears to be evidence in
Anouk's data in favour of (weaker) predictions made on the basis of Hoek-
stra and et al. (1997). We found that RIs never had "specified" subjects and
only very rarely "specified" direct objects (cf. Note 15), while they did have
bare noun subjects and objects (in addition to null subjects and objects). Fi-
nite verbs, on the contrary, took all kinds of subjects and objects. Moreover,
PPs with a null P generally also had a noun complement lacking a determiner
and the other way around. What all this tells us about the acquisition of func-
tional features in the nominal and in the clausal domain is clearly something
to be examined in future research.

   In the following section we address the third and last question raised above:
in what way does the acquisition of functional projections in the nominal do-
main of French bilingual children resemble or differ from the acquisition of
monolingual French children?

5.   Cross-linguistic influence?

5.1   Acquiring two languages from birth

In the last decade, most studies of bilingual language acquisition have shown that bilingual children are able to differentiate between their two languages from early on (De Houwer 1995; Gawlitzek-Maiwald & Tracy 1996; Genesee 1989; Meisel 1989 among others). These studies criticized an earlier view of bilingual acquisition, namely that children who are exposed to two languages from birth necessarily start out with one unitary language system (Taeschner 1983; Volterra & Taeschner 1978). Recently, the separate language hypothesis has been further refined (Döpke 1998; Genesee et al. 1995; Hulk & van der Linden 1996; Müller 1998; Müller, Hulk, & Jakubowicz 1999). The development of two languages in a bilingual child may be largely autonomous, but this does not exclude the possibility that there can be influence from one language on the other. Cross-linguistic influence is not to be taken as mixing or fusion, but it could take the form of facilitation/acceleration, delay, or transfer (Paradis & Genesee 1996). In studying bilingual language acquisition, we observe the emergence of the grammars of two languages at the moment of creation, when they are in close contact with each other. As suggested by Macwhinney (1987), the bilingual child may attempt to take short cuts and allow strategies from one language into the other. Plausibly, such "short cuts" are taken when the child has to cope with problematic input. The interesting question is to find out what is this problematic input, i.e. which parts of the grammar are sensitive to such cross-linguistic influence and why this should be so. In my earlier work together with Natascha Müller (Hulk & Müller 2000; Müller & Hulk 2000, 2001), we argued that cross-linguistic influence may be expected in phenomena at the interface between two modules of grammar, and more particularly at the interface between pragmatics and syntax, since this interface has been claimed to create problems in monolingual acquisition also, although to a lesser extent. Now we raise the question whether the disappearance of the universal strategy of null determiners in language development is also a phenomenon which we expect to be sensitive to cross-linguistic influence in the case of bilingual Romance/Germanic children.

Clearly, determiners involve the syntax/pragmatics interface. As we saw above, several authors argued that the problems children have in acquiring the adult determiner system can be explained to a large degree by the hypothesis that children do not (always) use the appropriate grammatical means (i.e. a functional node D with fully specified feature content) to anchor a noun in the

discourse. It is also the case that (adult) languages widely differ in the possibility of allowing bare nouns in argument positions. French does not have this possibility, whereas Dutch generally allows bare nouns in argument position under specific (semantic) conditions which relate either to an inherent, lexical property of the noun ("mass") or to a morpho-syntactic property ("plural"). For the bilingual French/Dutch child, the Dutch adult input contains both overt and non-overt determiners, supporting the early (universal) child grammar that also allows both. The French input, however, will contain no bare NPs in argument position, presenting clear evidence against bare Ns. Do we expect cross-linguistic influence from the Germanic to the Romance language under these conditions, or the other way around?

In the next part of this section, we consider the emergence and development of the DP in monolingual French children and compare this with what we saw in the bilingual children studied above.

5.2 From bare N to full DP in monolingual child French

According to Clark (1986) (citing Lightbown) nouns in early word combinations in French typically appear without any article, although definite and indefinite articles begin to appear soon after the first word combinations. Adult-like use, however, may take six years or more to appear. Young children overuse definite articles, according to Clark. "They often treat facts as if they were known to their addressees, tagging noun phrases with definite articles instead of new, tagged with indefinite articles" (Clark 1986: 699). These observations are confirmed by van der Velde (1999) and van der Velde et al. (2000) who longitudinally studied three monolingual francophone children. One of these children (Hugo) produced no determiners in the first files (age 1;8.14 and 1;9.21). Definite and indefinite determiners emerged at the same age (1;10.6), which is a lot earlier than what we saw in Anouk, who produced her first determiner at age 2;4. There was a sharp drop in null determiners in Hugo's data at age 2;1.17 (MLU 2.5). In Anouk we also saw a sharp drop, but at a later age and higher MLU-level (between age 2;8 and 2;11, MLU > 3). The interval between the first appearance and 90% production of lexical determiners is 4 months for Hugo, and 11 months for Anouk.

Van de Berg (2001) studied the emergence of determiners in the monolingual child Grégoire, between age 1;9.18 and 2;5.27 (MLU 1.9–4.9), available on CHILDES (MacWhinney & Snow 1985). Figure 2 represents the development of lexical determiners and the disappearance of bare nouns in Grégoire.
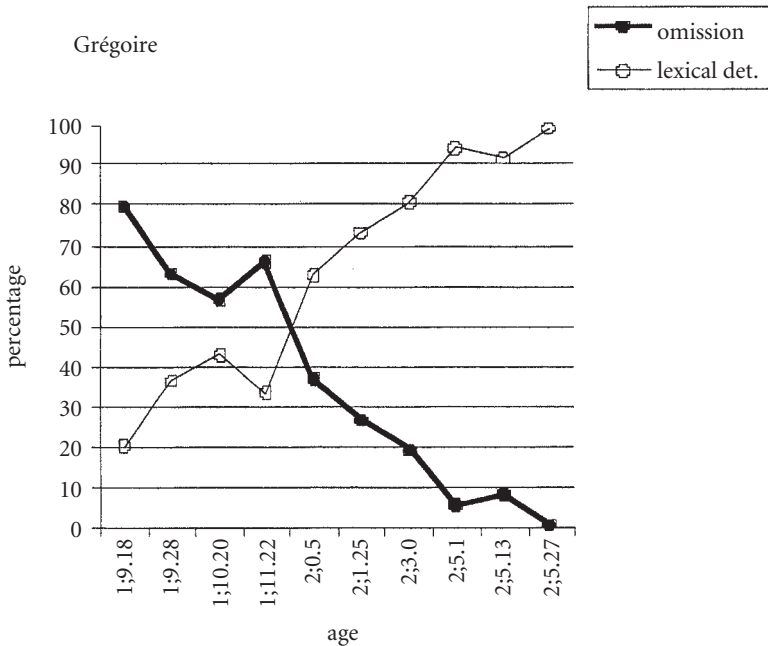
Figure 2. Production and omission of determiners in Grégoire

     In the first file, when Grégoire is 1;9.18, 80% of the nouns are bare. Three
months later, around age 2;0, 50% of the nouns have a lexical determiner and
at age 2;5.1 Grégoire has reached the 90% level of suppliance. The development
took about 8 months in all. When we compare this to what we have seen for
Anouk (see Figure 1 above), we observe that on the one hand, it is very similar,
but on the other hand it is very different. It is similar in that, initially, both in
Anouk and Grégoire's data, most nouns are bare and the emergence of deter-
miners takes place gradually. It is different in that Grégoire starts producing
determiners at an earlier age than Anouk and, consequently, reaches the 90%
level at an earlier age also. The graphs representing the increase of lexical de-
terminers and the decrease of omissions are also steeper in Grégoire than in
Anouk: it takes Grégoire about 7 months to reach the 90% level, whereas for
Anouk this development takes 11 months.
     To summarize, initially Anouk and the other bilingual children do not
produce more bare nouns than the monolingual children. However, the first
lexical determiner appears at an earlier age for the monolingual children than
for Anouk and the other bilingual children. Moreover, when we consider how

long it takes Anouk to complete the development of lexical determiners, i.e. 11 months, we see that this is slightly less than what has been found for the French/Swedish bilingual children, but a whole lot longer than what can be observed in the monolingual children Grégoire and Hugo. Apparently for the bilingual children, the decrease of bare nouns is twice as slow as it is for the monolingual children. In that respect the disappearance of bare nouns is very similar to the disappearance of RIs in bilingual children: it has been shown elsewhere (Hulk & Müller 2000; Müller & Hulk 2000) that RIs are a lot slower to disappear in bilingual children than in monolingual children.

As far as the order of emergence of the different determiners is concerned, in both Hugo and Grégoire's data, definite and indefinite articles are said to appear first and at the same time, followed by partitives, demonstratives and possessives (van den Berg 2001; van der Velde 1999). Number errors are practically non-existent in the monolingual data, but there are a few gender errors with articles, as illustrated in the following example by Grégoire:

(63) une   oiseau   Greg 2;1.25
      a:FEM bird:MASC

(64) un   pelouse   Greg 2;3.0
      a:MASC lawn:FEM

In other words, there is no difference between the bilingual and the monolingual children studied here with respect to the order of emergence of the determiners. It could be the case that the bilingual children make more errors with gender-marking, but further study is necessary to establish that, and to compare the gender-marking in the two languages involved.

5.3   The internal structure of the DP and the position of adjectives

There is little quantitative information in the literature which allows us to establish whether in monolingual French children, there is only one position initially available preceding N, and only two positions at the next stage (see the structures (36) and (37) above). Granfeldt (2000a) observes that pre-nominal adjectives alternate with articles in the first files in Grégoire's corpus. In the data produced by Hugo at age 2;1.7 from van der Velde (1999), we see that the noun which is combined with a preposition or an adjective is not preceded by an article, although Hugo is producing articles from age 1;10.6 onwards:

(65) sur bateau   Hugo 2;1.7
      on boat

(66) voiture cassée
      car   broken

(67) livre jaune
      book   yellow

(68) petit chien
      small dog

(69) grosse auto
      big   car

However, we also see in these data that at this age Hugo produces both pre-nominal and post-nominal adjectives, and agreeing ones (69). Above we followed Grandfeldt in assuming that post-nominal adjectives indicate movement of the noun to a higher functional projection. That would imply that Hugo's noun phrases already have an internal functional structure as in (38) above. As for Grégoire, Granfeldt reports that pre-nominal adjectives appear first, at age 2;0.5, and that post-nominal adjectives appear later, at age 2;5.13:

(70) ça   c'est un poisson rouge   Greg 2;5.13
      this it is a   fish   red

Above we saw that in Anouk's data post-nominal adjectives appear for the first time at age 2;6.11. In this respect, she does not seem to have much delay compared to Grégoire, although she does have a delay compared to Hugo. The same holds for the bilingual French/Swedish child Mimi in this respect: she produced her first post-nominal adjective at age 2;6. The other bilingual French/Swedish children, Jean and Anne, however, were much later in producing post-nominal adjectives: at age 4;2.

　　To summarize, although we do not have enough quantitative data to make a real comparison between monolingual and bilingual children with respect to the internal functional structure of the DP, nothing seems to suggest that they pass through different stages. The bilingual children, however, seem to be a bit slower than the monolingual children, just as we have seen above. The exact nature of this delay has yet to be established, since we saw individual differences within both groups.

5.4 Developmental links between the nominal and the clausal domain.

We saw that Schaeffer (1997) predicts that the acquisition of definite determiners and that of object clitics is related because both involve the acquisition of a pragmatic rule, the Discourse Rule. We argued, however, that Anouk's data

did not show such a relation. On the contrary, her data suggest that the acquisition of definite determiners and that of object clitics are independent of each other. Let us now look whether this is also the case for monolingual French children. Jakubowicz et al (1998), van der Velde (1999) and van der Velde et al. (2000) compared the acquisition of object clitics and of definite determiners in three monolingual French children, Hugo, Chloé and Victor. They considered data collected both in spontaneous interaction and via an elicited production task. They found that for each child in every session the production of determiners is always more frequent than the production of accusative clitics. Chloé and Victor produce about 80% of the required determiners at the age of 1;11, Hugo 27%. As for clitics, the results of Victor and Hugo show an early period in which they do not produce accusative clitics. The production of accusative clitics is quite low for the three children, and does not reach 30%. Van der Velde et al. conclude that there is a clear dissociation between determiners and object clitics in the acquisition by all three children. This corresponds to what we have observed for Anouk. In this respect, bilingual and monolingual French children do not seem to behave differently.

We also saw that for Anouk, on the one hand, there is no reason to assume that the disappearance of RIs is closely related to the disappearance of null determiners. On the other hand, we saw that her RIs never had a fully specified DP-subject. Interestingly, the same has been observed for monolingual French children by van der Meulen (1999) who studied production data from Philippe, Grégoire, Daniel and Nathalie. Moreover, she found that in the data of these children the absence of a lexical preposition in a PP entailed the absence of a lexical determiner in the nominal complement, and the other way around.

(71)   on   appuie   bouton   Philippe 2;1.3
        one   pushes [on the]   button

This too is very similar to what we have seen in Anouk's data.

To summarize, although we did not have the space here to make a detailed comparison between monolingual and bilingual children with respect to the possibility of developmental links between the acquisition of functional projections in the clausal and in the nominal domain, nothing seems to indicate that the two groups of children behave differently.

5.5 Cross-linguistic influence?

We saw that there appears to be no qualitative differences between the bilingual children, particularly Anouk, and monolingual French children as far as

the emergence of lexical determiners and the development of (functional projections in) the internal structure of the noun phrase is concerned. In both groups this development seems to be independent from the development in the clausal domain. However, there appears to be a quantitative difference between the monolingual and the bilingual children. Not in the sense that the bilingual children produce more (higher percentages) of bare nouns in French, but in the sense that it takes them more time (twice as much, in some cases) to acquire that determiners are obligatory in DPs in argument-position in French.

Now the question has to be raised whether and in what way this "delay" may be due to the influence of the other language of the bilingual children. Anouk's other language, Dutch, allows bare nouns under certain semantic conditions (see above).[18] It could be the case that the apparent optionality of determiners in the Dutch adult input makes Anouk stay longer in the universal, initial stage where determiners are also optional in monolingual French children (cf. what is argued for by Müller & Hulk 2000, 2001 for object drop in bilingual children). Comparison with the other bilingual children discussed in the literature, shows that this is a not an easy question to answer. We saw that for the Swedish/French bilingual children, Jean and Anne, bare nouns in French took even longer than for Anouk to disappear. Now Swedish, as opposed to Dutch, does not allow bare nouns, although it has a complicated determiner system where the definite article, under certain conditions, is realised as a suffix. This might have created a more complex situation for these bilingual children compared to the French/Dutch bilinguals. As for the German/French children Ivar and Caroline, no mention is made in the literature about differences with respect to monolingual French children or about a possible influence of German, which is like Dutch in allowing bare nouns in argument position. Finally, with respect to the English/French bilingual children Yann and Mathieu, studied in Paradis and Genesee (1997), both boys produce a substantial number of bare nouns in French up until age 3;0. Moreover, they also produce illicit bare nouns in English at the same time. It could be the case that the apparent optionality of determiners in the adult English input makes the children stay longer in the universal, initial stage where lexical determiners are optional, in both languages. Clearly, more research is necessary.

6.   Conclusion

Let us examine now how to answer the main question of this chapter: "What do the bilingual French data tell us about the development of functional projections in the nominal domain"?

First, we have seen that for Anouk and most of the other bilingual children, the lexical realisation of determiners increases gradually. In the first two files of Anouk's data there are only bare nouns; from age 2;4.17 (MLU 2.0) onwards, determiners emerge: first definite and indefinite singular, masculine articles (age 2;4.17), then the feminine indefinite article (2;4.23), followed by plural definite and indefinite plural and partitive articles at age 2;5.20, and the first feminine definite article at age 2;6.11. Up to that age we also saw some gender errors. Quantificational determiners (age 2;7.5), possessives (age 2;8.22) and demonstratives (age 2;7.28) followed later. There was a sharp drop in the percentage of bare nouns at MLU 3.0. This pattern is comparable to what has been reported in the literature for the other bilingual children – although the order of emergence may slightly differ – in that they all start with the lexical realisation of definite and indefinite singular masculine articles. We argued that this pattern supports an analysis where the internal structure of the noun phrase is created through operations such as Merge (and later Move) in different stages that partially overlap. Pre-nominal adjectives appear early, but alternate with articles before appearing in combination with them around age 2;4/2;5. We took the combination to indicate that, at that age, probably three different positions are available/activated inside the nominal domain. The appearance of post-nominal adjectives (at age 2;6.11 for Anouk) indicates the further deployment of the internal structure by movement of N across the adjective to a higher, functional projection. Granfeldt found post-nominal adjectives at age 2;6 for Mimi, at age 3;9 for Jean and age 4;2 for Anne. Adjectives first take the default masculine form, even in combination with feminine nouns. From age 2;7.5 onwards in Anouk's data, adjectives start to agree with the noun, indicating yet another stage in the internal make-up of the nominal structure.

The second, general question addressed in this chapter concerns a possible link between the acquisition of functional projections/feature-specifications in the clausal and the nominal domain. We saw, on the one hand, that for Anouk, just as for monolingual French children, definite determiners and object clitics do not show a parallel development and that DP and IP appear to develop independently. On the other hand, RIs in Anouk's data never had DP subjects, and only very rarely DP objects, just as in the data from monolingual French children. This somehow suggests that when the child has acquired (certain) fea-

tures of the DP these can only be checked/licensed via (Spec-Head) agreement with similar features in a verbal functional category. More research is necessary to find out what kind of licensing/checking mechanisms play a role in these early grammars.

Finally, we found that acquiring the French DP in a bilingual setting is not very different from the acquisition in a monolingual French setting. Qualitatively, the development is very similar, not only for Anouk, but also for the other bilingual French children in the literature. The only (striking) difference was quantitative,[19] not with respect to the frequency of bare nouns or lexical determiners, but concerning the time it takes bilingual children to get rid of the non-target-like bare nouns: twice as much as monolingual children. Again, this does not only hold for Anouk, but also, and even more so, for the Swedish/French bilingual children studied by Granfeldt. Further research is necessary to establish whether the other language plays a role in this delay, and if so, in what way.

Notes

1. Unfortunately, the Dutch data were not collected as frequently as planned, and therefore we have fewer data on Dutch than on French.

2. All three children have a francophone mother and a swedophone father. Granfeldt makes a distinction between "langue forte" and "langue faible" (based on Schlyter 1994): in the period under consideration the "langue forte" in Mimi and Anne is French, and is Swedish in Jean.

3. The repetitions took different forms which made it difficult to decide which ones to leave out and which ones to count. Therefore we included them all.

4. Granfeldt does not give enough information on Mimi to make a comparison: between age 2;0 and 2;6 the percentage of bare nouns decreased from 45% to 2% in Mimi's French.

5. Granfeldt mentions that in Jean's production the indefinite article appears before the definite one. He offers no explanation for this fact.

6. It has sometimes been claimed in the literature that the first occurrences of indefinite articles are in fact numerals (cf. Müller 1994). This does not seem to be the case for Anouk here, though, since the context clearly excludes a numeral reading.

7. Interestingly, the element *de* which should follow *beaucoup* in adult French, is lacking here.

8. In their analysis <Number> is a feature of D, not a separate functional projection.

9. It is however difficult to establish in French whether the noun is singular or plural, since in most nouns the plural marking *-s* is not pronounced.

10. Examples with post-nominal adjectives are not very frequent.

(i) a.   poussin marron 'chick brown'   (age 2;7.28)
     b.   les yeux roses 'the pink eyes'   (age 2;11.27)

11. In subsequent work with Hoekstra (Hoekstra & Hyams 1998) she assumes that both RIs and bare nouns in child data result from the underspecification of the functional head Number in the clausal and the nominal domain.

12. The same would hold for indirect objects (cf. Clahsen, Eissenbeis, & Penke 1996).

13. However, they add that a systematic analysis might reveal some relationship.

14. See Hulk and Müller (2000) and Müller and Hulk (2000) for details about the development of RIs in Anouk and other bilingual children.

15. In the first period, no "specified" DPs are found in object position of RIs, in the second period only a few are found:

(i) a.   pas abimer les jambes   (2;8.22)
          'not injure the legs'
     b.   regarder les photos là-bas tab   (2;11.27)
          'look at the pictures there'
     c.   après faire la promenade   (2;11.27)
          'after make the stroll'

16. We did find proper names in such constructions: *Anouk chaud non* ('Anouk hot no'), *Anouk poule* ('Anouk chicken').

17. In general, in the first period, bare nouns appear mostly in isolated position (110 tokens). But we also find them in other positions, such as subject, both of finite verbs and of non-finite verbs, as direct object, again both of finite and of non-finite verbs and in all kinds of Small Clause-like two or three word utterances.

18. In order to properly answer this question, we should of course also look at the development of the DP in Anouk's Dutch. Unfortunately we have less production data by Anouk in Dutch than in French. In the period which corresponds to the first two stages of Anouk's French (age 2;3.13 to 3;1.4), her mean MLU in Dutch is 2.28. We find 100% bare NPs until age 2;9.17 (but absolute number are low), when the percentage drops to 61%. It then fluctuates (55%, 75%) and shows a sharp drop to 33% at age 2;11.27. As for the emergence of lexical determiners, we observe that definite articles appear at the same time as indefinite ones and are more frequent, just as in French. This is different from what has been found in the monolingual Dutch child Laura (vd Velde 1999), in whose data between MLU 1.19 – MLU 2.17 indefinite determiners appear before definite ones and are more frequent than definite ones (21,1% vs. 5,2%). Bare nouns decrease in Laura from 100% to 50% in the period under observation. Clearly, more research is needed here, before we can make a comparison.

19. However, as pointed out to us by Johanne Paradis, with such small numbers of monolingual and bilingual children it is really difficult to know whether there are *systematic* differences between the two groups; the current data can only suggest a possibility.

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Null-arguments in bilingual children*

French topics

Natascha Müller

1. Introduction

It is well-known that monolingual French children display illicit subject (Friedemann 1995; Hulk 1987; Jakubowicz, Müller, Kang, Riemer, & Rigaut 1996; Jakubowicz, Müller, Riemer, & Rigaut 1997; Pierce 1992; van der Velde 1998 among others) and object omissions (Hulk 1997; Jakubowicz, Müller, Kang, Riemer, & Rigaut 1996; Jakubowicz, Müller, Riemer, & Rigaut 1997; van der Velde 1998 among others) during early stages of language development (MLU below 3). Moreover, it has been argued that there is a huge quantitative difference between subject and object omissions. Subject omissions in French children with an MLU below 3 range from 20% to 38% (of the type *court* 'runs'). Object omissions are reported to occur with a frequency of 11% in the same children during the same developmental stage. In the paper it will be argued that this asymmetry is due to characteristics of the adult system.

Analyzing null arguments in a bilingual German/French child, Müller, Crysmann and Kaiser (1996) did not find any qualitative difference between omissions in the French of the bilingual child and in monolingual French children.[1] Although no qualitative differences were found, Müller and Hulk (2001) observed a huge quantitative difference between bilingual (Dutch/French, German/French and German/Italian) and monolingual (French/Italian) children with respect to object omissions. The bilingual children use object omissions to the same extent as monolingual German/Dutch children, i.e. twice as frequently as monolingual French/Italian children with the same MLU. The authors explain this finding with crosslinguistic influence. In the literature on bilingual first language acquisition, language dominance is taken as an explanation for crosslinguistic influence, the stronger language influencing the

weaker language. The present article has the main goal of discarding language dominance as an explanation for crosslinguistic influence. Two bilingual German/French bilingual children will be compared, of whom only one has a dominant language. It will be shown that both children behave similarly with respect to subject and object omissions in French, showing crosslinguistic influence in the case of object omissions: Object omissions in the French of the bilingual children are as frequent and persist as long as in monolingual German children.

2. Language separation and crosslinguistic influence

Research in bilingual first language acquisition has been guided by two main approaches: either it has been assumed that children who are exposed to two languages from birth are not able to separate their two languages from early on (Taeschner 1983; Volterra & Taeschner 1978) since the two languages seem to influence each other, or it has been shown that there is evidence for very early language separation and the lack of crosslinguistic influence (Meisel 1989, 1994b, 1997; Genessee 1989; Genessee, Nicoladis, & Paradis 1995). Research during the last ten years has demonstrated that bilingual children are able to separate the two language systems from very early on, as early as two years of age. Notwithstanding, it is conceivable that separation and crosslinguistic influence are not mutually exclusive but occur in the same individual. This view is only plausible if it is assumed that separation and influence are observed for particular grammatical phenomena and not for languages as a whole. In the present article, the view that both early language separation and crosslinguistic influence can be observed in one bilingual individual during the same developmental stage will be further substantiated (Gawlitzek-Maiwald & Tracy 1996; Hulk 1997; Hulk & Müller 2000; Müller, Hulk, & Jakubowicz 1999; Müller & Hulk 2000, 2001; Müller, Cantone, Kupisch, & Schmitz 2002).

According to Paradis and Genesee (1996: 3f.), crosslinguistic influence in bilingual children has three manifestations: **Transfer** consists of the incorporation of a grammatical property into one language from the other. **Acceleration** means that a certain property emerges in the grammar earlier than would be the norm in monolingual acquisition. **Delay** means that bilinguals may be behind monolinguals in their progress in grammatical development. In other words, crosslinguistic influence may have positive and negative effects.

Recent studies, which show evidence of crosslinguistic influence, have explained language influence in terms of language dominance (Döpke 1992;

Gawlitzek-Maiwald & Tracy 1996; Hulk 1997; Schlyter 1994; Tracy 1995): The stronger or "more developed" language influences the weaker or "less developed" language. Most authors have defined language dominance on the basis of a comparison of MLU values in the two languages of the bilingual child and/or language use (the amount of utterances in the two languages used during a recording session). However, Gawlitzek-Maiwald and Tracy (1996) use the concept of "more/less developed" language which, in principle, is independent of MLU. They analyze a child who develops specific constructions at a different pace in the two languages. The language that develops at a slower rate for these specific constructions may profit from the faster language. One example is syntactic borrowing of the type *Kannst Du move a bit* 'Can you move a bit' where a German left periphery, which is argued to be much earlier developed in German as compared to English, is combined with an English VP structure. If crosslinguistic influence occurs in bilingual children with a stronger / more developed language and in children who develop the two languages at an equal pace, language dominance cannot be the reason for the observed influence. Hulk and Müller (2000) and Müller and Hulk (2001) argue that language-internal factors open the possibility for crosslinguistic influence to occur: One prerequisite for crosslinguistic influence is that there is a certain amount of overlap of the two languages in the bilingual: a construction in language A allows for more than one analysis (from the child's perspective) and language B contains positive evidence for one of those possible analyses (cf. Hulk & Müller 2000; Müller & Hulk 2001; Müller, Cantone, Kupisch, & Schmitz 2002).

3.   Omissions in monolinguals

3.1   Adult German

Adult German is a V2 topic-drop language,[2] i.e. the constituent in the first position (topicalized) of finite root clauses may be dropped (see the example in (1)). The dropped constituent, for example the object, requires a discourse referent. Since German is a V2 language, dropping of the first constituent results in a construction where the finite verb occupies the first position, as in (1). In syntactic terms, a V2 topic-drop language like German licenses an empty topic in the specifier of CP whenever the finite verb is raised to C. Adjunction of the empty topic is not an option, as it is generally believed that this is disallowed for German CPs. In contrast to topic-drop languages like Chinese, multiple argument drop is disallowed in German. Furthermore, topic-drop is ungram-

matical in subordinate clauses: The assumption is that in root clauses the finite verb moves up to the functional head – COMP – which hosts the complementizer / subordinate conjunction in subordinate clauses. In subordinate clauses, the finite verb has to remain in a projection below CP; an empty topic thus cannot be licensed.

(1)   Question: Kennst du dieses Buch?
                     'Do you know this book?'
        Answer: [CP 0 hab ich schon   gelesen]
                         have I   already read
                  *[CP 0 hab 0 schon   gelesen]
                         have   already read
                  *Ich kenne es, [CP weil   ich schon   gelesen hab]
                   I   know   it   because I   already read   have

3.2 Child German

Studies on object omissions in child German use elicited production tasks. Longitudinal studies which take into account the phenomenon of topic-drop during early language development do not exist for early German. Jakubowicz, Müller, Riemer and Rigaut (1997) investigated object omissions in monolingual German children in an elicited production task[3] accompanied with 30 minutes recordings of spontaneous speech. In the present study, we will summarize only the results from the spontaneous interactions since the bilingual data are recordings of spontaneous speech and the elicited production task affected the children's behavior: Omissions of objects were four times as high in elicited production as compared to spontaneous interaction; this difference was also found in French (and in Italian); cf. Table 13 in Müller and Hulk (2001). 12 children were tested for German.[4] Children were separated into two groups: In group 1 children, structures related to the adult C-system were missing, including subordinate clauses introduced by a lexical complementizer and V2 constructions where the first constituent is an object; V2 constructions where the first constituent is the subject or a so-called "light adverbial" were attested. In group 2 children, these structures were being used productively.

   Let us turn to objects first. Both groups of children omitted objects to a high degree (cf. Table 1). Object omissions gave rise to target-deviant constructions in both groups. In group 1, target-deviant constructions appeared at a much higher rate than in group 2. Target-deviant object drop is reported

Table 1. Object and subject omissions in monolingual German children

Group	-Obj. in %	target-deviant in %	-Subj. in %	target-deviant in %
Group 1	46	24.3	39.5	4.4
Group 2	37.8	1.8	8.6	1.2

to decrease as a function of age. Two types of target-deviant constructions are used: the finite verb does not occur clause-initially (as in (2a)) or more than one argument is being dropped (as in (2b)). However, dropped objects are pragmatically licit already in group 1, i.e. the empty object represents the discourse topic.

(2) a. Context: Baroudi takes a car and puts his hand onto it.
    B: Da   reißt roudi   ab
            There tears Baroudi off
            'Baroudi tears it off there'   (Baroudi)
  b. Adult: Was machst du, wenn dein Papa dich nicht sehen soll?
             'What do you do when your daddy shouldn't see you?'
     V: Auch mach
             also   make
             'I make it too'   (Valerie)

Let us turn to subjects. Table 1 shows that subject omissions are very frequent in group 1. The number of subject omissions is similar to the number of object omissions in these children. However, subject omissions reach a level below 10% in group 2. This result differs from the results for object omissions: although the number of target-deviant omissions decreases dramatically, the general frequency of object omissions remains at a level of 38%. Furthermore, in both groups of children subject omissions give only rarely rise to target-deviant constructions. If they do, they are of the type reported for object omissions, i.e. the subject is not omitted in first position which results in a non-V1-construction, or more than one argument is being dropped.

If we compare subjects and objects we have to explain two asymmetries: (1) The low number of subject omissions and the high number of object omissions in group 2 children, (2) the low number of target-deviant subject omissions in group 1 children as compared to the high number of object omissions in these children. The first asymmetry may suggest that topic-drop in adult German mainly concerns objects. Group 2 children behave nearly as adults with respect to finite verb placement and usage of C-related constructions, i.e. they mirror adult usage of topic-drop. Unfortunately, the frequency of subject and object drop in adult German has not been studied, which makes a conclusive answer

for the observed asymmetry difficult to establish. The second asymmetry with respect to target-deviant omissions can be accounted for if we look closely at the word order patterns group 1 children use. Interestingly, the (lexically realized) object nearly never occurs in first position (where dropping of the object would result in a target-like construction). Group 1 children frequently use V2 in constructions with a "light adverbial" in first position (*da, jetzt, so, hier* (= there, now, like-this, here) (Müller & Penner 1996)), however, the "OVS" pattern is nearly absent. If lexical objects do not occupy the first position in finite root clauses (but subjects do), omissions of objects (but not of subjects) will result in target-deviant constructions since the finite verb does not occur clause-initially.

We may thus conclude that (1) young German children at an (word-based) MLU of/below 3 (group 1) drop subjects and objects with nearly the same frequency. The observation that object-drop results much more frequently in target-deviant constructions than subject-drop in these children may be related to the fact that lexically realized objects are nearly absent in clause-initial position (in contrast to subjects) and that dropping of objects from a non-clause-initial position results in target-deviant finite verb placement. In other words, the observed asymmetry and its disappearance in older children are related to developments with respect to word order and not to topic-drop. (2) Older German children with an (word-based) MLU above 3 (group 2) use object-drop much more frequently than subject-drop. This observation may indicate that object-drop is also more frequent in adult German.

3.3 Adult French

Adult French is not a topic-drop language. However, as discussed by Tuller (2000), spoken French licenses null objects. Apart from arbitrary (generic) human null objects of the type *Cette musique rend _ heureux* 'This music renders happy' (Rizzi 1986), French exhibits discourse-controlled null objects of the type in (3), as discussed by Fónagy (1985) and Tuller (2000), which may have definite reference.

(3) a. Q: Voulez-vous que je vous donne mon numéro?
             'Do you want me to give you my phone number?'
         A: Non, je connais _.
               no   I   know
      b. Sit: The gardener with a movement of his head toward the tree:

Utt: J'abats _?
        I cut down

c.   Radio: Nous allons écouter un disque récent de Fischer-Diskau
              'You will hear a recent disk by Fischer-Diskau'

     Utt: J'adore _, moi
             I love   me

Fónagy (1985) further notes that it is the central theme of the conversation which corresponds to the dropped object.

On the basis of these observations, we may assume that French null objects are like null topics in German. Lambrecht and Lemoine (1996) and Tuller (2000) note that there are similarities between null objects in German and French, e.g. the null object is always third person. However, differing from German where null objects are possible with any transitive verb, null objects in French are lexically restricted: "[...] the class of transitive verbs allowing object-drop is vast, but [...] it [*is*] a closed class [in French]" (Tuller 2000: 8). Tuller (2000: 9) further notes that "null objects of transitive verbs [in French] may not only appear in non-root contexts (unlike German null objects), but they may also violate both subjacency and strong-crossover (cf. Tuller 1986, 1993; Lemoine 1997), and thus do not appear to be variables." This indicates that null objects in French are simply pronouns without phonetic content – *pro* (cf. also Rizzi 1997). The question is how *pro* would be licensed in the absence of agreement. The empty pronominal must be A-free in its BT-relevant domain. This amounts to saying that the antecedent must be positioned outside of IP/TP. As CP is excluded, since object-drop is not restricted to root contexts in French and may violate both subjacency and strong-crossover, one remaining option would be a position inbetween CP and IP/TP, i.e. an (empty) antecedent in the specifier of TopP. Thus, it would be interesting to analyze French null objects in terms of the "fine structure of the left periphery" (Rizzi 1997). At least for topics, Rizzi (1997) mentions that they never give rise to weak-cross-over effects. As a consequence, the syntactic description of French null objects would require the TopP-layer (in contrast to German where the CP-layer is required).[5] We may conclude that French neither is a generalized nor a V2 topic-drop language, as German is, but licenses null objects only under very specific conditions which involve the type of lexical verb, the type of complement and the specific discourse conditions.

Although French does not license object drop in general, it allows the canonical object position to be empty once an object clitic is present, as in the example *Jean le voit* 'John it sees'. Constructions with an object clitic may fur-

ther lead the child to the assumption that the canonical object may be empty in French.

To summarize, the French child has an immense amount of evidence in favor of null objects. The evidence includes constructions with a null topic and constructions with a clitic.

As to null subjects, Matushansky (1998) shows that they exist in French. She distinguishes two types of null subjects: impersonal null subjects of the type *Reste à voir si Marie viendra* '(One) has to see whether Mary will come' and null subjects in written contexts, the case of diary drop of the type described by Haegeman (1990). Interestingly, it has been argued that for advanced French, nominative subject clitics are nearly obligatory (Kaiser 1992; Lambrecht 1981; Zribi-Hertz 1994). This observation contrasts with objects where we have shown that these may be null once there is a salient discourse topic. We will not enter the discussion of the status of nominative subject clitics in this section (cf. Jakubowicz & Rigaut 1997, 2000; Jakubowicz, Nash, Rigaut, & Gérard 1998 for example). Suffice it to say that null subjects – i.e. subjects which are neither realized as a pronoun nor as a lexical DP – are rare in advanced French.

3.4 Child French

Jakubowicz, Müller, Riemer and Rigaut (1997) tested 12 monolingual French children in the elicited production task mentioned above with respect to object and subject omissions. For the purpose of the present study, only the results from the spontaneous interactions will be summarized since the elicited production task had an (negative) effect on omissions in the French children. Again, two groups were discerned. The first group (word-based MLU: 3 or below) did not produce constructions related to the adult C-system, whereas the second group (word-based MLU: above 3) showed productive usage of the relevant constructions.

Let us first turn to objects. Monolingual French children omitted objects infrequently. Both groups (group 2 to a much lesser extent than group 1)

Table 2. Target-deviant object and subject omissions in monolingual French children (Jakubowicz et al. 1997)

Group	-Obj. in %	-Subj. in %
1. Group	11.8	37.9
2. Group	4.2	5.9

exhibit target-deviant object omissions (cf. Table 2).[6] They produced constructions where the object is not lexically realized, as an NP or clitic, as in (4a), and constructions where the subject has been dropped simultaneously, as in (4b).

(4) a. Il   met dans le   bain
          he puts in   the bathroom
          'He puts it into the bathroom'   (Lou)
     b. Habille
          Dresses
          'He takes his clothes on'   (Rap)

Turning to target-deviant subject omissions, Table 2 clearly shows that group 1 children omitted subjects frequently, with a frequency which is comparable with monolingual German children. Group 2 children only use subject omissions infrequently.

If we compare subjects and objects, we have to explain the high number of target-deviant subject omissions in group 1 children. We have summarized work which shows that in contrast to topic-identification of null objects, the possibility of having a null subject is much more restricted in adult (spoken) French. It is possible then that the observed asymmetry is due to the fact that not all subject and object omissions (irrespective of whether they are licit) have been calculated: French children may have omitted objects as frequently as subjects; since null subjects are more restricted in adult French, illegitimate subject omissions appear with higher frequency than illegitimate object omissions in child production data. This factor makes a conclusive answer for the observed asymmetry difficult to establish.

3.5 Summary and discussion of the monolingual data

We can summarize the monolingual data as follows:

–   With respect to omissions, there is a subject/object asymmetry in German: Subjects are omitted less frequently in a target-deviant way than objects in children with an MLU of/below 3. However, the asymmetry may be due to the fact that dropping of the subject in SVX constructions – the dominant word order pattern – results in a target-like construction. If one considers target-like and target-deviant omissions, no subject/object asymmetry can be observed in children with an MLU of/below 3: Both subjects and objects are dropped with a frequency of approx. 40%.

– With respect to omissions, there is an inversed subject/object asymmetry in French. Subjects are omitted much more frequently in a target-deviant way than objects. Since studies on monolingual children acquiring a Romance language did not consider target-like omissions for subjects and objects, the Romance data are not fully comparable to the German data.

– If one compares (target-deviant) objects, the interesting finding is that French children with an MLU below 3 seem to drop objects less frequently than German children with the same MLU, suggesting that monolingual French children are in advance with respect to knowledge of the topic-drop properties of the adult systems.

– If one compares subjects, the interesting finding is that French children with an MLU of/below 3 seem to drop subjects (in a target-deviant way) as frequently as German children do (in a target-like/target-deviant way) at the same age. Since nominative subject clitics are nearly obligatory in advanced French, omission of the subject results in a target-deviant construction in French. Since German children abundantly use SVX patterns, subject-drop "happens" to result in a target-like construction (although the child might still not know that topic-drop is syntactically restricted to the first constituent, the constituent moved into the highest specifier position in the syntactic tree). Both language groups show an omission rate of approx. 40% for subjects and can be compared for the reasons given above.

The French data are compatible with observations made for English-speaking children. English-speaking children show the same subject/object asymmetry as French children: Young English children omit subjects with a frequency of approx. 30%, whereas object omissions do not reach the 10% level in the same children (Bloom 1990). Table 3 from Valian (1990) shows that in contrast to French children who still omit subjects with a relatively high frequency with an MLU above 2.5, English children with a comparable MLU omit subjects only with a frequency of approx. 10%. Thus, English children need less time for the acquisition of this grammatical property than their French peers. Interestingly, both French and English children differ from Italian children who are learning a pro-drop language: Young Italian children omit subjects with a frequency of 70%.

One may assume that German and French children pass through a stage during which they omit obligatory subjects and objects. If one takes the description of the adult systems seriously, one may conclude that subjects are dropped in both languages with a comparable frequency, namely about 40%: whereas in German dropping mostly results in a target-like construction since

Table 3. Subjects: Monolingual English children in comparison with Italian children
(Valian 1990)

Group	Subj + realized	Subj = pronoun
1. English (2;0/MLU 1.8)	69%	75%
2. English (2;5/MLU 2.49)	89%	–
3. English (2;5/MLU 3.39)	93%	–
1. Italian	30%	35%

the subject is used in first position frequently, i.e. SVX, in French nominative
clitic omission mostly results in a target-deviant construction since nomina-
tive clitics are required in adult French. Interestingly, the languages differ with
respect to the extent to which children make use of target-deviant object drop.
Children from a Germanic background omit objects twice as frequently as chil-
dren from a Romance background with a comparable MLU. Put differently,
Romance children with an MLU below 3 already master the (restricted) topic-
drop option of the adult system: They use object-drop at a level of 10%.[7] If one
considers the fact that OVS patterns are nearly absent during the stage of target-
deviant object-drop in German, we may conclude that German children need
more time to determine the exact "ingredients" of adult word order, in partic-
ular the V2-property. Target-deviant object drop decreases with age in children
from the two language backgrounds, in particular with the lexical instantiation
of the C-system: Children with a lexically instantiated C-system omit objects
to a much lesser extent in a target-deviant way than younger children who do
not yet show lexical reflexes of the adult C-system (Müller et al. 1996).[8] Müller
et al. (1996) and Müller and Hulk (2001) argue that early argument omissions
are of the Chinese type where an IP/TP-adjoined PRO is licensed via discourse.
A Chinese type analysis of early child argument omissions is able to account
for the observation that multiple argument drop is licit in early child grammar.
Moreover, Müller and Hulk (2001) suggest that in the early stages of acquisi-
tion all children use a pragmatic strategy to license the empty subject or/and
object via discourse. Discourse licensing is part of the set of default representa-
tions which all speakers possess. This set is called Minimal Default Grammar by
Roeper (1999). A default representation may coexist with a language-specific
representation. The monolingual children may be argued to show evidence of
the activation of more than one grammar at one developmental stage. Note
that researchers have made the observation that object clitics – in contrast to
subject clitics – are acquired late in French and that they develop gradually
in some children (Clark 1986; Friedemann 1992; Guasti 1993/1994; Hamann,
Rizzi, & Frauenfelder 1994; Jakubowicz, Müller, Riemer, & Rigaut 1996; Müller

et al. 1996). Gradual development means that a finite sentence with a subject clitic may coexist with a sentence where the subject clitic has been omitted. Alternatively a finite sentence with a realized subject and object clitic may coexist with a finite sentence where only the subject clitic is realized.

Although children from the two language backgrounds have evidence for the validity of the universal pragmatic strategy in the adult grammar (Minimal Default Grammar), the monolingual French children seem to converge earlier on the target-system for objects when contrasted with children from a Germanic background.

4.   Omissions in bilingual children's French

4.1 Previous studies

Müller and Hulk (2001) discuss two longitudinal studies on the acquisition of French of which one will be summarized below. The longitudinal study we will consider is discussed in Müller et. al (1996). The authors analyze a German/French bilingual boy – Ivar from the DUFDE study (Deutsch Und Franzsisch – Doppelter Erstspracherwerb 'German and French – Simultaneous First Language Acquisition'), conducted by J.-M. Meisel (Meisel 1990b, 1994a).

Müller and Hulk (2001) analyze early object omissions in Ivar. With respect to objects, two main developmental phases may be discerned: The first phase is characterized by the presence of a high number of target-deviant object omissions and the absence or infrequent usage of object clitics and constructions related to the C-system in the adult language (cf. Tables 4, 5, 6).

Table 4. The emergence of object clitics in Ivar (tokens) (Müller et al. 1996)

Age	MLU	*me*	*te*	*le, la, les*	*lui, leur*	*nous, vous*	*se*
2;4–2;11	–	0	0	0	0	0	15[a]
3;0	6.79	1	2	1	0	0	3
3;1	5.47	0	4	4	0	1	2
3;2	6.01	1	2	8	0	0	5
3;3	6.64	0	0	12	0	0	0
3;4	6.81	0	1	16	0	0	2
3;5	5.37	0	0	7	0	0	1

a. The 15 tokens of *se* refer to two types, namely *ils se battent* 'they each other beat', which is probably rote-learned, and *elle se lève* 'she herself gets up'. For an attempt to explain the early use of reflexive clitics, cf. Crysmann and Müller (2000).

Table 5. The emergence of wh-questions and complementizers in Ivar's French (Müller et al. 1996)

Age	*où*		other wh-words		Complementizers
	Matrix	Subordinate	Matrix	Subordinate	
2;4–2;11	7	0	1	0	3[a]
3;0	0	0	0	1	4
3;1	7	0	7	4	13
3;2	8	1	5	3	11
3;3	1	0	4	2	5
3;4	3	0	7	9	18
3;5	3	1	3	3	9

a. The three tokens occur at 2;11.

Table 6. Subject vs. object omissions in obligatory contexts in Ivar's French (Müller et al. 1996)

Rec. Nr.	Age	MLU	-SUBJ (abs.)	-SUBJ (in %)	-OBJ (abs.)	-OBJ (in %)
18	2;4	1.29	3	21	1	100
20	2;5	2.93	10	29	17	46
22	2;6	3.58	11	24	7	47
24	2;7	3.51	18	86	7	47
26	2;8	3.96	16	43	4	50
28	2;9	4.55	8	11	6	35
30	2;10	4.90	5	7	4	25
32	2;11	4.90	3	3	5	25
33	3;0	6.79	1	1	0	0
34	3;1	5.47	2	2	2	8
36	3;2	6.01	0	0	4	9
38	3;3	6.67	1	1	0	0
40	3;4	6.81	1	1	0	0
42	3;5	5.37	1	1	0	0

The second developmental phase sees the decrease of target-deviant object omissions and the increase of object clitics and C-related constructions. In Ivar, the first developmental phase lasts until the age of approximately 2;11,0 (Years;months,days) / 3;0.

Table 6[9] shows that subjects were also omitted during the first developmental stage. Subject omissions reach the 10% level three months earlier than object omissions. The acquisition of clitics in Ivar is discussed in Meisel (1990) and Kaiser (1994). First nominative subject clitics appear around age 2;4 when there is evidence for finite verbs (cf. Meisel 1990a).

To summarize the omission data, we may conclude that

- object omissions are frequent in Ivar until the age of 3. The mean percentage of object omissions during this stage is 39.5%, i.e. 4 times as high as the percentage found for monolingual French children and similar to that found for monolingual German children.
- subject omissions are also frequent in Ivar. The mean percentage of subject omissions until the age of 2;9 when omissions reach the 10% level is 37.9%. This percentage corresponds to that found for monolingual French children and also to that found for monolingual German children (if all omissions are calculated, independently of whether they correspond to the target).
- subject-drop decreases three months earlier than object-drop. Furthermore, nominative subject clitics emerge earlier than object clitics, as in monolingual French children (Clark 1986; Friedemann 1992; Hamann, Rizzi, & Frauenfelder 1994; Jakubowicz, Müller, Kang, Riemer, & Rigaut 1996).

Figure 1 shows that none of the two languages may be considered dominant in Ivar. Until the age of 2;4 (18th recording), the MLU (morpheme-based) is a little higher in German than in French (mean difference: 0.5 words). From 3 onwards (33rd recording), the values for French are higher than for German which may suggest a temporal dominance of French; cf. Schlyter (1990) and
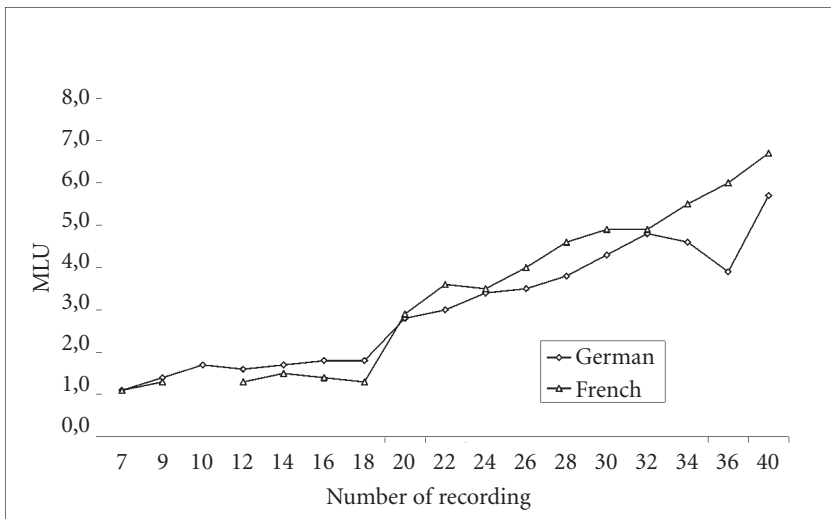
Figure 1. MLU: Ivar (1;10–3;5)

Köppe (1994). More importantly, it has been shown for different grammatical phenomena, such as finiteness and tense, subordinate clauses, case, and gender, (1) that they are marked before the age of 3 and (2) that they emerge simultaneously in Ivar's two languages (cf. Meisel 1990b, 1994a). We may thus also exclude the possibility that Ivar has an "advanced" language in the sense of Gawlitzek-Maiwald and Tracy (1996).

4.2 The bilingual child Céline

Céline is a bilingual French-German child. An analysis of the development of diverse grammatical phenomena in Céline's French as compared to her German can be found in Cordes (2001).[10] Céline is still being recorded: The recordings started when she was 2;0,9; she is in her fifth year. 31 recordings have been analyzed for Céline. Figure 2 shows the MLU values for the recordings analyzed in both languages. Céline's MLU is word-based. Although Céline's word-based MLU cannot be compared with Ivar's morpheme-based MLU, it is evident that the two languages develop in a parallel fashion and with similar speed in Ivar's language production while Céline seems to have a clear dominant language – German (mean difference between the languages until the age of 3;1: 1.5 words).
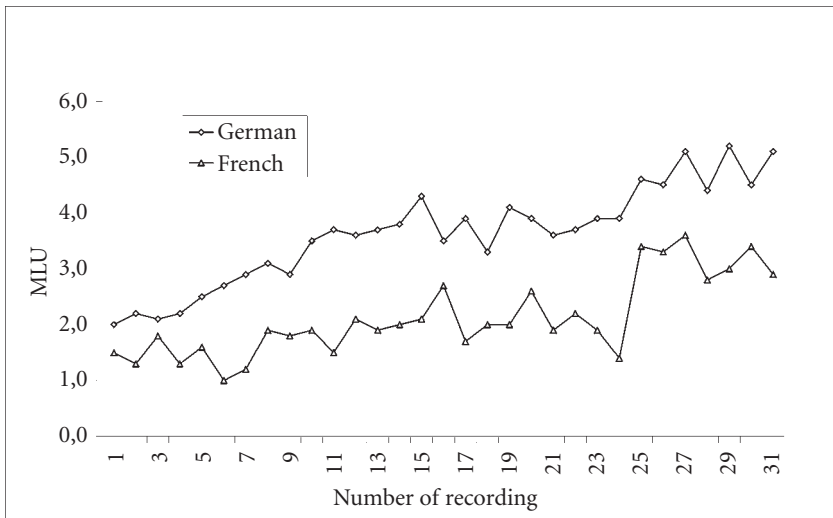
Figure 2. MLU: Céline (1;10–3;5)
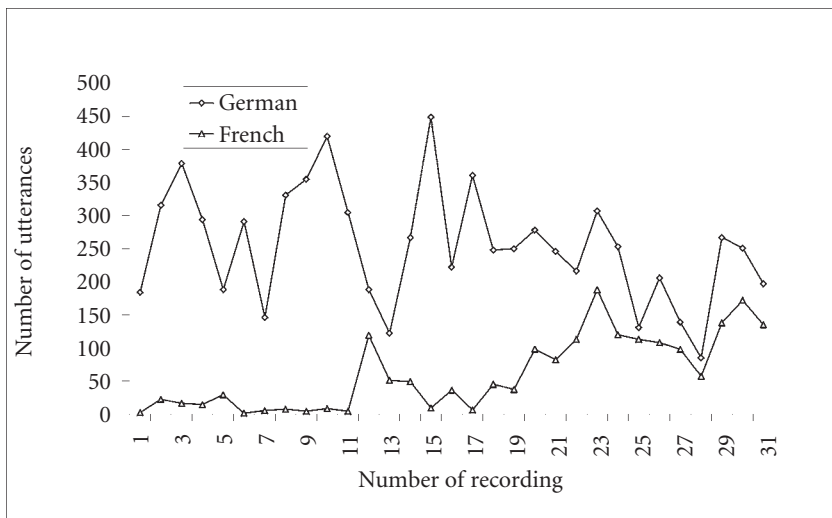
Figure 3. Number of French/German utterances per one-hour recording: Céline (2;0–3;6)

The video-recordings nearly always have the same length, namely one hour. The session has a French and a German part: Céline plays for about 30 minutes with the German interviewer and for about another 30 minutes with the French interviewer. Thus, the absolute number of French and German utterances per recording may reveal to what extent the child uses her dominant and her non-dominant language. Figure 3 shows that Céline nearly does not speak French during the first year of recordings. Cordes (2001), analyzing Céline's language use, shows that Céline nearly exclusively addresses the French interviewer in German and also answers questions from the French interviewer in German; cf. Figure 4.[11] In other words, although Céline understands what the French interviewer says,[12] she will not use French with her. There is a turning point at age 3;1 where she addresses the French interviewer in French only. Notice that Céline does not regularly use French with the German interviewer at any point in her language development; cf. Figure 5. If we compare her family situation with that of Ivar, one may conclude that Céline has less contact to the French language. Her mother is German and her father is French. Céline's mother worked half-time, her father full-time during the relevant period. Céline has an older brother who is bilingual and speaks French well. The family language was French. Céline has a German baby-sitter with whom she stays in
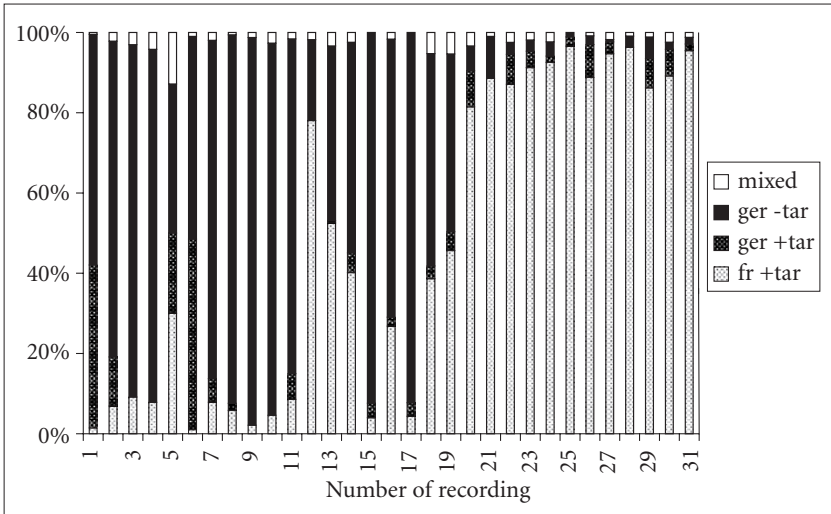
Figure 4. Target-like and target-deviant language use in Céline: French recording (2;0–3;6)
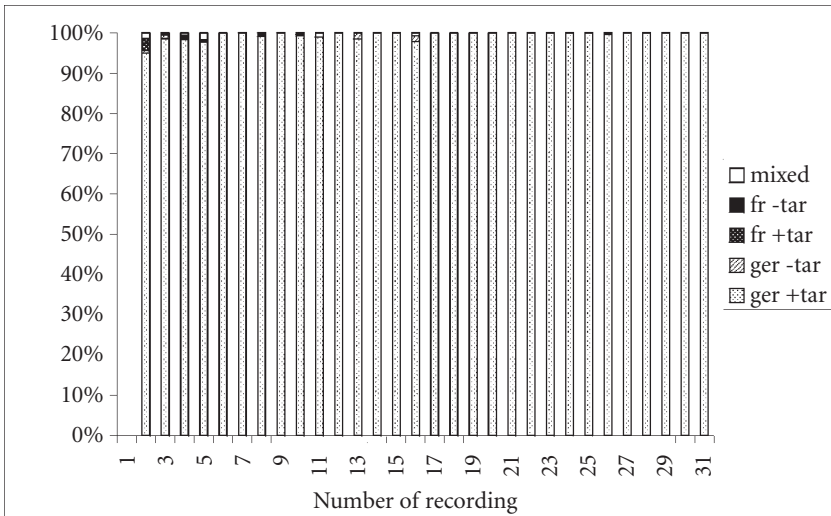
Figure 5. Target-like and target-deviant language use in Céline: German recording (2;0–3;6)
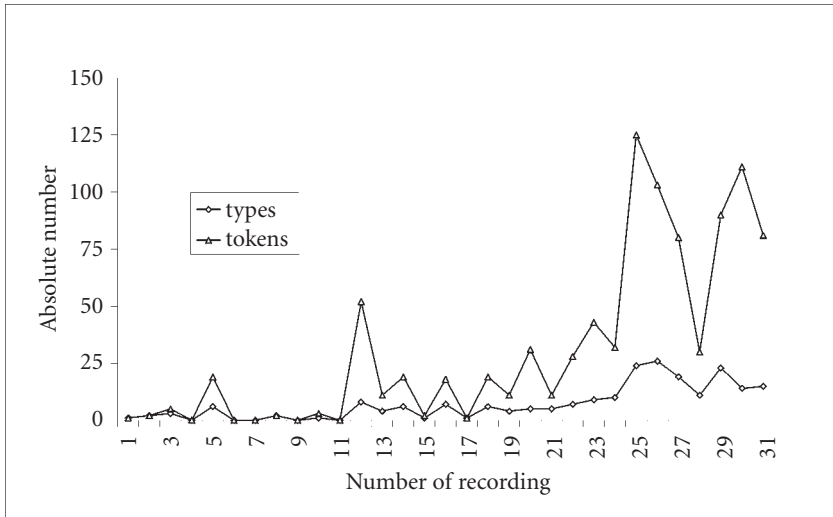
Figure 6. French verb types/tokens: Céline (2;0–3;6)

the morning. She sees her father during the evenings and weekends. During the period from 3 until 3;3 (22nd–25th recording), a French-speaking guest lived in the family. Moreover, Céline stayed for several weeks in France, without her German-speaking mother. This "bain de langue" corresponds to the point in Celine's development where she started to use French frequently and where she started to address the French interviewer in French only. Notice however that Céline went to France before and that these stays did not have similar effects. In contrast to Céline, Ivar's French parent is the mother, his father is German. Ivar's mother stayed at home with the child until Ivar was three. His father worked full-time and Ivar saw him during the evenings and weekends. From age 3 onwards, a German baby-sitter looked after him three times a week. The family language was French.

Figure 6 from Cordes (2001) shows the number of Céline's French verb types and verb tokens during the whole investigation period. Again, it is evident that there is a turning point around the age of 3.[13]

4.2.1   *Subject- and object omissions in French*

Céline's language development can be devided into two major stages: The first stage lasts from 2;0 until 3;1. This is the stage where she nearly does not use French and if she does, she uses formulaic expressions like *c'est N/NP* 'this is X' or *sais pas* 'know not'. During the first developmental stage, of the 183 contexts

for subjects (lexically realized or null), 63.4% were realized as *c'est N/NP* and 11.5% as *sais pas*, for example. In other words 75% of all utterances did contain the copula or *savoir*. The same holds for objects. Of the 59 contexts for objects (lexically realized or null), 44.1% are due to *sais pas*. In other words, although Figure 4 might indicate a qualitative shift of her French starting at the age of 2;7,19 (12th recording), it is not the case that the quality of the French utterances changes a lot before the age of 3;3,12, where the MLU suddenly raises up to 3.4.

4.3 Objects

As in the child Ivar, the first developmental stage is characterized by an absence of object clitics and a high number of object omissions; cf. in Tables 7 and 8. Furthermore, Céline does not regularly use constructions which are described in terms of the CP-layer in adult grammar; cf. Table 9. The mean percentage of object omissions during the first developmental stage is 34.4% in Céline. Müller and Hulk (2001) mention mean percentages of 39.5% (Ivar) and 32.5% (Anouk) in the French of the two German/Dutch-French bilingual children they study and 36.4% in the Italian of the bilingual German-Italian child. Thus, Céline ranges between these children.

Some examples for object omissions are listed in (5).

(5) a. Tu   fais   (Cél: 2;0,24)
        you make
        'You make it'

    b. Bleu je fais   (Cél: 2;7,19)
        blue I   make
        'I color it blue'

    c. Je mets moi   (Cél: 2;10,18)
        I   put   me
        'I put it there'

    d. C'est moi qui   fais   (Cél: 2;11,15)
        it's   me who make
        'It's me who will make it'

    e. Oui a   encore   (Cél: 2;11,29)
        yes has   still
        'It still has it'

    f. Moi brosse   (Cél: 3;1,10)
        me brush
        'I brush it'

Table 7. The emergence of object clitics in Céline (tokens)

Rec. Nr.	Age	MLU	*me*	*te*	*le, la, les*	*lui, leur*	*nous, vous*	*se*
1–24	2;0-3;1	–	0	0	0	0	0	0
25	3;3,12	3.4	0	0	1	0	0	1
26	3;3,26	3.3	0	0	0	0	0	0
27	3;4,9	3.6	0	0	7	0	0	0
28	3;4,23	2.8	0	0	1	0	0	0
29	3;5,15	3	0	0	2	0	0	0
30	3;5,29	3.4	0	0	2	0	0	0
31	3;6,12	2.9	0	0	0	0	0	0

Table 8. Subject vs. object omissions in obligatory contexts in Céline's French

Age	MLU	-SUBJ (abs.)	-SUBJ (in %)	-OBJ (abs.)	-OBJ (in %)
2;0–3;1	–	11	24.4	11	34.4
3;3,12	3.4	2	4.2	8	26.7
3;3,26	3.3	1	2.1	7	31.8
3;4,9	3.6	0	0	7	24.1
3;4,23	2.8	0	0	2	50
3;5,15	3	2	4.1	3	15.8
3;5,29	3.4	6	14.3	2	12.5
3;6,12	2.9	2	5.7	0	0

Table 9. The emergence of wh-questions and complementizers in Céline's French

Age	*où*		other wh-words		Complementizers
	Matrix	Subordinate	Matrix	Subordinate	
2;0–3;1	1	0	3	1	2 (*parce que*)
3;3,12	0	0	0	5	4 (*parce que*)
3;3,26	0	0	1	0	2 (*parce que*)
3;4,9	0	0	0	3	0
3;4,23	0	0	0	1	0
3;5,15	0	0	0	0	2 (*parce que*)
3;5,29	1	1	0	1	2 (*parce que/pour que*)
3;6,12	0	0	0	1	0

Interestingly, target-like omissions of objects amount to only two types during this developmental stage: *sais pas* and *je peux* 'I can' (uttered in the appropriate context).

It is remarkable that Céline is able to use two arguments per clause, as shown in (6).

(6) a. Ça   j'aime pas   (Cél: 2;7,19)
         This one I like   not
     b. Elle fait   le   bruit   (Cél: 2;9,20)
         she   makes   the   noise
     c. J'ai   un   pour toi . . .   (Cél: 2;11,15)
         I have one   for   you
     d. Ça   dit   Lora   (Cél: 3;0,27)
         this says Lora
     e. Moi fais- mets chouchou dedans   (Cél: 3;1,10)
         me   make   put   Chouchou inside

The comparison of the lists in (5) and (6) already shows that Céline both uses and drops the obligatory object with the same verb. Furthermore, she exhibits multiple argument drop. As in the children studied by Müller and Hulk (2001), the empty object represents the discourse topic (7) in Céline's utterances (A = Adult). The most interesting example is the following at 2;7,19 where Céline tries to reply with the adult's model.

(7) A: On l' enlève? (Céline and adult dress dolls)
            one it takes off
            'We take it off?'
     Cél: Oui / Lève
            yes   take off
            'Yes. We take it off'

As in the children studied by Müller and Hulk (2001), Céline's speech exhibits productive use of lexically instantiated topicalization into a pre-S position, as shown by the examples (5b) and (6a).

During the second developmental stage, object clitics start to be used (cf. Table 7) – albeit only third person clitics – and object omissions reach a 10% level in the penultimate recording (cf. Table 8). At the last recording, target-deviant omissions have disappeared completely. During this stage, Céline also starts to make productive use of relative markers and she uses wh-words which introduce embedded clauses (cf. Table 9). Notice, however, that she does not use the real complementizers *que* 'that' and *si* 'if/whether' yet. Müller and

Hulk (2001) observed in two of the three bilingual children that object drop constructions are used less during the second stage than during the first developmental stage, but they continue to be used once the CP in its adult form starts to be integrated. In other words, they found evidence for a rather long transitional stage in these children. The gradual decrease of target-deviant object omissions was reflected in the gradual increase of C-related constructions and object clitics in both children. In other words, those children who exhibit a rather long transitional phase for the disappearance of object drop also show a gradual development in other grammatical domains, the usage of object clitics and constructions related to the C-system. The same observations seem to be true for Céline.

A further interesting observation is that Céline uses target-like object drop with verbs other than *savoir* during this developmental stage: She drops the object in the appropriate context with *finir* 'finish', *ouvrir* 'open', *vouloir* 'want', *connaître* 'know', *tourner* 'turn'; cf. example (8).

(8) A: et   là? (Céline and adult look at pictures in a book)
             and there
             'And there?'
     Cél: je connais pas
             I   know   not
             'I don't know'
     A: c'est un bison / et   là?
             it's a   bison   and there
             'It's a bison / and there?'
     Cél: je connais pas
             I   know   not
             'I don't know'
     A: tu   connais pas non   plus?
             you know   not either
             'You don't know either?'

4.4 Subjects

The most interesting observation with respect to the first developmental phase is that subject omissions are less frequent than object omissions and that some forms of subject clitics are already used. This result has to be taken with caution, however, since Céline makes abundant use of *c'est N/NP* and *sais pas* during the first developmental stage, i.e. the absolute number of utterances

Table 10. The emergence of subject clitics in Céline (tokens)

Age	MLU	*je*	*tu*	*il, elle*	*on*	*nous, vous*	*ils, elles*
2;0–3;1	–	8	3	4	1	0	1
3;3,12	3.4	6	4	20	10	0	0
3;3,26	3.3	12	4	20	5	0	0
3;4,9	3.6	18	7	2	5	0	0
3;4,23	2.8	1	0	8	4	0	0
3;5,15	3	6	3	26	8	0	1
3;5,29	3.4	5	4	22	3	0	0
3;6,12	2.9	21	3	2	7	0	0

calculated for French is very low and perhaps not representative. A further ob-
servation concerns subject omissions which reach a level of below 10% already
at the beginning of the second developmental stage, i.e. three months before
such a level is reached for object omissions; cf. Table 8. This correlates with
developments observed in Ivar. A further important observation is that Céline
also uses subject clitics much earlier than objects clitics, with the first subject
clitic at 2;0,24; there is no stage which can be characterized in terms of com-
plete absence of subject clitics once the child uses finite verbs (cf. Table 10).
This observation corresponds to developments in Ivar (cf. Meisel 1990a). Fur-
thermore, during the second stage Céline uses a great variety of subject clitics
(cf. Table 10), whereas she uses only third person object clitics.

4.5 Comparison with monolingual French children

Céline's MLU is below 3 during the first developmental stage and we may thus
compare her with the first group of monolingual French children presented
above. It has been observed that monolingual French children with an MLU be-
low 3 display (target-deviant) object omissions at a level of 11%. Céline differs
from the monolingual French children and is comparable to the monolingual
German children who use object omissions frequently during this early de-
velopmental stage. With respect to subjects, we may observe that Céline uses
subject omissions less frequently than monolingual children. However, she also
uses nominative subject clitics in her French which account for 50% of all lex-
ically realized subjects during the first stage; cf. Table 11. It is thus probable
that the developmental stage of monolingual acquisition which is characterized
by the absence of nominative clitics and a high number of subject omissions
is very short and not visible in Céline (since the recordings were made every
fortnight).

Table 11. Clitics and strong pronouns in subject position: Céline's French

Age span		Subject			Object	
	clitic	strong	NP	clitic	strong	NP
2;0–3;1	17 (50%)	14 (41.2%)	3 (8.8%)	0	4 (19%)	17 (81%)
3;3–3;6	237 (91.9%)	13 (5%)	8 (3%)	14 (14%)	28 (28%)	58 (58%)

Table 12. Use of Pronouns: Céline's French compared with the monolingual children from Jakubowicz et al. (1997)

Age span		Subject			Object	
	pronoun	omission	NP	pronoun	omission	NP
2;0–3;1	31 (68.9%)	11 (24.4%)	3 (6.7%)	4 (12.5%)	11 (34.4%)	17 (53.1%)
3;3–3;6	250 (92.3%)	13 (4.8%)	8 (3%)	42 (32.6%)	29 (22.5%)	58 (45%)
1. French	55.5%	37.9%	6.6%	17.3%	11.8%	70.9%
2. French	87.2%	5.9%	7%	36.8%	4.2%	59%
1. German	41.9%	39.5%	18.6%	23.6%	46%	30.4%
2. German	75.6%	8.6%	15.8%	27.3%	37.8%	34.9%

Table 12[14] shows that Céline uses pronouns (clitics and strong forms) in subject position. There is a strong tendency to use pronouns in subject position, not lexical NPs. This trend does not change during development. What about monolingual French (and German) children? According to Jakubowicz, Müller and Riemer (1997) French monolingual children with an MLU below 3 prefer to use pronouns in subject position (lexical NPs amount to 6.6%) and lexical NPs in object position (70.9%). This general trend does not change in children with an MLU above 3. We may conclude that Céline patterns like a monolingual French child with respect to subject **realizations**. A comparison of Tables 11 and 12 further reveals that in Céline as well as in the monolingual French children, subject omissions disappear for the benefit of pronouns, and not of lexical NPs. Again, Céline patterns like monolingual French children for this aspect of subject **omissions**.

Tables 11 and 12 reveal that Céline nearly does not use pronouns (clitics and strong forms) in object position and that there is a strong tendency to use lexical NPs as objects. This general trend changes a little during development for the benefit of pronouns (strong and clitic). It is very difficult to interpret Céline's data in comparison with the monolingual data. If one considers **realizations**, she patterns more like a monolingual French child. In contrast to monolingual French children with an MLU below 3 who show a strong tendency to use lexical NPs in object position, monolingual German children use

pronouns and lexical NPs to a nearly similar extent in object position. This general trend does not change during development. A comparison of Tables 11 and 12 further reveals that object omissions in Céline disappear for the benefit of pronouns. In this respect, Céline seems to (start to) pattern like monolingual French children with an MLU above 3 for object **omissions**.

4.6 Discussion

The general conclusion drawn from the comparison of the two bilingual children with monolingual children is that the French of the bilinguals differs from monolingual French children mainly with respect to the frequency of **object omissions**. Müller and Hulk (2001) have analyzed French object omissions in terms of crosslinguistic influence from the Germanic language in two bilingual children. The influence to be observed was delay, i.e. there are no qualitative but huge quantitative differences between object omissions in monolingual and bilingual children. More specifically, Ivar does not abandon Minimal Default Grammar in French as quickly as monolingual French children do, due to the influence of German which is a topic-drop-language and which gives the child a lot of positive evidence in favor of discourse licensing of empty arguments.

With respect to object omissions, both adult languages French and German overlap: they both have constructions with an empty object which the child may analyze in terms of Minimal Default Grammar during a first stage. The bilingual child is not able to abandon Minimal Default Grammar for French as quickly as monolingual children since adult German contains a lot of evidence for discourse licensing and adult French seems to allow an analysis of constructions with an empty object in terms of Minimal Default Grammar (from the child's perspective). These are constructions with an empty topic and constructions with an object clitic where the canonical object position is empty.

We may assume for Céline's data a similar explanation for object omissions, namely influence from German onto her French. The comparison of the two bilingual children, Ivar – a balanced bilingual child – and Céline – a child with a weaker language – shows that this domain of the French grammar seems to be susceptible to influence, i.e. independently of whether German is the dominant language or not. We may thus exclude language dominance as an explanation for the observed crosslinguistic influence in the unbalanced child, Céline. With respect to argument realizations in French, both bilingual children seem to pattern more with monolingual French children, in other words, the domain which is not susceptible to influence also seems to be independent of language dominance. It is thus very plausible to search for reasons which

are related to properties of the particular grammatical phenomenon involved in order to explain why crosslinguistic influence has occured. The observation that Céline patterns more with monolingual French children for argument realizations and Cordes' (2001) analysis of other grammatical phenomena like word order and tense marking indicate that Céline is able to separate the two languages during the developmental stage which shows influence from German onto French for object omissions. Separation and crosslinguistic influence are not mutually exclusive in bilingual first language acquisition.

The present study opens the possibility for crosslinguistic influence to be explained independently of the fact that there is a (first) "dominant" language in child second language acquisition as well (cf. Grondin & White 1996). If the interpretation of the results obtained for bilingual first language acquisition given in the present article is plausible, it seems more fruitful to look for factors internal to the grammatical phenomenon in the L2 in order to explain crosslinguistic influence.

Finally, one difficulty with the study of Céline's corpus has to be addressed, namely the fact that she does not speak enough French during the early developmental stage in order to make "safe" generalizations about the data. One example are constructions of the type *c'est N/NP* which are representative of more than half of all constructions containing a finite verb during the first developmental stage. Of course, constructions of the type *c'est N/NP* do not invite the child to drop the subject for example. Future research has to take into account more children with a clear dominant language in order to be able to evaluate the importance of language dominance for the discussion of crosslinguistic influence in early child bilingualism.

Notes

1. One possible qualitative difference relates to verb classes, i.e. that null arguments are found with a particular verb class (ditransitive verbs for example) in one acquisition type but with all verb classes in the other. Another qualitative difference would be that null arguments are licensed *in situ* in one acquisition type but not in the other.

2. Topic-drop is a property of colloquial German.

3. Children were told a story accompanied by pictures. Subjects were asked to answer the questions of the interviewer. The German data has been collected by one of the authors of the present study, Natascha Müller, the French data by Celia Jakubowicz.

4. For further information cf. Müller and Hulk (2001).

5. Tuller (2000) mentions that French does not have focus-fronting.

6. Unfortunately, target-like object omissions were not considered.

7. Müller and Hulk (2001) argue that the target-deviant constructions at a level of 10% in young French children are not due to performance errors, since most object omissions concern ditransitive verbs in French, e.g. *mettre* 'to put'.

8. Cf. Müller, Crysmann and Kaiser (1996) for arguments against an account in terms of truncation, as being suggested by Rizzi (1992); cf. also Müller and Penner (1996).

9. Imperatives and subject realizations/omissions with the verb *falloir* 'need' were not included.

10. I want to thank Julia Cordes for the transcription of Céline's data.

11. Non-target-like usage of French in the French recording is non-existent.

12. The French interviewer will stick to French, even though the child speaks German to her.

13. *C'est + NP* has been included.

14. The German monolingual data are taken from Müller and Schmitz (2001).

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The semantic and aspectual properties of child L2 root infinitives*

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Introduction

One of the objectives of investigating child second language acquisition (SLA) is to find out to what extent it is similar to first language (L1) acquisition. Assuming that L1 acquisition is guided by principles of Universal Grammar (UG), it is often thought that second language (L2) acquisition by children is of the same nature, as it seems so easy for young learners to acquire a foreign language (Bley-Vroman 1990; Johnson & Newport 1989). However, the question of whether UG is accessible to L2 learners is debated mostly in the case of adults, who seem to struggle in the learning process. There exists little research on the exact nature of interlanguage grammars developed by children (see Grondin & White 1996; Hilles 1991; Lakshmanan 1991; Paradis, Le Corre, & Genessee 1998; Schwartz 1992). It is this gap in the literature that the present paper wishes to address. The focus is on the nature of root infinitives (RIs) produced by children learning an L2, namely root declarative clauses whose main verb is either a past participle or an infinitive, whereas a finite form is required in the target language (such as *papa partir* 'daddy leave-INF' instead of *papa part* 'daddy is leaving'). Previous research suggests that there exists a period, starting in the early phases of acquisition, during which RIs are produced by child learners (Prévost 1997; Prévost 2003; Prévost & White 1999). Evidence comes mainly from early L2 French and L2 German data. Research has crystallised over the issues of finiteness and the underlying structure of RIs. Are such clauses finite or nonfinite? Do they involve the projection of functional categories, and if so, what are the properties of these categories?

Two main hypotheses have been put forward to account for the RI phenomenon in child L2 acquisition: the Missing Surface Inflection Hypothesis

(MSIH) and the Truncation Hypothesis (TH). According to the former, RIs, while superficially nonfinite, are in fact finite (Haznedar & Schwartz 1997). The infinitival ending is used as a substitute for finite markers, presumably due to mapping problems between syntax and morphology (Lardiere 1998, 2000). Under this approach, apparently nonfinite forms appear in finite positions (such as Infl). On the TH, RIs are nonfinite. Functional categories, which are held to be part of initial grammars, are assumed not to be systematically projected (Prévost 1997; Prévost & White 1999). When only VP is projected, the resulting utterance is an RI; if at least Infl is projected, a finite clause will be produced. Evidence in favor of the TH has been found in early child L2 French acquisition by Prévost (1997) and Prévost and White (1999): when main verbs bear an infinitival marker, they seem to possess nonfinite properties, contrary to what the MSIH predicts. Note that Belletti and Hamann (2000, this volume) did not find evidence for RIs in longitudinal spontaneous L2 French data from two children whose L1s were Italian and German respectively. It might be the case that these children were past the RI period.

In this paper, I present further arguments in favor of the TH related to the types of predicates (eventive vs non-eventive) found in RIs and the modal interpretation of RIs. I argue that if RIs do not involve any functional category, they should only exhibit eventive predicates (which can be interpreted contextually) and their temporal interpretation should be free (in contrast to finite declaratives). I investigate these predictions in longitudinal data from two anglophone learners of French.

It is well known that RIs also occur in the early phases of L1 acquisition of several languages, including Dutch, French, and German (Friedeman 1993/1994; Pierce 1992; Poeppel & Wexler 1993; Wexler 1994; Wijnen 1998). The question therefore arises as to whether RIs produced by L1 and child L2 learners are similar in nature. At first glance, it seems that RIs in child L1 and L2 French have several properties in common. First, when RIs occur, they are found along with finite clauses. In other words, it is not the case that in either child L1 or L2 French, children start by producing only nonfinite verb forms. In both learning contexts, finite and nonfinite forms are observed, with the incidence of RIs decreasing over time. Second, nonfinite verb forms seem to be truly nonfinite, in that they are found in nonfinite positions. For example, infinitival verbs never precede negation; they always follow it. They are also never used with subject clitics; and if they are found with a subject pronoun, the pronoun is a so-called strong pronoun, such as *moi* 'me' or *toi* 'you', which presumably bears (non-nominative) default case.[1] In short, the occurrence

of nonfinite forms in early child L1 and L2 French seems to be structurally determined.

Despite these similarities, further investigation is required in order to establish whether RIs are of the same nature in the two learning contexts. In particular, research in early L1 acquisition of languages which possess overt infinitival morphology reports a double correlation between finiteness and verb type, and between finiteness and modality. It seems that verbs expressing an event, such as *marcher* ('walk'), are likely to be found in the nonfinite form, in contrast to state verbs such as *être* ('be') or *rester* ('stay') which are always finite. This is observed, for instance, in L1 French (Ferdinand 1996) and L1 Dutch (Wijnen 1998); for an overview, see Hoekstra and Hyams (1998). These studies also report that the vast majority of RIs produced by children bear a modal interpretation, e.g. deontic or boulemaic, in contrast to finite declaratives which tend to receive a present or past temporal reading. Hence, an RI such as *papa partir* is likely to convey a boulemaic meaning (i.e. 'daddy wants to leave'), while *papa part* would be an observation that 'daddy is leaving'. The existence of such correlations has not been examined in child SLA, except in L2 English where no relation between finiteness and verb-type is reported (Gavruseva 2000). Note that no such relation is observed in L1 English either, which, according to Hoekstra and Hyams (1998), is due to the fact that English lacks overt infinitival morphology. Indeed, uninflected forms such as *I walk* are ambiguously finite or nonfinite in English. It is therefore necessary to investigate the relation between finiteness and modality/verb type in L2 acquisition of a language which possesses a phonetically distinct infinitival marker, such as French.

1. Semantic and aspectual properties of RIs in L1 acquisition

According to Vendler (1967), event-denoting predicates have internal time structure: they can either refer to a homogenous process going on for some time (even indefinitely) with no overt or inherent culmination point, such as *cry*, or denote an event with a culmination point after which the event no longer takes place. In the latter case, the process leading up to that point can either go on for some time, such as *burn out*, or it can be instantaneous, such as *find*. The three types of event-denoting predicates described above are usually referred to as activity, accomplishment and achievement verbs respectively. By contrast, non-eventive (or stative) verbs are not associated with any temporal structure. It is difficult to imagine a beginning or an end point to what it is

they denote. In *John loves Mary*, the speaker does not focus on the time frame surrounding the feeling John has for Mary; rather, something is said about a property of John.[2] Non-eventive verbs include *be* and *have*, verbs describing an internal state, such as *want*, *know* and *love*, verbs expressing a capacity or a necessity, such as *can* and *must*, and auxiliary verbs (e.g. auxiliary *have* and *be*).

Investigating longitudinal production data from four children learning L1 French, Ferdinand (1996) found a significant contingency between finiteness and predicate type in the initial stages of acquisition, with nonfinite verbs being overwhelmingly eventive.[3] Indeed, verbs such as *couper* ('cut'), *faire* ('do'), *ouvrir* ('open'), and *donner* ('give') only appear as nonfinite verbs in the earliest files (in two of the children's corpora). In contrast, verbs such as *être* ('be') and *avoir* ('have') only appear in the finite form, as can be seen in (1).[4] In addition, the verb *aller* ('go') is found exclusively in the nonfinite form when used as a main (event-denoting) verb (2a), and in the finite form when used as an inchoative auxiliary (2b). At the next stage, finite verbs are split between event-denoting and non-eventive predicates, but nonfinite verbs continue to be exclusively eventive.

(1) a. est froid le   camion   (Philippe: 2;2;0)
         is cold the truck
     b. a   bobo   fesse   Nathalie   (Nathalie: 2;0.1)
         have-3s booboo bottom N.

(2) a. moi aller   dehors   (Daniel: 1;10;2)
         me go-INF outside
     b. manger on va   manger   (Daniel: 1:10;2)
         eat:INF we go:3s:INCHO eat:INF

Wijnen (1998) observed a similar correlation between finiteness and verb-type in early L1 Dutch. Out of 1883 RIs found in the production corpora of four children, 1790 (95%) were eventive.[5] They all involved lexical verbs. In contrast, the 699 finite verbs found in the same corpus were evenly split between eventive and non-eventive. Importantly, these were all lexical finite verbs, as modals and the copula were left out of the statistics, which allows direct comparisons with the results in non-finite root declaratives. Also working on L1 Dutch, Jordens (1990) noticed that stative verbs only occurred in the finite form. Finally, it has been observed in bilingual French/German acquisition (Meisel 1985), as well as in L1 Dutch (de Hann 1986), that in the early stages the only finite verbs are modals, auxiliaries and the copula, namely non-eventive verbs.

The other correlation widely reported in L1 acquisition is that RIs tend to have a modal interpretation, in contrast to finite declaratives. Ferdinand (1996) argues that most of the RIs she observed in L1 French had a modal interpretation, although she does not give precise figures and explicit examples. Wijnen (1998) reports that 86% (1625/1883) of the RIs he found in his L1 Dutch data had a future/modal interpretation (as shown in (3)), compared to only 21/699 finite verbs (3%). The vast majority of finite lexical verbs were found to bear a present temporal interpretation (657/699).

(3) a. Eerst kaartje kopen!
first ticket buy-INF
'We must first buy a ticket'

b. Niekje buiten spelen
Niek outside play-INF
'Niek wants to play outside'

Modal reference of RIs has also been observed in L1 Swedish (Plunkett & Strömqvist 1990) and L1 German (Ingram & Thompson 1996).

In order to account for the distribution of verb-types in finite and nonfinite declaratives, Wijnen (1998) proposes that the temporal reference of nonfinite eventive verbs can be inferred deictically, in contrast to non-eventive predicates. As mentioned earlier, eventive verbs inherently refer to the time axis, since they denote the onset of an event, its duration, or its end point. Following Kratzer (1989) and Zwarts (1992), Wijnen proposes that eventive verbs select an event argument, which takes the form of an event variable ranging over possible events in the semantic representation. This variable is related to Tense, or in Higginbotham's (1985) terms, theta-bound by Tense. When Tense is part of the representation, the event argument is interpreted via binding to Tense. However, when T is absent from the representation, the event argument can be interpreted contextually, which in turn means that the relation between the event time and the utterance time is free (Wijnen 1998: 388). In contrast, non-eventive predicates do not select an event argument. Therefore, the temporal reference of these verbs cannot be interpreted deictically. In other words, non-eventive verbs need Tense in order to be referentially bound. If the representation of RIs lacks Tense, it follows that these verbs cannot appear in such sentences. In addition to providing an account of the contingency between finiteness and verb-type in child L1 acquisition, this approach can also explain why adults RIs always exhibit eventive predicates, never non-eventive ones, as illustrated by the following examples of French jussives.

(4)   a.   Ne   pas   fumer!
            NEG   not   smoke-INF
            'no smoking'
      b.   *Ne   pas   aimer!
            NEG   not   love-INF
            'no loving'

As for the fact that a large proportion of RIs receive a future/modal interpreta-
tion, several scholars point to the [irrealis] property of overt infinitival markers
(Hyams 2001; Wijnen 1998). Another proposal is that RIs involve a null modal
with aspectual properties (Boser et al. 1992; Ferdinand 1996). The null ele-
ment, which appears under Infl, would select a nonfinite predicate. Note that
under this approach, all RIs are considered to be finite.

2.   RIs in early child SLA

As in L1 acquisition, children learning a second language have been found
to produce main declarative clauses with the main verb bearing an infiniti-
val marker or no inflection at all. Studies on early L2 French and L2 German
suggest that the nonfinite verbs of RIs have nonfinite properties. Longitudi-
nal production data were examined from three English-speaking children, two
of them learners of L2 French (Prévost 1997; Prévost & White 1999) and one
learner of L2 German (Prévost 2003). In each case, RIs were found to oc-
cur during a specific period starting in the earliest recording sessions and to
decline sharply thereafter. There is evidence that the verb in RIs is within
VP, which suggests that it is nonfinite. For instance, when used in negative
contexts, infinitival verbs systematically appear after negation. This contrasts
with inflected verbs, which are systematically positioned prior to negative ad-
verbs. Moreover, infinitival verbs are almost never used with a clitic subject,
in contrast to what is observed with inflected verbs. Such results support the
Truncation Hypothesis according to which the occurrence of nonfinite forms
is structurally determined. Under this approach, Rizzi's (1994) Root Principle,
whereby root clauses are CPs, does not operate in initial child interlanguage
grammars. This means that the root of main declarative clauses may vary: it
can be CP, but also IP or VP. When only VP is projected, the resulting utterance
is an RI; if at least Infl is projected, a finite clause will be produced. The results
fail to confirm the alternative Missing Surface Inflection Hypothesis according
to which morphological errors are due to mapping problems between syntax

and morphology, and not to the kind of structure being projected. Hence, under the MSIH, infinitival main verbs should be found in finite positions, i.e. in CPs, above negation or accompanied by a clitic subjects, contrary to facts. Additional results reported by Prévost (2001) confirm that infinitival verbs and past participles are indeed nonfinite in child L2 French grammars: they are restricted to nonfinite positions such as following another verb (e.g. an auxiliary or a modal) or a preposition.

Although the findings seem to be straightforward, there remains one particular question which is unexplored in L2 acquisition of French and German, i.e. the relationship between finiteness and verb-type/modality. If previous analyses of child L2 French data are correct, further support in favor of the TH should be obtained.

3.   Predictions

The following predictions are based on the incidence of lexical verbs in finite and nonfinite declaratives. Non-lexical verbs (such as modals and the copula) will only be briefly discussed in the results section. Previous research reports that such verbs occur solely in the finite form in child L2 French and L2 German (Prévost 1997; Prévost 2003; Prévost & White 1999). However, there appears to be a potential confound introduced by non-lexical forms in the investigation of modality and verb-types in finite and nonfinite declaratives, given the fact that they are extremely frequent in the input and that they overwhelmingly occur in the finite form. Therefore, the most reliable data for isolating the purely semantic effect of eventiveness would be found in the comparison of eventive vs. non-eventive lexical main verbs. Such an approach is also adopted by Wijnen (1998) for child L1 Dutch. Note that the distinction between lexical and non-lexical verbs is not discussed by Ferdinand (1996) in child L1 French, as all the examples of non-eventive predicates she quotes in her study are non-lexical.

Under the TH, the underlying representation of RIs lacks functional categories, including Tense. Therefore it is expected that only eventive predicates, and not non-eventive ones, will appear in nonfinite declaratives. In contrast, non-eventive verbs should be restricted to finite declaratives. Note that according to this prediction all non-lexical verbs, which are non-eventive, should appear in the finite form. A further prediction is that the interpretation of RIs should be free: they should refer to present, past or future events. Moreover, there should be a contingency between finiteness and modality on the TH.

Since RIs are considered to be nonfinite, we should observe a high incidence of future/modal interpretation in such clauses, due to the [irrealis] property of the infinitival morphology.[6]

Under the MSIH, Tense is part of the representation of RIs. Hence, all verb types should be observed in these declaratives, including eventive and non-eventive predicates. Furthermore, there should be no contingency between modality and finiteness, since all verbs are considered to be equally finite. Hence, finite and nonfinite predicates should receive similar interpretations. Should predicates be found to bear a modal reading, the incidence of this interpretation should be similar in both finite and nonfinite declaratives.

Under the Null Auxiliary Hypothesis (NAH), finite declaratives and RIs are equally finite and their structures involve functional categories. Following Boser et al. (1992), I assume that null modal/auxiliaries need to be identified by the subject occupying the specifier of the root of the clause. It can take the form of a DP or a subject-wh word (such as *qui* 'who'). Hence, if (nominative) subject DPs and subject-questions are used, they should be found together with finite and nonfinite verbs (e.g. *qui partir?* 'who leave-INF'). In contrast, strong pronoun subjects, such as *moi* 'me' (which presumably bear non-nominative default case), should not occur in either context. Finally, the subject of RIs is expected to be systematically overt, as it needs to identify the null auxiliary. Thus, null subjects are not expected to be found in RIs. As for modality, the NAH clearly predicts that there should be a contingency between finiteness and modality, since RIs, but not finite declaratives, are held to involve a null modal.

4.   The study

Spontaneous production data from two English-speaking children learning French, Greg and Kenny, were analysed (Lightbown 1977). First exposure to French occurred at age 4;9 for Kenny and age 4;5 for Greg. They were first interviewed when they were attending an immersion program at a kindergarten in Montreal (they had previously been enrolled in a bilingual nursery program). They then attended a regular French kindergarten. At the time of the first recording, Kenny was 5;4 and Greg was 5;8. Neither child spoke much during the first interview (which is not considered in the present study). They were then recorded, either separately or together, once a month on average for about 28 months. In all, Kenny was interviewed 20 times, and Greg 13 times. During each recording session, the interviewer and the child played games designed to elicit interaction. Each session followed the same format.

In previous research, Prévost (1997) and Prévost and White (1999) reported that both children produced RIs for roughly the first 18 months covered by the interviews. In addition, main infinitival verbs were argued to be always nonfinite (see Section 2 above).

The present study is restricted to the first 18 months of acquisition. Only non-interrogative main clauses were considered. In order to decide about the modal and temporal reading of a root declarative, I looked at the discourse and situational context in which the sentence was produced. In so doing, I took into consideration the previous two or three interventions of the child and the interviewer, as well as their next two or three utterances. Situational comments, which occasionally appear in the transcriptions, were also taken into account. In some cases, the context was not helpful enough for me to reach a firm conclusion about modality or temporality. In the following tables, I report such cases in a column labeled *Doubt*. As for predicate-types, I considered the semantics of the verb, as well as its arguments and the tense of the clause. It is well-known that the same predicate can have different aspectual interpretations depending on its arguments. For instance, *lire* 'to read' refers to an activity in *je lisais* 'I was reading', but to an achievement in *j'ai lu le livre* 'I read the book'. In the present tense, *il construit une maison* 'he's building a house' refers to an activity, while its past counterpart *il a construit une maison* 'he built a house' can be considered an achievement. Note that in all cases, the resulting interpretation falls within the general class of eventive predicates.

5.   Results

5.1   Finiteness and verb-type

According to the TH, there should be a contingency between finiteness and eventivity, such that non-eventive predicates should not appear in RIs. This is not expected under the MSIH which predicts that infinitival non-eventive forms should be found. Tables 1 and 2 report the occurrence of eventive and non-eventive predicates in the children's finite and nonfinite root declaratives. Both eventive and non-eventive verbs were used by the two children throughout the first 18 months of acquisition. As can be seen in Table 1, all of Kenny's RIs exhibit event-denoting predicates. Moreover, it is not the case that only a few verbs are used in RIs; rather, a variety of verbs are observed, such as *monter* 'climb' at month 2, *serrer* 'tighten', *manger* 'eat', *visiter* 'visit' and *sauter* 'jump'

at month 3, and *jouer* 'play', *ouvrir* 'open', *aller* 'go' and *défaire* 'undo' at month 5. Examples of RIs are given in (5).

(5) a. une fille monter   (Kenny, month 2)
          a   girl   climb-INF
     b. ma ferme visiter   toi   (Kenny, month 3)
          my farm   visit-INF you
     c. moi prendre une ça   (Kenny, month 8)
          me   take-INF a   that
     d. moi jouer   avec le   train aussi   (Kenny, month 11)
          me   play-INF with the train too

Table 1 also reports the findings on finite lexical verbs. Only simple forms are considered, so as to allow for direct comparisons with RIs, since only simple lexical verbs are used in such sentences. What is striking with respect to finite simple predicates is that some of them are non-eventive (34%), in contrast to what is observed in RIs. In fact, Kenny's non-eventive predicates are restricted to finite declaratives, whereas his eventive verbs are evenly split between finite and non-finite contexts. Out of the 143 eventive predicates found in root declaratives, 70 (49%) appear in finite utterances and 73 (51%) are in RIs. It is important to point out that a variety of non-eventive predicates were used, such as *savoir* 'know' (month 2), *rester* 'stay' (month 5), *avoir* 'have' (month 7), and *connaître* 'know' (month 14). Examples of eventive and non-eventive finite verbs are given in (6) and (7). This first set of results confirms the predictions of the TH, according to which Tense is absent from the representation of RIs.

(6) a. mon papa vient   maison   (Kenny, month 1)
          my   dad   come-1/2/3s home
     b. aide   papa après   (Kenny, month 1)
          (I) help-1/2/3s dad   later

(7) a. moi sais [: heu]   in anglais but pas de
          me   know-1/2/3s in English but not any
          français   (Kenny, month 2)
          French
     b. elle a   six et   ça   (Kenny, month 9)
          she   have-1/2/3s six and this

It should be noted that finite lexical non-eventive predicates are observed quite early in Kenny's corpus. Although they are relatively rare until month 4, their number increases thereafter, their ratio with respect to the total of lexical verbs fluctuating between 39% and 75% until month 18. It is therefore impossi-

Table 1. Eventive and non-eventive lexical verbs in Kenny's finite and nonfinite declaratives

Month	Nonfinite declaratives						Finite declaratives					
	+Ev	−Ev	*doubt*	Total[a]	%+Ev	%−Ev	+Ev	−Ev	*doubt*	Total[a]	%+Ev	%−Ev
0.5	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	5	0	0	5	100	0
2	1	0	0	1	100	0	0	2	1	2	0	100
3	4	0	0	4	100	0	1	0	0	1	100	0
4	0	0	0	0	0	0	5	0	0	5	100	0
5	5	0	0	5	100	0	3	3	2	6	50	50
7	6	0	0	6	100	0	2	2	4	4	50	50
8	7	0	0	7	100	0	7	0	2	7	100	0
9	5	0	0	5	100	0	1	1	0	2	50	50
9.5	8	0	0	8	100	0	1	2	1	3	33.3	66.6
10	5	0	0	5	100	0	3	1	2	4	25	75
11	5	0	1	5	100	0	9	0	3	9	100	0
14	9	0	1	9	100	0	4	6	8	10	40	60
15	12	0	1	12	100	0	11	7	7	18	61.1	38.9
18	6	0	0	6	100	0	17	12	4	29	58.6	41.4
Total	73	0	3	*73*	100	0	69	36	*34*	106	66	34

[a] based on non-doubtful instances

ble to isolate a period during which finite declaratives only involve eventive predicates.

Similar tendencies are found in Greg's data. There too a significant contingency between finiteness and predicate-type obtains ($X^2 = 51.713$, $p < .0001$). Almost all of Greg's RIs contain event-denoting predicates (Table 2), with a large variety of verbs being observed, such as *jouer* 'play' and *mettre* 'put' at months 5 and 9.5, *aller* 'go' at month 9.5, and *colorer* 'colour', *écrire* 'write' and *manger* 'eat' at month 10. As with Kenny, only lexical verbs were found in Greg's RIs (see the examples in (8)). The only instance of a non-eventive predicate used in an RI is presented in (9).

(8) a. moi jouer   avec le   train   (Greg, month 5)
         me   play-INF with the train
     b. juste le   mettre   comme ça   (Greg, month 5)
         just   it:ACC put-INF like   this
     c. moi colorer   ça   (Greg, month 10)
         me   colour-INF this
     d. moi couper   là   (Greg, month 14)
         me   cut-INF there

Table 2. Eventive and non-eventive lexical verbs in Greg's finite and nonfinite declaratives

Month	Nonfinite declaratives						Finite declaratives					
	+Ev	–Ev	*doubt*	Total[a]	%+Ev	%–Ev	+Ev	–Ev	*doubt*	Total[a]	%+Ev	%–Ev
5	7	0	0	7	100	0	7	2	1	9	77.8	22.2
9.5	2	1	0	3	66.6	33.3	5	5	0	10	50	50
10	13	0	0	13	100	0	2	4	0	6	33.3	66.6
11	2	0	0	2	100	0	2	8	2	10	20	80
14	12	0	1	12	100	0	26	24	9	50	52	48
15	13	0	0	13	100	0	16	27	*14*	43	37.2	62.8
18	7	0	0	7	100	0	20	29	*10*	49	40.8	59.2
Total	56	1	1	57	98.3	1.7	78	99	*36*	177	43.5	56.5

[a] based on non-doubtful instances

(9) (je/on) laisser comme ça   ou comme ça   (Greg, month 9.5)
     (I/one) let-INF like   this or like   this

When considering simple lexical finite predicates, we observe that they are almost evenly split between eventive and non-eventive verbs. This is illustrated in (10) and (11). In all, 78/134 (58.2%) eventive verbs produced by Greg occur in finite roots, in comparison to 99/100 (99%) non-eventive predicates. As with Kenny, the fact that non-eventive predicates almost never appear in RIs, even in the earliest stages, confirms the predictions of the TH. Note again that a variety of non-eventive predicates were produced, such as *laisser* 'leave' and *savoir* 'know' (month 5), *aimer* 'love' and *avoir* 'have' (month 9.5), *manquer* 'miss' (month 10), *rester* 'stay' (month 14), *connaître* 'know' (month 15), and *penser* 'think' and *croire* 'believe' (month 18). Finally, there is no period during which either eventive or non-eventive lexical verbs are found exclusively in Greg's finite clauses.

(10) a. on le   laisse   comme ça   (Greg, month 5)
         we it:ACC leave-1/2/3s like   this
     b. il manque   une roue ici   (Greg, month 10)
         it miss-1/2/3s a   tire here
     c. moi j'ai   deux fermes   (Greg, month 11)
         me I have-1/2/3s two farms
(11) a. le bébé y va   là   (Greg, month 5)
         the baby it go-1/2/3s there
     b. moi je joue   avec une…   (Greg, month 5)
         me I play-1/2/3s with a

   c. moi prends   aussi   (Greg, month 15)
       me   take-1/2/3s too

To summarise, it was found that almost all RIs in the data display event-denoting predicates, in contrast to finite declaratives which contain non-eventive verbs. Indeed, such verbs are restricted to finite declaratives. This conforms to the predictions of the TH. Since non-eventive predicates need Tense in order to receive temporal reference, it was expected that they should not appear in RIs if functional categories are not projected. The observed contingency between finiteness and predicate-type is not predicted by the MSIH, according to which RIs are finite and involve Tense. The contingency is also similar to what is observed in child L1 French and Dutch, whereby event-denoting predicates are largely found in RIs, and non-eventive predicates appear in finite clauses.

5.2 Finiteness and modality

Recall that under the TH, the reference of RIs should be free, since T is absent from their representation. Moreover, since RIs are considered nonfinite, a large percentage should have a modal interpretation due to the [irrealis] property of the infinitival marker. This is not predicted by the MSIH, since finite declaratives and RIs are both considered to be finite. Table 3 reports the findings on the modal interpretation of Kenny's nonfinite and finite declaratives, while results on Greg's utterances are reported in Table 4. In Kenny's data, a strongly significant contingency is observed between finiteness and modality ($X^2 = 89.484$, $p < 0.0001$). As can be seen in Table 3, most of his RIs have a future/modal interpretation (which is often boulemaic), which is not the case for verbs appearing in finite declaratives. This is compatible with the TH, but not with the MSIH. Examples of RIs with a modal reading are given in (12).

(12) a. inchoative interpretation
        Interviewer: on va   mettre la   maman aussi
                      we go-1/2/3s:INCHO put-INF the mommy also
                      dans l'   étable?
                      in   the stable
        Kenny: oui serrer # le   farme   (Kenny, month 3)
               yes tight-INF the farm
      b. deontic interpretation
        Kenny: non pas pas défaire   ça   (Kenny, month 8)
               no   not not undo-INF this

Interviewer: tu   veux   pas que je l'
              you   want-1/2/3s not that I it:ACC
              défasse?
              undo-1/2/3s:SUBJ

c. boulemaic interpretation
    Interviewer: ça   saute   hein ça   des   kangourous?
                  this jump-1/2/3s hmm this some kangoroos
    Kenny: non jouer   ça.   (Kenny, month 8)
           no   play-INF this
    Interviewer: tu   veux   pas jouer   à   ça?
                  you   want-1/2/3s not play-INF at this

d. capacity interpretation
    Interviewer: veux   que je l'   attache?
                  want-1/2/3s that I it:ACC tie+up-1/2/3s:SUBJ
    Kenny: pour moi pas faire.   (Kenny, month 11)
           for   me not do-INF
    Interviewer: non tu   peux   pas hein?
                  no   you can-1/2/3s not hmm

This said, it is not the case that all the RIs produced by Kenny have a modal
interpretation: as many as 35% have a present or past reading, which essen-
tially suggests that the interpretation of RIs is free. This is illustrated in (13).
Importantly, no developmental trend can be observed in the interpretation of
Kenny's RIs: both modal and non-modal readings are found from the outset.

(13) a. present
     (i) Interviewer: mais c'est quoi ça   Kenny?
                       but   it is what this K.
         Kenny: une fille monter.   (Kenny, month 1)
                a   girl   climb-INF
         Interviewer: c'est quelqu'un qui   monte   ici   oui.
                       it is someone   who climb-3s here yes
     (ii) Interviewer: ça   c'est le   garage.
                        that it is the garage
         Kenny: moi jouer   le   train.   (Kenny, month 10)
                me   play-INF the train
         Interviewer: toi tu   joues   avec le   train?
                       you you play-2s with the train
         Kenny: oui.
                yes

b. past
   (i) Interviewer: oui y   avait pas mangé ce   matin?
                        yes he had   not eaten   this morning
      Kenny: non I didn't.
      Kenny: moi pas manger aujourd'hui.   (Kenny, month 7)
             me   not eat-INF today
  (ii) Kenny: tous les bébés gagner.   (Kenny, month 8)
             all   the babies win-INF
      Interviewer: tous les bébés ont   gagné?
                    all   the babies have won
      Kenny: oui.
             yes

The results on modality in finite root declaratives are opposed to those in RIs.
Close to 90% (86/96) of simple lexical verbs have a present or past interpreta-
tion (see examples in (14)). Such a distribution is found in almost all the files
examined. Only 10/96 (10.4%) finite verbs have a modal/future reading (15).

Table 3. Interpretation of Kenny's simple lexical verbs

Month	Nonfinite declaratives						Finite declaratives					
	Past/ Present	Future/ Mod	*Doubt*	Total[a]	%P/P	%F/M	Past/ Present	Future/ Mod	*Doubt*	Total[a]	%P/P	%F/M
0.5	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	3	1	1	4	75	25
2	1	0	0	1	100	0	2	0	1	2	100	0
3	1	2	1	3	33.3	66.7	0	1	0	1	0	100
4	0	0	0	0	0	0	5	0	0	5	100	0
5	1	3	1	4	25	75	6	0	2	6	100	0
7	4	2	0	6	66.7	33.3	3	1	4	4	75	25
8	3	3	1	6	50	50	7	0	2	7	100	0
9	0	5	0	5	0	100	1	1	0	2	50	50
9.5	1	4	3	5	20	80	3	0	1	3	100	0
10	3	1	1	4	75	25	1	2	3	3	33.3	66.7
11	1	4	1	5	20	80	7	2	3	9	77.8	22.2
14	1	5	4	6	16.7	83.3	11	0	7	11	100	0
15	3	6	4	9	33.3	66.7	15	0	*10*	15	100	0
18	1	2	3	3	33.3	66.7	22	2	9	24	91.7	8.3
Total	20	37	*19*	57	35.1	64.9	86	10	*43*	96	89.6	10.4

[a] based on non-doubtful instances

Table 4. Interpretation of Greg's finite root declaratives

Month	Nonfinite declaratives						Finite declaratives					
	Past/ Present	*Future/ Mod*	*Doubt*	Total[a]	%P/P	%F/M	*Past/ Present*	*Future/ Mod*	*Doubt*	Total[a]	%P/P	%F/M
5	0	6	1	6	0	100	8	0	2	8	100	0
9.5	1	2	0	3	33.3	66.7	10	0	0	10	100	0
10	2	10	1	12	16.7	83.3	5	1	0	6	83.3	16.7
11	1	1	0	2	50	50	9	1	2	10	90	10
14	1	9	3	10	10	90	49	4	6	53	92.5	7.5
15	3	7	3	10	30	70	35	2	*20*	37	94.6	5.4
18	3	2	2	5	60	40	50	3	6	53	94.3	5.7
Total	11	37	*10*	48	22.9	77.1	166	11	*36*	177	93.8	6.2

[a] based on non-doubtful instances

(14) a. y   tombe   (Kenny, month 4)
           it fall-1/2/3s (= is falling)
      b. non, il pleut   (Kenny, month 8)
           no   it rain-1/2/3s (= is raining)

(15) inchoative interpretation
      Kenny: aide   papa après   (Kenny, month 1)
                (I) help-1/2/3s dad   later
      Kenny: Daddy I'm gonna help after ok.

The findings on Greg are once again similar to what is observed in Kenny's data (Table 4). First, there is a significant contingency between finiteness and modality (X^2 = 143.261, p < 0.0001). The majority of Greg's RIs have a modal interpretation (37/48 = 77%), compared to only 6% (11/177) of his finite declaratives. Again, the results go in the direction of a truncation account. Examples of modal interpretation of Greg's RIs are given below.

(16) a. boulemaic interpretation
          (i) Greg: moi je pas jouer   avec ça.   (Greg, month 5)
                      me I not play-INF with this
               Interviewer: tu   veux   pas jouer   avec ça?
                             you want-2s not play-INF with this
               Greg: non pas maintenant.
                      no   not now

(ii) Greg: moi écrire   aussi.   (Greg, month 10)
            me   write-INF too

      Interviewer: toi aussi tu   veux   écrire?
                   you too   you want-2s write-INF

      Greg: oui.
            yes

b. deontic interpretation

(i) Interviewer: veux-   tu   que j' essaie?
                  want-2s you that I try-1s:SUBJ

     Greg: oh juste le   mettre   comme ça.   (G, m 5)
           oh just it:ACC put-INF like   this

(ii) Greg: toi prendre.   (Greg, month 14)
           you take-INF

     Interviewer: tu peux   prendre la   dent.
                  you can-2s take-INF the tooth

c. inchoative interpretation

     Greg: moi chercher   n'autre cheval.   (Greg, month 11)
           me   look+for-INF another horse

     Interviewer: oui si tu   veux.
                  yes if you want-2s

Note that 23% (11/48) of Greg's RIs have a (past or present) temporal reading (over 30% in half the files considered). Examples are given in (17). As with Kenny, a clear-cut developmental pattern is difficult to establish: although all 6 RIs produced by Greg at month 5 have a clear modal reading, the dominance of the modal interpretation is short-lived.

(17) a. present

          Interviewer: qu'est-ce que tu   fais   là   Greg?
                       what   you do-2s here G.

          Greg: enlever   les dents.   (Greg, month 14)
                remove-INF the teeth

          Interviewer: tu lui enlèves   les dents?
                       you him remove-2s the teeth

      b. past

      (i) Interviewer: oh y saute   le   singe.
                       oh it jump-3s the monkey

          Greg: lancer.   (Greg, month 15)
                throw-INF

          Interviewer: tu l'   as   lancé?
                       you it:ACC have-2s thrown

(ii) Greg: trouver   le   auto.   (Greg, month 18)
         find-INF the car
     Interviewer: t'   as   trouvé des   autos?
                  you have-2s found some cars

Next, over 90% (166/177) of simple lexical forms produced by Greg have a
present or past interpretation, which is akin to Kenny's corpus. This over-
whelming trend is observed in all files. Examples are in (18). In (19), I give
an example of a finite declarative with a modal interpretation.

(18) a. le   monsieur va   là   (Greg, month 5)
        the mister   go-1/2/3s there
     b. le   lion mange   les girafes   (Greg, month 11)
        the lion eat-1/2/3s the girafes

(19) Greg: moi je joue   avec une l'   autre   (Greg, month 10)
           me I play-1/2/3s with a   the other
     Interviewer: une auto?
                  a   car
     Comment: Greg takes out farm animals from a box

To summarise, most RIs have a modal reading, compared to just around 10%
in the case of finite predicates. The latter almost always receive a temporal
interpretation. This conforms to the predictions of the TH which holds that
RIs contain truly nonfinite verbs displaying [irrealis] infinitival morphology.
The results are not compatible with the MSIH according to which a differ-
ence between finite and nonfinite declaratives in terms of future/modal and
present/past interpretation is not expected. These results are similar to what is
reported in L1 Dutch (Wijnen 1998).

5.3 DP and strong pronoun subjects in root declaratives

If RIs involve null modals, as suggested by Ferdinand (1996) for child L1
French, then similar subjects should occur in finite declaratives and in RIs
(given that both clause types are considered to involve functional categories).
In particular, if DP subjects are used, they should be found in both clauses.
In contrast, strong pronouns, which bear non-nominative case, should be ex-
cluded from both contexts. Finally, null subjects should be excluded from RIs
since the null auxiliary needs to be identified by an overt subject. The distri-
bution of subjects in finite and nonfinite declaratives produced by the two
children is discussed in Prévost (1997) and Prévost and White (1999). The
overall results are summarized in Table 5. As can be seen, they contradict the

Table 5. Subject types in finite and nonfinite root declaratives*

Learner	Finiteness	Total declaratives	DPs	Strong pronouns	Null
Kenny	+finite	428	115 (26.9%)	65 (15.4%)	87 (20.3%)
	−finite	76	6 (7.9%)	45 (59.2%)	23 (30.3%)
Greg	+finite	591	99 (16.7%)	32 (5.4%)	59 (10%)
	−finite	58	0 (0%)	15 (25.9%)	31 (53.4%)

*Most subjects of RIs are null subjects; almost no clitic subjects were found in such utterances. For further discussion on RI subjects, see Prévost (1997) and Prévost and White (1999).

predictions of the NAH. First, there is a significant contingency between the incidence of DP subjects and clause type, such that DP subjects are severely restricted to finite declaratives (Kenny: X^2 = 12.736, p = .0004).[7] Second, strong pronoun subjects are observed, contrary to what is expected, and their incidence is significantly greater in RIs than in finite root declaratives (Kenny: X^2 = 73.311, p < .0001; Greg: X^2 = 32.874, p < .0001). They account for 59.2% of the subjects found in Kenny's RIs, and for 25.9% in Greg's. Note that in Kenny's data, as much as 15% of finite declaratives (65/428) include a strong pronoun subject. However, almost half (31/65) of these cases involve only two forms, namely *moi est* ('me is') and *moi fais* ('me do'), which suggests that the incidence of such subject pronouns is not productive in finite contexts (White 1996). Finally, the incidence of subjectless RIs is quite high in both corpora. They account for over one third (39%) of Kenny's RIs, and over half (53.4%) of Greg's. Examples of DP subjects in finite declaratives and strong pronoun subjects in RIs are given in (20) and (21). Some subjectless RIs are given in (22).

(20) a. mon papa vient   maison   (Kenny, month 1)
        my father come-1/2/3s home
     b. le bébé va   là   (Greg, month 5)
        the baby go-1/2/3s there

(21) a. toi aller   à Greg's   (Kenny, month 5)
        you go-INF to Greg's
     b. moi jouer   avec le train   (Greg, month 9.5)
        me play-INF with the train

(22) a. jouer   de hockey   (Kenny, month 9.5)
        play-INF of hockey
     b. manger les oreilles   (Greg, month 10)
        eat-INF the ears

Table 6. Finiteness in subject *qui*-questions

Learners	Finiteness	Total *qui*-questions
Kenny	+finite	13
	−finite	2
Greg	+finite	10
	−finite	0

With respect to development, DP subjects appear in the earliest interviews and are consistently used in finite declaratives by both children thereafter. Strong pronouns and null subjects are used as subjects of RIs almost as soon as root infinitives are produced and they occur in almost all interviews where RIs are found. These findings suggest that RIs do not involve null auxiliaries and that their underlying representation does not include functional categories, contrary to the tenets of NAH.

5.4 Verb-forms in subject questions

Another prediction of the null auxiliary analysis of RIs is that both finite and infinitival main verbs should be found in interrogatives questioning the subject. This is because the subject wh-word (*qui* in French) can act as an identifier of the null modal/auxiliary in such clauses. Only 25 *qui*-questions were identified in Kenny's and Greg's data, as shown in Table 6. Kenny produced 15 *qui*-questions (mostly as of month 14 and after), while 10 were found in Greg's data (mostly at months 5 and 9.5). As illustrated in Table 6, almost none of these questions exhibit a nonfinite verb; examples are given in (23) and (24). The only instances of nonfinite *qui*-questions occurring in the data are given in (25). This further disconfirms the null modal approach for RIs in child SLA.

(23) a. qui   est   là?   (Kenny, month 7)
          who   is   there
      b. qui   a   fait   ça?   (Kenny, month 10)
          who   have-1/2/3s   done   this

(24) a. qui   va   ici?   (Greg, month 11)
          who   go-1/2/3s   here
      b. qui   met   ça   là?   (Greg, month 12)
          who   put-1/2/3s   this there

(25) a. qui   faire?   (Kenny, month 14)
          who   do-INF

    b.   qui   gagner   ça?   (Kenny, month 18)
         who   win-INF   this

6.   Discussion and conclusion

In this paper, I looked at the types of verbs that occur in RIs produced by children learning L2 French, as well as the temporal and modal interpretation of such utterances. Two strong contingencies were observed: first, non-eventive predicates are restricted to finite declaratives, whereas eventive predicates can occur in either finite declaratives or in RIs. Second, the majority of RIs have a future/modal interpretation, against about 10% for finite declaratives. Instead, the overhelming majority of finite declaratives receive a present or past reading. These results are compatible with the Truncation view which holds that RIs are VPs underlyingly, i.e. they do not involve functional categories. In particular, the absence of T in the structure of RIs prevents the occurrence of non-eventive predicates in such clauses since these verbs need T in order to receive a referential interpretation. Such is not the case of eventive predicates which do not need T in order to be interpreted. Rather, their interpretation can take place via discourse. In addition, the fact that infinitival verbs in RIs are truly nonfinite means that the infinitival marker is associated with the [+irrealis] feature, which explains why most RIs have a future/modal reading. The two contingencies identified above are not compatible with the MSIH. First, if T was present in the underlying structure of RIs, as contended by this approach, then non-eventive predicates should also appear in such clauses, contrary to facts. Second, the MSIH holds that the infinitival marker in RIs is used as a substitute for finite markers. Hence, it is not associated with the [+irrealis] property. This in turn predicts that there should not be any difference between finite predicates and infinitival predicates (in RIs) as far as future/modal interpretation is concerned. This prediction is not met.

    I also tested the null auxiliary approach to RIs according to which RIs involve a null auxiliary or modal in a functional projection. All the predictions based on this hypothesis were disconfirmed. In particular, there is a significant contingency between subject types and finiteness, such that DP-subjects and *qui*-subjects are restricted to finite contexts. This is not expected if finite and (apparently) nonfinite clauses involve functional categories. Moreover strong pronouns were found to appear to a large extent in RIs, which is unexpected given that these elements are associated with default (non-nominative) case.

Finally, a large number of subjectless RIs were observed, which is unexpected under the NAH, since the null auxiliary must be identified by an overt subject.

All these results point to the same direction: the structure of RIs in early child French do not seem include functional categories. Instead, they have truly nonfinite properties, which grants support for the Truncation Hypothesis.

The properties of RIs in child L2 mirror the properties of RIs produced by children learning an L1 with overt infinitival morphology. In particular, it fits in well with data reported by Wijnen (1998) on L1 Dutch. In both cases, then, it can be argued that RIs lack functional categories. It should be reminded that the two children investigated in the present paper were beyond the RI period in their L1. Thus, it cannot be argued that we are dealing here with a context of bilingual acquisition; instead, the learning situation is a clear case of L2 acquisition. In her investigation of the early acquisition of L1 French, Ferdinand (1996) reports no initial overlap between finite and nonfinite verb types: finite verbs are all non-eventive, and main infinitival verbs are all event-denoting. At the next stage (stage II), while finite verbs may be either eventive or non-eventive, all nonfinite verbs are still eventive. This is not what is observed in the L2 data that I investigated. (Note that Ferdinand's results also differ from what is reported by Wijnen (1998) for L1 Dutch.) In particular, eventive predicates were found to occur in finite root declaratives produced by Greg and Kenny, as well as in RIs. This pattern repeats itself in practically all the files examined. It could be argued that Greg and Kenny were already at a later stage of development when data collection began, one at which nonfinite predicates are solely eventive while finite main forms may either be eventive or non-eventive (which would correspond to Ferdinand's stage II for child L1 French). This could indeed be the case for Greg, whose first interview considered here took place 5 months after he started kindergarten. However, this does not seem to apply to Kenny, who was recorded less than a month after starting kindergarten. In contrast to Greg, whose data contain utterances exhibiting verbs right from the onset, Kenny almost used no verbs during his very first recording sessions. In his case, then, the data collected seem to truly reflect the earliest stages of acquisition. The difference between what is reported in L1 and L2 child French might come from the L1 data themselves and the methodology used by Ferdinand. There does not seem to be any non-eventive lexical predicates in the data she looked at, contrary to what was observed here. This probably forced her to mix lexical (eventive) verbs and non-lexical verbs in her research, a strategy that I carefully avoided. In any case, her analysis partly rests on the assumption that RIs involve null auxiliaries or modals, which cannot be maintained in child L2 French, as we have seen. She also claims that the fact that non-

eventive verbs do not appear in RIs stems from the incapacity, on the part of children, to relate (null) modals with state verbs. A similar idea is presented by Hoekstra and Hyams (1998) who argue that young children below 3 years of age do not yet have knowledge of epistemic modality. Since RIs are held to express modality, only event-denoting verbs can be found in such clauses. It seems reasonable to assume that children learning an L2 have knowledge of stative verbs and epidemic modality, and that they are able to use non-eventive verbs as complements of auxiliaries and modals. Kenny and Greg did not produce many modal verbs followed by another verb in root declaratives. Only 16 such sequences are found in Kenny's corpus, while 29 occur in Greg's speech. In most cases, the verb following the modal is an eventive predicate, such as *jouer* 'play', *faire* 'do' and *donner* 'give'. This is illustrated in (26) and (27). Only 3 non-eventive verbs were found to follow a modal (28).

(26) moi peux   pas jouer   à ça   (Kenny, month 7)
      me can-1/2/3s not play-INF at this

(27) a. moi vais   mettre le hibou hmm brun   (Greg, month 10)
          me go-1/2/3s put-INF the owl   brown
      b. peut   faire ça ou tourner là   (Greg, month 16)
          (it) can-1/2/3s do-INF this or turn-INF there

(28) a. dimanche tu vas   être   ici   (Kenny, month 7)
          Sunday   you go-1/2/3s be-INF here
      b. va   laisser   comme ça   (Kenny, month 10)
          go-1/2/3s leave-INF like   this
      c. je peux   voir   (Greg, month 16)
          I can-1/2/3s see-INF

Although the results seem to mirror Ferdinand's approach, it must be emphasised that meaning itself might play a role in the rare occurrence of non-eventive verbs as infinitives following modals, as pointed out by one anonymous reviewer. Indeed, how often, and in what circumstances, would anyone, especially a child, say *pouvoir être* 'can be' and *pouvoir penser* 'can think' in the context of an informal conversation? In the case at hand, the two children were recorded as they were playing various games, and the vast majority of their utterances consisted in describing ongoing actions. Note that this comment also applies to data obtained from children learning their L1.

Another difference between the child L2 results obtained here and Ferdinand's (1996) study has to do with the future/modal interpretation of RIs. Ferdinand reports no overlap between the interpretation of RIs and finite declaratives: all RIs have a modal interpretation (including boulemaic, deon-

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tic and future readings), whereas finite root declaratives all bear a present/past tense interpretation. The results of the present study differ to what is reported in L1 French since some RIs (from 23% to 35%) have a present and past interpretation. Indeed, the results suggest that the interpretation of child L2 RIs is free.

One final remark concerning Ferdinand (1996). She argues that RIs arise because specific tense values (e.g. [±present]) are initially underspecified in developing L1 grammars (although tense itself is assumed to be represented abstractly). In other words, the Tense category and its [±tense] features are held to be initially available, but specific tense values are not. Non-eventive predicates, which lack an internal temporal structure, 'can be [+tense] without being linked to a specific part of the time axis' (Ferdinand 1996: 88), which explains why they appear in the finite form. In contrast, eventive predicates, which denote changes taking place in time, must be related to a specific moment in time. Since [±present] features are otherwise held to be initially unavailable in child grammars, it follows that eventive predicates cannot be [+tense]. Hence, these predicates will remain nonfinite and appear in RIs. Further detail of how this analysis may play itself out need not interest us at this point. The question one might want to ask is whether [±present] features are initially unavailable in child SLA as well. If this was indeed the case, then one should expect random use of tense marking in the early phases of SLA. Since, according to this view, finite inflectional markers are not related to any particular tense value, feature checking cannot take place. Hence, present markers may refer to past events and vice-versa. Alternatively, a default tensed form may be used for all tense forms. I leave this issue for further research.

The results obtained in this study makes interesting predictions as far as adult SLA is concerned. Previous research suggests that the RIs produced by adults are different in nature from those used by children (Prévost 1997; Prévost & White 1999). In particular, adult RIs were shown to involve functional categories and were best handled by the MSIH. If this analysis is correct, then the predictions made by this hypothesis on the relations between finiteness and modality on the one hand and between finiteness and predicate-type on the other hand should hold in the context of adult SLA (see Section 4). In particular, since Tense is considered part of the representation of RIs both eventive and non-eventive predicates should be observed in such declaratives. Moreover, there should be no contingency between modality and finiteness, since all verbs are considered to be equally finite. Hence, the incidence of present, past and future/modal readings should be similar with finite and nonfinite predicates.

Notes

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1. See DeCat (this volume) for a different account of strong pronoun (apparent) subjects in child L1 French.

2. Event-denoting predicates are often referred to as dynamic verbs, in contrast to stative verbs.

3. The children were Nathalie (age 1:9;3–2:3;2), Daniel (age 1;8;1–1;11;1), Grégoire (age 1;9;14) and Philippe (age 2;1;19–2;6;27). The data from Nathalie and Daniel were collected by Lightbown (1977). Grégoire's and Philippe's data are part of the CHILDES database (MacWhinney & Snow 1985).

4. Examples from Pierce (1992).

5. The children whose production data were analysed were Josse (age 2;0;7–2;6;22), Matthijs (age 1;11;10–2;8;5), Niek (age 2;7–3;2;13) and Peter (age 1;9;6–2;1;26). These data are from the CHILDES database (MacWhinney & Snow 1985).

6. It should be clear that this does not mean that RIs cannot refer to present or past events. As Rizzi points out in his original proposal, the interpretation of RIs should be free since the structure lacks T. All I am saying here is that one should observe a high incidence of future/modal interpretation in RIs, due to the [irrealis] property of the infinitival morphology.

7. A chi-square analysis could not be run on Greg's data because one of the cells is equal to zero (Greg did not produced any DP subjects in nonfinite clauses).

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Cliticisation in the acquisition of French as L1 and L2*

Jonas Granfeldt and Suzanne Schlyter

1. Introduction

The intense debate on continuity in child grammars has largely focused on whether Functional Categories (FCs) exist in early grammars, regardless of the differences between children and adults in language use (e.g., omissions, word order errors, lack of case marking). In brief, the major theoretical explanations for these properties range from Maturational accounts (Radford 1990 and subsequent work) claiming an initial absence of FCs, to Weak Continuity views (Clahsen, Eisenbeiss & Penke 1996) claiming one (or more) initially underspecified FCs that are subsequently specified by exposure to input, and further to Strong Continuity views (Poeppel & Wexler 1993) where an adult set of FCs is initially assumed and child language is claimed to be subject solely to performance constraints. A similar debate has raged in SLA (see Herschensohn this volume, for discussion) where an initial absence of FCs has been advocated by many scholars (Vainikka & Young-Scholten 1996, among others). The opposite view, i.e. initial presence of FCs, has been defended by scholars such as Schwartz and Sprouse (1996) who claim that, initially, structural representations of the L2 are based solely on the L1, and by scholars claiming direct UG-access to FCs (White 1996; Prévost & White 2000b). Most of these studies concern adult SLA.

One way to investigate FCs in learner grammars is to study the acquisition of clitics. There is a strong connection between FCs and clitics; clitic pronouns in French have an especially tight relation to the finite verb, which they precede in most cases. Since French is a verb raising language, it follows that the clitic must also move to an FC at spell-out. A common argument, based on this logic, is that a structure of the type *je l'entends* (I it hear – 'I hear it') is diagnos-

tic of the existence of (some) FC in the grammar of a particular learner. These facts have lead researchers investigating FCs in L1 and L2 to analyse the development of clitic pronouns in general (Hamann et al. 1996 on L1 monolingual French, White 1996 on child L2 French, Herschensohn, this volume, on adult L2 French), and also to use the emergence of subject clitics and finite verbs for determining when AGR is acquired (Meisel 1994 on bilingual L1 French).

Even if scholars agree on the relation "if clitics then FCs", the inverse relation is much more problematic. Certain data (see below) suggest that, in adult L2 acquisition of French, there may be object pronouns but not clitics. But a lack of clitics does not necessarily imply a lack of FCs. The question mirrors in a certain way the issue of Missing Inflection: if systematic functional inflection is present, then we can conclude that FCs are accessible, but the lack of inflection does not necessarily imply the absence of FCs (Lardiere 1998; Prevost & White 2000b).

Now the syntax of clitics, and more generally cliticisation (pronouns and articles), is itself a long-standing issue in theoretical linguistics and especially in Romance linguistics. A recently developed theory of pronouns provides new perspectives from which to approach acquisition data. In their detailed analysis, Cardinaletti and Starke (1999) reveal a typology that seems to have been rapidly accepted (see peer comments in van Riemsdijk 1999), where pronouns are classified as either strong, weak or clitics. The distributional and interpretative properties of clitics, weak pronouns and strong pronouns depend on the amount of (functional) internal structure they project. Cliticisation in this view can be seen as a change in structural representation during the derivation, from more to less (i.e., from XP to X^0).

Since both UG-access and FCs are prerequisites for cliticisation, the study of cliticisation can contribute to a better general understanding of L1 and L2 acquisition. Indeed, the strong consensus on direct access to UG and to early instantiations of FCs in L1 acquisition is not as clear in adult L2 acquisition (see White 2000 for an overview). Furthermore, previous work on clitics in L1 and adult L2 acquisition suggests that there may be differences in the way these are acquired. There is, therefore, a need for further L1 and adult L2 comparative research addressing cliticisation, and controlling for general access to FCs.

In this chapter, we will address the issue of differences between L1 and adult L2 acquisition with respect to cliticisation. Adopting the framework of Cardinaletti and Starke (1999), we will investigate how and to what extent subject and object pronouns and articles become clitics in developing grammars. The data come from bilingual first language acquisition (2L1) and adult second language acquisition (L2). The children are Swedish-French bilinguals and the

adults are native speakers of Swedish and L2 learners of French. The fact that Swedish, the "other" language here, is present in both cases allows us to separate transfer from age effects.

We will show that there are indeed major differences between the bilingual children and the adult L2 learners with respect to cliticisation, both in the initial state and in the way development proceeds. These differences will neither be attributed to an absence of FCs in L2 nor entirely to transfer, but are, we believe, due to a more general difference in interpretation of pronouns between child and adult learners. Our data indicate that, for the three domains studied – subject clitics, object clitics and definite articles – there is a tendency for adult L2 learners to interpret them as non-clitics for an extended period, i.e. as XP's, whereas the child acquirers interpret them early on as clitics, i.e. as heads. We propose that the findings can be accounted for within a theory of UG, assuming two conflicting economy principles presented by Rizzi (1998).

2.   Background

2.1 Pronouns and articles

2.1.1   *General framework – and the case of French*
Since the work of Kayne (1975), it is well known that French has two sets of pronouns, strong and weak/clitic (*moi* vs. *je* etc., cf. Table 1 below). The following sets of examples demonstrate that these pronouns display differences in distribution. Only strong pronouns can be co-ordinated (1a), can occur in isolation (1b) or in peripheral position, and can be modified by adverbs (1c):

(1) a. *Il /   Lui   et   son frère   sont arrivés hier
          he:WEAK:CL he:STRONG and his brother are arrived yesterday

     b. A: Qui   l'   a   fait?
             Who   it:CL has   done
             'Who did it?'
         B: Moi   / *Je
             me:STRONG   /   I:WEAK:CL

     c. C'est *il   / lui   seul qui sait le   faire
         It-is he:WEAK:CL / he:STRONG only who can   it:CL do

The above examples demonstrate that strong pronouns such as *moi* and *lui* behave like full nominal expressions, DPs, whereas weak and clitic pronouns do not. Cardinaletti and Starke (1999) argue for a further division into three dis-

tinct classes of pronouns: strong, weak and clitic. This is supported in French by the fact that there are differences between weak and clitic pronouns. Clitics are deaccentuated, phonetically reduced and form a phonetic unit with the verb (2a) and cannot stand as the common head for co-ordinated verbs (2b) (which is possible with a weak pronoun, cf. (2c)):

(2)   a.   J-   lis   et   puis j' écris
            I:CL read and then I:CL-write
                                   (Non-standard French, Lambrecht 1981:24)
      b.   *Paul le   frappera et   mettra à   la   porte
            Paul him:CL will.hit   and will.put to the door
            'Paul will hit – and throw him out.'
                                   (from Kayne 1977, cited in Zribi-Hertz 1994:455)
      c.   Je lis et puis écris   (Weak pronouns in Standard French)

There is currently no consensus on the status and analysis of subject pronouns in French. Whereas most authors agree that French object clitics are syntactic clitics, scholars have somewhat different conceptions of French subject clitics. In one tradition, following the work of Kayne (1975), subject and object clitics receive different analyses: the former only becoming clitic through a late PF-rule (Rizzi 1986), the latter being syntactic clitics and incorporating with the verbal host. However, many scholars consider this valid only for standard, especially formal or written, French. These scholars consider the subject pronouns in spoken, informal French as different, either as being clearly affixes (Auger 1995; Pierce 1992) or as clitic pronouns in the sense of Cardinaletti and Starke (1999), as being a head (X^0) (Zribi-Hertz 1994; Ferdinand 1996). Arguments for the clitichood of subject pronouns in spoken informal French include a disproportionately high frequency of doubled subjects (Pierce 1992), the necessity of repeating the subject pronoun in coordinations (Auger 1995), and their phonetic reduction (Cardinaletti & Starke 1999; Auger 1995). We could add here the impossibility of inserting an element (except the negative particle *ne* or another clitic) between the clitic and the finite verb (Kayne 1975), and the impossibility of pausing between the clitic and the finite verb (in that case, the clitic is repeated). These criteria distinguish French from Swedish pronouns, which are non-clitic (cf. below). Here we will assume that the status of subject pronouns in French depends on the register. It is therefore conceivable that learners will be exposed to both types of subject pronouns in the input. The weak pronouns are analysed as moved to Spec-IP and the syntactic subject clitics as heads adjoined under the verbal host (see the structure in (4a)).

With respect to clitic placement and cliticisation, we will adopt (with the exception of this possible register difference) a uniform analysis of syntactic subject clitics and object clitics in spoken French. This analysis is based on the structural approach presented in Cardinaletti and Starke (1999). These authors argue that asymmetries in the distribution and interpretation of different classes of pronouns are due to the amount of internal structure that they realise. Specifically, clitic and weak pronouns are "structurally deficient" in the sense that they project less structure than strong pronouns. Deficient pronouns lack the relevant structure to assign case internally (CP-layer in the terms of Cardinaletti & Starke 1999). This means that strong pronouns do not need to move to be assigned (or recover) CASE. Deficient pronouns need to end up in a spec-head configuration of a functional projection in order to get CASE. Furthermore, clitic pronouns (as opposed to weak pronouns) also lack the layer where prosodic features are located. These features will have to be recovered in a head-head relation. Now, adopting this view necessarily implies applying a movement analysis to clitic placement for both subject and object clitics (and to articles, see below).[1] Put simply, the deficient pronouns must move from their base position in order to "make up for" the lack of internal structure.

Definite articles in French have been proposed as clitic elements (Abney 1987) and behave very similarly in syntax (they can not stand alone, they must be repeated for each noun, etc.). Definite articles are also phonologically dependent in the sense that they must appear in the stress domain of the following adjective or noun and are subject to morphological restructuring (*le/la* reduce to *l* before vowel-initial nouns), thus suggesting that, just as in the case of pronominal clitics, articles lack the projection with which prosody-related features are associated. Generative analyses specifically addressing the properties of the French definite article agree on its X^0 status at spell-out (Abney 1987; Valois 1991 among others). Here we follow Valois (1991), where definite articles merge as the specifier of NumP and subsequently cliticise onto D^0. The analysis put forward by Valois is very much the same as that for subject and object clitics (see (4c)).

As mentioned, in the framework of Cardinaletti and Starke (1999), clitics must move in order to recover missing features that cannot be assigned internally due to lack of structure (e.g. CASE and prosodic features). But since it is stipulated that only XP categories can be base-generated (Kayne 1994), the correct characterisation is rather that deficient pronouns (i.e. weak and clitic pronouns) are structurally "stripped" during their derivation (beginning as XPs and ending up as X^0).[2] In accordance with Valois (1991), this is also the analysis we adopt for the definite article (cf. above and the structure in (4c)

below). In all cases under investigation here, then, the process of cliticisation can schematically be described as:

(3) $XP > X^0$

Reducing an element from XP to X^0 implies movement. For object pronouns we assume that this movement will take place in two steps, first as an instance of A-movement (of an XP) followed by head movement. As for the intermediate landing site, we assume, in accordance with Hamann et al. (1996), that Spec, AgroP is the relevant position. The following tree structures illustrate the process of cliticisation in the three cases under investigation here.

(4) a. Subject clitics

```
            IP
          /    \
       Spec     I'
              /    \
            I⁰      VP
          /   \    /   \
       il_k   I⁰  Spec   V'
                   t_k  /  \
                      V⁰    XP
```

b. Object clitics

```
            IP
          /    \
       Spec     I'
              /    \
            I⁰    AgrOP
          /   \    /    \
       le_k   I⁰  Spec   AgrO'
                   t_k  /    \
                     AgrO⁰    VP
                             /  \
                           V⁰    DP
                                 t_k
```

c. Definite articles

```
            DP
          /    \
       Spec     D'
              /    \
            D⁰     NumP
           les_k  /    \
               Spec     Num'
                t_k    /    \
                    Num⁰     NP
                  femmes_i   /\
                            t_i
```
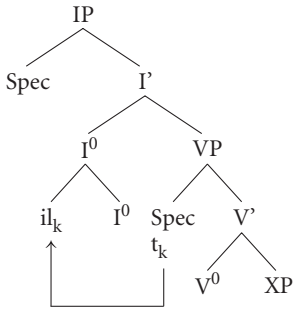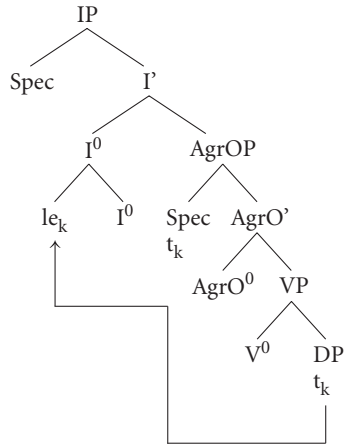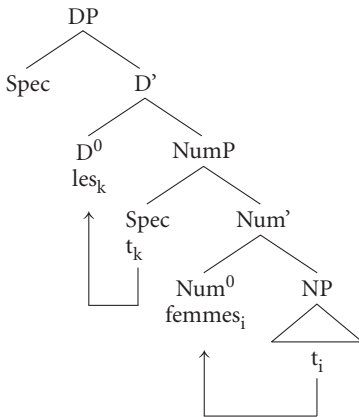
2.1.2 *Pronouns in Swedish*

Since both types of learners of French studied here have Swedish as an additional language, some discussion of the Swedish pronouns and articles is required. Swedish pronominal subjects (*jag, du han/hon/den/det, vi, ni, de*, see also Table 1b) are traditionally considered as strong, behaving syntactically as full noun phrases (cf. Hellan & Platzack 1999: 124). In addition to their use in a normal subject position, they can be co-ordinated, isolated and modified, and in clear contrast to French, they can be separated from the finite verb by an adverb (cf. (5a)). They are in most cases placed preverbally, as in French or English, but due to the V2 word order, they may also occur directly after the finite verb, just as full DPs (cf. (5b)). This occurs in about 40% of declarative and in all interrogative clauses (Jörgensen 1976). Swedish pronouns can also be weak, since there is a difference between positions in which they are accentuated and necessarily strong (5c) and those where they are ambiguous weak/strong (5d) (see further Hellan & Platzack 1999: 125, and also Cardinaletti & Starke 1999).

(5) a. … där   han   troligen kunde fortsätta
          where he:WEAK/STRONG probably could continue

b. Igår   tog Kalle/ han   med sig   sina pengar
    Yesterday took Kalle/ he:WEAK/STRONG with himself his money
    'Yesterday Kalle/ he did not bring his money.'

c. Igår   tog inte Kalle / HAN   / *han   med sig   sina
    Yesterday took not   Kalle/ he:STR / *he:WEAK with himself his
    pengar
    money

d. Igår   tog han   inte med sig   sina pengar
    Yesterday took he:WEAK/STRONG not   with himself his money

Swedish object pronouns (*mig, dig, honom/henne/den/det, oss, er, dem*, see Table 1b) are postverbal, similar to English, and normally are considered to be strong (Hellan & Platzack 1999). In contrast to German and Dutch, they never occur in front of the nonfinite verb, see examples in (6).

(6) a. *Jag har   den sett
          I   have it   seen

b. Jag har sett den
    'I have seen it.'

Swedish object pronouns, like subject pronouns, are analysed as weak in the position between the finite verb and the negative marker (Hellan & Platzack

Table 1a. Forms of pronouns in French

	subject	isolated	after prp	object
1ps	je	moi	moi	me
2ps	tu	toi	toi	te
3ps +/–hum	il, elle	lui, elle	lui, elle	le,* la*
1ppl	nous	nous	nous	nous
2ppl	vous	vous	vous	vous
3ppl	ils, elles	eux,elles	eux,elles	les**

*indirect object: *lui*
**indirect object: *leur*

Table 1b. Forms of pronouns in Swedish

	subject	isolated	after prp	object
1ps	jag	jag	mig	mig
2ps	du	du	dig	dig
3ps +hum	han, hon	han,hon	honom, henne	honom, henne
–hum	den, det	den, det	den, det	den, det
1ppl	vi	vi	oss	oss
2ppl	ni	ni	er	er
3ppl	dom	dom	dom	dom

1999: 127). The pronouns may, in very informal spoken language, be cliticised onto the verb as an enclitic article with strong reduction.

(7)   jag såg'na   (non-clitic: *jag såg henne*)
      I   saw-her:CL
      'I saw her'

Cardinaletti and Starke (1999: 65) argue that these should also be analysed as clitics syntactically, which would then imply that clitic pronouns are not excluded from Swedish, allowing transfer of clitic status or the cliticisation process to the acquisition of French.

    The similarities between Swedish and French reside on the one hand in the predominant preverbal position of the subject pronouns (but these differ with respect to clitic status), and on the other hand in the fact that clitic pronouns may occur in both languages. Pronouns differ, however, with respect to the obligatoriness of cliticisation: cliticisation is obligatory for French pronouns, at least objects, whereas in Swedish clitics are only optional, and when they occur, they are enclitic.

    Tables 1a and 1b show the distribution in French and Swedish of the pronominal forms.[3] "Isolated" necessarily implies a strong pronoun, whereas

the clitic status of subject and object pronouns varies as shown in the presentation above. In Swedish, the oblique form is used after prepositions, and is different from the strong form.

2.1.3   *Articles in Swedish*

In Swedish, the definite article *-en* is a bound morpheme appearing typically as enclitic on the noun:

(8)   katten
      cat-the
      'the cat'

In one generative analysis, such as Delsing (1993), the article *-en* is generated in D^0 to which the noun incorporates. In a more recent framework, Giusti (forthcoming) analyses the noun as already inflected with the article before insertion in NP, which triggers movement to D (F^{max} in her terms). There is also a free definite article preceding the noun and appearing in the context of prenominal adjectives. In these much discussed cases, both the free definite and the enclitic article are obligatory, resulting in so-called *double definiteness*:

(9)   den gamla katten
      the old   cat-the

Different proposals have been put forward concerning the appropriate analysis of structures such as (9) above. Delsing (1993) assumed that the free definite *den* was in D^0 and that the bound enclitic article was base-generated on the noun, in this case remaining in situ. To our knowledge there has been no attempts, yet, to use the tripartite distinction (strong, weak, clitic) on nominal Swedish determiners (but see Holmberg 1999: 264 for a suggestion along these lines). However, at least the enclitic definite article seems to fit the characteristics of clitic elements provided by Cardinaletti and Starke (1999) since it is phonologically and morphologically dependent (it agrees in gender and number) on the noun, it is subject to incorporation and it is semantically underspecified (it is compatible with both specific and non-specific readings).

2.2   Previous studies on the acquisition of clitics

2.2.1   *Subject clitics*

There seems to be general agreement that subject pronouns in early French child language are affixes or clitics, in any case heads (Meisel 1990; Kaiser 1994; Pierce 1992; Ferdinand 1996). The authors offer as criteria the very frequent

subject doubling (i.e. the fact that when a nominal subject occurs in early child language it is almost always doubled by a subject pronoun), the repetition in conjunctions, as well as the fact that the nominal subject can be indefinite, which excludes the possibility of it being dislocated (Ferdinand 1996). Another argument mentioned is the frequent postposition of nominal subjects, which was interpreted to suggest that a) the nominal subject is generated in postverbal position and that b) the child does not yet have access to SpecIP to which the nominal subject can move (Meisel 1990: 264).

The acquisition data presented by Hamann, Rizzi and Frauenfelder (1996) are used as evidence in favour of a subject-object asymmetry: the delayed appearance of object pronouns in L1 French is accounted for by assuming a difference in status: object clitics are syntactic clitics whereas subject clitics only cliticise at PF. This conclusion relies, however, on a presupposed and questionable acquisition principle stating that deficient elements (in Cardinaletti & Starke's sense) are more "marked" and therefore acquired later. Both the subject-object asymmetry and the acquisition principle have been questioned by Jakubowicz et al. (1996) and Jakubowicz et al. (1998), who proposed that the reason object pronouns are acquired later than subject pronouns is not due to differences in the syntactic status of the pronoun but to pragmatic factors, giving the same results in German where object pronouns are normally not clitics.[4]

With regard to the doubling of the subject, however, there seems to be a development with age. It has been shown that, whereas pre-school children predominantly double a nominal subject with a pronoun, this behaviour decreases in older children (e.g. Jisa 2000). This may indicate sensitivity to a more formal register and to written French.

Studies on French L2 acquisition in English-speaking children (about 5 to 8 years) have shown that these children use subject pronouns with a clitic status from early on, according to the criteria mentioned above (Paradis, Le Corre & Genesee 1998; White 1996). White's conclusion has been questioned by Schwarz (1999), who argues that the clitic status of these pronouns is not absolutely evident, and that the subject pronouns can be ambiguously clitic vs. non-clitic, which allows a transfer interpretation.

As for older L2 learners, Prévost and White (2000b: 124) argue for access to AgrS using the criterion of agreement between subject clitics and the nominal subject they are doubled with, and show that "subject clitics agree in person, number and gender with the NP to a large extent". They do not, however, discuss possible cases of misinterpretation of subjects as regards to clitic status. This is, however, discussed by Larsson Ringqvist (2000), who supposes that

certain errors in Swedish-speaking learners of French are caused by the learners' inability to perceive the clitic status of the pronouns. Herschensohn (2001) also examines the clitic status of the subjects used by the university students she was studying, but unlike Larsson Ringqvist, she argues that since the learners used the reduced forms *j'entends* and not *je entends*, these rather advanced learners had already acquired the clitic status of the pronouns.[5]

2.2.2   *Object clitics*

Studies on object pronouns in the L1 acquisition of French, whether monolingual or bilingual, show practically error-free acquisition, such that the anaphoric pronoun is placed correctly in preverbal position from the first time it appears in the child's production (Hamann et al. 1996; Müller et al. 1994; Jakubowicz et al. 1996). Object clitics appear later than subject clitics. The authors do not question the clitic status of the object pronouns, since these occur in preverbal position in a target-like way, indicating that they must have cliticised. However, Hulk (2000) observes some SVO patterns and occurrences of the intermediate position between the auxiliary and the participle (type: *j'ai le vu*) in the bilingual Dutch-French child she studies (age about 3 years), both target-deviant positions. Hulk points out that the child's acquisition of both subject and object clitics is dissimilar to that of a monolingual child, and proposes that there is an influence from the dominant language, Dutch, where pronouns are weak and occur in such a VOV position.

In her study of child L2 learners of French, White (1996) argues for a development that is very similar to that of L1 acquisition: from the time the children start using anaphoric object pronouns, (like in L1, somewhat later than subject pronouns) these are essentially correct in form and position, and there are only a few cases of misinterpretation or incorrect position. This shows that these children interpret object pronouns as clitics from the outset.

As for adult L2 acquisition, it has been observed that English-speaking adult learners of French pass through roughly four stages (Towell & Hawkins 1994: 137–138; Herschensohn, this volume):

1.   Postverbal position   *je vois lui*
2.   Omission of the object   *j'ai vu 0*
3.   Intermediate position   *j'ai le vu*
4.   Pre-finite position, target-like   *je l'ai vu.*

The same progression has been observed in Swedish-speaking learners (Schlyter 1997). Towell and Hawkins (1994: 137) account for the first type by assuming that the learners follow the canonical "head first – complement last" parameter

setting for French, that they subsequently omit the object assuming that French has object *pro*, and that in stage (3) they analyse the object pronoun as an affix agreeing with *pro*. The authors do not, however, discuss the clitic status of these pronouns. Herschensohn (2000, this volume) accounts for the postverbal position as transfer from English, and for the intermediate one as adjunction to the participle. She points out that the intermediate and the final stages (types 3 and 4) demonstrate that L2 learners are able to master functional features and the movement associated with them.

An older study of the forms of object pronouns in Danish school pupils' acquisition of French (Andersen 1986) may be reinterpreted as arguing in favour of initial incorrect use of strong pronouns. The author does not discuss positions, but shows that the forms are used in tripartite opposition: *lui* for masculine human, *le* for non-human, and *la* or *elle* for human feminine. Jakubowicz et al. (1998) propose that the difference between clitics and non-clitics is not, as Cardinaletti and Starke (1999) claim, only that strong pronouns are exclusively [+human], but that they are marked as either [+human] or [−human] since they have the feature [+N]. If we adopt that analysis, it means that the form *le* can also be considered strong, since it is clearly marked for non-human in this sample. Anderson refutes a transfer hypothesis, referring to similar data on German learners' acquisition of French, since German does not distinguish [+/−human] in this way.

2.2.3   *Definite articles*

In L1 and 2L1, French articles are learned as part of the noun in the one word stage and are not analysed initially (Sourdot 1977; Carroll 1989; Granfeldt 2000a). The definite article is normally acquired before the indefinite article. We know of no study on the syntactic status of definite articles in French L1.

Previous research has shown that supplying articles *per se* is not a major difficulty for learners of an L2 where the L1 has overt determiners (Parodi, Schwartz, & Clahsen 1997 on L2 German, Granfeldt 2000b; Gess & Herschensohn 2001 on L2 French). But few studies have analysed the categorial status of articles in L2 grammars. Carroll (1989: 577) mentions in passing, however, that Canadian immersion students (aged 8–12 years) "will stress articles" and "pause between the determiners and nouns". Both observations indicate that the immersion students have not learned the correct phonetic properties of French articles at this point. Carroll presents no data to suggest that L1 children produce the same type of non-clitic determiners. The difficulty of proclitic articles is a subset principle problem, according to Carroll. English determiners can cliticise optionally, whereas all French determiners do so obligatorily. If

they were to apply the English value of the parameter ("determiners cliticise sometimes") to French, the immersion students would find no evidence that this is incorrect in the target language.

2.3 Rationale and hypothesis

Previous research has shown that when pronouns emerge in the speech of children acquiring French (L1 or L2), the children predominantly know their syntax and distribution from their first occurrence. We can interpret this as early access to the process of cliticisation. This is in sharp contrast to object pronouns in adult L2 acquisition, where a large number of (clearly target-deviant) SVO-structures have been reported in the literature. These studies, along with some observations on subject clitics and articles, suggest that cliticisation has perhaps not occurred in L2.

In addition to the careful studies on the clitic status of French pronouns in the L2 acquisition of younger children, where initial clitics have been found, a parallel study is therefore needed on older L2 learners of French. Furthermore, there is no study directly comparing child and adult learners using the same method, in a manner similar to that employed by Prévost and White (2000a) for verb morphology. In order to fill this gap and to further develop the study of clitics in L1-L2 acquisition, we propose to include definite articles since the cliticisation process can be assumed to be the same in all three cases (schematically as in (3) above). Below we outline an hypothesis for the acquisition of cliticisation in child and adult learners based on previous research in this area. It is followed by three theoretical explanations that will be discussed in the conclusion:

(10) Hypothesis
       Empirically, we hypothesize that adult L2 learners do not cliticise pronouns and articles in initial stages of development, whereas bilingual L1 children do. Theoretically, we hypothesize that adults treat pronouns and articles as XPs at spell-out, whereas the bilingual children treat them as X^0-heads, in the sense of Cardinaletti and Starke (1999).

If we were to find pronouns and articles that have *not* been cliticised in L2, then there are three possible *a priori* explanations:

a. There is an absence of relevant FCs (in L2: The Minimal Trees Hypothesis, Vainikka & Young-Scholten 1996).

b.   The relevant FCs have the parameters or feature specifications of the other language (i.e. transfer from Swedish).

c.   The process of cliticisation is itself subject to development, independently of the development of phrase structure and feature specification.

In order to evaluate the hypothesis and its possible explanations, the following empirical analysis will be conducted. Studies of the process of cliticisation, i.e. the status of pronouns with respect to the tripartite division (strong, weak or clitic) and a study of cliticisation of articles, will be carried out in 2L1 and L2, using the same methods and criteria. If the hypothesis is verified, a further control for evidence of other properties related to the FCs in the adult L2 learners will be made. Moreover, there will be need for a discussion of the question of possible transfer. If the absence of cliticisation cannot be explained by a lack of FC or by a transfer effect, the adult-child difference will have to be discussed in more general terms of different mechanisms used in child and adult language acquisition.

3.   Corpus – the children and adults studied

Four Swedish-French bilingual children were studied from about 2;0 to 4;0, and 11 adult Swedish-speaking learners with varying proficiency in French were studied in a semi-longitudinal design.

The children (Jean, Anne, Mimi and Dany) were living in Sweden, in middle-class families, their mothers being French-speaking and their fathers Swedish-speaking, in keeping with the 'one-parent-one-language' strategy. They were recorded at home every second month (Jean, Anne) or every fourth month (Dany, Mimi) up to the age of about 4;0, in spontaneous interaction and in each language separately.

The adult learners were Swedish students of about 20 years or older, some of them acquiring French in France in a natural setting only (as students of music, art etc.), others as university students in Sweden only, more precisely:

a.   Informal learners (Henry, Björn, Sara, Petra, Martin, Johan, Karl and Knut), acquiring French in a natural setting;

b.   Formal learners (Lisa, Sama, Nina), acquiring French at school and during their first term of university studies, without any residence in a French-speaking country.[6]

The two categories of adult learners have similar social conditions, all of them being middle class, having completed primary and secondary school, and able to speak English. Both groups were recorded during informal conversation, discussing similar subjects, and both completed the same elicitation procedures. Some of them were recorded from the earliest time they were able to produce their first two or three word utterances, after about 3 months' residence in France, others after about two years' residence, or many years of studies at school. They were recorded two to five times at one- or two-month intervals, but not for a period longer than 6 to 12 months. This means that the adult data are half cross-sectional, half longitudinal, a design necessary due to the restricted number of Swedes acquiring French in a natural setting. In this way, both the children and the adults were studied from practically their first use of multiword utterances, and up to a level of fluency, using different tenses, varying subordinations, etc.

We divided each group into three developmental levels (Tables 2 and 3 below), according to data obtained through earlier studies on this corpus (Schlyter 1997 and forthcoming; Granfeldt 2000a, b; Granfeldt 2003). These levels should be seen as rather rough indications – there are individual differences as well as certain differences in terms of the phenomena studied – but we find it necessary to indicate whether we are talking about beginners, intermediate or very advanced learners.

These stages evidently vary according to each feature studied and each individual, and they are more difficult to establish for the formal learners, due to greater variation.

Table 2. Bilingual Swedish-French children – levels of development

Levels	Criteria	Interpretation	Age / MLU	Recordings
1	Mostly lexical items ("telegraphic speech")	No or few FC instantiated	Age around 2;0 MLU under 2,0	Anne 1–3 Jean 1–4 Dany 1 Mimi 1
2	Frequent subject pronouns; Auxiliaries; Modals; Postverbal Neg.; Articles productive	IP/DP instantiated	Ca 2;6–2;10 MLU up to 3,0	Anne 4–6 Jean 5–7 Dany 2–3 Mimi 2–4
3	Subordinates productive; Imparfait; Text structure	TP/CP instantiated	Ca 2;11–4;0 MLU 3–4,5	Anne 7–13 Jean 8–12 Dany 4–7 Mimi 5–8

Table 3. Adult L2 learners – levels of development

Levels	Criteria	Months of residence etc.	Recordings
1	Bound verb morphology not productive; Hardly any PC; Hardly any modals; Many Neg + X	3–10	Henry 1 Björn 1–2 Sara 1–2 Petra 1 Martin 1 Johan 1–2 Karl 1
		Begin of 1st term of university	Lisa 1–2 Sama 1
2	PC for past tense but not yet Imparfait; Verb morphology getting productive (some learners)	7–16	Petra 2 Martin 2–3 Karl 2–3 Johan 2–4
		1st term of university	Lisa 3–4 Sama 2–4
3	PC and Imparfait; Verb morphology Target-like	14–35	Karl 4–5 Knut 1–3
		2nd term of university	Nina 1–6 Sama 5

Key: PC = Passé Composé

4. Analysis of the data

4.1 Acquisition of subject pronouns

Recall that our main hypothesis is that children interpret pronouns and articles as clitics, i.e. as heads, whereas adults do not. This will be studied first in the domain of subject pronouns, then in object pronouns and definite articles.

4.1.1 *Subject pronouns in child learners – 2L1*

The children begin using subject pronouns at the age of 2;0 (Jean) and 2;5 (Anne), and Mimi has them from the start of the observation time (at 2;0). In the presence of a nominal subject, the children predominantly double the subject with a subject pronoun, without any intervening pause (see Table 4, below, column "NP + scl" compared to the column "NP"). The first NPs occur mostly in final position (see example (11a)) as they do in most studies on French early child language (cf. above).

(11) a. *JEAN: Il est pas á toi ce   camion.   (Jean 5,6, 2;6–2;9)
                    it is not to you this lorry
      b. *JEAN: Moi   je veux du   cidre.
                    me:STR I want PART cider

(12) *MIMI: Oui, la   place elle est comme ça.   (Mimi 2, 2;2)
               yes, the place it   is   like   that

In line with the reduction criteria, the children also treat subject pronouns as clitics, in that they (with some exceptions in Jean) reduce *je* to *j'* before a vowel (see Table 4, column "Elided" vs. "Non-elided"). Example:

(13) *MIMI: j'ai   trouvé!   (Mimi 2, 2;2)
               I have found

The children never separate the subject pronoun from the finite verb by an ad-verb (see Table 4, column Scl + A + V), nor do they modify them. Since they

Table 4. Subject pronouns with respect to clitic status – 2L1

Learner Rec.	Age	NP + scl	NP	Elided	Non-elided	Scl + A + V
Jean 1–4	1;10–2;4	–	3	–	–	–
Jean 5	2;6	2	2	–	–	–
Jean 6–8	2;9–3;1	15	–	1	–	–
Jean 9–11	3;3–3;7	44	5	4	4	–
Jean 12	3;9	6	–	3	–	–
Anne 1	2;3	–	–	–	–	–
Anne 2	2;6	4	2	–	–	–
Anne 3	2;8	–	–	–	–	–
Anne 4	2;10	–	–	–	–	–
Anne 5	2;11	5	5	–	–	–
Anne 6	3;1	10	2	–	–	–
Anne 7	3;3	3	1	–	–	–
Mimi 1	2;0	3	–	–	–	–
Mimi 2	2;2	9	–	2	–	–
Mimi 3	2;6	8	1	4	–	–
Mimi 4	2;10	19	1	4	1	–
Mimi 5	3;2	21	–	3	–	–

NP + scl: "le prof il parle"; "moi je pense"   (clitic use)
NP: "le prof parle" (excluded: *ça*)   (non-clitic use)
elision: "j'écoute, j'ai", etc.   (clitic use)
non-elision: "je écoute"   (non-clitic use)
The frequent cases of subject pronouns without doubling and before a consonant-initial verb are not considered.

use *aussi* at these early stages, and *moi aussi* ('me too') is a frequent combina-
tion, the combination *je aussi* would have been possible. As for the criterion
co-ordination with a common subject, we did not find a sufficient number of
clear cases.

These findings on doubling, elision (reduction), non-separation, non-
modification all argue for the clitichood of the subject pronouns in children,
and thereby confirm earlier studies.

4.1.2   *Subject clitics in adult learners – L2*

Subject pronouns occur in contexts where they are not found in the speech of
the children. We will argue that subject pronouns are often not treated as clitics
in the production of these L2 learners.

First, there are very few doubled NP-subjects in the speech of the adult
learners, and the nominal subjects without clitic doubling dominate in most
learners (see Tables 5 and 6, column "NP + scl" compared to "NP"). A striking
fact is that these adults never use a NP subject in final or postverbal position,
but always place them in preverbal position. This suggests that the adults have
access to the SpecIP node where the subject NP can be placed. Since the learners
place the negative marker (*pas*) postverbally, even in very early stages (Schlyter,
forthcoming), the verb must have been raised to I, which constitutes further
evidence for IP in their grammar.

Second, pronouns can be accentuated freely and used in contrast, as seen
from (14):

(14) *HEN: JE comprendre,   e la / la   dame
              I   understand-INF t he the woman
              comprendre.   (Henry 1, informal learner)
              understand-INF

Third, pronouns can be separated from the finite verb by an adverb, which
occurs in some of the least advanced learners, for example, (15) and column
"Scl + A + V" of Tables 5 and 6.

(15) *LIS: Je seulement habite…   (Lisa 1, formal learner)
              I   only   live:PRES

Fourth, pronouns frequently do not undergo elision preceding a vowel, for
example, (16) and columns "Elided" and "Non-elided" in Tables 5 and 6.

(16) *HEN: Je je aime.   (Henry 1, informal learner)
              I   I like:PRES

Table 5. Subject pronouns with respect to clitic status in L2, informal learners

Learner Rec.	NP + scl	NP	Elided	Not Elided	Scl + A + V
Henry 1	–	8	–	3	1
Martin 1	12	2	–	–	–
Martin 2	5	2	2	2	–
Martin 3	–	3	4	–	1
Petra 1	7	16	4	3	–
Petra 2	3	6	–	2	–
Karl 1	4	28	2	–	–
Karl 2	5	30	8	8	–
Karl 3	7	42	1	2	–
Karl 4–5	3	51	–	–	–

Key: see Table 4

Table 6. Subject pronouns with respect to clitic status in L2, formal learners

Learner Rec.	NP + scl	NP	Elided	Not Elided	Scl + A + V
Lisa 1	1	5	9	3	2
Lisa 2	5	16	10	2	1
Lisa 3	–	16	9	1	1
Lisa 4	2	27	12	4	2
Sama 1	–	5	8	–	–
Sama 2	2	17	–	–	–
Sama 3	3	9	5	–	–
Sama 4	–	12	2	–	–
Nina 1	3	4	9	–	–
Nina 2	5	4	2	–	–
Nina 3	2	4	7	–	–
Nina 4	2	2	6	1	–

Key: see Table 4

Fifth, the subject pronouns are often separated from the finite verb by a pause, without being repeated as they normally are in native French (Candea 1998) as shown in (17) where # indicates a pause:

(17) *PTR: Et   je # vais aller avec un ami.   (Petra 1, 5 months)
        and I   will go   with a   friend

Like strong stress, this has not been quantified (since the quality of the tapes did not allow acoustic analysis), but it is very obvious in the least advanced learners.

Table 7. Elision of subject pronouns in Johan and Knut

Learner Rec.	Elided	Not Elided
Johan 1	6	4
Johan 2	3	1
Johan 3	6	1
Johan 4	9	2
Knut 1 + 2	13	1
Knut 3	7	–

Learners at low and intermediate levels vary in their use of elided and non-elided subject pronouns, whereas data from the more advanced learners (Nina, Knut, possibly Sama) show a clear dominance of elided forms. This suggests that elision of subject pronouns is acquired late. See Nina (stage 3) in Table 6, and Knut (stage 3) in Table 7 (cf. the elision of articles below, for more clear-cut data).

Practically all learners also produce subject pronouns like *je* with a consonant-initial verb and *tu, il, ils*. Since these are not possible to elide, we cannot decide whether the learners treat them as clitics or not. It is not the case that all learners have problems with the clitichood of subject pronouns, as shown by the criteria studied, but the learners of the lowest level generally do. There are also certain individual differences because Sama elides and does not insert adverbs, in spite of her initially low proficiency level (cf. also her articles, below).

4.2 Acquisition of object pronouns

In our investigation of the clitic status of object pronouns, we studied the forms used by the learners in their different positions (two preverbal, two intermediate, and one postverbal position, see Tables 8–13). Target-deviant forms or positions are marked in the tables with ⋆.

4.2.1 *Object pronouns in child learners – 2L1*

We can observe that the children begin using object pronouns in all target-like positions from the moment these appear at about 2;6 (somewhat later than subject pronouns); see Tables 8–10 and the examples below. There are some very rare instances of incorrect placement (*⋆il a l'acheté*), and these occur in the last stage.

Table 8. Forms and positions of object pronouns in children, first stage (around 2;0)

	Pre-Aux	Pre-Vfinite	Pre-infinitive	*Pre-past ptc	Post-Vlex
Strong					
Weak					
Cl = Weak		1			
Reflexive cl					
Cl reduced		1			

Key:
Strong: *lui, elle, moi, toi, nous, vous*
Weak: postverbal *le, la*; unreduced *le*
Clitic = Weak: *le, la, les, me, te*
Reflexives (+ = more than 10 occurrences)
Clitic reduced: *l', t', m'* (non-reflexive)
*: target-deviance of form or position

Table 9. Forms and positions of object pronouns in children, second stage (around 2;6–2;10)

	Pre-Aux	Pre-Vfinite	Pre-infinitive	*Pre-past ptc	Post-Vlex
Strong					
Weak			*2		
Cl = Weak		5	15		
Reflexive cl		10	1		
Cl reduced	1	1	1		

Key: see Table 8

Table 10. Forms and positions of object pronouns in children, third stage (around 2;11–4;0)

	Pre-Aux	Pre-Vfinite	Pre-infinitive	*Pre-past ptc	Post-Vlex
Strong					3
Weak					
Cl = Weak	2	14	22	*1	
Reflexive cl	1	+	2	*1	
Cl reduced	15	2			

Key: see Table 8

(18) *ANNE: Je le mets dans l'eau.   (Anne 4, 2;10)
              I it put   into the.water

Already at this stage, forms are normally reduced (except 2 examples from Jean 6).

(19) *JEAN: Je l'attrape.   (Jean 8, 3;1)
              I it.catch

The three cases of postverbal pronouns are *ça*, in a usage that is not clearly deictic, but possibly anaphoric. They are noted here because of their similarity with the adult data.

4.2.2   *Object pronouns in adult learners – L2*

In the adult learners studied here, we found an initial stage where object pronouns occur essentially in postverbal position, just as previous researchers have found for English-speaking learners of French. The great majority of these (see Table 11 below) are in the strong form, as in (20):[7]

(20) a. Il dit lui   (Petra 1, 5 months)
          he says him
      b. Je veux mange   toi
          I   want eat:PRES you

In the tables, we counted *nous* and *vous* as strong forms, since they never occur preverbally and therefore do not seem to be perceived by the learners as clitics.

The learners also use many pronouns postverbally in a form that looks like a clitic pronoun, (21) and (22), but since they have individual stress, which is clearly different from Spanish and Italian (or Swedish) postverbal clitics, these pronouns should be considered as non-clitic. According to what we proposed above for the analysis of the Andersen (1986) data, we may consider them as strong in terms of semantics, since there is a tendency also in our data towards a distribution of forms according to humanness (= *le*), human feminine (= *la*) and human masculine (= *lui*). To avoid overinterpretation, however, we have counted these as "weak" in Tables 8–13. If we count them as strong, the dominance of strong forms will be still more evident: 37 strong vs. 8 possible clitics, of which just one is before a finite verb. This shows that there is no cliticisation process, neither for forms nor for positions.

(21) a. Elle demande la   (Petra 1, 5 months)
          she asks   her

  b. Elle croit la
    she believes her

(22) a. On prend le gaz et refroidir le   (Karl 1, 8 months)
    one takes the gas and cool   it
  b. On refroidir le dedans
    one cool   it in.there

During the developmental period, the learners also often use reflexive clitic pronouns. These are essentially used in the chunks *je m'appelle, il s'appelle, je me rappelle* (*pas*), which is thus not a sign of cliticisation. In the tables we just mark their occurrence with a "+".[8]

  In the second stage, the adult learners still use a rather large number of strong forms in postverbal position, see Table 12. They now also have many pronouns in the intermediate position, either target-like before infinitives (23a), or target-deviant before a past participle (23b).

(23) a. Je peux le faire ...   (Karl 2, 10 months)
    I can it do
  b. J'ai # j'ai le vu
    I.have I.have it seen

Also at this stage, target-deviant strong forms occur before a past participle, as in (24). However, in a number of cases, the pronouns in this position now have the clitic/weak form, as in (25). There are no reduced/elided forms found in the corpus in this position and this stage

(24) Il a ass- ... il a lui assis.   (Petra 2, 7 months)
   he has   he has him sat

(25) Je veux te écouter.   (Karl 3, 12 months)
   I want you listen

The fact that many of these forms are strong (24) casts doubt on the analysis that learners treat these as agreement affixes (cf. Towell & Hawkins 1994). The non-reduction in (25) rather indicates that the pronoun has a weak status. In addition, we found 7 reduced forms before an auxiliary at this stage. However, 6 of these are an apparent chunk used by Lisa 3: "X *m'a* Verb", indicating that the object clitics are still not very productive at this stage.

  This pattern suggests that the learners have started to move the object pronouns to a higher position above VP, however not yet to the final, target-like position. One hypothesis is that they often lose part of the full structure and

Table 11. Forms and positions of object pronouns in adults, first stage

	Pre-Aux	Pre-Vfinite	Pre-infinitive	*Pre-past ptc	Post-Vlex
Strong		*1	*1	*2	*23
Weak					*10
Cl = Weak		1ᵃ	7		
Reflexive cl		+			
Cl reduced					

Key: see Table 8
ᵃThere are, furthermore, four cases of pronouns incorrectly placed before a modal by Sara, who is clearly influenced by Italian at this point.

Table 12. Forms and positions of object pronouns in adults, second stage

	Pre-Aux	Pre-Vfinite	Pre-infinitive	*Pre-past ptc	Post-Vlex
Strong		*1	*1	*3	*10
Weak			*1	*1	
Cl = Weak		11	4		
Reflexive cl	1	+	4	*3	
Cl reduced	7				

Key: see Table 8

Table 13. Forms and positions of object pronouns in adults, third stage

	Pre-Aux	Pre-Vfinite	Pre-infinitive	*Pre-past ptc	Post-Vlex
Strong		*1			3
Weak	*1				
Cl = Weak	2	27	9		
Reflexive cl		+	1	*2	
Cl reduced	13	3	3	*1	

Key: see Table 8

consequently have the status of weak pronouns. This would mean that the cliticisation is gradual and proceeds in two steps.

Regarding the third stage, Table 13 shows that there are practically no target-deviant pronouns in postverbal position, only three postverbal instances of *ça*. The great majority of the object pronouns are now in a target-like position; most of them occur before the finite verb, and also before the auxiliary, where they are necessarily reduced before the vowel of the auxiliary. Examples are given in (26).

(26) a. Je l' ai   pris   (Knut 1,3, ca 20 months)
         I   it.have taken
     b. Ça m' a   changé
         it   me.has changed
     c. Je t' ai   dit
         I   you.have said

At this stage, we find many reduced forms, which argues that they are clearly clitics. These forms, together with the weak = clitic pronouns before a finite verb, are now in clear majority. Thus, it is evident that at this stage of development the learners have succeeded in moving the object pronoun up to its final position (under IP) and have accordingly learned its clitic status.

4.3 Acquisition of the definite article

The proclitic nature of the definite article is morphologically apparent before a non-consonant-initial noun or adjective. In these cases, the singular articles *le* and *la* reduce to *l'*:

(27) a. l' orange
         the.orange
     b. l' autre   orange
         the.other orange

In the following analysis of this aspect of acquisition, we will deal with the cases in (27) and analyse the extent to which the bilingual children and the adult Swedes elide the article before a vowel. This will be taken as an indication of whether they treat articles as proclitic elements. We begin again with the child learners.

4.3.1   *Elision of the definite article in child learners – 2L1*
The results in Table 14 show that there are very few cases where elision is not respected (4 cases out of 127).

    If we include the doubled articles, which are not erroneous in the same way since they (probably) reveal problems with segmentation, we obtain 8 cases out of 131, i.e. less than 6% incorrect usage. It is hard to say anything further about the status of these productions, and it could well be that several of them are performance errors.[9] Examples of elided articles in the children appear in (28). To summarize, it is clear that the clitic status of the definite article is acquired very rapidly and almost without error.

Table 14. Articles before vowel – 2L1

Child Recs.	Elision		Doubled (ex. "le l'homme")	% correct use
	Elided	Not Elided		
J1–J13	38	3	1	93
A1–A15	40	–	3	93
D1–D9	26	–	–	100
M1–M10	19	1	–	95
Total	123	4	4	

Key: J = Jean, A = Anne, D = Dany, M = Mimi

(28) a. *MIMI: (il passe)[10] aussi, l' auto.   (Mimi 2, 2;2)
              it passes also   the.car
      b. *ANNE: L'arbre encore ?   (Anne 6, 3;1)
              the.tree again
      c. *JEAN: (Mais l' autre) je sais   pas.   (Jean 6, 2;9)
              but   the.other I know not

4.3.2 *Elision of the definite article in adult learners – L2*
Previous studies on these adults have shown that, with some specific exceptions, they generally use all determiners from the outset (Granfeldt 2000a, 2000b). In Table 15, the elision of definite articles is reported. Only DPs occurring in argument positions are considered here (DP subjects or DP objects).[11] The learners can be divided into three independent stages of development with respect to proclitic definite articles.

Stage 1: Articles are never elided
In the least advanced learners, Henry, Sara and Petra, the definite articles are never elided before a following adjective or noun beginning with a vowel. Table 15 shows that out of 19 contexts, they never produce an elided article. They are all at Stage 1 with respect to this property of the definite article. Some examples are given below:

(29) a. *INT: Alors quelle est quelle est l'école que tu fais? # les études # qu'est-
              ce que tu fais?
              'so what, what school do you go to? the studies what do you do?'
          *SAR: Eh … le école Etienne Decrous.   (Sara 1, 3 months)
                      the school
      b. *PTR: Eh je regarde la   artiste.…   (Petra 1, 5 months)
                   I   look+at the artist

Table 15. Articles before vowel – L2

Learner Rec.	Elided	Not Elided	% correct use
Stage 1	–	19	0
Stage 2	54	37	60
Stage 3	47	4	92
Total	*101*	*60*	*62.7*

Key:
Stage 1: Henry 1–2, Sara 1–2, Petra 1–2.
Stage 2: Martin 1–3, Karl 1–5, Lisa 1–4.
Stage 3: Knut 1–3, Sama 1–5.

Stage 2: Elided articles appear with some nouns

Learners at an intermediate stage produce both elided and non-elided articles in the relevant contexts. The recordings with Karl, Martin, and Lisa are indicative of such a stage of variation. These learners produced elided articles in 60% of the contexts. At this level of proficiency, it can be hypothesized that the proclitic status of the definite article depends on the noun/adjective type with which it occurs (see Granfeldt 2003, for further development of this hypothesis). Stage two represents a more advanced system than the previous one, but arguably still indicative of a grammar without cliticisation of articles. It is more like a first step where some units (i.e., chunks) come out correctly in production.

Stage 3: Articles are (nearly) always elided

At this stage, the definite article is nearly always elided in the relevant contexts (92% correct use). Sama, a very monitoring formal learner (student of French), seems to be conscious of the elision rule from the beginning of the data collection period. Moreover, Knut, the most advanced informal learner, had acquired this property of French definite articles from the first recording after some 20 months of residence in France: in all three recordings with Knut we found only one case of an article that was not elided and 19 cases of elision.

To summarize, we have seen that, just as in the case of subject and object clitics above, there are clear differences between the children's and the adults' initial use of articles. The elision rule, indicative of the proclitic property of French definite articles, is difficult for the L2 learners at lower levels of proficiency but is applied by the children immediately. If adopting the analysis in Valois (1991), where articles merge as XPs in SpecNumP and subsequently cliticise onto D^0, we might in fact see a development parallel to that shown in previous sections on subject and object clitics.

5.   Cliticisation and not – some possible explanations

We have discussed the fact that 2L1 learners use subject and object pronouns and definite articles as clitics from their first appearance, i.e. children have no problems with cliticisation. This is not the case for adult L2 learners, who initially perceive these elements as XP's, and acquire cliticisation through a long, stepwise and difficult process, where there is clear evidence of cliticisation only after at least one year of frequent French input. Since access to FCs is a prerequisite for cliticisation, it is natural to first explore evidence for their existence in the child and especially in the adult grammars.

There is, however, no reason to question the presence of the relevant FCs in the grammar of the children. Not only do the children show evidence for correct cliticisation, they also use opposing verb forms, postverbal negation after finite verbs, prenominal adjectives, and so forth, very early on, just as has been presented in many earlier studies.[12]

The situation is less clear for the L2 learners, but we argue that a lack of FCs is not part of the explanation. Even the least advanced L2 learners, Henry, Sara and Björn, with only 3 months of French input, all show some evidence of Functional Categories. They all oppose nominative and non-nominative case with at least *je/moi*, which is evidence for a nominative-distributing IP (Lardiere 1998), and they all use at least some auxiliaries, and some cases of postverbal negation, even from the very first recording (for further details, see Schlyter 2003). All of the learners have several instances of subordinate clauses with a complementizer (*parce que* or *quand* clauses) and/or relatives (mostly occurring with the incorrect form of the complementizer), both of which are evidence for C^0 and arguably (some) FCs of the Middle Field. In the following examples from Petra 1 (5 months of residence), we can observe evidence for non-cliticisation in the same utterance where she uses subordination, i.e. evidence for C^0:

(30)   a.   *PTR: C'est parce que eh   quand je # essaie parle eh
                       it.is because   when I   try   speak:PRES
                       sué suédois, …
                       Swedish

         b.   *PTR: Et   ma mon bouche est gros parce que je veux eh #
                       and   my my   mouth is   big   because   I   want
                       mange toi.   (Petra 1, 5 months)
                       eat   you

With respect to the definite article elision data, it is not the case that the L2 learners at level 1 (without cliticisation) lack access to DP or NumP at this time. They have no problem in conveying Definiteness (31a), a feature generally taken to be associated with the DP-layer (Valois 1991 and many others) or Number (31b) (associated with NumP) or in producing sequences of D-N-A (31c) (see Granfeldt 2000a, 2000b for further details):

(31)   a.   *INT: Aha hm hm c'est c'est donc aussi de mime?
                  'Oh, so that is also miming?'
         *SAR: Oui, le   même eh mime
                  yes   the same   mime

       b.   Jamais je viens eh dans les bars et   les
            never   I come   in   the bars and the
            restaurants   (Sara 1, 3 months)
            restaurants

       c.   Je joue saxo   classique avec la   garçon
            I play saxophone classique with the boy
            suédois.   (Petra 1, 5 months)
            Swedish

On the contrary, it would seem as if the non-proclitic articles are associated with the DP-layer. A possible interpretation is that instead of cliticising onto D^0, articles remain XPs (possibly moved to SpecDP) during the whole derivation in the adults' initial grammar. They pattern in this respect more with demonstratives than with articles in the target language (Valois 1991) and are still XP-elements at spell-out. As for development, then, the adult learners have to unlearn movement to SpecDP and acquire cliticisation onto D^0. As we have seen above, adult Swedes normally do so within two years of immersion in a French-speaking society.[13]

A second possible explanation for the initial lack of cliticisation in L2 is to consider transfer of parameters or of features of the relevant FCs. Even though it is not excluded, a transfer account of the present data involves a number of problems. First, if Swedish structures were generally transferred, we would also expect that the very frequent post-finite verb position of the subject pronoun in main clauses, due to the V2 parameter, would also be transferred. This is, however, never the case. In the entire L2 corpus, there is no single instance of a subject in this position, neither clitic, pronominal or nominal. One postverbal subject in a subordinate clause, a position in which a Swedish subject is excluded, is instead an argument against transfer. This example is given in (32).

(32) *KAR: Non   et   tu   ne   sais   pas   où   se   trouve moi,
             no   and   you   NEG   know   not   where REFL   find   me
             n'est-ce pas?
             isn't it?
        'no and you don't know where I am, do you?'   (Karl 2, 10 months)

The native French version of this utterance would have been *tu ne sais pas où moi je me trouve*, but Karl here uses the position that would have been normal with a nominal object: *tu ne sais pas où se trouve ton collègue*.

Second, the target-deviant type of object pronoun position, of the type *j'ai le vu*, is not the result of transfer either. Since it occurs neither in the source language nor in the target language, it must imply direct access to UG, and since it has moved, there must be an FC to attach to, presumably AgrOP.

Third, the very fact that children and adults behave differently is a problem for a general transfer account. Since transfer between two first languages has been proposed (Hulk 2000), we might expect the children to have at least some of the problems with cliticisation we find in L2, due to their other language, Swedish. Our data indicates that this is not the case.

Fourth, the initial lack of cliticisation applies to all three areas under investigation, strongly indicating that it is indeed a general phenomenon. Schwartz (1999) argues in her re-analysis of White's (1996) study, that transfer is the factor to be considered in L2 French acquisition of clitics where the L1 is English. She shows that there possibly are both subject and object clitics in English and that the relevant projections (NomP and AccP, following the approach to clitics in Sportiche, 1996) are projected in English. Schwartz then goes on to assume that the English-speaking children studied by White (1996) have transferred these FCs to French. Following this logic, it is predicted that we should see a differentiated pattern with respect to cliticisation in the three areas under investigation. Whereas spoken informal Swedish might contain some object clitics (cf. *-na*), there are probably no syntactically clitic subject pronouns in Swedish. If transfer were the unique explanation, Swedes would project AccP, but not NomP, in early L2 French. This differentiation is not supported by our data. Moreover, definite articles in Swedish are clearly clitic (*enclitic*), but this does not help adults in early stages to acquire the clitic status of French articles. Carroll's observation that L1 speakers of English do not at first produce proclitic articles is also relevant here. Basing her arguments on those of others, Carroll says that articles in English can be proclitic. This property is apparently not transferred initially to French. This suggests then that the clitic status of de-

terminers in the L1 (be it enclitic or proclitic) does not facilitate the acquisition of clitic determiners in the L2.[14]

6.   General discussion and conclusion

We have shown that the process of cliticisation displays sharp differences in child and adult learners of French. In three separate domains where cliticisation is involved in French, it has been demonstrated that adult learners do not apply cliticisation initially. On the other hand, cliticisation poses no problem to the bilingual child learners. What characterises the child-adult comparison is that when the children begin producing clitic forms, they seem to know their syntax and distribution in all three domains. The adults, on the other hand, clearly do not, but only learn cliticisation gradually over time. We find, thus, that the hypothesis on cliticisation in L1 and L2 (see Section 2.4) has been confirmed.

In discerning among the possible explanations put forward in the same section, a first attempt was made to control for a structural explanation. Since clitics are by definition firmly associated with FCs acting as hosts, it could be that, in the L2 case, the relevant FCs are absent or not projected initially (cf. Vainikka & Young-Scholten 1996). In the preceding section, we demonstrated that, in the case of adults, the lack of cliticisation does not co-occur with an absence of other properties associated with the relevant FCs of the clause or of the DP. We conclude, then, that a lack of FCs cannot be the reason cliticisation does not apply in the adult grammars.

The second possible explanation concerns transfer from Swedish. Again, as demonstrated in the previous section, there are many problems with a transfer account. We therefore refute transfer as the sole explanation, even if we do not exclude the possibility that transfer can be a contributing factor.

With respect to the inventory of possible explanations outlined in Section 2.4, we are therefore left with the third one: the process of cliticisation is itself subject to development, but only in adult grammars. Since early cliticisation has been shown for child L2 acquisition at the age of 5 years (White 1996), we believe that the acquisition of cliticisation should above all be discussed in terms of age and not in terms of L1 vs. L2 acquisition only. Studies on age differences have proposed a difference in treating language before and after the age of about 6–7 years (see, e.g., Long 1990), a notion that may be related to the differences observed here, even if the details of this relation remain to be worked out. Andersson and Strömqvist (1990) proposed processing differences between children and adults to account for differences in L1 and adult L2 ac-

quisition. We will now propose an explanation founded on the theory of UG to account for this finding.

It is well known from earlier comparative research (Vainikka & Young-Scholten 1998; Parodi 1998, etc.) that an essential difference between L1 and adult L2 acquisition is that L1 learners have easy access to bound morphology, whereas adult L2 learners have great problems with it, but much less with free morphemes and lexical items. In the ongoing discussion on Missing Inflection (e.g., Lardiere 1998), the difficulty of acquiring bound morphology in adult L2 learners is in conflict with evidence for FCs and the presence of free grammatical morphemes such as complementizers. In this type of categorisation (free vs. bound morphemes), clitics are more similar to bound morphemes (cf. Auger 1995 and many others). Furthermore, in the syntactic framework we have adopted here, the distinction between clitic and non-clitic elements has structural consequences. This account allows a structural approach to the issue of free versus bound morphemes in L1 and L2 acquisition.

According to our syntactic framework, cliticisation is the result of a reduction: a *decrease* in structural representation (from XP to X^0). At the same time, grammatical systems having clitics as well as weak and strong pronouns (like French) that can express one and the same function (e.g., subject or object), *increase* the number of different elements with which the computation must deal.

This tension between structure and the number of different categories is the basis of a recent proposal for first language acquisition put forward by Rizzi (1998). He argues that two different principles of economy, one applying to the structure and the other applying to the number of categories entering the computation, are responsible for specific patterns in child language development. We present these two principles below and discuss how they might account for the data on cliticisation presented here.

(Rizzi 1998: 33) speculates that two principles govern linguistic computations:

– Structural Economy: Use the minimum of structure consistent with well-formedness constraints.
– Categorial Uniformity: Assume a unique canonical structural realisation for a given semantic type.

The first principle is more or less self-explanatory (it mirrors the *Minimise structure* principle of Cardinaletti & Starke 1999). The second principle, *Categorial Uniformity*, is "acting upon the inventories of elements that enter the syntactic computation, rather than on the syntactic computation itself. Under

Categorial Uniformity the inventory of categories to be used for the syntactic computation will be maximally simple and transparent for the translation to semantics" (Rizzi 1998: 33). Put somewhat differently, adult native grammars are economical in a different sense than child grammars: adult grammars assume the fewest possible *different* elements. As for development, Rizzi's idea is that in child grammars only the first principle is activated, whereas in native adult grammars the Categorial Uniformity principle prevails.

Applying Rizzi's theory to cliticisation provides a straightforward way of accounting for our findings, which is also in accordance with empirical facts described in other frameworks. If Structural Economy prevails in the initial state of (2) L1 acquisition, this correctly predicts that children will have few problems treating subject and object clitics as well as determiners as syntactic heads, in the sense of Cardinaletti and Starke (1999). In terms of the (internal) structure projected, these options are economical ways of realizing the function of arguments and expressing definiteness. Cliticisation is therefore a favoured option since it limits the projected structure at spell-out.

In sharp contrast, if the adult UG, where the Uniformity Principle prevails, guides adult learners, then as few different categories as possible will be posited. Under this principle, a unique structural representation is preferred in order to express the function of subjects and objects. This representation must be modelled on DPs in order to include Noun Phrases. The result is an overgeneralisation of XP-categories (i.e. weak and strong subject pronouns) to contexts where an X^0 would be the target-like choice. The same line of reasoning applies to definite articles. It can be assumed that representations of the definite article are modelled on a more general category of "modifiers" (demonstratives, adjectives etc.), which are also XPs. Cliticisation is therefore a clearly disfavoured option since it challenges the Uniformity Principle.

Notes

1. With respect to object clitic placement it is still an open question whether it is obtained through derivation or base-generation. Object clitics have been analysed as either moved from the object position in VP (Kayne 1975 and later Manzini 1998) or as an agreement marker agreeing with a DP or a pro in this position (Kaiser 1994; Müller et al. 1994 etc.). There are also approaches attempting to reconcile both positions, such as Jakubowicz et al. (1998: 116) and Sportiche (1996). (See Cardinaletti 1999 for an overview of these proposals.)

2. The details of this implementation are not necessary for our present aims. Cardinaletti and Starke (1999: 204–207) assume that the level at which cliticisation occurs is between a (pre)syntactic lexicon and a full (language specific) lexicon. The presyntactic lexicon is an "abstract" or a "core" lexicon where all entries share a fixed array of underspecified features. This is thus the level at which only XP-categories may exist. Only after some derivation, which seeks to reduce structure in accordance with a general principle of economy, the full lexicon is accessed. Therefore, deficient pronouns exist only in the full lexicon. See Cardinaletti and Starke for further details and discussion.

3. The clitic forms *on* and *ce* are not studied here and are therefore not included in Table 1a.

4. C. Hamann (p.c.) pointed out problems with this analysis. Whatever the status of the "pragmatic argument" is, there may be many reasons other than differences in clitichood to account for the later appearance of object clitics, such as the fact that object pronouns are much less frequent than the – obligatory – subject pronouns, the non-canonical place of object pronouns, etc.

5. There is a contradiction between this criterion and the fact that these forms are quite normal in written French – where subject pronouns should have a 'weak pronoun' status. For the moment we cannot resolve this problem.

6. We have not always studied all of these learners in each partial study.

7. Utterances in the CHAT format, including speaker indications, are copies of the transcriptions, whereas other examples are sampled and simplified.

8. It is probable that these serve as triggers for non-reflexive object clitics (Schlyter 1997), but we will not go into this question here.

9. As a measure of comparison, it can be noted that in the monolingual child Grégoire (corpus assembled by C. Champaud, transcriptions available from CHILDES, MacWhinney 2000), we found only one (1) violation of the elision rule in 23 contexts (recordings G5-G10, 2; 0,5 – 2; 5,27), i.e. 96% correct use. No doubled articles were found in the Grégoire corpus.

10. We use parenthesis as a transcription convention for parts of speech that are less clearly produced.

11. All learners also produce doubled articles (e.g. *le l'homme*), like the children, but these are not reported on here (see Granfeldt 2003).

12. It should be noted that this is not equal to an initial access of FCs. In fact we have argued elsewhere (see Granfeldt 2000a, b; Schlyter 2003) that FCs in the DP and the clause are instantiated in sequence.

13. One reviewer asks what might trigger the unlearning of movement to SpecDP. This questions can not be dealt with seriously here for reasons of space. One possibility, though, is that prosodic development might help. Even the least advanced learners who never cliticise ar-

ticles when the DP is in argument position have some occurrences of elided articles after prepositions. In these cases the learners typically produce all three morphemes within a single intonational phrase (e.g. | *à l'hôtel* |) whereas in many other cases articles and nouns receive individual stress in a DP (e.g. | *le* | *hôtel* |).

14. A serious discussion of transfer in the domain of cliticisation would, however, require further L1-L2 combinations.

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