

Current Trends in Child Second Language Acquisition

A generative perspective

Language Acquisition & Language Disorders

46

Edited by
Belma Haznedar
Elena Gavruseva

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Current Trends in Child Second Language Acquisition

Language Acquisition and Language Disorders (LALD)

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Volume 46

Current Trends in Child Second Language Acquisition. A generative perspective
Edited by Belma Haznedar and Elena Gavruseva

Current Trends in Child Second Language Acquisition

A generative perspective

Edited by

Belma Haznedar

Boğaziçi University

Elena Gavruseva

University of Iowa

John Benjamins Publishing Company

Amsterdam / Philadelphia



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PART I

Introduction

Recent perspectives in child second language acquisition

Belma Haznedar and Elena Gavruseva

1. Recent perspectives in child second language acquisition

This volume presents recent generative research on the nature of grammars developed by child second language learners. In generative literature, this learner population is known as successive bilinguals who have acquired the basic fundamentals of their native language (L1) and who are exposed to a second language (L2) between the ages of 4 to 8. The main goal of the collected works here is to define child L2 acquisition (cL2A) in relation to other types of acquisition such as child first monolingual and bilingual acquisition (cL1 and 2L1), adult second language acquisition (aL2), and specific language impairment (SLI). This comparative perspective should be able to open up new angles for the discussion of currently debated issues such as the role of Universal Grammar (UG) in constraining development, developmental sequences, maturational influences on the 'growth' of grammar, critical period effects for different linguistic domains, initial state and ultimate attainment in relation to length of exposure, L1-transfer in relation to age of onset, among many others. The implications of cL2A for increasing our understanding of these issues are of growing importance as some researchers place cL2A closer to cL1 and others place it closer to aL2 (see an overview of the contents and the articles below).

Over the past two decades, child L2 research has undergone significant shifts in focus, with earlier studies addressing primarily the descriptive facts regarding developmental universals, L2 developmental stages (e.g. negation, wh-questions), rate of development, and individual differences (see e.g. Cancino, Rosansky & Schumann 1974, 1978; Cazden, Cancino, Rosansky & Schumann 1975; Dulay & Burt 1974; Hakuta 1974, 1976; Milon 1974; Ravem 1978; Wode 1977; Wagner-Gough 1975) and later studies addressing the issues of parameter-setting,

access to UG and the role of L1 transfer (Clahsen 1991; Grondin & White 1996; Lakshmanan 1991, 1993/94, 1994; Lakshmanan & Selinker 1994). Child L2 learners, unlike L2 adults, are considered to be much more successful in terms of rate of acquisition and ultimate attainment of L2 properties and hence have been argued to have full access to UG (e.g. Felix 1991; Schwartz 1992). As noted in Lakshmanan (1995), UG-inspired studies of child L2 have advanced the empirical inquiry into domain-specific processes of language learning, especially regarding an innately specified language faculty consisting of highly abstract universal principles and a restricted set of parametric options (see also White 1996). We note the scarcity of child L2 studies in the 90s as aL2A had been gaining prominence in the generative field, especially in regard to the availability of UG question (e.g. Bley-Vroman 1990; Clahsen & Muysken 1986, 1989; Clahsen 1988; Epstein, Flynn & Martohardjono 1996; Eubank 1993/1994; Hawkins & Chan 1997; Hilles 1991; Schwartz & Sprouse 1996; Slabakova 1999; Vainikka & Young-Scholten 1994, 1996a, 1996b; see also White (2003) and Hawkins (2001) for a thorough review of these issues). In the context of L2 research exploring L2 learners' access to UG, the issues around the role of L1-transfer were reformulated to include the possibility that the UG might be accessed not directly, but rather through the mediation of L1.

How much L1-transfer happens in child L2 is still debated and some recent studies attempt to further our understanding of the issue by considering how L1-influence might relate to age of onset. In this volume, Ionin raises the possibility that L1-transfer intensifies as age of first exposure approaches puberty. In her study, individual child patterns revealed that the range of semantic errors in aspectual morphology was more expansive in 'older' 8 to 9 year-old children than in 'younger' 6 to 7 year-old children. Meisel (also, this volume) takes a more general position regarding the age-of-onset effects and argues that cL2A is different from 2L1 (and closer to aL2), thus distinguishing language acquisition from birth from any form of acquisition that occurs after the age of 4. Yet, other contributors (e.g. Blom) argue that the presence of L1-influence is one of the factors that separates child L2ers from adult L2ers (at a group level) and that the patterns of verb placement and verb morphology change with the age of onset, getting more and more dissimilar from cL1. In an examination of the acquisition of definite determiners and object clitics in Turkish-speaking child L2 learners of Greek, Chondrogianni reports that child L2 learners are superior to adults in the rate of determiner acquisition at the intermediate levels. In another study on the acquisition of gender assignment of definite determiners, Brouwer, Cornips & Hulk in this volume argue that unlike monolingual Dutch-speaking children, child L2 learners of Dutch do not represent abstract gender assignment fully but produce overgeneralization errors.

With the development of further links between linguistic theory and L1/L2 acquisition research, most recent generative work on child L2 acquisition has focussed on the following major issues: (i) the L2 initial state, (ii) the availability of functional categories, with an emphasis on the acquisition of tense-agreement and tense-aspect systems, and (iii) morphological variability (e.g. Gavruseva & Lardiere 1996; Gavruseva 2002, 2003, 2004; Grondin & White 1996; Haznedar 1997, 2001, 2003; Ionin & Wexler 2002; Prévost & White 2000). Crucially related to these issues is the long-standing debate on the nature of syntactic representation in L2 acquisition. In particular, regarding the morphology/syntax interface, there is considerable disagreement over the relationship between overt verbal/nominal inflectional morphology and the knowledge of the abstract properties of the L2 syntax. One line of L2 research examines morphological variability with respect to the use and omission of inflectional morphology in L2 production data. For some researchers, absence of surface morphology does not entail absence of the syntactic representation and therefore disassociation between overt morphology and abstract syntax is proposed (Haznedar & Schwartz 1997; Lardiere 1998a, b; Prévost & White 2000). For others, the dissociation in performance on L2 syntactic structures and morphology reflects a syntactic deficit and thus the unavailability of UG (e.g. Clahsen & Muysken 1986; Meisel 1997; Beck 1998); the apparent target-like performance is attributed to other cognitive mechanisms (see also Tsimpli 1997 for a different but related perspective).

Several papers in this volume (Blom, Gavruseva, Prévost, Geçkin and Haznedar) focus on the relationship between morphological development/variability and syntactic representations. In a study that examines the relationship between verb placement and verb morphology in child and adult L2A, Blom argues that the acquisition of syntactic and morphological properties works in tandem, showing that morphological errors correlate with word order patterns. Gavruseva and Prévost explore the connection between morphological variability and syntactic structure in light of specific assumptions about the nature of child L2 initial state. Gavruseva proposes that the asymmetry in the acquisition of copula and auxiliary *be* could be accounted for under the hypothesis that assumes underspecification of aspectual features in syntactic structure. Prévost, on the other hand, suggests that the patterns of verbless utterances follow from the Truncation approach to early syntactic representations (Rizzi 1993/1994). From a different angle, Mobaraki, Vainikka & Young-Scholten pursue the idea that early grammars do not represent a truncation option, but constitute only a VP. In contrast, Geçkin & Haznedar argue that the lack of overt inflection could be attributable to problems associated with surface morphology. In comparing atypical/impaired cL2A to typical cL2, Paradis attributes the gap in acquisition of copula *be* and affixal morphology to the workings of the Extended Unique Checking Constraint. Taken together, these

contributions demonstrate that investigating morphological acquisition as developmentally linked to the properties of functional structure or domain-specific principles can be a fruitful direction for future research in cL2A.

Another important line of cL2 research is concerned with similarities between cL2 and cL1/aL2 acquisition. While some researchers argue that morphological variability could be attributed to the same grammatical principles in both cL1 and cL2, others maintain that cL2 and aL2 are more similar and so stand apart from cL1A. Given the well-known assumption regarding the superior level of attainment in cL2A (in comparison to aL2), Schwartz (1992, 2003, 2004) formulates this question in more specific terms: Is cL2A more like cL1A or more like aL2A? According to Schwartz' (2003) Domain-by-Age Model, cL2A resembles cL1A in the domain of inflectional morphology whereas in the domain of syntax, cL2A is more like aL2A (Schwartz 2003:47). In an empirical study of this proposal, Unsworth (2004) shows that in the production of scrambled objects in Dutch, English-speaking L2 children and adults go through similar developmental stages. In comprehension, however, discourse-pragmatic factors influence both L1 and L2 children.

Several studies in this volume investigate the predictions of the Domain-by-Age Model. In a comparative experimental study of cL2 and aL2 learners of L1-Turkish and L1-Moroccan Arabic backgrounds, Blom (this volume) argues that child L2ers are quite distinct from the adult L2 population both in the domain of syntax and in the domain of morphology. Child L2ers showed distinct word order patterns (contrary to the predictions of Schwartz' model) but were similar to child L1 Dutch speakers in inflectional errors (in accordance with the predictions). Similarly, Meisel (this volume) observes that L1-German L2-French successive bilinguals make errors in clitic form (domain of morphology) and clitic placement (domain of syntax) that are unattested in monolingual and bilingual L1 acquisition of French but are attested in adult L2. Thus, it appears that the predictions of the Domain-by-Age Model are ripe for further empirical inquiry and for future theoretical revisions. Finally, we note that Paradis' contribution (this volume) provides a new angle on cL2/cL1/aL2 comparisons as she compares typical cL2A with its atypical (delayed/impaired) types and makes specific observations about how cL2-SLI resembles cL1-SLI and typical cL1.

We hope that this volume will enhance the visibility and theoretical/empirical contributions of cL2 research as more and more studies embrace new theoretical insights, expand into the domain of linguistic interfaces, explore and introduce new methods of investigation, and extend their research agendas to delayed/impaired cL2A.

2. The papers of this volume

The contributions in this volume address both general and specific issues related to cL2A and show how cL2 as a field informs research on theories of both cL1A and aL2A. To this end, the volume is organized in terms of five major themes: (i) age effects and differences between child and adult learners are the two primary concerns investigated in Ionin & Meisel; (ii) the acquisition of D-related elements is examined in Brouwer, Cornips & Hulk and Chondrogianni, which we believe is important due to little discussion of the nominal domain in cL2A research; (iii) morphological variability is addressed in a number of papers (Gavruseva; Prévost; Mobaraki, Vainikka & Young-Scholten; Geçkin & Haznedar); (iv) comparisons of child L1, cL2 and aL2 are investigated in Blom and Unsworth; and finally, (v) typical and atypical cL2A is addressed in Paradis.

In more specific terms, the areas of study in the papers are as follows: aspectual interpretation of *-ing* and bare verb forms in L2 English (Ionin), clitic placement and finiteness in L2-French (Meisel), determiner and clitic omission in L2 Greek (Chondrogianni), neuter gender in child L2 Dutch (Brouwer, Cornips & Hulk), asymmetry in the development of copula and auxiliary *be* in L2 English (Gavruseva), copula *être* 'be' and lexical verb omission in L2 French (Prévost), null subjects in child L2 English (Mobaraki, Vainikka & Young-Scholten), morphological variability in L2 English (Geçkin & Haznedar), verb placement and tense-agreement morphology in L2 Dutch (Blom), methodological perspectives in child L2 vs. adult L2 comparisons (Unsworth), tense and non-tense morphology in L2-SLI and typically developing L2-English (Paradis).

It should be noted that a unique characteristic of this volume is that it expands cL2 research beyond English-as-L2 contexts. While most earlier research in cL2A has dealt with English-acquiring learners (e.g. Lakshmanan 1994; Gavruseva & Lardiere 1996; Gavruseva 2000; Haznedar 2001, 2003; Armon-Lotem 1998; Ionin & Wexler 2002), we hope that this volume remedies this at least to a certain extent. Blom's chapter examines data from cL2 Dutch and compares the acquisition of verb placement (syntax) and verbal inflection (morphology) in cL2 Dutch to cL1 and aL2 Dutch. Prévost's chapter investigates verbless utterances in child L2 French. In his analysis of German L2 data, Meisel highlights the differences between cL2A and monolingual/simultaneous bilingual L1 acquisition. Brouwer, Cornips & Hulk's contribution examines the acquisition of gender in definite DPs by Dutch-acquiring L2 children. Finally, Chondrogianni analyzes data from Turkish-speaking child L2 learners of Modern Greek, focusing on the acquisition of the definite article and direct object clitics.

The aforementioned five themes are investigated using a range of methods, including innovative experimental designs that take into account L2 learners'

proficiency levels (Blom; Chondrogianni; Unsworth), quasi-elicited production (Ionin; Brouwer, Cornips and Hulk), electronic corpora (Prévost), and researchers' own longitudinal studies (Gavrusева; Geçkin & Haznedar; Meisel; Mobaraki, Vainikka & Young-Scholten; Paradis).

Age effects and differences between child and adult learners

Ionin takes a developmental perspective on the acquisition of progressive *-ing* morphology in the cross-sectional data from L1-Russian L2-English children. The acquisition path of *-ing* is examined in relation to the use and interpretation of bare verb forms and to the emergence of finite auxiliary *be* in *be+ing* constructions. The results suggest that L2 children rarely use *-ing* outside of progressive contexts, while overextending bare verb forms to both progressive and various non-progressive contexts. It is also shown that progressive interpretation of *-ing* is acquired independently of finiteness morphology. A clear separation of interpretations associated with *-ing* and bare verb forms is taken to suggest that the acquisition of the aspectual marker is guided by the *Uniqueness Principle*. **Meisel** aims to identify grammatical features that uniquely characterize successive cL2 acquisition and highlights two major factors that uniquely shape cL2: age of onset and L1 transfer. The optimal critical period for cL2 is argued to fall between the ages of 3–4 to 7–8, whereupon it begins to share more and more features with aL2. The evidence for this claim comes from a cross-sectional study of L1-German L2-French children who are compared to a group of simultaneous French-German bilinguals on a number of grammatical properties such as tense/agreement morphology, subject clitics and verb placement. The findings are discussed in light of the Domain-by-Age Model (Schwartz 2003) and are taken as evidence for a tentative conclusion that cL2 resembles aL2 more than cL1, at least in some areas of morphosyntactic development.

The acquisition of D-related elements

Chondrogianni explores the acquisition of definite determiners and object clitics in L1-Turkish L2-Greek child and adult population. The participants of four proficiency levels (low, lower intermediate, upper intermediate and high) completed a story-telling and elicited production tasks. The child/adult comparisons reveal that children are superior to adults in the rate of determiner acquisition at the intermediate levels. The patterns of clitic production varied by task and revealed significant child/adult differences at the upper intermediate and high levels. The results are discussed in light of three L2 frameworks – the Full Transfer/Full Ac-

cess hypothesis (Schwartz & Sprouse 1996), Failed Functional Features hypothesis (Hawkins & Chan 1997), and Interpretability Hypothesis (Tsimplici 2003). Adults' difficulties with clitics are attributed to their syntactic deficiency and to their function as resumptive elements in some structures. **Brouwer, Cornips & Hulk** examine the acquisition of gender assignment of definite determiners in child L2 Dutch. While previous research showed that monolingual Dutch children show a target-like production with respect to gender assignment of definite determiners, bilingual children massively overgeneralized *de*. In an analysis of the overgeneralization patterns in child L2 data, Brouwer, Cornips & Hulk designed an experimental decision task in order to tap the knowledge of both monolingual and bilingual children. The results show that bilinguals fail to represent abstract gender and that *de* and *het* are in free variation. The difference between the production and comprehension data are argued to suggest that bilinguals have some awareness of *de* and *het* being gender markers.

Morphological variability

Gavruseva investigates a developmental asymmetry in the acquisition of copula and auxiliary *be* in a longitudinal corpus of data from English-acquiring consecutive bilinguals (ages 6 to 9 at first exposure). It is argued that a delay in the productive use of auxiliary *be* vis-à-vis copula *be* can be explained if the two elements are treated as distinct in aspectual properties. Auxiliary *be* is specified as [-bounded]/ [+progressive] in addition to [±past], whereas copula *be* is specified for tense features only. It is furthermore proposed that the aspectual features in child L2 are either underspecified, or influenced by L1-transfer, and hence auxiliary *be* should be distinct from copula *be* in language development. It is shown that by and large, child L2 developmental trends can be explained under the proposed analysis; however, some individual child differences are also observed. **Prévost** explores verb omission in a longitudinal corpus of data from two L1-English L2-French children. Verbless utterances are tracked developmentally in root declaratives and CP-contexts and compared to similar data in cL1 and cL2 English, cL1 Italian, and aL2 French. It is reported that verb omission is restricted to root declaratives and is hardly present in CP clauses. The structurally-based asymmetry in verb omission in cL2 French is interpreted as empirical support for the Truncation Hypothesis (Rizzi 1993/1994) and against the existence of a lexical stage in cL2. The implications for maturational theories and the accounts of omission relying on a breakdown in children's access to the relevant lexical forms are also discussed. **Mobaraki, Vainikka & Young-Scholten** address the on-going debate regarding how much syntactic structure the language learner projects at the start of acquisition.

Specifically, they ask whether early pronominal subjects constitute evidence for functional projections in L2 English. Adopting Vainikka & Young-Scholten's (2005, 2007) revised approach, *Organic Grammar*, they pursue the idea that L2 children's early English syntax consists only of VPs, while lacking INFL and nominative case forms. Based on longitudinal data from two L1-Farsi L2-English children, they examine early non-contrastive use of pronominal subject forms, which are attributed to absence of case marking. The earliest thematic verbs are found to be non-finite and the early subjects are either full NPs, null, or non-contrastive pronominals. The patterns found are similar to those in cL1 English in terms of the early non-contrastive pronoun use (e.g. Vainikka 1993/1994) and in terms of co-occurrence of null subjects with non-finite verbs. **Geçkin & Haznedar** examine the issue of morphological variability in the suppliance of overt morphology. On the basis of longitudinal data from three Turkish-speaking child L2 learners of English, inflected and uninflected verbs in past and present contexts, copula *be* forms, null subjects and case on pronominal subjects are examined. Data from the three children show the following characteristics: (i) thematic verbs are optionally inflected; (ii) null subjects are virtually non-existent; (iii) pronominal subjects are almost always nominative; (iv) while there is variability in affixal morphology, suppletive elements such as copula *be* are acquired well before the consistent suppliance of affixal elements. These results suggest dissociation between morphology and syntax.

Comparisons of child L1, child L2 and adult L2

Blom explores how children and adults of Turkish and Moroccan Arabic L1 backgrounds acquire the properties of verb placement and finite verb inflection in L2 Dutch. The child and adult participants were matched in proficiency levels and were asked to complete picture- and situation-description tasks in three experimental conditions: subject-verb-object (SVO), subject-object-verb (SOV), and adverb-verb-subject (XVS). The results reveal across-conditions differences between children and adults both with respect to verb placement and inflection. In the discussion, Blom suggests that acquisition of verb placement and inflection go hand in hand, contrary to the predictions of the Domain-by-Age model, and that L2 syntactic development is influenced by age of onset. **Unsworth** considers methodological issues that arise when one is interested in comparing cL2 development with aL2 development to gain insight into the role of domain-specific principles (UG) in aL2A. Some of the core variables that need to be controlled for in any child/adult comparative study – L1 transfer, age at time of testing (along with age of first exposure), and L2 proficiency level – are discussed. It is argued

that traditional reading/writing tasks of cloze-test type are ill-suited for proficiency evaluations in L2 children. An alternative proficiency measure, the Age-Sensitive Composite Proficiency Score (ASCOPS), is then presented and discussed in terms of its main components – morphosyntactic complexity, lexical complexity, and morphosyntactic and lexical accuracy. The advantages of ASCOPS are demonstrated in L1-English children and adults acquiring scrambling properties in L2 Dutch.

Typical vs. atypical child L2 acquisition

Paradis considers whether acquisition patterns of tense-marking morphemes can be used as indicators of possible impairment in child L2-English L1-Cantonese/Mandarin. To this effect, nine typically developing children are longitudinally compared to two delayed/specifically-language impaired children. The results show that the delayed/impaired children were slower in the acquisition of tense, showing a pattern characteristic of the *Extended Optional Infinitive* stage. The impaired child was also different from the delayed child in maintaining an acquisition gap between *be* and affixal tense morphology throughout the study. Paradis interprets the comparative data as evidence that a domain-specific principle like *Extended Unique-Checking Constraint* guides the acquisition of tense in impaired/delayed child L2, while interacting with children's sensitivity to computational complexity.

3. Summary

The contributions in this volume present recent generative research on the nature of grammars developed by child second language learners, paving the way for discussion on the implications of child L2 acquisition for other related research areas such as child L1 acquisition, adult L2 acquisition and specific language impairment. The timeliness of the volume is strengthened by the following main themes. First, it expands the range of methods that consist not only of naturalistic production data but also include some novel experimental techniques. Second, it presents most current research on syntactic acquisition in the VP and DP domains – the two domains that have been intensely studied in both cL1 and aL2 contexts. Third, it explores and highlights how cL2 studies inform its 'sister fields', such as aL2, cL1 and SLI contexts. Overall, the volume is intended to enhance visibility and theoretical contributions (along with rich empirical evidence) of child L2 research with a special emphasis on its relevance for the areas of child typical and atypical language development and adult L2 acquisition.

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Progressive aspect in child L2-English

Tania Ionin

University of Illinois at Urbana-Champaign /

University of Southern California

This paper investigates the use of *-ing* forms and bare verb forms in progressive contexts in cross-sectional data of L1-Russian L2-English children. It is proposed that child L2-learners are guided by the *Uniqueness Principle* (cf. Wexler & Culicover 1980; Pinker 1989; Clark 1987; among others), which leads them to restrict *-ing* forms to progressive contexts and bare verb forms to non-progressive contexts. The acquisition of progressive interpretation is furthermore shown to be independent of the acquisition of finiteness morphology. It is suggested that child L2-learners follow a developmental path similar to that of child L1-learners, but that, unlike L1-learners, they may also be influenced by L1-transfer.

1. Introduction

Recent literature on both child L1 and child L2 acquisition of English has concerned the issue of aspectual interpretation (e.g., Hoekstra & Hyams 1998; Hyams 2006 on child L1-acquisition and Gavruseva 2000, 2002, 2004, this volume, on child L2-acquisition). One of the issues that has received much attention is the interpretation of bare verbs in child English:¹ that is, when a child produces an utterance such as *she play*, what is the intended meaning? Some possibilities include habitual (*she plays every day*), progressive (*she is playing*), future/modal (*she will/should/might/may/must play*), past (*she played*), and so on.

A convergent finding from child L1 and child L2-acquisition of English is that children allow bare verbs to have a progressive interpretation. In the case of L1-acquisition, Hyams (2006) reports that the majority of bare verbs used by L1-English

1. For the purposes of this paper, I use the term *bare verb* to mean a verb without any inflectional morphology: e.g., *play* as opposed to *plays*, *played*, or *playing*. I use the term *bare verb* regardless of whether the lack of inflection is grammatical (as in *I play*) or ungrammatical (as in *she play*).

children (72%, on average) have a progressive interpretation (Deen 1997; Torrence & Hyams 2004; Madsen & Gilkerson 1999). An illustration, taken from Hyams (2006), is given in (1): Nina is using the bare stem *play* to talk about the ongoing event of playing.

- (1) Mother: What's she doing with the tiger now?
 Child: Play # play ball with him. (Nina, file 39)
 (Suppes 1974; MacWhinney & Snow, CHILDES, 1985)

Similarly, Gavruseva (2000, 2002, 2004, this volume) found that L2-English children from several different L1 backgrounds frequently use bare verbs with an ongoing interpretation. Across three L2-English children (two L1-Russian children and one L1-Japanese child), Gavruseva (2004) found the rate of bare stem forms used in ongoing contexts to range from 10% to 46%. An illustration from an L1-Japanese L2-English child is given in (2): Toshiko is using the bare stem *make* to talk about the ongoing event of making (drawing) a house.

- (2) I kind of make house. (Toshiko, file 4, Gavruseva 2004: 358)

The child L1 and L2 data are thus in contrast to native adult English, which disallows the use of eventive present-tense verbs with an ongoing interpretation. Instead, eventive present-tense verbs are restricted to habitual readings, while verbs with an *-ing* suffix have an ongoing interpretation. This is illustrated in (3).

- (3) a. She plays every day / *now.
 b. She is playing now / *every day.

Given the fact that children use bare verbs with a progressive interpretation, a related question arises as to how they treat the verbal *-ing* suffix: i.e., do they know that *-ing* allows, and in fact requires, a progressive interpretation?

It is well-established that both L1-English and L2-English children frequently omit the *be* auxiliary while using the *-ing* suffix, producing bare *-ing* forms (see Brown 1973; Phillips 1995, among others on L1-acquisition; Ionin & Wexler 2002; Gavruseva 2004, this volume, among others, on child L2-acquisition). An example from child L2-English is given in (4), from Ionin & Wexler (2002).

- (4) Here she making a cake. (A.T.)

Since native adult English requires both the *be* auxiliary and the *-ing* suffix in progressive environments, an interesting question is whether bare *-ing* forms in child English have the appropriate aspectual interpretation. The answer for child L1-English appears to be yes: Brown (1973: 318) reports that L1-English children in the early stages of acquisition use *-ing* to make the verb into “a primitive pro-

gressive... almost always naming an action or state in fact of temporary duration and true at the time of utterance” – i.e., they do not misuse *-ing* (see Section 5.2.1 for more discussion of L1-acquisition). While L1-acquiring children allow bare verbs to have progressive interpretation, they do not seem to do the reverse – they do not allow verbs with the *-ing* suffix to have non-progressive interpretation.

The present paper aims to examine this issue in child L2-acquisition, by analyzing the interpretation of bare verbs, bare *-ing* forms and *be + ing* forms in the L2-English of L1-Russian children. I show that the interpretation of *-ing* is acquired (by most children) before successful use of the *be* auxiliary, and propose that children’s ability to differentiate between bare verbs and bare *-ing* forms is guided by the Uniqueness Principle (see Wexler & Culicover 1980; Pinker 1989; Clark 1987). I furthermore provide evidence that the acquisition of *-ing* helps children narrow down the meaning of bare verb forms. The data examined in this paper are cross-sectional, so I cannot make strong claims about stages of acquisition. However, I will show that longitudinal data reported by Gavruseva (this volume) are largely consistent with my claims.

This paper is organized as follows. In Section 2, I review the relevant facts concerning the aspectual systems of English and Russian, and outline the learning task facing L1-Russian L2-English learners. Section 3 advances a hypothesis for how progressive aspect is acquired in L2-English, and spells out specific predictions. In Section 4, I present and discuss the child L2-English data used to examine these predictions. Section 5 places child L2-acquisition of progressive aspect in the larger context of acquisition of inflectional morphology, and furthermore compares child L1, child L2 and adult L2 acquisition of the progressive.

2. Aspectual systems of English and Russian

In this section, I summarize the relevant properties of the English aspectual system, and compare it to the Russian aspectual system. There is a vast body of literature on the aspectual systems of both English and Russian, and the present paper necessarily gives only a brief overview.

2.1 Aspect in English

In this paper, I am concerned primarily with eventive verbs in English: predicates that denote events (*eat an apple, run, reach the top, etc.*), as distinct from states

(*want, love, know*, etc.).² English differs from many European languages (including other Germanic languages) in that its eventive present-tense verbs cannot have a continuous interpretation. Thus, (5) cannot refer to a continuous, ongoing event of John eating an apple. Giorgi & Pianesi (1997) explain this by proposing that English has a [+perf] (perfective) feature on all eventive predicates. A [+perf] feature on a verb means that the event denoted by the verb is a closed, completed event. On the other hand, the continuous ongoing event is by definition not completed – hence the impossibility of a continuous interpretation for English present-tense verbs.

(5) John eats an apple.

As Giorgi & Pianesi show, further evidence for the [+perf] feature on English verbs comes from the fact that English bare infinitives which are complements of perceptual verbs have only a perfective readings. Thus, (6a), but not (6b), entails that the event of eating an apple has been completed.

- (6) a. I saw Mary eat an apple.
b. I saw Mary eating an apple.

If English eventive predicates cannot denote ongoing events, what interpretation can they have in the present tense? The only possibility is habitual: (5) becomes felicitous with a continuation such as “every day” (but see also Note 4 for another type of reading). Giorgi & Pianesi, building on the proposal of Chierchia (1995), argue that habituals are possible in English present tense because instead of a [+perf] feature they have a quantificational feature which is associated with a generic operator.³ Habitual events are analyzed as a series of closed events (such as,

2. I will not address further divisions of eventive verbs into activity, achievement, and accomplishment (see Vendler 1967; Verkuyl 1999). See Andersen & Shirai (1996), Bardovi-Harlig (1999) and Gavrusova (2004), among others, for proposals linking telicity and inflectional morphology in L2-English, and see Haznedar (2007) for counterevidence.

3. Unlike present-tense eventive verbs, past-tense eventive verbs in English are not restricted to a habitual interpretation. For analyses of the English past tense, see Giorgi & Pianesi (1997) and Gueron (2002), among others. In this paper, I will not address past-tense verbs, for the following reason. My focus is on the acquisition of progressive aspect. In order to determine whether learners exhibit a one-to-one correspondence between the *-ing* suffix and progressive aspect, we need to check whether they use other forms, such as bare verbs, with a progressive interpretation. In the present-tense, it is relatively easy to determine whether an ongoing interpretation was in fact intended: if a child says *she play* while describing a picture, it is reasonable to suppose that an ongoing interpretation is intended, and *she is playing* would be the target form. In the past tense, on the other hand, the determination of aspectual interpretation is far less straightforward. For instance, suppose that a child says *yesterday she play*. Is the intended

for (5), the event of *John eating an apple completely*) in an open-ended interval. Statives are analyzed in a similar fashion, accounting for why sentences such as *Mary likes soup* are fine in the present tense.

In order for eventive English verbs to have a truly ongoing (non-habitual) interpretation, progressive morphology, *be + ing*, is required. Giorgi & Pianesi (1997) follow Dowty (1979) and Landman (1992) in treating the progressive as an intensional operator: on this proposal, progressive forms in English are still [+perf], but the event is completed in a possible world rather than in the actual world. All eventive predicates involve a processual part, and it is this processual part of the event that has an ongoing interpretation.

Thus, L2-English learners need to acquire the [+perf] feature on present-tense verbs as well as the contribution of progressive morphology: they need to learn that the English present tense disallows an ongoing interpretation, while *be + ing* makes this interpretation possible.⁴

interpretation progressive (*yesterday she was playing*) or perfective (*yesterday she played*)? This can be quite difficult or even impossible to tell without a very rich context. In order to avoid this problem, I restrict my attention to present-tense verbs, with only a brief mention of the past progressive. See Gavrusseva (2004) for an analysis of past-tense forms in child L2-English, and for the relationship between the acquisition of past-tense morphology and inner aspect.

4. The issue is further complicated by the fact that English present tense does allow an apparently ongoing interpretation in certain special contexts, including narratives and sports reportage. An example is given below, from Marc Nesbitt's short story 'Gigantic' (published in *The New Yorker* on 9 July 2001, p. 76), cited in Slabakova (2003: 101).

- (i) I *rake* dead bats from the hay floor of the bat cage and *throw* them in a black plastic bag... I *pick up* a sign that says, 'Quiet! _____ sleeping!'; *slip* in the 'Bats' panel, and *place* it up front, where all the kids can see it. An hour till we open, I *go see* our one elephant, Clarice.

Slabakova (2003) analyzes the simple present tense in such cases as denoting a series of closed events, where the choice of the present tense over the past tense is made for stylistic reasons (see de Swart 1998 on aspectual coercion, Smith 2003 on different modes of discourse). Interestingly, Slabakova found that adult native English speakers accepted the simple present-tense with an ongoing interpretation 50% of the time (contra the expectations), while adult L2-English learners rejected such an interpretation. Slabakova suggests that L2-learners, unlike native speakers, do not have access to the pragmatic conventions needed to coerce the present tense into having an ongoing interpretation.

I will leave aside the issue of this narrative present tense use for this paper. As a stylistic or pragmatic phenomenon, it appears to fall outside the basic grammar of the progressive. As discussed in Section 4.2.2, the L2-English children examined here did have some uses of the simple present-tense that appeared to be such a narrative use, and that I therefore consider appropriate.

2.2 Aspect in Russian

In Russian, aspect is morphologically marked on the verb: verbs with no aspectual prefixes are called imperfective, and those with aspectual prefixes are called perfective.⁵ There is much debate in the literature on Slavic as to whether the distinction between prefixed and unprefixed verbs in fact corresponds to the semantic perfective/imperfective distinction (Smith & Rappaport 1997; Borik 2006, among many others) or to the inner aspect (telicity) distinction (Borer 2005; Di Sciullo & Slabakova 2005, among others). What matters for my purposes is that unlike English, Russian allows simple present tense verbs to have an ongoing interpretation – in Giorgi & Pianesi's terms, Russian present-tense verbs do not carry the [+perf] feature.

While past-tense Russian verbs can be morphologically either perfective (prefixed) or imperfective (unprefixed), in non-past tenses aspectual morphology is related to temporal interpretation. The unprefixed (morphologically imperfective) present-tense form has a present-tense interpretation, either ongoing (7a) or habitual (7b). The prefixed (morphologically perfective) form has a future interpretation (7c).

- (7) a. Masha est jabloko
 Mary eats-imp apple
Mary is eating an apple
- b. Masha est jabloko kazhdoe utro
 Mary eats-imp apple every morning
Mary eats an apple every morning
- c. Masha s'est jabloko
 Mary eats-perf apple
Mary will eat an apple (entails that the apple will be completely eaten)

Thus, L1-Russian children acquiring English are coming from an L1 in which the morphologically simple present-tense form of an eventive verb has an ongoing interpretation, but are learning an L2 where this is not the case. Furthermore, Russian does not have progressive morphology: in addition to acquiring the [+perf] feature on present-tense English verbs, L1-Russian children need to acquire the contribution of *be + ing*.

5. This is an oversimplification, since Russian also has aspectual suffixes as well as quantificational verbal prefixes (see the papers cited in this subsection for details). This is not relevant for the present paper.

3. Acquiring the progressive: Theoretical considerations

It is well-known that L2-English learners, children as well as adults, go through a period in which they omit inflectional morphology. Omission of finiteness morphology – 3rd person present-tense singular *-s*, past tense *-ed*, and the *be* copula and auxiliary forms – is well-documented (see Haznedar & Schwartz 1997; Ionin & Wexler 2002; Gavrusseva 2004; Geçkin & Haznedar, this volume, among others, on child L2-acquisition; Lardiere 2000; White 2003, among others, on adult L2-acquisition). On the other hand, the progressive *-ing* suffix is often found to be present in learners who omit finiteness morphology: bare *-ing* forms, in which the *be* auxiliary is absent, are quite common. The morpheme order studies (Dulay & Burt 1974 on child L2-acquisition; Bailey, Madden & Krashen 1974 on adult L2-acquisition) found that the *-ing* suffix was acquired earlier/more successfully than the *be* auxiliary, regardless of the learners' L1. This is confirmed by more recent longitudinal studies (Gavrusseva 2004). The emergence of *-ing* before *be* is also found in L1-acquisition (Brown 1973).

Thus, we have a situation in which L2-learners use bare verb forms as well as bare *-ing* forms while omitting finiteness morphology. Furthermore, Gavrusseva (2004, this volume) found that child L2-English learners go through a period when they use both bare verbs (*she play*) and bare *-ing* forms (*she playing*) with an ongoing interpretation, eventually acquiring the target *be + ing* complex (*she is playing*).

The use of bare verbs with an ongoing interpretation could be a result of L1-transfer (from a language in which the present tense does not bear the [+perf] feature), but it could also be a general developmental effect. The latter possibility is supported by the finding that L1-English children also initially use bare verbs with an ongoing interpretation (see Hyams 2006). The present paper, which examines only one L1/L2 combination, cannot tease apart the transfer and developmental explanations (but see Section 4.4.2 and Section 5 for some speculation on this issue). Instead, I focus on the following questions (which can be asked equally well of L1-acquisition): (1) do child L2-learners use bare *-ing* forms *only* with an ongoing interpretation – i.e., do they correctly associate *-ing* with progressive aspect? and (2) how do child L2-learners unlearn the ongoing interpretation of bare verbs?

3.1 Aspectual interpretation and finiteness morphology

One possible approach would be to tie the acquisition of aspectual interpretation to the acquisition of finiteness morphology: the acquisition of the *be* auxiliary

should trigger the mapping of *-ing* to a progressive interpretation. Gavrusseva (2000) put forth a similar proposal for the acquisition of past-tense morphology, arguing that acquisition of the *-ed* suffix is related to the [+perf] feature (but see Gavrusseva 2002, 2004 for more recent proposals tying inflectional morphology to inner aspect).

If the progressive interpretation of *-ing* forms is triggered by the acquisition of the *be* auxiliary, then we would expect bare (*be*-less) *-ing* forms to have a variety of interpretations, both progressive and non-progressive. However, empirical data suggest that this is not the case: for instance, Gavrusseva (2002) found that in the data of an L1-Russian L2-English child, who used many bare *-ing* forms, "...whenever *-ing* was used the intended aspectual interpretation was progressive" (p. 118).

3.2 The Uniqueness Principle and lexical insertion

If finiteness morphology is not necessary for progressive interpretation, then how do children learn that *-ing* forms have a progressive interpretation? And how do they unlearn the progressive interpretation of bare verbs? I suggest that the answer lies in a learning principle that has been variously termed the Uniqueness Principle (Wexler & Culicover 1980; Pinker 1989; Clark 1987), the Avoid Synonymy Principle (Carstairs-McCarthy 1998), the Blocking principle (Marcus, Pinker, Ulman, Hollander & Xu 1992), and the Unique Entry Principle (Pinker 1984). The differences between these proposals are not relevant for my purposes; what matters is the basic idea, which they all share, that distinct forms within an inflectional paradigm cannot be associated with identical meaning or information content (see Carstairs-McCarthy 1998). When a child acquires a new form in a paradigm, this principle tells her that the form should contrast in meaning with existing forms in the paradigm; this results in a one-to-one mapping from form to meaning. Williams (1997) expresses the same idea in terms of specificity: if forms X and Y are part of the same paradigm, they may be similar in many ways, but on some property, X should be more highly specified than Y (or vice-versa).

A classic illustration of the Uniqueness Principle at work comes from L1-English acquisition of past-tense morphology. It is well-known that young children overregularize, producing past-tense forms such as *goed*, *sitted*, etc. Pinker (1984, 1989) argued that recovery from such overregularization is governed by the Uniqueness Principle: as a child learns the irregular form *went*, the Uniqueness Principle tells her that *went* and *goed* cannot have the same meaning. The irregular form blocks application of the regular "add *-ed*" rule.

While the Uniqueness Principle has been applied primarily to child L1-acquisition, it is reasonable to think that, as a general learning principle, it would also govern child L2-acquisition (for a recent application of this principle to adult L2-acquisition, see Oh 2006). Thus, as an L2-English child acquires *-ing* forms, the Uniqueness Principle should tell her that *-ing* forms and bare verbs have distinct meaning. The child will then look to the input to tell her how *-ing* forms differ in meaning from uninflected verb forms and will discover that *-ing* forms are used with an ongoing interpretation (along with some other uses, such as the futurate).

The above hypothesis predicts that *-ing* forms should be used mostly with a progressive interpretation. I say ‘mostly’ because it is possible that in the earliest stages of acquisition, the child might misuse the *-ing* suffix; however, she should quickly recover from this misuse and restrict *-ing* to progressive contexts, thanks to the Uniqueness Principle. (See Section 5 for more discussion.)

Furthermore, we can now make a prediction for the interpretation of bare verbs, as follows. Distributed Morphology (Halle & Marantz 1993) makes a distinction between the features on a particular lexical item and the features on the syntactic node in which the item is inserted. Lexical insertion can take place if the features of the lexical node form a subset of the features on the syntactic node: it is possible that the lexical item bears fewer features than the node. If two or more items are compatible with the features on the syntactic node, the most highly specified item wins. Consider now what happens with the child L2-learner acquiring the progressive: the child has to insert a lexical item into a syntactic node (such as an aspectual head) bearing the features corresponding to the semantics of the progressive. Initially, the child uses only bare verbs, which are unspecified for aspectual interpretation – there is no competition, so the bare verb is inserted into this aspectual node. Then, the child acquires the *-ing* suffix and gives it the specification [+progressive]. The bare *-ing* form is thus more highly specified than the bare verb form. This means that whenever the syntactic structure contains a functional node specified for [+progressive], both the bare verb and the bare *-ing* forms are in principle compatible with the node, but the bare *-ing* form should win out, since it is the most highly specified form which is compatible with the functional node.⁶

Thus, once the child has productive use of *-ing* as a marker of progressivity, she should cease to use bare verbs in progressive contexts. This cessation is not expected to be instantaneous: there will probably be a brief period of optionality, when both bare *-ing* and bare verb forms are used with an ongoing interpretation.

6. See Prévost & White (2000) for a discussion of lexical insertion of L2-finiteness morphology in the Distributed Morphology framework. I come back to this issue in Section 5.1.

This expectation is based on the finding that the Uniqueness Principle does not lead to instantaneous learning in L1-acquisition either.

In the case of past-tense morphology in L1-acquisition, it is well-known that children go through a period where they produce overgeneralized forms such as *goed* interchangeably with the correct irregular forms such as *went*: having acquired the irregular form, they nevertheless do not immediately block the overgeneralized forms, and allow the two forms to have the same meaning, thus apparently violating the Uniqueness Principle. Pinker (1999: Ch. 7) explains this finding by proposing that children's memories for irregular verb forms are not fully reliable until the form has been heard multiple times; until then, children may fail to retrieve the irregular form at any given time, and thus produce the overgeneralized form instead.

We can make a similar argument for the acquisition of progressive morphology: until the retrieval of *-ing* forms becomes fully automatic, the child may occasionally use bare verb forms with an ongoing interpretation alongside *-ing* forms.⁷ However, after such a period of optionality, we should expect bare verbs to be restricted to non-progressive contexts.

Importantly, on this view, the interpretation of both bare verbs (as non-progressive) and bare *-ing* forms (as progressive) is quite independent of the acquisition of the *be* auxiliary (or other finiteness morphology). Whether the successful acquisition of *-ing* takes place before or after the acquisition of the *be* auxiliary is an empirical question that will be addressed in more detail in later sections. Crucially, however, the presence or absence of *be* should not affect the interpretation of *-ing*: *-ing* forms with or without *be* are expected to have similar interpretation.

3.3 A note on the limitations of production data

Before proceeding, it is important to note the following: even if a child appropriately uses *-ing* with ongoing reference, that child has not necessarily fully acquired the semantics of the progressive. The semantics of the progressive is very complex, and in fact varies in subtle and interesting ways between languages (see

7. Note that this case is not quite parallel to the past-tense morphology case discussed by Pinker. While acquisition of irregular past-tense forms is, in Pinker's framework, a matter of learning and retrieving individual lexical forms, the acquisition of *-ing* forms is arguably about learning the rule "add *-ing*" and not about memorizing individual forms. However, even when it comes to rule-learning, retrieval difficulties have been posited for L2-acquisition: Prévost & White (2000) argue that forms inflected with (regular) finiteness morphology can be difficult to retrieve under communication pressure. I will come back to the question of how *-ing* vs. finiteness morphology is retrieved in Section 5.1.

Gabriele 2005 for recent investigations on how the semantics of the progressive is acquired by L1-English learners of Japanese and L1-Japanese learners of English). In the case of L1-acquisition of English, there is evidence that even when children use the progressive appropriately (Brown 1973), their comprehension of the progressive is nevertheless not fully adultlike (Wagner 1997, among others). Thus, in order to gain a complete picture of child L2-learners' acquisition of the English progressive, we would need comprehension as well as production data. Since the present paper focuses on production, the most I can claim is that child L2-learners use the *-ing* suffix appropriately with an ongoing interpretation, not that they have fully acquired the semantics of the progressive. Throughout this paper, I use the term "progressive" as shorthand for 'predicate with an ongoing interpretation'. Crucially, even if the children's *-ing* forms do not have fully target-like semantics, they are still more highly specified than bare verb forms (e.g., they are specified as having an ongoing interpretation) and should win out for lexical insertion in progressive contexts, as discussed in the previous section. I will come back to a more detailed discussion of production vs. comprehension in Section 5.2.

3.4 Hypothesis and predictions

Based on the discussion of the previous sections, I put forth the hypothesis in (8), with the corresponding predictions in (9).

- (8) Hypothesis, for child L2-English: the Uniqueness Principle drives acquisition of the progressive interpretation of *-ing* and the subsequent unlearning of the progressive interpretation of bare verbs.
- (9) Predictions:
 - a. Once L2-English children start using *-ing* forms, they use them mostly with an ongoing interpretation.
 - b. L2-English children assign the same aspectual interpretation to *be + ing* forms as to bare *-ing* forms because the ongoing interpretation of *-ing* is acquired independently of finiteness morphology.
 - c. As child L2-English learners acquire the progressive interpretation of *-ing* forms, they restrict bare verbs to non-progressive readings.

The present study examines the above predictions using a corpus of cross-sectional data from L1-Russian L2-English children. For some children, two transcripts are available, and for others, only one. The predictions in (9) can be examined by looking both cross-sectionally (do individual children restrict *-ing* to progressive contexts and bare verbs to non-progressive contexts? do they use *be + ing* and bare *-ing* forms with the same interpretation?) and longitudinally (for those children

for whom two transcripts are available, how does the interpretation of *-ing* forms and bare verb forms change from the first to the second transcript?). I will also draw upon the longitudinal data from Gavrusseva (this volume) for comparison.

4. Transcript analysis

In this section, I first discuss the sources of the data collection, then present the raw data, and then examine the data with regards to the predictions in (9).

4.1 Methods

The data for this study come from transcripts of naturalistic speech from child L1-Russian L2-English learners. These transcripts are a subset of those examined in Ionin & Wexler (2002).

4.1.1 *Children's background*

Transcripts from 11 children ranging in age from 5 to 11 were analyzed. Five children were recorded once, and the other six twice. All of the children resided in the U.S. at the time of the recordings. Nine of the children lived in Russian-speaking families; the remaining two (O.L. and M.Y.) had been adopted by an English-speaking family. All of the children were native speakers of Russian; one child (A.Y.) came from Azerbaijan and may have had some knowledge of Azerbaijani, but Russian was her family's primary language. The background of individual children is given in Table 1. A.N. and D.I. are siblings, as are O.L. and M.Y.

4.1.2 *Audio-recordings*

The audio-recordings took place in the children's homes, except in the case of K.I., T.I. and V.A., who were recorded in a classroom. In all cases, the investigator (Tania Ionin) interacted with the children either one-on-one, or in the presence of parents or grandparents, siblings, or (in the case of the classroom recordings) the child's teacher (a few classmates were present in some cases, but not participating in the interaction). In order to encourage the children to talk, the investigator asked the children about their daily activities, past vacations, hobbies, arrival in the U.S., and so on. Picture books were often used as props, prompting the child to describe the pictures and/or tell the story in the book. The audio-recordings were subsequently transcribed and analyzed.

Table 1. Background of individual children

child	sex	age at 1st recording	age at 2nd recording (where applicable)	length of U.S. residence at 1st recording	length of U.S. residence at 2nd recording (where applicable)
A.N.	F	10;1		18 months	
A.T.	F	6;2		8 months	
A.Y.	F	10;1	10;4	2 months	5 months
D.A.	F	9;7	9;9	6 months	8 months
D.I.	M	11;9		18 months (+some study in Russia)	
K.I.	M	6;5	6;7	4 months	6 months
M.Y.	F	5;3	5;5	5 months	7 months
O.L.	F	6;10	7;0	5 months	7 months
T.I.	M	11;11		1 month (+limited study in Russia)	
T.O.	F	7;8		11 months	
V.A.	M	9;6	9;8	5 months	7 months

4.1.3 Coding procedure

All of the utterances containing the progressive *-ing* suffix were analyzed, and were coded for presence vs. absence of the *be* auxiliary and for tempo-aspectual interpretation (ongoing vs. habitual, present vs. past, etc.). Additionally, all present-tense utterances containing present-tense verbs without *-ing* were analyzed, and coded for finiteness and for aspectual interpretation.

Simple past-tense verbs (including bare verbs with past-tense reference) were not analyzed, since the focus was on present-tense interpretation (see Note 3). (But past progressive forms were included in the analysis of progressives.) When the intended temporal reference or aspectual interpretation was not clear from the context, the verb was not included in the analysis. Examples of the different types of utterances are given in the following section.

4.2 Distribution of verb types

In this section, I present the raw data concerning the distribution of *-ing* forms and present-tense verbs.

4.2.1 Distribution of *-ing* and *be* forms

Four categories of tempo-aspectual interpretation of *-ing* forms were established: (1) present progressive; (2) past progressive; (3) habitual; and (4) perfective past –

reference to completed events.⁸ Only the first two categories represent appropriate use of *-ing* morphology. Examples of each category are given in (10) through (13) – the (a) cases contain examples where the *be* auxiliary is present, and the (b) cases – where it is missing. The only category in which the past-tense auxiliaries *was* and *were* are used is category (2), past progressive. In all other categories, if a *be* auxiliary is used, it is a present-tense form, *is*, *are*, or *am*, or their contracted variants.

- (10) Present progressive interpretation:
- a. He is riding and telling them to not to go down [T.O., describing a picture]
 - b. The basement making bubbles [V.A. file1, describing a picture]
- (11) Past progressive interpretation:
- a. He was sleeping [M.Y. file1, telling the story of Snowwhite]
 - b. And now it was a girl... and... but... she doing something really bad [A.T., telling a story]
- (12) Habitual interpretation:
- a. Investigator: do you just draw with your crayons or with paint too?
Child: I'm drawing with markers or crayons⁹ (A.Y., file2)
 - b. Investigator: So what kind of games do you play?
Child: we not playing any games... I don't know... we just making up games and then play (T.O.)
- (13) Perfective interpretation:
- a. I'm buying watch [shows her watch to the investigator]. (A.Y., file2)
 - b. We already going to the beach. (M.Y., file1)

Table 2 gives the distribution of *be + ing* as well as bare *-ing* forms across the four categories of aspectual interpretation. The bottom row shows the percentages of *be + ing* use vs. bare *-ing* forms within each category. The italicized rows of the table correspond to those files which had fewer than five total uses of *-ing*. When so few *-ing* forms are used, we cannot draw reliable conclusions about the appropriateness of their aspectual interpretation. Therefore, in discussing the aspectual

8. There was also a single example of a progressive used with a future interpretation. Since there was only one example, I do not include future interpretation as a separate category, but include the relevant example inside the 'habitual' category in Table 2, with a note.

9. An anonymous reviewer points out that habitual uses of the progressive can be target-like in certain environments, as in *I'm cooking more these days*. However, (12a) is unlikely to be such an environment: the child does not add a phrase such as *these days*, and the investigator's preceding question in fact uses the simple present.

Table 2. Aspectual interpretation of bare *-ing* and *be + ing* forms in the data

file	present		past		habitual	perfective		total		
	progressive		progressive		reading	reading				
	<i>is/am/are + -ing</i>	bare <i>-ing</i>	<i>was/were + -ing</i>	bare <i>-ing</i>	<i>is/am/are + -ing</i>	bare <i>-ing</i>	<i>is/am/are + -ing</i>	bare <i>-ing</i>	<i>be aux + -ing</i>	bare <i>-ing</i>
A.N.	6	3							6 (67%)	3 (33%)
A.T.	2	9		1					2 (17%)	10 (83%)
A.Y. <i>file1</i>							1		0 (0%)	1 (100%)
A.Y. <i>file2</i>	6	1			16	4	14	1	37 (86%)	6 (14%)
					(+1 fut.)					
D.A. <i>file1</i>		2					1		1 (33%)	2 (67%)
D.A. <i>file2</i>				1		1	1		1 (33%)	2 (67%)
D.I.	22								22 (100%)	0 (0%)
K.I. <i>file1</i>	4	12			1	5	2		7 (29%)	17 (71%)
K.I. <i>file2</i>	1		2				1		4 (100%)	0 (0%)
M.Y. <i>file1</i>	4	1	1		1			2	6 (67%)	3 (33%)
M.Y. <i>file2</i>	2				1				3 (100%)	0 (0%)
O.L. <i>file1</i>	5	6					1		6 (50%)	6 (50%)
O.L. <i>file2</i>	2					1			2 (67%)	1 (33%)
T.I.	1	2							1 (33%)	2 (67%)
T.O.	12	7	2	1		2			14 (58%)	10 (42%)
V.A. <i>file1</i>	17	10	2				1		20 (67%)	10 (33%)
V.A. <i>file2</i>	24	4	1		1	1			26 (84%)	5 (16%)
total	108	57	8	3	20	14	21	4	157	78
%	66	34	73	27	59	41	84	16	67	33

interpretation of *-ing* forms in later sections, I will consider only files with at least five uses of *-ing*, i.e., the non-italicized rows in the table.

Table 2 shows that the use of the *be* auxiliary in the presence of *-ing* was fairly high across contexts, 67% overall. However, quite a few of the individual transcripts had low use of the *be* auxiliary. In terms of interpretation, the majority of both bare *-ing* and *be + ing* forms occur with an ongoing interpretation (mostly in the present tense), but uses of both forms with a habitual or perfective interpretation are also present.

4.2.2 Distribution of present-tense verbs in the data

I next consider the aspectual interpretation of verbs without the *-ing* suffix in the present tense. These fall into three categories: inflected 3rd person singular verb forms (as in *s/he plays*); bare verbs used in 3rd person singular contexts (as in *s/he*

play); and bare verbs used in non-3rd person singular contexts, where they are in principle appropriate (as in *I/we/you/they play*).

Four categories of aspectual interpretation were established. First, stative verbs form a separate category: these are verbs such as *know*, *love*, etc., which do not normally bear progressive morphology and can be used in the present tense with an ongoing interpretation, as in (14). Eventive verbs were separated into three categories: eventives with an ongoing interpretation, as in (15), which are inappropriate without the *-ing* suffix and with 3PSG *-s*; eventives with a habitual interpretation, as in (16), which are appropriate; and a third category which I will term “other eventive”. This category includes all eventive verbs which are felicitously used in the present tense even though they have a non-habitual interpretation. Typically, this occurs in a narrative, when the speaker uses present tense to narrate a sequence of events, as in (17) (see also Note 4).¹⁰ In the examples below, the (a) cases contain inflected verbs, and the (b) cases contain bare verbs.

(14) Stative verbs

- a. She loves to do everything [O.L., file2]
- b. My friend have a cat [A.T.]

(15) Eventive verbs with an ongoing interpretation¹¹

- a. Mermaid talks to her father. [A.N., describing a picture]
- b. She go to gate [T.I., describing a picture]

(16) Eventive verbs with a habitual interpretation

- a. He talks Russian a little [O.L., file1, describing her friend]
- b. I have a Russian teacher and she talk [D.A., file1]

10. The ‘other eventive’ category also included the verb ‘think’. While ‘think’ can be argued to be a stative verb, unlike such stative verbs as *know* and *love*, it is easily compatible with *-ing* morphology. At the same time, however, it can occur without *-ing* in the present tense and have a non-habitual interpretation. The ‘other eventive’ category also includes the perception verbs *see* and *hear*, which can occur without *-ing* inflection but nevertheless have a non-habitual interpretation. Gavrusseva (2004) classifies *think*, *see*, and *hear* as eventive verbs, and I follow that classification.

11. An anonymous reviewer suggests that the examples in (15) could be viewed as fine if the child is using a narrative present tense, as in the examples in (17). However, it seems that picture descriptions are more compatible with progressive aspect than with a narrative present tense, in contrast to narratives not tied to pictures. In fact, the child V.A. in file1 (one of only three files with a lot of bare verb forms used progressively) changes a bare verb form into a progressive form at one point: “Here her mother make a dress for her... I think they are making a dress for her”, which suggests that the child ultimately aims to express progressive aspect.

Table 3. Distribution of bare verbs and 3rd person *-s* present-tense forms in the data¹²

file	ongoing			habitual			other eventive			stative		
	3sg <i>-s</i>	3sg bare verb	other bare verb	3sg <i>-s</i>	3sg bare verb	other bare verb	3sg <i>-s</i>	3sg bare verb	other bare verb	3sg <i>-s</i>	3sg bare verb	other bare verb
A.N.	1	2					1	4		1	2	1
A.T.					1	1			3		3	10
A.Y. file1					10	12						5
A.Y. file2		1			8	11	5	12	5	3	12	58
D.A. file1		18	4			6		11	37		3	2
D.A. file2				1	4	7			3	1	1	5
D.I.							4	2	6	1		
K.I. file1					2	3		1	2	1	3	12
K.I. file2						4	1	1		1		28
M.Y. file1						1				5	3	6
M.Y. file2				2		6	2		2	1		12
O.L. file1			1	7	1	5	3		2	2	5	27
O.L. file2			1	3	2	14	3		2	2		14
T.I.		16	1					2				1
T.O.			1			9				3	6	33
V.A. file1		13			1	2	2	7	6	1	5	3
V.A. file2		1		1			3		5	1	2	6
total	1	51	8	14	29	81	24	40	73	23	45	223
% in 3sg contexts	2	98		32	67		38	63		34	66	

(17) Other eventive

- a. Husband goes to the bathroom [A.Y., file2, telling a story]
- b. Then she like she die [D.I., telling the story of the Little Mermaid]

Table 3 reports the distribution of inflected forms and bare verbs in the data. The last row reports the percentage of *-s* use vs. bare verb use in 3rd person singular contexts. The table shows that use of 3rd person singular *-s* is much lower in the ongoing category than in the other three categories. Since the ongoing category is the only one where use of *-ing*-less verbs is ungrammatical, this distribution

12. The column labels are as follows: '3sg *-s*' corresponds to inflected 3sg present-tense verbs; '3sg bare verb' corresponds to bare verbs in 3sg present-tense contexts; and 'other bare verb' corresponds to bare verbs in other present-tense contexts, where they are in principle grammatical.

suggests that the children always use *-s* with appropriate aspectual interpretation. It looks as if appropriate aspectual specification for the English present tense is in fact acquired before the emergence of third person *-s*: only three transcripts (D.A.file1, T.I., and V.A.file1) show substantial use of bare verbs with an ongoing interpretation, and these files also show a very low or non-existent rate of *-s* use in obligatory contexts. At the same time, most files show much *-s* omission, coupled with appropriate interpretation of bare verb forms. In the next section, I will argue that the acquisition of appropriate aspectual specification on present-tense verbs is in fact related to the acquisition of *-ing*.

4.3 Checking the predictions

In this section, I will check the predictions in (9) against the actual data.

4.3.1 Predictions (9a–b): Interpretation of bare *-ing* and *be + ing* forms

We can now examine the interpretation of *-ing* in more detail, and check predictions (9a–b), repeated below.

- (9) a. Once L2-English children start using *-ing* forms, they use them mostly with an ongoing interpretation.
- b. L2-English children assign the same aspectual interpretation to *be + ing* forms as to bare *-ing* forms because the ongoing interpretation of *-ing* is acquired independently of finiteness morphology.

Using the numbers in Table 2, we can compute the percentage of *be + ing* forms as well as bare *-ing* forms that have appropriate (i.e., present progressive or past progressive) interpretation. I set 75% as the criterion for successful acquisition: if 75% of *-ing* forms within a particular category (*be + ing* or bare *-ing*) have an ongoing interpretation, we can say that the aspectual interpretation of that category has been acquired.¹³

Table 4 reports the results for both categories, as well as for the total. Rows corresponding to transcripts with fewer than five uses of *-ing* are italicized – there are too few contexts to make any conclusions about the appropriateness of *-ing* interpretation. Focusing on the non-italicized cells, we can see where the 75% criterion has been reached; cells where it hasn't been reached are highlighted in bold.

13. The 75% cut-off used throughout this paper is of course fairly arbitrary: one could make the case that successful acquisition means 70%, 80%, 90%, etc. It should be noted, however, that on the measures examined with respect to the predictions in (9), children's performance is nearly always either above 80% or below 70%. This suggests that somewhere between 70% and 80% is indeed a good place to draw the line.

Table 4. Aspectual interpretation of *be + ing* and bare *-ing* forms

file	% of <i>be + ing</i> forms used with an ongoing interpretation	% of bare <i>-ing</i> forms used with an ongoing interpretation	% of all <i>-ing</i> forms used with an ongoing interpretation
A.N.	100.0% (6/6)	100.0% (3/3)	100.0% (9/9)
A.T.	100.0% (2/2)	100.0% (10/10)	100.0% (12/12)
A.Y. file1	<i>n/a</i>	0.0% (0/1)	0.0% (0/1)
A.Y. file2	16.2% (6/37)	16.7% (1/6)	16.3% (7/43)
D.A. file1	0.0% (0/1)	100.0% (2/2)	66.7% (2/3)
D.A. file2	0.0% (0/1)	0.0% (0/2)	0.0% (0/3)
D.I.	100.0% (22/22)	<i>n/a</i>	100.0% (22/22)
K.I. file1	57.1% (4/7)	70.6% (12/17)	66.7% (16/24)
K.I. file2	75.0% (3/4)	<i>n/a</i>	75.0% (3/4)
M.Y. file1	83.3% (5/6)	33.3% (1/3)	66.7% (6/9)
M.Y. file2	66.7% (2/3)	<i>n/a</i>	66.7% (2/3)
O.L. file1	83.3% (5/6)	100.0% (6/6)	91.7% (11/12)
O.L. file2	100.0% (2/2)	0.0% (0/1)	66.7% (2/3)
T.I.	100.0% (1/1)	100.0% (2/2)	100.0% (3/3)
T.O.	100.0% (14/14)	80.0% (8/10)	91.7% (22/24)
V.A. file1	95.0% (19/20)	100.0% (10/10)	96.7% (29/30)
V.A. file2	96.2% (25/26)	80.0% (4/5)	93.5% (29/31)

As can be seen from the table, that is fairly rare: the 75% has not been reached in only three files. For M.Y. file1, this criterion has been reached for the *be + ing* category but not for the bare *-ing* category – however, with only three instances of bare *-ing*, this might not be a meaningful contrast. For K.I. file1, on the other hand, the 75% criterion has not been reached for either category; nevertheless, the majority of his *-ing* forms (66.7%) do exhibit appropriate aspectual interpretation. Only A.Y. file2 shows a clear lack of appropriate aspectual interpretation of *-ing* forms.

Thus, prediction (9a) is mostly supported: in nearly all of the files with a sufficient number of tokens, *-ing* is used primarily with an ongoing interpretation. A.Y. file2 is the only exception, which will be discussed more below.

Importantly, there is virtually no difference between bare *-ing* and *be + ing* forms in terms of aspectual interpretation – A.Y. file2 shows lack of an ongoing interpretation for both, while nearly all of the other files show appropriate aspectual interpretation for both. As noted above, M.Y. file1 is the only file with a definite contrast between the two categories, but that may well be due to the small number of tokens. Thus, overall, prediction (9b) is supported: children assign more or less the same aspectual interpretation to bare *-ing* forms as to *be + ing* forms, and in fact for the most part assign appropriate aspectual to *-ing* forms.

The longitudinal data in Gavrusseva (this volume) shows similar patterns: of the five children examined by Gavrusseva, three do not misuse *-ing* at all, one (Sultana) misuses both bare *-ing* and *be + ing* forms in non-progressive contexts, and one (Dasha) misuses bare *-ing* forms but not *be + ing* forms in non-progressive contexts – however, as seen in Gavrusseva’s Table 4, Dasha almost never uses *be*. Thus, in Gavrusseva’s data, as in mine, those children who use both bare *-ing* and *be + ing* forms use them with similar aspectual interpretation.

Note that in principle, we could have seen a very different result: if *be* were necessary for encoding the progressive interpretation, then a given child, within a single file, would use bare *-ing* forms with all types of aspectual interpretations (habitual, perfective, etc.) while using *be + ing* appropriately. However, this is not the case: the children do not distinguish between bare *-ing* and *be + ing* forms. Instead, most children use both forms appropriately, with an ongoing interpretation, while A.Y. misuses both.

4.3.2 Interpretation of *-ing* vs. acquisition of the *be* auxiliary

The previous subsection established that the *be* auxiliary is not necessary for the progressive interpretation of *-ing*. Next, I ask what comes first: target-like interpretation of *-ing* forms, or successful acquisition of the *be* auxiliary.

For each file, I ask two questions: (1) does the child show successful (75% or higher) use of the *be* auxiliary in obligatory contexts (i.e., with *-ing* forms)? and (2) does the child show appropriate (75% or higher) interpretation of *-ing* forms across all instances of *be + ing* and bare *-ing* forms? The answer to question (1) is found in Table 2, and the answer to question (2) – in Table 4. Only files with at least five uses of *-ing* are considered. The resulting subject patterns are given in Table 5.

This table shows that all combinations of *-ing* vs. *be* acquisition are in principle possible. At the same time, we see that five files (in the top right-hand corner) show correct interpretation of *-ing* without successful acquisition of *be*, while only

Table 5. Comparing acquisition of the *be* auxiliary with acquisition of aspectual interpretation

	<i>be</i> aux acquired (75%+)	<i>be</i> aux not acquired (< 75%)
interpretation of <i>-ing</i> acquired (75%+)	D.I. V.A. file2	A.N. A.T. O.L. file1 T.O. V.A. file1
interpretation of <i>-ing</i> not acquired (< 75%)	A.Y. file2	K.I. file1 M.Y. file1

one file (in the bottom left-hand corner) shows the reverse pattern. Moreover, this one file is A.Y. file 2, which we already saw differs from all the other files in the database where interpretation of *-ing* is concerned. Thus, with the exception of A.Y., the children are more likely to acquire the interpretation of *-ing* before productive use of the *be* auxiliary. I will come back later to why this might be the case.

4.3.3 Prediction (9c): Interpretation of bare verbs vs. *-ing* forms

We are now in a position to ask whether the children differentiate bare *-ing* forms and bare verbs in terms of aspectual interpretation, and whether the acquisition of progressive interpretation for *-ing* is related to the cessation of progressive readings on bare verbs. We can now test the prediction (9c), repeated below.

- (9) c. As child L2-English learners acquire the progressive interpretation of *-ing* forms, they restrict bare verbs to non-progressive readings.

(9c) predicts that children who use *-ing* productively should rarely use bare verbs with an ongoing interpretation. In order to check this prediction, we need to determine what is meant by 'productive' use of *-ing*. I define productive use of *-ing* in a given file as use of at least five instances of *-ing* use.¹⁴

Table 6 reports the number of bare verbs, bare *-ing* forms, and *be + ing* forms used with a present progressive interpretation, and the corresponding proportions. For the bare verb category, I combine bare verbs used in 3rd person singular contexts with those used in other contexts, since my focus is on the interpretation of all present-tense bare verbs, regardless of whether they are morphologically correct. For the *-ing* forms, I report only those with the present progressive interpretation, since only present-tense bare verbs are considered. Based on Table 6, we can divide the files into the following patterns:

1. The *-ing* suffix is not used productively, and there are many bare verb forms used with an ongoing interpretation (D.A. file1, T.I.).
2. The *-ing* suffix is used productively, but bare verbs are still used with an ongoing interpretation to a large extent (A.N., V.A. file1).
3. The *-ing* suffix is used productively, and bare verbs are rarely or never used with an ongoing interpretation (A.T., A.Y. file2, D.I., K.I. files 1 and 2, M.Y. file1, O.L. file1, T.O., V.A. file2).

14. It is debatable whether productive use of *-ing* is best measured by considering all instances of *-ing* in the file, or only those appropriately used with progressive readings. In the data discussed here, however, the two measures come out with the same result: every file (even A.Y. file2) which had at least five instances of *-ing* had at least five instances of *-ing* used progressively. This is not surprising, given the low misuse of *-ing* with non-progressive readings.

4. There are fewer than five progressive contexts in the data, so a comparison of bare verbs and *-ing* forms in progressive contexts is not particularly meaningful (A.Y. file1, D.A. file2, M.Y. file2, O.L. file2).

We can now check each pattern against prediction (9c). Pattern 4 is irrelevant – when there are few or no progressive contexts in the data, we cannot say anything about how bare verbs vs. *-ing* forms are used with respect to progressive interpretation. Pattern 3 supports the prediction: the vast majority of files show productive use of *-ing* and little or no use of bare verbs with an ongoing interpretation. Note that all of the children used bare verbs in other contexts (e.g., habitual, stative), so the children in Pattern 3 have clearly learned that bare verbs are restricted to non-progressive readings.¹⁵

Pattern 1 is also consistent with the prediction: the two children in this pattern (D.A. and T.I.) have not yet started using *-ing* productively, so bare verbs is the major means that they have for expressing ongoing readings.

Table 6. Verb forms used with ongoing readings

	number of tokens			percentage		
	bare verb	bare <i>-ing</i>	<i>be + -ing</i>	bare verb	bare <i>-ing</i>	<i>be + -ing</i>
A.N.	2	3	6	18.2	27.3	54.5
A.T.	0	9	2	0.0	81.8	18.2
A.Y. file1	0	0	0	n/a	n/a	n/a
A.Y. file2	1	1	6	12.5	12.5	75.0
D.A. file1	22	2	0	91.7	8.3	0.0
D.A. file2	0	0	0	n/a	n/a	n/a
D.I.	0	0	22	0.0	0.0	100.0
K.I. file1	0	12	4	0.0	75.0	25.0
K.I. file2	0	0	1	0.0	0.0	100.0
M.Y. file1	0	1	4	0.0	20.0	80.0
M.Y. file2	0	0	2	0.0	0.0	100.0
O.L. file1	1	6	5	8.3	50.0	41.7
O.L. file2	1	0	2	33.3	0.0	66.7
T.I.	17	2	1	85.0	10.0	5.0
T.O.	1	7	12	5.0	35.0	60.0
V.A. file1	13	10	17	32.5	25.0	42.5
V.A. file2	1	4	24	3.4	13.8	82.8

15. Interestingly, even A.Y. file2, which shows high use of *-ing* in non-progressive contexts, does not show use of bare verbs in progressive contexts: it would appear that A.Y. recognizes that the two forms are not synonymous.

Pattern 2, on the other hand, appears on the surface to be problematic for the prediction: the two children in this pattern, A.N. and V.A. file1, show high use of bare verbs with ongoing readings despite productive use of *-ing*. However, a closer look reveals that these files are not necessarily a problem for the prediction. One of the files, A.N., does not present particularly meaningful results, since there are only two instances of bare verbs used with an ongoing reading. This leaves V.A. file1, which indeed shows fairly high (32.5%) use of bare verbs in progressive contexts despite productive use of *-ing*. While this appears to go against the Uniqueness Principle, recall the discussion in Section 3.2 that learning is not expected to be instantaneous: we do not expect the child to cease using bare verb forms with an ongoing interpretation the moment that *-ing* forms begin to be used. It is quite likely that V.A. is in a transitional stage in file 1: he has begun using *-ing* progressively but cannot always successfully retrieve the *-ing* form, and thus resorts to using the bare verb form with an ongoing interpretation. This explanation is supported by the data for V.A. file2, where bare verbs make up only 3.4% of ongoing readings. It appears that in the interval from the first file to the second, V.A. unlearned the ongoing interpretation of bare verb forms.

4.4 Summary and discussion

The findings reported in the previous sections can be summarized as follows:

1. When L2-English children acquire progressive *-ing*, they in most cases use it appropriately – i.e., with an ongoing interpretation.
2. Acquisition of the *be* auxiliary is not necessary for the acquisition of ongoing interpretation: bare *-ing* forms receive the same interpretation as *be + ing* forms, and in most cases, *-ing* is acquired before the *be* auxiliary.
3. Acquisition of *-ing* appears to be related to the interpretation of bare verb forms: as *-ing* forms begin to be used progressively, bare verb forms are largely restricted to non-progressive environments

4.4.1 Comparing cross-sectional and longitudinal data

The above patterns hold for all children in the data except A.Y. (who is discussed more below). It looks as if acquisition of progressive aspect for the children proceeds roughly as follows: first, bare verbs are used with an ongoing interpretation; then, *-ing* is acquired, and mapped to an ongoing interpretation; subsequently, the ongoing interpretation of bare verb forms is unlearned. Productive use of the *be* auxiliary does not appear to be a prerequisite to the acquisition of the progressive interpretation.

The cross-sectional nature of the data does not allow us to establish this sequence with certainty. However, support comes from longitudinal data examined by Gavruseva (this volume). The two L1-Russian children in Gavruseva's study, Alla and Dasha, both go through a period in which bare verbs as well as *-ing* forms are used progressively, with this optionality ceasing in later files. As shown in Gavruseva's Table 3, Alla goes from 100% of progressive forms being bare verbs in files 3 and 4, to 80% bare verbs in file 5, to 0% bare verbs in file 6 and subsequent files; interestingly, Alla shows almost no omission of *be*, going directly to high *be* + *ing* use starting in file 6. As for Dasha, she uses both bare verbs and bare *-ing* forms with progressive interpretation, but the percentage of progressive contexts in which bare verbs are used falls noticeably between files 6 and 7 (64% to 33% – calculations mine, based on data in Gavruseva's Table 4). Dasha has very few uses of the *be* auxiliary.

Thus, the longitudinal data from Alla and Dasha provide independent evidence for the pattern established by the cross-sectional data in this study: shortly after *-ing* is acquired, the percentage of bare verbs used progressively goes down, in accordance with the Uniqueness Principle. Comparing these longitudinal data to the cross-sectional data examined here, we can say that D.A. and T.I. are at the same stage as Alla is in her early files, where ongoing interpretation is expressed only via bare verbs. On the other hand, V.A. undergoes the same type of change between files 1 and 2 as Alla does between files 5 and 6, or as Dasha does (albeit less dramatically) between files 6 and 7: namely, a decrease in the proportion of bare verbs in progressive contexts.¹⁶

Thus, my cross-sectional data and Gavruseva's longitudinal data converge on the same finding: child L2-learners start out by using bare verbs with an ongoing interpretation, then acquire *-ing* forms and go through a brief period of optionality, and finally restrict bare verbs to non-progressive contexts.

16. It is curious that Alla has almost no bare *-ing* uses, going directly to *be* + *ing*. In this Alla is unlike the four other children in Gavruseva's study as well as the children in my study (one child in my study, D.I., does exhibit exclusively target-like *be* + *ing* forms, but as the one file available for D.I. is at more than 18 months of exposure, we don't know how D.I. arrived at this point in acquisition). If acquisition of *-ing* interpretation and the *be* auxiliary are independent, as I have argued, then nothing precludes early successful acquisition of the *be* auxiliary. In Section 5, I will discuss in more detail why acquisition of *-ing* typically precedes acquisition of *be*. I have nothing to say about why some learners might in fact acquire the two forms more or less simultaneously. See Gavruseva (this volume) for more discussion of individual differences.

4.4.2 The case of A.Y.: A possible role for L1-transfer

The one exception to the generalizations at the start of this section is A.Y. file2 (we cannot say anything about A.Y. file1, which contains only bare verb forms, and only non-progressive contexts). A.Y. in file2 shows very productive use of the *be* auxiliary while failing to use *-ing* appropriately: her uses of bare *-ing* and *be + ing* forms receive a variety of interpretations, including habitual, perfective, and future, as well as progressive. The only constraint on A.Y.'s use of *-ing* forms is eventivity: there is not a single *-ing* form on a stative verb in her data, while she uses plenty of stative bare verbs. Thus, all A.Y. appears to have acquired about *-ing* is that it is restricted to eventive verbs.

The differences between A.Y. and the other children cannot simply mean that A.Y. is a less proficient speaker. Although A.Y. has one of the shortest lengths of exposure to English (five months in file2), this is not enough: the other children with similar lengths of exposure show very different patterns. D.A. file1 (6 months of exposure) as well as T.I. (1 month of exposure, plus limited study in Russia) use primarily bare verbs and fail to use either *-ing* forms or the *be* auxiliary productively, while K.I., M.Y., O.L. and V.A., in their first files (5–6 months exposure), use *-ing* primarily with appropriate interpretation but haven't fully acquired the *be* auxiliary – i.e., the opposite pattern to that shown by A.Y.¹⁷

A more plausible explanation is that A.Y.'s acquisition is influenced by her knowledge of Azerbaijani as well as Russian. She was the only child in the database who knew another language besides Russian and English (although it is not clear how much exposure to Azerbaijani A.Y. had had). The view that Azerbaijani played a role is supported by the findings of Gavruseva (this volume). As noted above, Gavruseva found that two out of the five children in her study misused *-ing* in non-progressive contexts: Dasha, an L1-Russian speaker, and Sultana, an L1-Azerbaijani speaker. However, according to the data in Gavruseva's Appendix 1, while Dasha had only six instances of such misuse Sultana had 12. More importantly, Dasha's misuse of *-ing* forms was restricted to two files, out of the seven files where she used *-ing* at all, while Sultana misused *-ing* in all four of the files in which she exhibited any *-ing* use. Thus, the most pervasive use of *-ing* in non-progressive contexts was found for an L1-Azerbaijani child in Gavruseva's data, and for a L1-Russian child with knowledge of Azerbaijani in my data. Gavruseva

17. Note that K.I., M.Y., O.L. and V.A. are well ahead of D.A. and T.I. in the acquisition of *-ing*, despite comparable length of exposure. Both K.I. and V.A., despite short lengths of exposure, were reported by their teacher to be exceptionally good at English. The adopted sisters O.L. and M.Y. were also highly proficient for their short length of exposure, as a result of being completely immersed in an English-speaking environment, their adoptive family.

speculates that L1-transfer may be responsible: “In Sultana’s case, the patterns of misuse (*-ing* forms are used in progressive and habitual contexts) could attest to some L1 influence from Azerbaijani, a language that has an imperfective morpheme in its inventory. The transfer of [+IMP] from L1 would yield both interpretations.” The fact that Azerbaijani, unlike Russian, has an overt imperfective morpheme, would also explain why A.Y. misuses *-ing* with habitual interpretation in English. It is more of a puzzle why A.Y. also uses *-ing* in past-tense perfective contexts; a detailed analysis of the Azerbaijani [+IMP] marker and its uses in both present and past contexts would be necessary to answer this question. However, the parallels between Sultana and A.Y. are suggestive. It is curious that the other L1-Azerbaijani child in Gavrusseva’s data, Sultana’s sister Tamara, does not show similar misuse of *-ing* forms. Gavrusseva suggests that age might have something to do with the degree of L1-transfer: while Sultana is 9;2 at the beginning of the audio-recordings, Tamara is 7;10. If L1-transfer of aspectual semantics is indeed age-dependent, its effects on A.Y., who is 10;4 in file2, are not surprising. An in-depth investigation of the relationship between age and L1-transfer is beyond the scope of this paper.

4.5 The role of *be*

Finally, we need to consider the role of the *be* auxiliary. It looks as if *be* is not necessary for the acquisition of progressive aspect: there is no difference in the interpretation of bare *-ing* and *be + ing* forms, and most children (A.Y. excepted) acquire progressive interpretation before productive use of the *be* auxiliary. What then is the status of *be* in the children’s grammars?

4.5.1 *Be overgeneration*

I follow the proposal of Ionin & Wexler (2002), who treat the *be* auxiliary in child L2-English as a marker of tense and agreement, rather than aspect. Support for this view comes from the finding that children sometimes overused *be* with bare verbs, producing forms such as *he is want* and *she is go*.¹⁸ Ionin & Wexler argue that this is a case of *be* overgeneration rather than *-ing* omission: a large proportion of the ‘*be + bare verb*’ instances have non-progressive interpretation. Table 7 reports the types of ‘*be + bare verb*’ forms in the files considered in the present paper. As Table 7 shows, *be* overgeneration occurred with a variety of verb types,

18. Ionin & Wexler (2002) also found a few uses of *be* with an inflected verb (as in ‘he is goes’). However, these were extremely rare, compared to the ‘*be + bare verb*’ cases. See Gavrusseva (this volume) for more discussion of overgenerated *be* in child data.

Table 7. *Be* overgeneration in the data

	present progressive reading (eventive verbs)	present non-progressive reading (eventive verbs)	past	stative	future
A.N.	3				
A.T.			1		
A.Y. file1		6			
A.Y. file2	3	11	5	5	5
D.A. file1	3				
D.A. file2		2	2		
D.I.				1	
K.I. file1	1	2	3		
K.I. file2	1	1			
M.Y. file1	1				
M.Y. file2					
O.L. file1		7		1	
O.L. file2					
T.I.	8	1	1		
T.O.					
V.A. file1					
V.A. file2					

including statives (*want, like, etc.*): in contrast, we saw that *be + ing* forms were never used with stative verbs.

Additional support for the view that *be* marks tense/agreement while *-ing* marks aspect comes from a comparison of the interpretation of bare *-ing* forms, *be + ing* forms, and '*be + bare verb*' forms in the data. This comparison is given in Table 8, which reports the percentages of progressive interpretation in each of these three categories.

Only four files (A.N., A.Y. file2, K.I. file1 and O.L. file1) have enough tokens of both *-ing* forms and *be* overgeneration to allow a comparison. Of these, both K.I. file1 and O.L. file1 use '*be + bare verb*' forms primarily with non-progressive readings while using *-ing* mostly with progressive readings; this suggests that they use *be* to mark tense/agreement rather than progressive aspect. A.N., on the other hand, appears to associate both *-ing* and *be* with progressive aspect. Finally, A.Y. file2 uses '*be + bare verb forms*' as well as *-ing* forms primarily with non-progressive interpretation. Recall that A.Y. (in file2) was the only child to acquire the *be* auxiliary before acquiring the interpretation of *-ing*; interestingly, A.Y. file2 is also the file with a disproportionately large number of overgenerated *be* forms. It seems that A.Y. uses *be* forms across all verb types, regardless of aspectual interpretation and presence of *-ing*, to mark tense/agreement. I leave open the issue of whether this particularly high use of the *be* auxiliary can be traced to A.Y.'s knowledge of

Table 8. Interpretation of *be* vs. *-ing*

file	% of bare <i>-ing</i> forms used with an ongoing interpretation	% of <i>be</i> + <i>-ing</i> forms used with an ongoing interpretation	% of overgenerated ' <i>be</i> + bare verb' forms with an ongoing interpretation
A.N.	100.0% (3/3)	100.0% (6/6)	100.0% (3/3)
A.T.	100.0% (10/10)	100.0% (2/2)	0.0% (0/1)
A.Y. file1	0.0% (0/1)	n/a	0.0% (0/6)
A.Y. file2	16.7% (1/6)	16.2% (6/37)	10.3% (3/29)
D.A. file1	100.0% (2/2)	0.0% (0/1)	100.0% (3/3)
D.A. file2	0.0% (0/2)	0.0% (0/1)	0.0% (0/4)
D.I.	n/a	100.0% (22/22)	0.0% (0/1)
K.I. file1	70.6% (12/17)	57.1% (4/7)	16.7% (1/6)
K.I. file2	75.0% (3/4)	n/a	50.0% (1/2)
M.Y. file1	33.3% (1/3)	83.3% (5/6)	100.0% (1/1)
M.Y. file2	n/a	66.7% (2/3)	n/a
O.L. file1	100.0% (6/6)	83.3% (5/6)	0.0% (0/8)
O.L. file2	0.0% (0/1)	100.0% (2/2)	n/a
T.I.	100.0% (2/2)	100.0% (1/1)	80.0% (8/10)
T.O.	80.0% (8/10)	100.0% (14/14)	n/a
V.A. file1	100.0% (10/10)	95.0% (19/20)	n/a
V.A. file2	96.2% (25/26)	80.0% (4/5)	n/a

Azerbaijani (the two L1-Azerbaijani children studied by Gavrusseva (this volume) also overgenerate *be*, but not to a particularly high extent, compared with the other children).

Finally, an interesting case is presented by D.A. file1 and T.I. As discussed earlier, these were the two files where *-ing* forms are almost non-existent and bare verbs are used with ongoing interpretations. Both files also show overgeneration of *be*, and use overgenerated utterances primarily in progressive contexts. One could conclude from this that the children correctly associate *be* with progressive aspect. However, there is also an alternative explanation: the children use *be* to mark tense/agreement on what would otherwise be bare verb forms. These two files have a very high number of progressive contexts (indeed, T.I. has almost no non-progressive contexts), so it is not surprising that overgeneration of *be* to mark tense/agreement would also occur in progressive contexts.

5. Further discussion and conclusions

In this paper, I examined cross-sectional naturalistic data from L1-Russian L2-English children with reference to the acquisition of progressive aspect. Overall,

the following pattern emerges: children use *-ing* earlier and more productively than the *be* auxiliary, and most children use *-ing* appropriately, with an ongoing interpretation. Additionally, children who successfully use *-ing* with an ongoing interpretation also restrict bare verb forms to non-progressive contexts. The longitudinal data from Gavrusseva (this volume), taken together with the cross-sectional data examined here, suggest that acquiring the interpretation of *-ing* helps children narrow down the meaning they associate with bare verb forms. I have suggested that the early acquisition of *-ing* interpretation is facilitated by the Uniqueness Principle, which forces children to assign a different meaning to *-ing* forms than to bare verb forms.

As discussed earlier, first language learners are also known to use bare verb forms with an ongoing interpretation. If the proposal in this paper is on the right track, we would expect the Uniqueness Principle to similarly help L1-acquiring children both acquire the meaning of *-ing* and unlearn the ongoing interpretation of bare verb forms: i.e., we would expect a correlation between the acquisition of *-ing* and the restriction of bare verb forms to non-progressive contexts. Whether this correlation holds would be an interesting question to investigate. The present paper provides preliminary evidence that child L2-acquisition is constrained by the Uniqueness Principle, and that the acquisition of aspectual interpretation is independent of the acquisition of finiteness morphology. In the rest of this section, I discuss in more detail how the acquisition of the progressive compares to the acquisition of finiteness morphology, and how child L2-acquisition compares to child L1 and adult L2-acquisition.

5.1 Aspectual morphology vs. finiteness morphology

It is important to consider how the arguments concerning the acquisition of *-ing* apply to the acquisition of finiteness morphology. In principle, the argument in this paper should be applicable to the acquisition of 3rd person *-s* and past tense *-ed* as well as to the acquisition of *-ing*: the Uniqueness Principle should lead learners to realize that *walks* or *walked* has a different meaning than *walk*, and the lexical insertion rule should cause the fully inflected finite forms to be inserted whenever possible – i.e., if a node is specified for 3rd person present tense singular, the learner should insert *walks* rather than *walk* in this node, as long as the learner has acquired third person *-s*.

Nevertheless, there are two important differences between the acquisition of *-ing* and the acquisition of finiteness inflection, as discussed below.

5.1.1 *Differential rates of omission*

First, omission of *-s* and *-ed* persists even after the learner has started using inflected forms (see Lardiere 2000; Ionin & Wexler 2002; Haznedar 2001, among many others): a learner is quite likely to produce *she walk* alongside *she walks* or *she walked*. For the children examined here, Table 3 shows omission of 3rd person *-s* is well above 60%, on average. Omission of finite *be* forms, while lower, is still fairly high, at 33% (Table 2) (see Ionin & Wexler 2002 for a proposal explaining the higher omission rates of affixal finiteness morphology than of *be* forms).

This appears to violate the lexical insertion rule discussed in Section 3.2: if a learner has begun using 3rd person *-s*, she should always insert *walks* rather than *walk* in 3rd person present tense singular contexts, since *walks* is more highly specified. And once she has acquired a form of *be*, she should consistently insert it in the relevant contexts. However, this is not the case; both child and adult L2-learners show optionality in the use of finiteness morphology, and in adult L2-learners this optionality is subject to fossilization (Lardiere 2000; White 2003).

Prévost & White (2000: 129) discuss precisely this problem, and suggest that “access to the more fully specified lexical entries is sometimes blocked. That is, even when a form specified for the relevant features has been acquired, it becomes temporarily irretrievable from the lexicon”. Thus, while the learner may have acquired both *walks* and *walk*, her access to *walks* may be temporarily blocked. In Section 4.3.3, I advanced a similar explanation for why a child who has acquired *walking* may still use *walk* in progressive contexts.

Crucially, however, such a period of optionality of progressive marking appears to be fairly brief, and children quickly cease to use bare verbs progressively. In contrast, optionality in the use of bare forms alongside forms inflected for finiteness appears to be much more widespread and persistent. If indeed access to more fully specified form is blocked (e.g., by communication pressure, as Prévost and White suggest) to a greater extent in the case of tense/agreement morphology than in the case of aspectual morphology, this points to an interesting difference in how tense/agreement vs. aspectual categories and features are represented in the mind.¹⁹

19. Another possible explanation for why learners are quite likely to drop *-s* and *-ed*, compared to *-ing*, even after these forms are acquired, has to do with the semantic complexity of the different forms. As pointed out by an anonymous reviewer, *-s* and *-ed* have relatively little semantic contribution in English: the agreement information contributed by *-s* is also conveyed by the subject (since English is a non-pro-drop language); while both *-s* and *-ed* do convey tense information, this information can in principle also be easily conveyed lexically (e.g., by adverbs such as *yesterday*). In contrast, progressive aspect cannot be easily conveyed lexically: an adverb such as *now* is not enough, since it is also compatible with non-progressive readings (e.g., future, as in “The magician will now pull a rabbit out of a hat”). Putting together this explanation and

5.1.2 *Differential rates of misuse*

A second difference between the acquisition of *-ing* and finiteness morphology is that 3rd person *-s* and past tense *-ed* are practically never misused (as in *I walks* or *I walked now*), while we saw that *-ing* forms are misused in the earliest stages of acquisition. A.Y., the child who frequently used *-ing* with non-progressive interpretation never misused *-s* or *-ed* (see Ionin & Wexler 2002). Hawkins and Casillas (2008) explain this difference in terms of context-sensitive features: they propose that L2-learners' initial lexical entries for inflectional morphemes are specified for the particular contexts of surrounding syntactic nodes. On their account, 3rd person *-s* is inserted only in the context of a V head, [-past] Tense and 3rd person singular subjects; past tense *-ed* is inserted only in the context of a V head and [+past] Tense; and *-ing* is inserted simply in the context of a V head. As a result, *-ing* is misused while *-s* and *-ed* aren't.

While Hawkins and Casillas's proposal captures a number of facts about inflectional morphology in the L2 (e.g., the earlier acquisition of *-ing* than *-ed*, and of *-ed* than *-s*), it is not clear why the context-sensitive features for *-ing* do not make reference to an aspectual head (e.g., insert *-ing* only in the presence of a V head and [+progressive] Asp).

I suggest a possible alternative explanation for the misuse of *-ing* vs. *-s/ed*, in terms of L1-transfer. We already saw that the highest rates of *-ing* misuse were present for A.Y. in my study and Sultana in Gavruseva's study; as discussed earlier, their performance may be influenced by the transfer of the [+IMP] morpheme from Azerbaijani (i.e., they may map the English progressive to the [+IMP] morpheme, thus allowing *-ing* with all imperfective verbs, including habituales). However, we cannot disregard the fact that monolingual L1-Russian children also exhibit some misuse of *-ing* in non-progressive contexts, notably K.I. in this study and Dasha in Gavruseva's study. In contrast, misuse of finiteness morphology by

Prévost & White's proposal discussed above, we have something like the following: under communicative pressure, learners fail to retrieve morphemes which provide little or no semantic contribution, while successfully retrieving morphemes with a greater semantic contribution, such as *-ing*. A potential counterexample to this proposal is plural *-s*. Ionin & Wexler (2002) found that the L1-Russian L2-English children who regularly omitted third person *-s* omitted plural *-s* in only 11% of contexts where a plural was clearly intended – i.e. when the NP follows a number (e.g. *two*), or a quantifier (e.g. *many*, *a lot of*). These are precisely the contexts in which information about plurality is provided lexically, by the numeral or quantifier, so *-s* does not contribute any semantic information (in fact, many languages – e.g., Hungarian and Turkish – require or at least allow morphologically singular lexical nouns after numerals; see Farkas & de Swart 2003; Ionin & Matushansky 2006, among others). Nevertheless, plural *-s* is rarely omitted. This suggests that there's more to the issue of finiteness morphology omission than the semantic contribution of the morpheme.

L1-Russian children is practically non-existent. Transfer may play a role here as well, as follows.

Russian has both morphological tense and morphological agreement: in acquiring *-s* and *-ed*, L1-Russian L2-English learners have to map specific morphemes to syntactic specifications (past tense, third person) that are fully represented in their L1.²⁰ On the other hand, Russian lacks progressive aspect, so the children have to acquire not just the *-ing* morpheme but also the corresponding syntactic category (and its associated semantics). The initial misuse of *-ing* may be due to the initial lack of such a category, or perhaps to an erroneous mapping of the English progressive to the Russian imperfective present tense (which allows both progressive and habitual interpretations). This predicts that children whose L1 does have progressive aspect should not exhibit misuse of *-ing* (except in those environments where the behavior of progressive aspect in the two languages differs).

The above discussion points to an interesting dichotomy: the categories of Tense and Agreement, unlike the category of Aspect (at least, progressive aspect) are argued to be present in the grammar of L1-Russian L2-English children from the start. At the same time, the progressive morpheme is actually acquired quicker and more successfully than tense/agreement morphemes. The children may take a while to acquire the Aspect category (hence the initial misuse of *-ing*), but once the category is in place, use of *-ing* is highly productive. On the other hand, the children have Tense and Agreement categories from the start, but access to the corresponding morphemes is often blocked. This difference would make an interesting subject for future investigation.

5.2 Child L1-acquisition, child L2-acquisition, and adult L2-acquisition

Finally, I consider child L2-acquisition of progressive morphology in light of what is known about child L1-acquisition and adult L2-acquisition. Child L2-acquisition might easily pattern with either (see Schwartz 2004 for more discussion). On the one hand, child L2-learners, like child L1-learners, are still within the critical

20. While this explanation works in the case of L1-Russian, it is known that *-s* and *-ed* are also not misused when the L1 lacks tense and/or agreement verbal morphology (such as Chinese – Lardiere 2000). However, even languages that lack tense/agreement marking on the verb generally have some ways of conveying information about past vs. present tense (e.g., through time adverbials) and/or about person (e.g., through the pronoun system). On the other hand, a language with no progressive morphology, such as Russian, has no way of distinguishing progressive readings from non-progressive ones (an adverbial such as *now* is not enough, as discussed in the previous footnote). Thus, arguably, the properties of tense and agreement should be more easily acquired than those of aspect. I leave the issue open to further investigation.

period for language acquisition, and therefore might show similar developmental patterns. On the other hand, child L2-learners, like adult L2-learners, are potentially subject to transfer from their L1.

5.2.1 *Child L1 vs. child L2-acquisition*

As discussed earlier, child L1-learners of English are known to initially use bare verbs with an ongoing interpretation, to acquire *-ing* before *be*, and to generally use *-ing* accurately – that is, in progressive environments (see Brown 1973; Hyams 2006; among many others). The patterns found for child L2-acquisition in this paper thus appear to be fairly similar to the patterns established for child L1-acquisition. However, child L2-acquisition, unlike child L1-acquisition, is potentially subject to L1-transfer; as speculated in Section 4.4.2, misuse of *-ing* in non-progressive environments may be due to transfer from Azerbaijani, although more investigation is needed. To the extent that monolingual L1-Russian children also show some (albeit very little) misuse of *-ing*, it is possible that there is L1-transfer from Russian.

It is unlikely that misuse of *-ing* is a general developmental effect. Brown (1973: 317) reports that in the speech of Eve, an L1-acquiring child, *-ing* is nearly always appropriately used to signal temporary duration: Eve was found to use progressive morphology inappropriately with only seven tokens.²¹ Thus, to the extent that *-ing* misuse exists in child L2-English, it may be due to L1-transfer; however, more in-depth investigation with child L2-learners from different L1s is required for a more definitive conclusion.

Furthermore, while child L1-learners' production of *-ing* may be generally target-like, there is evidence from interpretation and comprehension data that their semantics for *-ing* is not fully adult-like. For example, Wagner (1997) examined young L1-English children's understanding of the past progressive using sentence completion and comprehension tasks, and found that morphosyntactic and pragmatic properties of the progressive emerge at different ages. Wagner found that the ability to map the past progressive to incomplete events and the simple past to complete events was absent in two-year-olds but present in three-year-olds, whereas the more pragmatic ability to use the past progressive in an adult-like manner in a narrative was absent as late as age five.

21. Brown does not report how often Eve used the progressive appropriately. However, a quick search through just one of Eve's files (file #14; Brown 1973; CHILDES; MacWhinney & Snow 1985) reveals 27 *-ing* forms. Given the existence of multiple files for Eve, and the early acquisition of the progressive reported by Brown, we can safely assume the seven inappropriate uses of *-ing* in fact form a very small percentage of her total *-ing* uses.

In the absence of controlled elicitation or comprehension data from child L2-learners, we do not know how deep child L2-learners' knowledge of the progressive goes. If child L1-acquisition and child L2-acquisition follow similar processes, we might expect that even child L2-learners who use *-ing* appropriately still have not acquired all the subtleties of the interpretation of the English progressive. This would make an interesting question for further study.

5.2.2 *Child L2-acquisition vs. adult L2-acquisition*

As discussed earlier, some of performance of the child L2-learners may be attributed to L1-transfer. L1-transfer is also known to affect adult L2-learners' performance on aspect, with the relevant data coming primarily from experimental tasks rather than naturalistic production.

An adult L2-acquisition study whose L1/L2 combination is similar to the one discussed in this paper is that of Slabakova (2003), who studied aspectual interpretation by adult L1-Bulgarian learners of English. Like Russian, Bulgarian has no present progressive and uses simple present tense for both ongoing and habitual interpretation. In terms of production, Slabakova found that more than 90% of the learners were quite accurate at supplying the *-ing* morpheme, as well as finiteness morphemes. In a truth-value judgment task, Slabakova found that all learners were generally sensitive to the semantics of English aspect, but that the least proficient learners made errors on sentences with the progressive while being relatively accurate on sentences with the simple present tense. Slabakova speculates that "if beginning learners are directly mapping simple present tense forms in the L1 and the L2, then their semantic acquisition process will be facilitated by the fact that the habitual meaning is available in both cases. The progressive meaning, on the other hand, is associated with a different piece of morphology in the L2, making the process of form-function mapping more problematic" (p. 97–98). Intermediate and advanced learners, on the other hand, were very accurate, showing that it is possible for adult learners to overcome L1-transfer and acquire the progressive.

The proposal that the adult beginner L2-learners in Slabakova's study misinterpreted *-ing* as a result of L1-transfer supports the possibility that L1-transfer is also behind the misuse of *-ing* we saw for some L1-Russian (and L1-Azerbaijani) children. The role of L1-transfer in both child and adult L2-acquisition of the progressive would point to similarity between the two types of acquisition. However, until adult and child learners from the same L1 backgrounds are tested with the same methodology, this must remain a speculation.

5.2.3 Summary

The above discussion suggests that child L2-acquisition of progressive morphology bears similarity to both child L1- and adult L2-acquisition. Child L2-learners exhibit a similar developmental path as child L1-learners, from bare verbs with a progressive interpretation, to bare *-ing* forms, to be + *ing* forms. At the same time, errors of *-ing* use in child L2-English may, like similar interpretational errors in adult L2-English, stem from L1-transfer. However, more investigation is required. The naturalistic child L2-data needs to be supplemented with experimental findings on L2-children's interpretation of the progressive. Child L1-, child L2-, and adult L2-learners need to be tested with similar methodologies before a definite conclusion about these populations can be reached.

In this paper, I have traced a developmental path in the acquisition of the progressive. By applying the Uniqueness Principle, established for L1-acquisition, to child L2-acquisition, and by discussing a possible role for L1-transfer, I hope to have shown that child L2-acquisition has properties in common with both child L1- and adult L2-acquisition.

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Child second language acquisition or successive first language acquisition?

Jürgen M. Meisel

University of Hamburg / University of Calgary

This paper explores the question of whether child L2 acquisition is more like L1 or adult L2. An analysis of the acquisition of finiteness by German child L2 learners of French leads to the conclusion that successive acquisition of languages exhibits similarities to adult L2 in some aspects of inflectional morphology. This claim is based on the observation that specific features of grammatical development typically occur in one type of acquisition only, not in the other. Unlike mature French and child L1, French subject clitics appear adjacent to non-finite verbs in adult and child L2 French. One can argue that they do not possess the same grammatical status in child and adult L2 grammars as they do in L1 grammars.

Introduction

Differences between various types of language acquisition, dependent on the age of onset (AO) of acquisition, have been studied and have created controversy in a vast and steadily increasing body of research on second language acquisition. The controversy, however, concerns primarily the nature of these differences, whereas the fact that such differences do exist seems to be generally acknowledged, even though it may be difficult to reach an agreement when it comes to drafting a comprehensive list of features distinguishing these acquisitional types.

The overwhelming amount of research on this issue is based on comparisons of monolingual first language acquisition (L1) in children exposed from birth to one language and adult second language acquisition (aL2) in learners with first exposure after the age of 10. As a consequence, very little is known about child second language acquisition (cL2), even at a descriptive level. We have only a vague idea about which features cL2 shares with aL2, distinguishing both from L1, or whether, conversely, cL2 interlanguage exhibits forms or constructions which are also attested in L1 but not in aL2; but see Lakshmanan (1994), among others.

In fact, assuming that substantial differences distinguish cL2 from L1 and/or from aL2, the age range during which we may justifiably refer to cL2 as a distinct type of language acquisition is largely a matter of speculation.

This paper represents an attempt at identifying some of the grammatical features characterizing cL2 acquisition, focusing on phenomena related to finiteness, e.g. forms and positions of verbs. My claim is that in this area of grammar, cL2 learners' interlanguage exhibits a number of properties which are attested in aL2 as well, but not in either monolingual or in bilingual (2L1) first language development. Moreover, since these results are obtained with (German-speaking) children whose first exposure to their L2 (French) occurred between ages 3 and 4 years, it can be argued that changes leading to the observed differences happen during the age range between 3 and 4 and thus earlier than is commonly assumed. My interpretation of these findings is that these changes are brought about by neurological maturation, resulting in modifications to the human Language Making Capacity (Slobin 1985).

1. Differences between L1 and L2 acquisition

Extensive research over the past 25 years on simultaneous acquisition of two (or more) languages from birth has demonstrated that 2L1 represents an instance of multiple L1 acquisition, i.e. children are able to differentiate the two languages structurally and functionally from early on, they proceed through the same developmental sequences and they ultimately attain the same kind of grammatical knowledge as the respective monolinguals; see Meisel (2001) for a summary of some of this research. One conclusion which can be drawn from such findings is that the human language faculty is an endowment for multilingualism. This is to say that the fact that more than one language is acquired need not lead to qualitative differences between monolingual and multilingual development.

Successive acquisition of two or more languages, on the other hand, seems to differ substantially from both monolingual and bilingual first language acquisition. It is therefore not implausible to hypothesize that a major cause of these differences is the age of onset of acquisition. Another possibility is that previously acquired linguistic knowledge affects the emergence of, or alters the developmental path of knowledge which comes in later. In order to be able to assess the importance of these and possibly other causal factors, more information is needed, first of all, on the differences distinguishing various acquisitional types.

The aim of the present paper is to gain some insights, in this respect, into child L2 acquisition by contrasting it with (2)L1 and aL2. Although I ultimately want to argue that L1 and L2 are fundamentally different, meaning that the two

types of learners acquire qualitatively different types of linguistic knowledge, the Fundamental Difference Hypothesis (Bley-Vroman 1989) is only indirectly at stake here. My focus will instead be on observable differences characterizing the speech of the various acquisitional types. I hope to be able to show that cL2 resembles aL2 in a number of structural properties. I believe that if we can arrive at a broad consensus with respect to such facts, this would constitute a considerable scientific achievement. The facts would provide a more solid empirical basis for the debate on the question of whether these observations reflect fundamental differences in the underlying linguistic knowledge of the learners.

This approach obviously presupposes that L1 and aL2 do indeed differ in a number of non-trivial properties; see Meisel (1991) for a more detailed discussion of such differences. The question of whether it is impossible for principled reasons to attain native competence in L2 is certainly the one which raises the most controversies, but there can be no doubt that the attainment of native competence in an L2 happens only rarely – if at all. I will not pursue this issue in the present paper since I am primarily concerned with early phases of L2 acquisition. With respect to the nature of L2 utterances during the ‘initial state’, some authors maintain that early L2 grammars – just like developing L1 grammars – do not contain functional heads and projections, e.g. Vainikka & Young Scholten (1994, 1996a, b). In view of the empirical evidence available, this view cannot be seriously maintained; see Grondin & White (1996) or Parodi (1998), among others. I therefore believe that the following list of L1 – aL2 differences should not be controversial among most L2 researchers:

- *Initial state*: L2 utterances are longer, probably more complex, and contain functional categories.
- *Course of acquisition*: invariant developmental sequences characterize both L1 and L2, but they are not identical.
- *Rate of acquisition*: fast in L1, protracted in L2.
- *Uniformity*: significantly broader range of variation in L2, across individuals and within the same learner across time.
- *Ultimate attainment*: few (or no) L2 learners reach native competence.

2. Sensitive periods for grammatical development

The major goal of this study is to distinguish acquisitional types in relation to the age of onset of acquisition. Let me here briefly explain the rationale for this kind of research enterprise. It is based on the assumption that the human Language Making Capacity (LMC) guides language development in L1. In the spirit of Slobin

(1985:1158), I view the LMC as containing innate capacities which the child brings to the task of language development, including, “some initial procedures for perceiving, storing, and analyzing linguistic experience” (Slobin 1985:1158). In other words, principles of Universal Grammar (UG) are part of the LMC, but LMC is more than UG. It contains, in addition to constraints on grammatical representations, processing capacities and also language-specific discovery procedures, possibly of the type proposed by Slobin (1985) under the term of ‘operating principles’. The basic hypothesis for what follows is that the LMC is subject to maturation, i.e. neural maturation opens a window of opportunity for multiple L1 acquisition. In the course of further developments, however, parts of the LMC become inaccessible. Language acquisition continues to be possible, of course, but learners then have to resort to other cognitive capacities in order to compensate for those which are not available anymore. In other words, I am adopting the Critical Period Hypothesis (CPH) suggested by Penfield & Roberts (1959), Lenneberg (1967), and others. A more thorough discussion of this hypothesis would be far beyond the scope of this paper but a few brief comments are necessary in order to avoid possible misunderstandings; see Hyltenstam & Abrahamsson (2003) for a recent state-of-the-art summary. Most importantly, the CPH does not refer to a single age period. Rather, it should be understood as a set of sensitive phases, each offering an optimal period for the integration of new information into the developing grammar; see Meisel (to appear). The optimal age range is thus not the same for syntax, morphology, and phonology. In fact, one should expect to find different sensitive phases even within these sub-components of grammar. Moreover, sensitive phases are not switched on and off. Rather, current work on the CPH suggests that a relatively abrupt onset leads to an extended optimal period, followed by a gradual offset.

Finally, this last point leads to another issue which is particularly difficult but also crucial for the current debate, namely, the precise age range delimited by the beginning of the offset of an optimal period. What is clear now is that the terminal age originally suggested by Lenneberg (1967) – around puberty – cannot be maintained. A number of different age ranges have been proposed in the literature; see Long (1990), Hyltenstam & Abrahamsson (2003) or Unsworth (2005:6). The picture emerging from this discussion is still blurred, partly due to the fact that the various empirical studies deal with a variety of grammatical properties. Taking into account linguistic as well as neurolinguistic evidence, the age period ranging from 3 to 8 appears to be the critical one. In fact, for morphology and syntax the optimal age is likely to begin fading out as early as between ages 3 and 4; see Meisel (to appear) for a more detailed discussion. I will therefore tentatively adopt this suggestion. Note that for methodological reasons, it is also preferable to choose the earliest plausible option since if it turns out to be incor-

rect, it can easily be refuted empirically. If, however, one chooses a cut-off point at an age after the actual period of qualitative change, the learners who begin to learn another language before that point will form a heterogeneous group, and it will be difficult, if at all possible, to identify linguistic properties distinguishing 2L1 from cL2 learners in successive acquisition of languages. Consequently, I will tentatively define cL2 in terms of age of onset between 3–4 and approximately 7 years of age.

Tentative age ranges

2L1 ≤ 3

child L2 ≥ 4

adult L2 ≥ 8

3. A study of child second language acquisition of French

With the aim of testing the claims and hypotheses mentioned above, we are currently carrying out a study contrasting simultaneous acquisition of French and German with successive acquisition by children who are first exposed to French, their second language, at the time of entering school, around age 3 or a few months later. The following is thus a report on work in progress, comprising a cross-sectional pilot study and a quasi-longitudinal study, recording children at 3–6 month intervals over a period of two years. The cross-sectional corpus has previously been analyzed by Loewe (2004) and Stöber (2004); see Loewe & Stöber (2005) for a summary of the results.

3.1 Data collection and subjects

The two corpora consist of recordings of children attending the *Lycée Français de Hambourg*. They enter the *Ecole Maternelle* (preschool) at around age 3 (*Petite Section*, *Moyenne Section* as of age 4, and *Grande Section* as of 5) where they normally spend six hours per day. The medium of instruction is French, except for 5 weekly lessons intended to foster their knowledge in German. Once they advance to the primary school (*CE*), both languages become objects of teaching, with 9 hours (12 lessons) of French instruction per week for German children, and 3:45 hours (5 lessons) of German weekly for children from French families who, for the most part, have acquired the two languages simultaneously from birth. Note that the second language is thus acquired naturalistically, even if this happens in an institutional setting.

The interviews analyzed below were conducted by a French native speaker who interacted with the children during the video recordings, while another research assistant manipulated the camera. Picture cards were used in order to incite the children to talk or tell stories.

3.2 The cross-sectional study

This study included 14 children aged 5 to 10 years. 7 of these children were monolingual German at the time of entering the school and will be referred to as child L2 learners; see Table 1. They entered the *Ecole Maternelle* at around age 3;0 (age range 2;9 to 3;8; ~ indicates approximate age). Note that they have all been exposed to French for at least two years at the time of the recordings. 8 children come from French-speaking homes and grow up bilingually, French-German; they will be referred to as 2L1 children; see Table 2.

Each interview was conducted with two children simultaneously, lasting for 15–20 minutes. All utterances containing a verb were included in the analysis. In their studies Loewe (2004) and Stöber (2004) focused on the use of tense forms, subject-verb agreement, subject and object clitics, and the placement of verbs in relation to negative elements and adverbs.

Table 1. Child L2 learners from German-speaking homes

Name	Age at onset	Age at recording	Exposure at time of recording
Nadja	2;09	5;05	2;08
Anne	~3;00	~5;00	~2;00
Tom	~3;00	~8;00	~5;00
Paul	3;02	5;07	2;05
Miriam	3;02	7;07	4;05
Annette	3;02	7;07	4;05
Erich	3;08	6;01	2;05

Table 2. Bilingual children from French-German speaking homes

Name	Age at entering school	Age at recording	Exposure at time of recording
Ariane	~3;00	~5;00	~2;00
Antoine	3;02	5;08	2;06
Michel	4;03	5;09	1;06
Thierry	4;09	8;02	3;05
Candide	5;04	5;10	0;06
Luc	5;06	7;09	2;03
Christian	6;05	9;00	2;07

Let us first examine the use of verb morphology, focusing on tense and agreement as indicators of finiteness. In Meisel (1985, 1990, 1994), I studied the development of tense and agreement in simultaneous acquisition of French and German. These analyses revealed that subject-verb agreement emerges prior to tense and that children never commit errors in person agreement. Perhaps even more important for the present purpose is the finding that finite verbs are placed in the correct position required by the adult norm, once finite verb forms are used productively. In all these respects, bilingual children behave like the respective monolinguals. As for French, subject clitics (SCL) are of special importance. In Colloquial French, they can be analyzed as agreement markers; see Roberge (1986), Kaiser & Meisel (1991), Kaiser (1992, 1994), and more recently Bonnesen & Meisel (2005), among others. Irrespective of the details of this analysis, what matters is that these elements enter into a close relationship with the finite verb. In fact, subject clitics are never combined with non-finite verb forms, either by bilingual or by monolingual children. De Cat (2006:70f.) found two counterexamples to this claim in the data of one French and one Belgian child, out of a total of 463 infinitives in root clauses, and she concludes that “they are noise in the data”. Note that the observation about the relationship between the development of finite forms and verb placement also hold for SCL: as soon as they are used productively, finite verbs precede negative *pas* whereas non-finite verbs follow it, suggesting that the finite verb (together with the SCL) has been moved out of the VP. In sum, then, finiteness is acquired early and virtually without errors by (2)L1 children, and person agreement plays a particularly important role in this case.

The first question to be asked is how the child L2 learners studied by Loewe & Stöber (2005) fare in this respect. Remember that time of exposure to the L2 by the cL2 learners ranges from 2;0 to 5;0 years. We can therefore only hope to detect the most persistent problems in their acquisition of French, but we cannot say anything about how they arrived at their knowledge of the L2. Interestingly enough, verb inflection still causes problems for most of the cL2 learners studied, in spite of this extended period of exposure to French; see Figure 1 which displays all occurrences of verbs in contexts requiring finite forms.

The only exceptions are Anne and Miriam who, however, use few finite forms, overall. The majority of errors occurs with thematic verbs; see examples in (1).

- (1) Nadja: un petit [n]enfant qui mang[e] une pomme
 a little child who eat-NON-FINITE a apple
 ‘a little child who eats an apple...’
- Paul: et là jou[e] dehors
 and there play-NON-FINITE outside
 ‘and there (he) plays outside’

Erich: et il jou[e]
 and he play-NON-FINITE
 'and he plays'
 Annette: on vas- y
 one go(2nd SG).there'
 'there we go'

In most of the cases deviating from the adult norm, the children use non-finite verb forms in contexts where finite forms are required. With verbs ending in *-er*, it is not possible to decide whether they represent an infinitival or a participial form, but this is not a problem for this analysis since both represent non-finite forms. Note that non-finite forms also appear in constructions where so-called *root (or optional) infinitives* (RI) are excluded, e.g. in subordinate clauses; cf. Rizzi (1994). In contrast to the observations referring to cL2 learners, one finds that there is only a single error of this type in the recordings with bilinguals. This phenomenon may therefore be counted as a first difference between the L2 and (2)L1 learners. Note that the L2 children pattern in this respect with adult L2 learners, cf. Parodi (1998).

Perhaps, the most interesting case of target-deviant usage is the combination of SCL with thematic non-finite verbs. Remember that an important finding of studies analyzing French child language by monolinguals as well as bilinguals is that (2)L1 children never combine SCL with non-finite verb-forms. Only full pronouns have been reported to appear in such contexts in (2)L1 data; see Bonnesen (2004) for a recent discussion of such constructions, illustrated by (2) from Loewe & Stöber (2005).

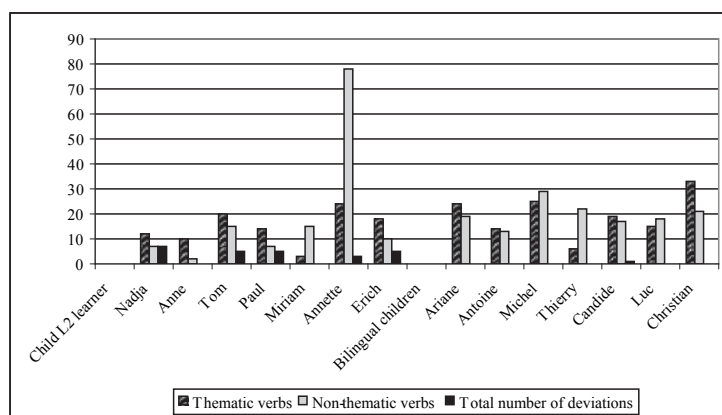


Figure 1. Types of verbs

- (2) Tom: moi sais c'que c'est
 me know that.what that is
 'I know what this is'

Examining our corpus (Figure 2), we find that none of the bilingual children, but four of the cL2 learners combine SCL with non-finite verb forms, among them three of the younger ones, Nadja, Paul and Erich.

Although this type of error is infrequent, it is nevertheless remarkable that it only occurs in the speech of cL2, but never in the data of 2L1 children; see examples in (3).

- (3) Paul: et là c'est un jeu il cass[e]
 and there this.is a game he break-NON-FINITE
 'and there this is a game which he broke'
- Erich: ils jou[e] dehors
 they play-NON-FINITE outside
 'they play outside'
- Nadja: et le canard là, elle dessin[e]
 and the duck there she draw-NON-FINITE
 'and the duck there, she has drawn it'

With less than three years, time of exposure to French is considerably shorter in their cases than that of the other learners of the cL2 group who have been in contact with French for 4;5 to 5 years. It remains to be seen whether time of exposure is indeed a relevant factor distinguishing the various cL2 learners, or whether the frequency of these errors increases with later ages of onset of L2 acquisition. Based on the available data, these questions cannot be fully explored, but the data from the quasi-longitudinal study may at least provide a tentative answer to the first one, referring to the amount of exposure to the L2.

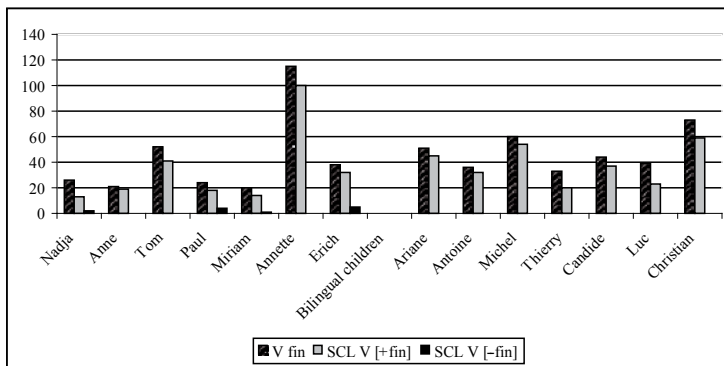


Figure 2. Finiteness: Verb forms and subject clitics

3.3 The quasi-longitudinal study

In this study, 35 children were recorded, all first exposed to French when entering kindergarten between ages 2;08 and 4. At the time of the first recording, their ages ranged from 2;11 to 6;08 years. We grouped the children into four groups, labeled A, B, C, and D, based on their length of exposure to French. Group A (9 children) had been exposed to French for 3 to 5 months, Group B (16 children) for slightly over one year, Group C (7 children) for just over two years, and Group D (3 children) for just over three years. Subsequent recordings will be made with children in groups A–C, at 3 to 6 month intervals, depending on their linguistic progress.

During this first round of recordings, 7 of these children did not utter anything at all, or at least not in French. Another 8 merely produced single word utterances. We will have to wait until later recordings before deciding whether these 15 children belonging to Groups A and B can be included in the study. From the remaining 20 learners, 5 from Group B and 5 from Group C are included in this study; their ages at first exposure to French ranging from 2;08 to 3;07. As for the 9 children in Group A (exposure to French 3 to 5 months), 6 were among those who did not produce any French utterances, and one of the other three uttered

Table 3. Group A

Name	Age at onset	Age at recording	Exposure
Ina	2;11	3;04	0;05
Eduard	3;07	4;00	0;05

Table 4. Group B

Name	Age at onset	Age at recording	Exposure
Martin	3;01	4;05	1;04
Willi	3;02	4;06	1;04
Lars	3;06	4;10	1;04
Lara	3;06	4;10	1;04
Ludwig	3;06	4;10	1;04

Table 5. Group C

Name	Age at onset	Age at recording	Exposure
Florian	3;04	5;08	2;04
Nicole	3;05	5;10	2;05
Klaus	3;06	5;11	2;05
Jeremie	3;07	5;10	2;03
Peer	3;07	5;11	2;04

only a single utterance containing a verb. I will briefly return to the two remaining ones below. Those in Group D are too advanced for the purpose of the present analysis.

The children were interviewed individually, each recording lasting for 20 to 30 minutes. The interviews consisted of a structured interaction during which the children were asked questions referring to themselves (name, age, etc.), their siblings and parents, and they were also presented with picture cards representing activities and objects in order to incite them to talk. All utterances containing a verb were included in the analysis.

The two children of Group A use mostly formulaic expressions. Ina (8 utterances containing a verbal element) produces only *sais pas* 'don't know' and (*ça*) *c'est DP/Adj* 'this is DP/Adj', and once *moi j'ai une rose* 'me I have a rose'. As for Eduard, who communicates surprisingly well after only 5 months of exposure to French (52 utterances containing a verbal element), he also relies mostly on (*ça*) *c'est DP/Adj* 'this is DP/Adj' patterns; he also produces one possessive expression similar to the one by Ina (4a) and three thematic verbs.

- (4) a. moi j'ai du chocolat
me I have of chocolate
'I have some chocolate'
- b. et la va une (X) et un petit tour
and there goes a (X) and a little tower
'and there goes a (X) and a little tower'
- c. c'est mang[e] de chocolat
this.is eat-NON-FINITE of chocolate
'this one eats chocolate'
- d. souffler (= souffler) comme ça
blow-NON-FINITE like this
'blow like this'

Example (4c) shows that the (*ça*) *c'est* pattern serves not only to describe objects but rather as a general purpose formulaic construction. In fact, these data suggest that neither of the two children is able to use finite forms productively. Note that the only SCL appears in the *moi j'ai* construction of each child.

The children in Groups B and C too all make extensive use of formulaic expressions. Since these are likely to represent rote-learned chunks, they will be excluded from the following counts which are intended to reveal the productive use of finite constructions. The expressions not included in the analysis are the following: (*je*) *sais (pas)*, (*ça*) *c'est DP/Adj*, *il/c'est (pas) X*, *est-ce que c'est*, *qui est*, *ça va*, *il y a (pas)*.

Table 6. Verbal expressions

Name	Total [†]	SCL + V _{fin}	SCL + V _{inf}	SCL + Aux/Mod	Pron + V	DP + V	Aux/Mod + V
Martin	29	10	–	–	–	–	–
Willi	26	6	1	1	–	–	3 (*2)
Lars	21	4	–	2	–	–	2
Lara	43	2	1	3	5 (2 inf)	–	2 (*2)
Ludw.	14	–	2	1	3	1	1 (*1)
Florian	45	18	–	20	4	1	18
Nicole	34	4	–	10	1	1	9
Klaus	60	6	2	4	–	–	–
Jeremie	80	24	3	10	–	1	13
Peer	15	1	1	1	5 (2 inf)	6 (1 inf)	3

[†] Number of clauses (tokens) containing a verbal element, including possibly rote-learned ones; V: thematic verbs; *Pron + V*: full pronoun preceding a finite or non-finite (in brackets) verb; *Aux/Mod + V*: auxiliary + past participle and modal + infinitival verb, in brackets: number of tokens out of the total given, where the V appears in a finite form. The sum of all figures may exceed the total in the first column, since auxiliaries and modals may be counted twice as SCL + Aux/Mod and as Aux/Mod + V.

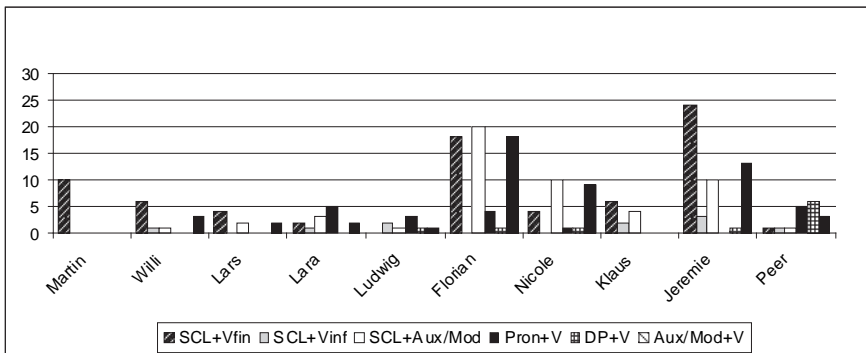


Figure 3. Verbal expressions

Table 6 and Figure 3 exhibit the use of constructions containing verbal elements by the children of Groups B and C.

The ten children whose acquisition of French is examined here exhibit a considerable amount of variability not only in how many French utterances they produce but also with respect to the grammatical knowledge which these reflect. Interestingly enough, this variability with respect to the acquisition of finite forms is more important across individuals within each group than between the groups. Most of the children nevertheless seem to use finite forms productively, as opposed to the Group A children. This assessment is based mainly on the fact that

finite verbs appear in the contexts where they are required by the target norm. Moreover, these learners use at least two distinct subject clitics with thematic verbs (the SCL attested in this corpus are *je, il, elle, on*). This is true for all children except for Peer who only combines *on* with thematic verbs and once combines *elle* with an auxiliary. The fact that SCL are used productively does not necessarily mean, however, that they are correctly analyzed as agreement markers. If this were the case, one would expect to find at least some examples of clitic doubling, and SCL should never be combined with non-finite verb forms. In Group B, clitic doubling only appears in the speech of Lars, if we ignore formulaic *moi je sais (pas)* 'I (don't) know'. In Group C it is attested in the recordings of all children, except for Peer. As for the combination of SCL with non-finite verbs, it emerges in the speech of a surprising number of 6 out of 10 children. Although it does not happen frequently, as is shown by Table 6, its significance becomes apparent if it is put in relation with the correct use of SCL with finite thematic verbs (Lara 1/3, Ludwig 2/2, Willi 1/7, Klaus 2/8, Jeremie 3/27, and Peer 1 of a total of 2).

Applying the criteria – (1) distribution of finite and non finite-forms in appropriate contexts, (2) use of at least two different SCL with thematic verbs, (3) clitic doubling, and (4) SCL only with finite verb forms – I conclude that at least three of these children have not yet successfully acquired finiteness, and certainly not the clitic nature of subject clitic pronouns, namely Lara, Ludwig and Peer. This conclusion is confirmed if we apply two further criteria: (5) the combination of two finite verbs in complex verb groups (Lara, Ludwig), e.g. (*j'ai pas connais* 'I have not know +1st sg', Lara; *mon papa fait joue au football* 'my dad makes plays soccer', Ludwig), (6) the use of non-finite V with full subject pronouns (Lara, Peer), e.g. *moi pas dire* 'me not say (non-finite)' (Lara), or with nominal subjects (Peer), e.g. *la clé ferm[e] une porte* 'the key lock (non-finite) a door' (Peer). In fact, Peer almost exclusively uses nominal expressions or full pronouns as subjects. Although this occurs in (2)L1, too, see Bonnesen (2004), the placement of French non-clitic subjects in preverbal position adjacent to the verb is typical for adult L2 learners. Let me point out again that the observed combination of two finite verbs as well as SCL + non-finite V constructions are not found in (2)L1 development, but they do occur in adult L2. Examples of the former kind are provided by Rieckborn (2005):

- (5) a. *j'ai eh achète le achète le le film* (8th month of exposure)
 I have buy the buy the the film
 'I bought the film'
- b. *ma père il – il est vont ici* (13th month of exposure)
 my-FEM father he he is go-3rd PL
 'my father came here'

For three other children in this study, Willi, Klaus and Jeremie, the picture resulting from the application of these five criteria is somewhat blurred. It reveals that they too encounter difficulties, although they have been more successful than the cases just discussed. Willi does not use clitic doubling; once he uses a SCL with a non-finite verb, and he produces one construction combining two finite verbs, *on va chercher* 'we go looks (for something)'. SCL + non-finite V constructions also appear in the data by Klaus (2) and Jeremie (3). They appear to have acquired finiteness, but they apparently do not analyze French weak subject pronouns as clitics.

3.4 Summary and discussion

In sum, then, this analysis of data from children's successive acquisition of two languages has revealed a number of properties of this type of acquisition which, taken together I contend, justify its characterization as an instance of second language acquisition. A first observation is that these recordings exhibit a considerable amount of variation across individuals, even within groups of learners defined in terms of length of exposure to the second language. This remark also refers to the fact that a relatively large group of children did not speak the L2 at all although many of them interacted with the interviewers and quite obviously comprehended what was said to them. Later interviews will hopefully reveal whether this should be interpreted as a "silent period" of L2 acquisition. A second point concerns the fact that all the children whose language use has been analyzed here rely quite heavily, albeit to a variable degree, on routine formulae which appear to be rote-learned and which allow them to communicate more efficiently with limited linguistic means, especially when they creatively extend the usage of this routines, as is illustrated by example (4c), above.

Focusing on the grammatical phenomenon investigated here, the acquisition of finiteness, a first observation is that, not surprisingly, children who have been exposed to French for approximately five months do not yet use finite forms productively. Only auxiliaries and other irregular verbs, e.g. *va* 'goes' appear as finite forms which are arguably rote-learned.

Approximately one year later most children acquired some forms and functions of finite expressions, although they still struggle with specific properties of the target grammar. Interestingly, hardly any examples were found which could arguably be analyzed as root (optional) infinitives. Only two of the children, Lara and Peer, occasionally combine a non-clitic pronoun or a nominal subject with an infinitival verb form. On the other hand, six of the ten children combine SCL with non-finite verb forms, a finding which I consider of specific importance for the

current debate since it suggests that these children behave like adult L2 learners, whereas constructions of this sort are normally not found in monolingual or bilingual first language development. This confirms the result of the cross-sectional study discussed by Stöber (2004). Importantly, similar results have also been obtained by researchers investigating adult L2 acquisition of French, e.g. Granfeldt & Schlyter (2004) studying adult Swedish learners of French in comparison with Swedish-French 2L1 children. They discuss the acquisition of SCL, OCL and determiners, all three analyzed as clitic elements in the native target grammar. Their hypothesis is that adult L2 learners initially do not cliticize subject and object pronouns but treat them as XPs at spell-out. 2L1 children, on the other hand, analyze them as X^0 heads from early on; Granfeldt & Schlyter (2004: 345). This analysis is in accordance with the data from those children in our corpus who combine SCL with non-finite verb forms. In fact, under this analysis, constructions of this type could perhaps be interpreted as root infinitives, after all.

Another property of the language of cL2 learners which brings this type of acquisition closer to aL2 than to first language development is the combination of two finite verbs rather than combining finite elements with non-finite thematic verbs. No such constructions are attested in our 2L1 corpus, nor have they, to my knowledge, been reported for L1 children.

From these and similar observations one can draw the conclusion that the acquisition of verb morphology seems to represent a specific problem for cL2 learners. In French, this implies the misanalysis of subject clitics as free morphemes. As mentioned at the beginning of 3.2, above, it does not matter at this point whether they are analyzed as affixes or as clitics; what matters is that in (2)L1 and in adult colloquial French, these elements undoubtedly function as agreement markers which enter into a close relationship with the finite verb and which are never combined with non-finite verb forms. Child L2 learners, however, make precisely this combination, arguably analyzing subject clitics as free morphemes. Irrespective of the details of the grammatical analysis, cL2 learners thus exhibit types of clitic usage and of inflectional morphemes which are not attested in (2)L1 data but in adult L2 interlanguage. This is in line with previously obtained results according to which the acquisition of bound morphology causes particular problems for adult L2 learners, e.g. Wode (1981), Zobl & Licerias (1994), Parodi (1998: 144), Herschensohn (2001), or Parodi, Schwartz & Clahsen (2004). I hasten to add that this hypothesis, assuming it to be further corroborated, does not necessarily mean that cL2 resembles aL2 across-the-board. Rather, as has been suggested by Schwartz (2004), it is possible, in principle, that cL2 is closer to aL2 in some aspects of grammatical learning, while it resembles (2)L1 development in other respects. I want to emphasize, however, that according to the findings presented here and contrary to

Schwartz (2004) it is precisely in the morphological domain that child L2 is like aL2 and distinct from (2)L1.

In fact, word order appears to be less of a problem for cL2 than verb morphology. Loewe (2004) reports that in the cross-sectional corpus, placement of French verbs with respect to the negator or adverbs always conforms to the target norm. Examining the speech of the children studied here, one finds indeed that word order appears not to represent a major acquisitional problem, although some errors do occur. Noun – adjective order, for example, always conforms to the French target norm, even in the data from the children in Group A. In other words, there is no evidence of transfer of German prenominal adjective placement. What is of more importance in the present context, however, is the position of the finite verb. In French, movement of the finite element out of VP into the head of a functional category (I or T) is frequently a string vacuous operation. Only when it raises above an adverb or the negative *pas* does this operation become visible in surface order. Early examples of this type exist even in learners of Group A, but these are instances of *je sais pas* which have been qualified as rote-learned strings. Thus, although no word order errors are found, there is no unambiguous evidence for finite verb movement, at this point, but certainly in groups B and C where finite verbs consistently precede *pas*, as is illustrated by the examples from Martin in (6).

- (6) a. il mange pas les gâteaux
he eats not the cakes
'he doesn't eat the cakes'
b. il est pas une canard
he is not a-FEM duck
'he is not a duck'

One child Lara, however, places the negator in preverbal position. Only in utterances which have been classified as formulaic expressions (7a–b) does she use the target word order. Note that the negative element precedes finite (7c–d) as well as non-finite (7e) verbs, and even the subject in formulaic expressions as in (7f).

- (7) a. je sais pas
I know not
'I don't know'
b. moi c'est pas ça
me that is not that
'me that's not that'
c. moi pas connais ça
me not know (finite) that
'I don't know that'

- d. moi aussi pas connais ça
 me too not know (FINITE) that
 'I don't know that either'
- e. moi pas dire
 me not say (NON-FINITE)
 'I don't say x'
- f. je crois mais pas je sais
 I believe but not I know
 'I believe so, but I don't know'

This pattern is well-known from adult L2 acquisition where it has been argued to represent a strategy used by some learners who place the negator immediately in front of the element to be negated (NEG + X); see Meisel (1997). These examples can be interpreted as constituting further evidence in support of our claim that this child has not yet acquired finiteness. They certainly show that at least some child learners resort to strategies attested in aL2 but not in (2)L1 acquisition.

In this connection it is interesting to observe something which does *not* happen – these children do not transfer syntactic knowledge from their L1, neither in adjective – noun nor in negative constructions. And although gender errors occur frequently in these data, they cannot be explained as resulting from transfer either. Let me add that I have not found a single example of transfer of German verb-second or OV order in this corpus, either in main clauses or in relative clauses (Martin, Nicole). This lack of evidence for 'full transfer' could be construed as representing a difference between cL2 and aL2 acquisition. It is, however, far from obvious that such massive transfer during early phases of acquisition actually happens in aL2 production, cf. Möhring (2005). This debate cannot be pursued here, but clarification of this issue is necessary in order to determine whether child L2 learners are indeed closer to L1 than to adult L2 learner in acquiring syntax.

4. Child second language acquisition: Results and open questions

This report on work in progress investigating successive acquisition of languages in early childhood has demonstrated, I believe, that this type of research can make a significant contribution to our understanding of language acquisition. At the same time, it suggests quite strongly that much more research is needed and that particular caution is warranted when drawing conclusions from the research results currently available.

As for the results of the present study, I believe that it lends support to the hypothesis that qualitative changes happen significantly earlier than is generally

assumed, namely during the age range between approximately 3 and 4 years of age. Moreover, these changes are of such a nature as to justify the tentative conclusion that child L2 acquisition resembles adult L2 acquisition more than (2)L1 development, at least in some areas of grammatical development. In the preceding session, I summarized a number of points, all suggesting that child L2 acquisition shares important characteristics with adult L2. In fact, it aligns with aL2 in all the properties listed in Section 1 above, distinguishing L1 and L2 at the initial state, in the course of acquisition pursued, and with respect to variability as opposed to L1 uniformity. Concerning the *initial state*, early cL2 utterances can be relatively long and probably also complex, as is evidenced by some of the constructions used alongside those which have been interpreted as rote-learned. This is shown by examples such as those in (4) which appear to be fairly complex and which can contain functional categories, an observation already made by Grondin and White (1996), Parodi (1998), and others. With respect to the *course of acquisition*, the discussion of constructions not attested in (2)L1 but in aL2 demonstrates that L2 learners acquire certain types of grammatical knowledge later than L1 children – if at all. As for L1 type *uniformity*, it has already been pointed out in Section 3.4, that cL2 learners indeed exhibit a significant range of variation across individuals as well as in the use of some constructions by one individual.

Turning to the remaining properties which have been argued to constitute defining characteristics of L2, distinguishing it from (2)L1, it is, for obvious reasons, not possible to deduce claims either in favor or against the issue of *ultimate attainment* from a corpus containing data only from early phases of acquisition. But a short comment is possible with reference to the *rate of acquisition*. We have seen that 3–5 months of exposure to the target language appear not to be sufficient for acquiring what it takes to productively use finite expressions. More interestingly, a comparison of groups B and C (time of exposure 1;04 and 2;04, respectively), reveals no clear effect of length of exposure. Note that other grammatical properties do distinguish the two groups. Complex verb constructions, for example, are hardly used by Group B children. In 5 out of altogether 8 examples in this corpus, the thematic verb appears (incorrectly) in finite form. All Group C children except Klaus, on the other hand, do use constructions of this type. Another feature differentiating these two groups is the use of object clitics (OCL). No child in group B uses them, whereas Peer is the only one in Group C who does not use them. Thus, although a certain amount of exposure to the L1 trivially represents a necessary condition for grammatical acquisition, a more extended time of exposure does not necessarily lead to success. And a protracted rate of acquisition is one of the features characterizing L2 acquisition.

If some questions have been answered, at least partially and tentatively, further questions emerge as a consequence of the results obtained so far. They con-

cern, for example, one of the main issues discussed here, age of onset of acquisition. Assuming that the age range between approximately 3 and 4 years indeed represents a period of significant changes, we have not found a clear effect of age within this age range, i.e. AO between age 2;11 and 3;07. It is nevertheless worth noting that the more successful learners in Groups B and C are the ones who were exposed to French at an earlier age, i.e. Martin (AO 3;01) in Group B and Florian (3;04) and Nicole (3;05) in Group C, whereas the least successful ones are those who started later, i.e. Lara (3;06) and Ludwig (3;06) in Group B and Peer (3;07) in Group C. Whether this is more than a coincidence remains to be seen.

Moreover, we know almost nothing about successive acquisition of languages during the first three years of life. I have argued that onset of acquisition before approximately age 4 is a necessary requirement for native L1 development to be possible; see Meisel (to appear). This does not mean, however, that it is also a sufficient condition. In other words, we cannot rule out the possibility that at least some of the phenomena characterizing L2 acquisition will also emerge in the speech of children who acquire their languages successively rather than simultaneously before age 3. If this is not the case, i.e. if successive acquisition during this early age span is not qualitatively different from (2)L1, AO after 3 is clearly the decisive factor shaping cL2. If, however, early successive acquisition resembles cL2 at least partially, this may mean that age effects play a role even before age 3, as has been suggested by Hyltenstam & Abrahamsson (2003).

I should add that if age of onset can be established as a major or decisive factor shaping early successive acquisition of languages, this, of course, does not exclude the possibility of other types of determining variables. A further, potentially crucial, factor distinguishing types of acquisition is the role of previously acquired linguistic knowledge. Whereas aL2 learners have at their disposal the complete and stabilized L1 system, L1 knowledge in cL2 learners is still incomplete and probably instable. 2L1 development is again distinct from both other types, but it arguably resembles cL2 more than aL2 in that knowledge of language L_a is, by definition, neither complete nor stabilized during the process of simultaneously acquiring L_b . In what way previously acquired knowledge might influence the development of grammars in successively acquired languages is still largely a matter of speculation. Even in the extensively studied case of aL2, the importance of grammatical transfer is a highly controversial issue; cf. Möhring (2005). As for cL2, one might predict stronger effects of cross-linguistic influence than in 2L1 (see Meisel 2007), but to my knowledge, empirical support for such a prediction is not yet available. The expectation that acquired knowledge needs to be stabilized over time in order to become less vulnerable and less susceptible to cross-linguistic influence, however, is supported by findings showing that in language attrition, grammatical knowledge is more likely to attrite if contact with a language

ends at around age 10–11 or earlier, although it remains to be determined whether this indeed affects the representation of grammatical knowledge or rather the speaker's ability to control this knowledge in use; see Flores (2007). At any rate, even if the exact roles of such factors are not known, there can be no doubt that “degree of stability and completeness of the L1 and quantity/quality of exposure to both languages” need to be investigated in more depth, as was suggested by an anonymous reviewer.

With respect to the latter point, quantity and quality of the available input for cL2 learners, the data analyzed in this study are drawn from a corpus where the L2 (French) is acquired naturalistically in an institutional setting. Except for weekends, the children are exposed to the L2 for approximately six hours per day, in a largely French-dominant environment, and this language is not the object of instruction, during the first years; see 3.1. Thus, for all we know, they do not seem to fare much worse – at least with respect to quantity of exposure – than 2L1 children acquiring their languages in families where each parent speaks a different language. And it is quite likely that they fare better than immigrant children growing up in predominantly monolingual families. Although I do not see why institutional settings like the one of the study presented here, should be expected to result in differences in the initial state of grammatical knowledge as well as in the course of acquisition, as compared to naturalistic L2 acquisition in non-institutional settings, as was suggested by another anonymous reviewer, I do acknowledge the importance of taking into account the type of setting in which cL2 happens as a potentially important factor influencing the nature of the acquisitional type. Especially in the case of immigrant children raised in virtually monolingual family settings and who are said to be exposed to the societal languages outside the family only, it will be crucial to determine quantity and quality of input in the societal language during the first years, in order to decide on what is their age of onset of L2 acquisition.

This brings me back to the role of age of onset in cL2 acquisition. In this study I have tried to explore the hypothesis according to which delayed AO results in modifications of the Language Making Capacity. But a later age of onset will result in further effects which may also alter the process of L2 acquisition. Quite obviously, older individuals can resort to more mature cognitive capacities, and although this is likely to be advantageous in some areas, e.g. in lexical learning, it may result in increased competition of domain-specific and general cognitive resources, ultimately causing problems in grammatical development; see Felix (1984) who first suggested a maturational explanation of L1-L2 differences along this line of argument. Moreover, if processing capacities and strategies change in the course of development, as is suggested by recent research results, see Clahsen and Felser (2006), some of the observed particularities of cL2 may, in fact, be due

to these changes rather than to modifications of the LMC. More research, including experimental studies, is needed in order to tease apart the different effects which age of onset can possibly exert on successive language acquisition.

To sum up, then, the results obtained in the present study suggest that successive acquisition of languages represents an instance of second language acquisition if the age of onset of acquisition happens during the age span between 3 and 4 or later. In pursuing this issue, my focus has been on differences between (2)L1 and cL2 and on similarities between cL2 and aL2. Undoubtedly, cL2 and aL2 also differ in a number of respects, some of which are likely to bring cL2 closer to (2)L1. To mention a possible example, many or most child L2 learners seem to acquire the target language at a faster rate than adult learners; see Rothweiler (2006) and Thoma & Tracy (2006). A major task for future research is, I believe, to find out whether, in addition to such quantitative similarities, cL2 also shares qualitative commonalities with (2)L1 development. In order to achieve this goal and at the same time gain a deeper understanding of the underlying acquisition mechanisms, it is necessary to develop a theoretically founded account which explains why certain properties of developing grammars are subject to maturational changes whereas others are not.

The need for an explanatory approach becomes apparent in the discussion concerning the role of word order as opposed to inflectional morphology as possible candidates for phenomena causing major acquisition problems, see Section 3.4, above. A number of predictions have, in fact, been formulated in the still scarce literature on successive language acquisition in childhood, but to my understanding, principled reasons for specific claims have not been offered. Schwartz (2004), for example, predicts that cL2 learners will behave like aL2 and differently from L1 children in the acquisition of syntax, whereas in inflectional morphology she expects cL2 to be distinct from L2 and similar to L1. The findings reported here, however, suggest otherwise. Although more data and further analyses are needed, it is noteworthy that the children in our study show no sign indicating major problems in acquiring French word order. Only one child Lara used target deviant order in negative constructions much like adult L2 learner, but even in this case, it is not obvious whether this should be interpreted as a failure of verb movement. In fact, a number of recent studies arrive at the conclusion that OV/VO order, V2 phenomena, etc., are acquired fast and apparently without much effort; see Blom (to appear), for an experimental study of Dutch cL2 learners (AO 4 years), Rothweiler (2006), analyzing the speech of three Turkish children acquiring German (AO 2;10–4;05), Thoma & Tracy (2006) studying four cL2 learner of German (L1 Arabic, Russian, Turkish) (AO 3;0–3;07), as well as Haznedar (2003) and Haznedar & Schwartz (1997) investigating the acquisition of English by a Turkish boy (AO 4;03).

With respect to the acquisition of inflectional morphology by cL2 learners, the findings of the present study are apparently in line with results obtained by Haznedar (2003), according to which verb morphology in the language of her subject was still deficient at a time when *wh*-questions and complement clauses were already used correctly. In accordance with Haznedar & Schwartz (1997), she suggests that missing verb inflection is not an indication of a deficiency in syntax, rather, it is interpreted as a surface phenomenon (Missing Surface Inflection Hypothesis); see Prévost & White (2000). Irrespective of whether one agrees with this interpretation, what matters here is that according to these authors non-finite constructions are not instances of L1-like optional (root) infinitives and that cL2 thus differs in this respect from L1. Interestingly, Belletti & Hamann (2004), analyzing the acquisition of French by one L1 Italian (AO 2;04) and one L1 German (AO 2;08) child, arrive at the same conclusion despite the early age of exposure to the target language. An opposing view is advocated by Prévost (2004) on the basis of an analysis of two English speaking children (AO 4;05 and 4;09) acquiring French, correlating occurrences of semantic verb types (eventive *versus* non-eventive) and the expression of modality with the children's use of finite and non-finite verb forms. Just as Prévost & White (2000), he concludes that non-finite forms are true infinitives, not merely instances of missing surface inflection and that cL2 resembles L1 in that root infinitives lack functional categories, as opposed to aL2 where he believes this is not the case. I should add that Rothweiler (2006) and Blom (to appear) also analyze non-finite forms in cL2 main clauses as root infinitives, the latter observing that they appear more frequently in cL2 than in L1.

At this point, it is not possible to resolve the contradictions in the interpretation of non-finite verb forms in cL2 acquisition, let alone to draw firm conclusions concerning the question of whether inflectional morphology indeed constitutes one of the grammatical domains distinguishing L1 from child and adult L2 acquisition. I believe, however, that this hypothesis should guide further research. This tentative conclusion is corroborated by the fact that virtually all studies investigating these phenomena did find differences between L1 and cL2 learners, even those researchers who do not want to interpret them as evidence for a qualitative distinction between types of acquisition, but rather as quantitative differences. Blom (to appear), for example, finds that the *-en* suffix (marking infinitival as well as plural forms) is used in place of the respective target forms in cL2 Dutch clearly more often than in L1. Perhaps more importantly, both Rothweiler (2006) and Thoma & Tracy (2006) observe that non-finite verbs are sometimes placed in V2 position by cL2 learners of German, a usage blatantly violating the target norm and never attested in German L1 acquisition, except for a few isolated examples in the speech of some individuals. Finally, it should be noted that Prévost (2004: 326f.) observed that the developmental pattern of his cL2 learners is

not the same as the one detected for French L1 acquisition by Ferdinand (1996). Moreover, at least one child uses subject clitics together with non-finite verbs (see Prévost 2004: 316), i.e. precisely the type of construction which has been argued to constitute evidence for a qualitative difference between L1 and L2 acquisition.

This, finally, brings me back to a point which I made in sections 1 and 3 above and which, I contend, is essential to detecting fundamental differences between various types of acquisition, namely that we should search for qualitative differences rather than limiting these comparisons to quantitative properties of learner languages, as important as these may be. As mentioned in Section 2, above, language acquisition continues, of course, to be possible beyond the critical period. We should therefore expect to find, for every grammatical property of the target language, learners who are able to use it correctly. Consequently, quantitative similarities referring to (superficially) correct usage reveal only the kind of proficiency attainable, particularly in the case of cL2 learners, if it is true that they proceed towards the target considerably faster than adult learners. What matters, however, is whether cL2 acquisition differs from (2)L1 in the kind of knowledge acquired and in the process by which it is attained. As a consequence, it is crucial to search for phenomena which exist, at least temporarily, in one but not in the other type of acquisition, irrespective of their frequency. This is why I focused on SCL combined with non-finite verbs in the acquisition of French. In German, placement of non-finite verbs in V2 position can possibly serve a similar function, i.e. in a kind of litmus test.

Admittedly, defining distinct types of acquisition in term of specific grammatical characteristics still does not constitute an explanation of why just these aspects of grammar are subject to maturational changes, but insights of this type should enable us to come closer to a principled account of this phenomenon.

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PART II

The acquisition of D-elements

Misrepresentation of Dutch neuter gender in older bilingual children?

Susanne Brouwer, Leonie Cornips and Aafke Hulk

Max Planck Institute for Psycholinguistics, Nijmegen /

Meertens Institute (KNAW), Amsterdam / University of Amsterdam

Previous research revealed that monolingual children between 11- and 13-year-old show a target-like production with respect to gender assignment of definite determiners whereas this is not the case for bilingual children who massively overgeneralize *de*. In order to further investigate this overgeneralization, we designed an experimental decision task, “tapping the knowledge” of both monolingual and bilingual children. Our results show that bilinguals fail to represent abstract gender and that *de* and *het* are in free variation. The difference between the production and comprehension data could suggest that bilinguals have some awareness of *de* and *het* being gender markers. In that case, the overgeneralization in the production data is possibly not a grammatical phenomenon, but more likely a speech production strategy.

1. Introduction

Unlike English, Dutch draws a distinction between common and neuter nouns. Grammatical gender is reflected in a number of agreeing elements accompanying the noun or referring to it. Definite determiners are a clear case: singular definite determiners vary morphologically according to the gender of the noun, as illustrated in Table 1 below. Nouns that take the singular definite determiner *de*, such as *de hond* ‘the dog’ are called *de*-words and can be referred to as being common gender. Nouns that take the singular definite determiner *het*, such as *het schaap* ‘the sheep’, are called *het*-words, and can be referred to as having neuter gender.¹

1. Similar to definite determiners, demonstrative determiners vary morphologically according to the gender of the accompanying noun in the singular. Further, attributive adjective agreement always requires a schwa (+e), except with nouns that are [indefinite, singular, neuter].

Table 1. Dutch morphology of definite determiners

Gender of noun	Definite determiners	
	Singular	Plural
Common	de	de
Neuter	het	de

Spontaneous as well as experimental production data regarding the acquisition of the gender of definite determiners in monolingual Dutch child language reveals that children until the age of six have serious problems with neuter gender (cf. Bol & Kuiken 1988; De Houwer & Gillis 1998). Furthermore, bilingual children who are simultaneously acquiring two languages from birth (Dutch and another one) have been shown to present even more problems with the acquisition of neuter gender, and during a longer time irrespective of their other language. In previous papers, we have pointed out that the Dutch two-gender system is not very salient for learners of Dutch because there is a lot of syncretism in the paradigms. This might be one of the reasons why *het* is problematic (Hulk & Cornips 2006a, b; Cornips et al. 2006).

The question that arises is whether these problems are restricted to (a mapping problem involving) ‘production’ strategies or whether they reflect a lack of knowledge. The aim of this paper is to get more insight in this question. We designed an experimental decision task that should provide us with more information about knowledge of the gender of the definite determiner in Dutch. Our subjects are monolingual and bilingual children between 11 and 13 years old. We will consider two hypotheses that arise from the production data of bilingual children (Blom, Polisenská, & Weerman 2006; Hulk & Cornips 2006a, b). First, if bilingual children have a mapping problem, but not a representational problem then they will differ from monolinguals in speech, overgeneralising one of the article forms as a default. By contrast, in a decision task (which appears to involve comprehension rather than production) they should not differ from monolingual peers in their response patterns.

Second, if bilingual children have a representational problem and not a mapping problem, their responses should differ from monolinguals both in speech and in the decision task. Our research question is whether we find support for either one of these hypotheses.

The paper is organized as follows. In the next section, we briefly review relevant production data for monolingual and bilingual children from the literature. Based on the bilingual production results, two explanations are put forward. These hypotheses attempt to find an answer to the question of what knowledge bilingual children possess about the gender of the Dutch definite determiner. In

Section 3, a new experimental design, eliciting both accuracy and response time data, is proposed to “tap the knowledge” of bilingual subjects in the age range between 11 and 13 years old. Section 4 presents the accuracy and response time data for the two language groups. Finally, Section 5 summarizes the main points and gives new interpretations regarding the gender acquisition of definite determiners in bilingual children.

2. Production data

Production data have revealed that monolingual acquisition of neuter gender of the Dutch definite determiner is a long-lasting process in the sense that children do not acquire a target grammar until a very advanced age (cf. Bol & Kuiken 1988; De Houwer & Gillis 1998), to be more specific, not before the age of six (cf. Van der Velde 2002, 2004). Interestingly, monolingual Dutch children clearly differ from their international peers since they overgeneralize in one direction only and adopt *de* as compatible with both neuter and common nouns. Thus, monolinguals overgeneralize the definite determiner *de*, as required by common nouns in adult grammar (see Table 1 in Section 1), and use it incorrectly with neuter nouns that require the definite determiner *het*.

It is expected that when monolingual children have problems acquiring a certain phenomenon, we can be sure that bilingual children encounter even larger problems. Indeed, results of a picture description task by Blom et al. (2006) (see also Hulk & Cornips 2006a, b for younger bilingual i.e. Turkish and Moroccan children and Cornips et al. 2006) for older Turkish and Moroccan children demonstrate that both age groups show severe difficulties regarding the acquisition of neuter gender in their elicited production of the definite determiner, as illustrated in Tables 2 and 3 respectively.

First, the monolingual children between 3 and 5 years old show overgeneralization of *de* in one direction (*de* is used with *het*-nouns in 52% of the cases). The older monolingual children between 11 and 13 years, however, produce *de* almost target-like. Second, the youngest bilingual children also use *de* as compatible with both neuter (60%) and common nouns (63,5%) (see Table 2). The older bilingual children differ from the older monolingual children in that the former still overgeneralize *de* with neuter nouns although to a slightly lesser extent (48,9%).²

2. We will discuss the production of *het* below.

Table 2. Monolingual and bilingual results for the determiner *de/het*, age between 3–5 years (target in bold); taken from Blom, Polisenská & Weerman (2006)

	Monolinguals (N = 39; 3–5 yr)		Bilinguals (N = 30; 5–8 yr)	
	de	het	de	het
Neuter	52%	44%	60%	4%
Common	88.5%	6.5%	63.5%	3.5%

Table 3. Monolingual and bilingual results for the determiner *de/het*, age between 10;5 and 12;11 years (target in bold); taken from Cornips et al. (2006)

	Monolinguals (N = 4; 10;5–12;11 yr)		Bilinguals (N = 24; 10;5–12;11 yr)	
	de	het	de	het
Neuter	18.7%	68.8%	48.9%	42%
	9/48	33/48	141/288	121/288
Common	83.3%	4.2%	68.7%	23.6%
	40/48	2/48	198/288	68/288

Taken together, in contrast to the monolingual children, the bilingual children still largely overgeneralize *de* when they are between 10 and 13 years old.³

3. Present study

3.1 Subjects

In this experiment a total of 42 children in the age range between 11 and 13 years old participated. There were two language groups: monolingual ($n = 18$) and bilingual ($n = 24$) children.⁴ The subjects were recruited from four different primary schools in the east of the Netherlands. The bilingual subjects all belong to the same group level common in the school system and were selected by the teachers on the basis of their proficiency in Dutch.

3. In this article we will leave aside the question which theoretical explanation can be offered for the overgeneralization of *de*, but see the conclusion section for some speculative suggestions.

4. In this study we did not consider the possible influence of the other languages of the bilingual children. However, in our production experiment we did take this factor into account. There we found no influence of the other language (Hulk & Cornips 2006a, b; Cornips et al. 2006).

Table 4. Overview of experimental items

Gender of noun	Presentation			
	Correct		Incorrect	
Common	Ik zie <i>de</i> hond (12)		*Ik zie <i>het</i> hond (12)	
	'I see the dog' CorrectDE		*'I see the dog' IncorrectHET	
Neuter	Ik zie <i>het</i> schaap (12)		*Ik zie <i>de</i> schaap (12)	
	'I see the sheep' CorrectHET		*'I see the sheep' IncorrectDE	

3.2 Experimental design

An experimental design is set up to “tap the knowledge” in monolingual and bilingual children with respect to their gender system of definite determiners. Spoken items are paired with an identical image on the screen of a laptop monitor. The subjects have to decide as soon as possible whether the spoken item is correct or incorrect in Dutch.

They responded by pressing buttons on a button box. One button had a happy smiley face that the subjects pressed to indicate they believed the sentence to be correct Dutch, and another button had a sad smiley face that the subjects pressed if they believed the sentence to be incorrect Dutch.

The experiment is preceded by a practice sequence containing 4 spoken examples. Each subject receives this warm-up trial. After the practice session, two lists each with 24 spoken experimental items, are offered (see Table 4).⁵ Every experimental item consists of correct (CorrectDE: *Ik zie de hond* ‘I see the dog; and CorrectHET: *Ik zie het schaap* ‘I see the sheep’) and incorrect presentations (IncorrectHET: **Ik zie het hond* ‘*I see the dog; and IncorrectDE: **Ik zie de schaap* ‘*I see the sheep’). In other words, each presented noun is paired with a correct and an incorrect definite determiner. Moreover, a distinction is made between 12 common and 12 neuter nouns.⁶ All *de*- and *het*-words are unambiguous.

In addition to the 4 examples and 24 experimental items, 4 spoken filler items are used. The fillers consisted of a correct (e.g. *Ik zie vandaag een kuiken*, ‘I see today a chicken’) and an incorrect (e.g. **Vandaag ik zie een kuiken*, ‘*Today I see a chicken’) word order.

5. The items resembled the ones used in the production study by Cornips et al. (2006).

6. Each gender type was also divided in 8 inanimate and 4 animate nouns. However, this article will not consider the role of animacy.

3.3 Data analysis

This experiment yielded accuracy rates and response times as dependent variables. Language Group (monolingual versus bilingual children) was a between-subjects group factor. Presentation (correct versus incorrect items) was a within-language group factor. As illustrated in Table 4, in correct presentations (i.e. CorrectDE and CorrectHET), the determiner corresponds correctly to the gender of the noun, whereas in incorrect presentations (i.e. IncorrectDE and IncorrectHET), the determiner doesn't match with the gender of the noun. The factor Gender of noun (common *de* versus neuter *het*) varied between items.

First, accuracy rates were analysed using a MANOVA to examine differences between the monolinguals and bilinguals on the different item categories, i.e. CorrectDE; CorrectHET; IncorrectDE; and IncorrectHET (see §4.2). Secondly, a Repeated Measures analysis was conducted to study response time differences between the Language Groups on the different item categories (see §4.4, Baarda & de Goede 1999; de Vocht 2005).

It is important to keep in mind that we cannot be sure what we are measuring when considering accuracy rates for the presented *correct* items. Hence, it might be the case that what we take as correct knowledge about the gender specification is due to a yes-bias, that is to say, the children prefer to press the 'smiley'- or 'yes-button' rather than the 'sad'- or 'no-button'. A potential 'yes'-bias can only be excluded if the same children also reveal high scores on the 'no'-button when confronted with incorrect items. Therefore, we will first compare the 'yes' with the 'no' scores.

3.4 Predictions

We put forward the following predictions:

Monolinguals. Since previous studies have found that older monolingual children show target-like behaviour in their use of *de* and *het* in speech, this suggests that they have good knowledge of the abstract underlying gender features. It is predicted that in the present decision task they will be highly accurate in accepting grammatical items and rejecting ungrammatical items, and it is also predicted that their response times to the ungrammatical items will be slower than to the grammatical items.

Bilinguals: (1) If bilingual children have a *mapping* problem, but not a representational problem, they will not differ from monolingual peers in their response patterns in the decision task. (2) If the bilingual children *misrepresent*

the gender specification in the sense that they have *de* compatible both with common and neuter nouns, we expect them to show a lower rejection rate for incorrectDE than incorrectHET in the accuracy data. (3) If, however, they all together *fail* to represent abstract knowledge of gender features, we expect them to randomly accept/reject incorrectDE and incorrectHET.

Let us now turn to the results.

4. Results

First, an analysis of variance (ANOVA) is conducted to examine whether there are significant differences between the language groups. Secondly, a multiple analysis of variance (MANOVA) examines differences between the item categories. Finally, a T-test will check possible differences between the language groups. Several ANOVAs will be conducted to check the MANOVA (Baarda & de Goede 1999; de Vocht 2005).

4.1 Item-analysis

To start with, all *de*- and *het*-items are controlled for reliability. The Cronbach's alpha with a value of .80 or higher in Table 5 shows that the test items were very reliable.⁷

Table 5. Reliability analysis

Items	Cronbach's alpha
CorrectDE	.86
IncorrectDE	.84
CorrectHET	.83
IncorrectHET	.80

7. One of the reviewers recommended us to determine Cronbach's alpha on the separate language groups, because the bilinguals might be treating some terms aberrantly, while the monolinguals are not. This analysis showed that the bilinguals (alpha = .53) indeed performed less consistent on the accuracy items than the monolinguals (alpha = .85). However, a subject-analysis on the performance of bilingual children on presented correct versus incorrect items demonstrated that merely 25% of them showed a highly inconsistent pattern. This small group could have had an influence on the results. Clearly, more research is necessary.

Table 6. Accuracy rates (% correct) for CorrectDE and CorrectHET

Language groups	Presentation	
	CorrectDE (de hond)	CorrectHET (het schaap)
Monolinguals	92	93
Bilinguals	70	80

Table 7. Accuracy rates (% correct) for IncorrectHET and IncorrectDE

Language groups	Presentation	
	IncorrectHET (*het hond)	IncorrectDE (*de schaap)
Monolinguals	91	88
Bilinguals	40	42

4.2 Accuracy data: (in)correctDE and (in)correctHET

The results regarding the accuracy rates for the presented correct items are presented in Table 6. The monolinguals show higher accuracy rates than the bilinguals both on CorrectDE (92% versus 70%, respectively) and CorrectHET (93% versus 80%, respectively). This difference appears to be significant (CorrectDE: $p < .001$ and CorrectHET $p = .005$).

It is important to keep in mind that we cannot be sure what we are measuring in Table 6 when we consider accuracy rates for the presented *correct* items only. Hence, it might be the case that high rates are due to a preference of the children to press the ‘smiley’- or ‘yes’-button more than the ‘sad’- or ‘no’-button. A potential ‘yes’-bias can only be excluded when the same children also press the ‘no’-button. Let us therefore turn to the accuracy rates for the presented *incorrect* items.

Table 7 shows the accuracy rates for the presented incorrect items. Again, there is a difference between the monolingual and bilingual children in the accuracy rates for IncorrectHET (91% versus 40%) and IncorrectDE (88% versus 42%). This difference is also significant ($p < .001$) for both incorrect presentations.⁸

Let us turn now to the consequences of these results for our hypotheses.

4.3 What about the accuracy rates hypotheses?

As mentioned above, the monolinguals show high accuracy rates on both the acceptance of the *correct* items and the rejection of the *incorrect* items. This means

8. It must be noted that the bilinguals showed more individual variation than the monolinguals in their performance. However, this is a well known phenomenon from the literature.

they show consistent behavior. From this, it is safe to conclude that the monolinguals possess good knowledge of the Dutch gender specification.

In contrast, the bilinguals show a much higher accuracy rate on the acceptance of the presented *correct* items ('yes'-button; 70% correctDE and 80% correctHET) than on the rejection of the *incorrect* items ('no'-button; 40% incorrectHET and 42% incorrectDE). One might think that the rather high accuracy rates for the correct items in Table 6 are due to a 'yes'-bias as a task-effect. However, as pointed out by an anonymous reviewer, such a task-effect should also affect the monolinguals and this is clearly not the case.

What does this mean for our hypotheses? First, the results do not support the mapping hypothesis, in the sense that it is certainly not the case that the bilingual children possess the right knowledge of gender specification in Dutch. The accuracy rates for the incorrect items are far too low (40% incorrectHET and 42% incorrectDE). Second, the results do not support the misrepresentation hypothesis either since the bilingual children do not show a lower rejection rate for incorrectDE than for incorrectHET. On the contrary, the random acceptance/rejection rates of incorrectDE and incorrectHET presents evidence in favour of the third hypothesis, indicating failure of gender specification. The results suggest that the bilingual children fail to represent abstract gender appropriately and therefore assume that *de* and *het* are in free variation in a decision task. But, they are clearly not in free variation for the monolingual children (and they are also not in free variation for the bilinguals in production, where *de* seems to be the default).

4.4 Frequency-effect

An interesting question that arises is whether the frequency of the test item c.q. noun plays a role in its correct assignment and rejection according to grammatical gender. The 24 singular nouns presented as test items can roughly be divided into three categories according to their frequency in the Spoken Dutch Corpus e.g. nouns that are:

- i. very frequent – more than thousand tokens,
- ii. frequent – more than 100 tokens and
- iii. infrequent – less than 100 tokens (see Table 8 below).⁹

9. The Spoken Dutch Corpus is a database of contemporary standard Dutch as spoken by adults in The Netherlands and Flanders. The total number of words available is nearly 9 million (800 hours of speech). Some 3.3 million words were collected in Flanders, well over 5.6 million in The Netherlands. The corpus comprises a large number of samples of (recorded) spoken text (see <http://lands.let.kun.nl/cgn/ehome.htm>).

Table 8. The frequency of the test items according to the Spoken Dutch Corpus

Noun c.q. test item	Rank	Tokens
		> 1000
man _C	'man'	199
boek _N	'book'	351
vrouw _C	'woman'	356
jongen _C	'boy'	433
meisje _N	'girl'	638
		100–600
*hond _C	'dog'	1077
*glas _N	'glass'	1374
brood _N	'bread'	1415
*bord _N	'plate'	1561
*steen _C	'stone'	1919
paard _N	'horse'	1952
*sleutel _C	'key'	2258
schaap _N	'sheep'	2755
*pot _C	'pot'	2791
*pan _C	'pan'	3895
		< 100
*mes _N	'knife'	4074
*touw _N	'rope'	4092
*schrift _N	'notebook'	4506
*konijn _N	'rabbit'	4523
beker _C	'mug'	5971
schoen _C	'shoe'	6302
*schaar _C	'scissors'	8735
*lepel _C	'spoon'	9118
*potlood _N	'pencil'	9278

* inconsistent behavior

An item-analysis shows that overall the children give a correct response on the correct items (range: 73.8%–90.5%) whereas this is significant ($p < .000$) less so on the incorrect items (range: 50%–78.6%). Further, the most frequent nouns (> 1000) reveal a consistent pattern in the sense that by and large the children accept as much the correct items as they reject the incorrect ones (for example *de man* 'the man' and **het man* have an acceptance and rejection percentage of 85,7 and 78,6, respectively). However, 7 out of 10 nouns falling in a token range between 100 and 600 show a less consistent pattern and 7 out of 9 nouns belonging to the category infrequent nouns (less than 100) even show a very inconsistent pattern (for example, 88.1% of the children accepts the correct item *het*

paard ‘horse but only 26.2% rejects the incorrect *de paard*). The linkage between (in)frequency of the tokens and (in)consistent patterns reveal a frequency effect signalling that the bilingual acquisition of grammatical gender in Dutch is sensitive to input factors.¹⁰

5. Response time data: (in)correctDE and (in)correctHET

With respect to the response time data, if the bilingual children assume that *de* is compatible both with common and neuter nouns (misrepresentation), we expect that it will take more time to reject IncorrectDE (**de* *schaap*_N) than IncorrectHET (**het* *hond*_C). In contrast, if they have good knowledge of grammatical gender in Dutch (mapping problem), we don’t expect to find any substantial differences in response time data regarding rejecting incorrect *de* and incorrect *het* although the rejection of incorrect items will take some more time than accepting the correct presentations.

Table 9 presents the response time for the presented CorrectDE and CorrectHET items. There are no major differences between the monolinguals and bilinguals, that is, they both need the same amount of time to push the ‘yes’-button. Moreover, the monolingual and bilingual children do not differ in response times regarding *de*- and *het*-items.

Let us turn now to Table 10 showing response times for the presented IncorrectHET and IncorrectDE items.

Table 9. Response times (in ms) for CorrectDE and CorrectHET

Language groups	Presentation	
	CorrectDE (<i>de hond</i>)	CorrectHET (<i>het schaap</i>)
Monolinguals	1495	1554
Bilinguals	1584	1490

Table 10. Response times (in ms) for IncorrectHET and IncorrectDE

Language groups	Presentation	
	IncorrectHET (* <i>het hond</i>)	IncorrectDE (* <i>de schaap</i>)
Monolinguals	1585	1577
Bilinguals	1765	1640

10. All the children who display inconsistent behaviour are bilingual, none of them are monolingual.

We see that for both the monolingual and the bilingual children, it takes more time to reject the presented incorrect items (Table 10) than accepting the correct ones (Table 9) ($p < .001$).

5.1 What about the response times hypotheses?

The response times of both the monolinguals and the bilinguals confirm general psycholinguistic findings that the rejection of presented incorrect items takes longer than the acceptance of the presented correct items, although the monolinguals perform faster than the bilinguals.

Furthermore, the results in Table 10 show that it did not take the bilinguals longer to reject incorrectDE than incorrectHET, consequently there is no evidence in favor of the misrepresentation hypothesis. Indeed, it took them a bit longer to reject incorrectHET than to reject incorrectDE, suggesting at least some knowledge about grammatical gender, contrary to what we concluded on the basis of the accuracy results. Clearly, further research is necessary here.

6. Conclusion

Our starting point was that previous research revealed that monolingual children between 11 and 13 years old show a target-like production with respect to gender assignment of definite determiners whereas this is not the case for bilingual children of the same age who massively overgeneralize *de*.

In order to further investigate how to interpret this overgeneralization of *de* in the production data of bilingual children between 11 and 13 years old, we designed an experimental decision task, “tapping the knowledge” of both monolingual and bilingual children. As for what we expected to find, we formulated three hypotheses.

First, if bilingual children just have a mapping problem they will not differ from monolingual peers in their response patterns in the decision task.

Our results show that this is not the case: they reveal a significantly lower percentage of *incorrect* items than the monolinguals i.e. only 40% (vs. 90% for the monolinguals).

Second, if the bilingual children *misrepresent* the gender specification in the sense that they assume that *de* is compatible with both common and neuter nouns, we expect them to show a lower rejection rate for incorrectDE than incorrectHET.

Our results show that this is not the case either: the accuracy rates for incorrectHET and incorrectDE are 40% and 42%, respectively.

This, in fact, might support the third hypothesis, namely that they fail to represent abstract gender in their grammar and that *de* and *het* are in free variation in the decision task.

Nevertheless, with respect to the bilingual children, we attested a difference between the original production data which show a massive overgeneralization of *de* and the accuracy data which do not show such a difference between *de* and *het*. We saw, however, that the response time data did suggest some awareness of grammatical gender in the bilingual children, since they needed more time to reject incorrectHET than to reject incorrectDE. If these observations are correct and indicate that the bilingual children have some awareness of *de* and *het* being gender markers, the overgeneralization in the production data is possibly not a grammatical phenomenon, but more likely a speech production strategy.

We like to speculate that the present results in combination with the production data might indicate that, initially, young children have no gender-specification in their grammar.¹¹ They only use the feature specification [definite] for which they choose *de* as the 'default' value, possibly due to its overwhelming presence in the input. So, they first have no idea that gender plays a role. At a certain moment,¹² they become aware of [gender] as an abstract grammatical specification. It might be the case that at first the feature-specification of gender remains underspecified. In other words, then they are aware that *de* and *het* are related to grammatical gender, but they don't know the right gender specification (yet). In that stage, they not only overgeneralize *de* to neuter nouns, but they also sometimes overgeneralize *het* to common nouns (see Table 3). Monolingual children overcome this stage and acquire good knowledge of gender specification, whereas bilingual children possibly remain in this stage, i.e. they might fossilize. Further research will have to show what makes it so difficult for bilingual children to leave this stage and become targetlike in the acquisition of grammatical gender. Specially since such a "fossilization effect" has not been found for the acquisition pattern of other grammatical phenomena in these children, such as word order (see Hulk & Cornips 2006). Several possibilities have to be considered, involving not only psycholinguistic and grammatical factors, but also sociolinguistic factors.

11. An anonymous reviewer pointed out to us that, given the literature, this implies that the acquisition of grammatical gender would differ from the acquisition of grammatical number.

12. See Cornips, Hulk & Brouwer (2007) for a suggestion about a possible trigger.

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Comparing child and adult L2 acquisition of the Greek DP

Effects of age and construction*

Vicky Chondrogianni
University of Cambridge

The present paper investigates the acquisition of the definite article and third person direct object clitics by Turkish-speaking L2 learners of Modern Greek (henceforth Greek). Oral production data was elicited using identical methods from child and adult L2 learners who belong to similar proficiency levels. The results show an asymmetrical pattern in the acquisition of the two D-elements, with the acquisition of the clitic being severely delayed. This can partly be explained by theories that assume transfer in L2 acquisition, but pose problems to the ones suggesting lack of attainment due to feature interpretability. The paper discusses additional factors that may account for the acquisition pattern, such as the linguistic structure to be acquired coupled with notions of the age of exposure and the quantity of input received.

1. Introduction

A much debated topic in the second language acquisition (L2A) literature is whether and to what extent adult L2A is guided by the same underlying mechanisms as L1 acquisition (L1A), and more particularly, by Universal Grammar (UG). Unlike children who ultimately and uniformly reach nativelike competence in their L1, for (adult) L2 learners successful acquisition of L2 properties is not guaranteed. 'Defective' acquisition has been attributed to the age of exposure and to the

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unavailability of access to UG after a maturational cut-off point or critical period (Critical Period Hypothesis, CPH, Lenneberg 1967). After this critical point exposure to the target language will exhibit fundamental differences between L1 and adult L2A, both in terms of rate and path of development and degree of ultimate attainment (Fundamental Difference Hypothesis, Bley-Vroman 1989; Clahsen & Muysken 1986).

The practice of comparing adult L2 to child L1 acquisition has been criticized as confounding variables that have an effect on the acquisition output, namely age of onset (AoO) and the presence of another language (Schwartz 2003; Meisel 2007). At the same time, recent assumptions regarding the organization of the language faculty (Chomsky 1995 onwards) have led to a more fine-grained notion of what constitutes UG and the properties or 'domains' of grammar which are susceptible to external factors such as age or input (Gregg & Eubank 1999; Meisel 2007).

With regard to the first point, namely the conflation of age and the presence of L1, Schwartz (2003, 2004) proposes that one way of disentangling this is by comparing child and adult L2 learners keeping the L1 constant, so as to make comparable possible L1 influence. The rationale behind this approach is as follows: if it is acknowledged that child L2A is guided by the same underlying acquisition mechanisms as child L1A (namely UG), then the comparison of the *developmental* path followed by child and adult L2 learners could provide a valuable insight into the properties guiding L2A in general. Notice that emphasis is given on the notion of *development* rather than *ultimate attainment*, as it is argued that the finding that L2 children being more successful than adults does not necessarily mean that adult L2 acquisition is not UG-constrained. The question whether child L2 learners reach indeed the same level of ultimate attainment as their L1 counterparts is itself open to investigation.

Child L2A is defined in this account as "a non-native acquirer whose initial exposure to the target language is between the ages of 4 and 7" (Schwartz 2004; Unsworth 2005:7). The lower bound is set following the assumption that by the age of 4 most of the L1 properties are in place (Guasti 2002). At the same time, child L2 learners are within an age range when principles of UG are said to be still operative (see Hyltenstam & Abrahamsson 2003 for an overview), although they are cognitively more mature than their L1 counterparts (Schwartz 2003). The upper bound is defined on the basis of independent data suggesting that at least up to the ages of onset 6 or 7, L2 learners will reach levels that allow them to pass as native speakers, provided that there is sufficient input and that the learning circumstances are not deficient (Hyltenstam & Abrahamsson 2003:575; Johnson & Newport 1989). Consequently, child L2 learners are similar to adult L2 learners with respect to the presence of the L1, but different as to the age of exposure.

With respect to the second issue, namely the domains of grammar that are susceptible to age, various studies have shown that, at least, adult L2 learners have problems with the acquisition of various interface phenomena, either syntax-discourse (Sorace 2005) or syntax-morphology, irrespective of whether these are interpreted as indicative of unavailability of access to language particular properties (Hawkins & Chan 1997; Tsimpli 2003) or problems associated with surface phenomena (Haznedar & Schwartz 1997; Lardiere 1998, 2000; Prévost & White 2000a, b).

The present paper seeks to contribute to the ongoing debate in the literature with regard to the nature of L2A and the importance of child L2A more particularly, by examining the acquisition of the definite article and direct object clitic pronouns by child and adult Turkish-speaking L2 learners of Greek. Clitic pronouns and determiners have been argued to belong to the same D-category, to bear the same set of features and to lie at the interfaces between syntax-morphology and discourse (for the clitics). At the same time both elements are missing from the L1 grammar, Turkish has neither a definite article nor a clitic pronoun. The acquisition of articles and clitic pronouns in this respect provides a fruitful ground for testing similarities and differences between the two populations, as in both cases L2 learners need to acquire the feature specification and the spell-out properties of a functional category.

This paper is organized as follows. In Section 2, I provide a brief overview of the Greek and Turkish article and pronominal system. In Section 3 I introduce the main L2A theories whose hypotheses will be entertained in the present study. In Section 4 previous studies on the acquisition of clitics are summarized. Section 5 presents the experimental data and the results of the study. In the final section, the results are interpreted in light of the current L2 acquisition theories and with respect to other factors such as age of exposure and degree of input.

2. Background

2.1 Articles and pronouns in Greek and Turkish

2.1.1 *The DP in Greek*

Greek has a definite and an indefinite article. The definite article inflects for case, number and gender (Table 1) and agrees in phi-feature specification with the noun and its modifiers (1).¹

1. According to Ralli (2002) there are eight inflectional classes in Greek and agreement within the DP can be canonical or non-canonical (Corbett 2006).

Table 1. The definite article in Greek

	Definite article		
	Masculine	Feminine	Neuter
Singular:			
Nominative	o	i	to
Accusative	to(n)	ti(n)	to
Genitive	tu	tis	tu
Plural:			
Nominative	i	i	ta
Accusative	tus	tis	ta
Genitive	ton	ton	ton

- (1) To/Ena mikr-o pedh-i kath-ete
 The.DEF/One.INDEF young.NEUT.NOM.SG child.NEUT.NOM.SG sit.3SG
 ston kip-o.
 in the.MASC.ACC.SG garden.MASC.ACC.SG
 ‘The/A child is sitting in the garden.’

The definite article is obligatory with singular (2a), plural count nouns (2b) and proper names (2c) in argument position.

- (2) a. *(To) pedhi anikse
 The.NEUT.NOM.SG child.NEUT.NOM.SG opened.3SG.PAST
 *(tin) porta
 the.FEM.NOM.SG door.FEM.NOM.SG
 ‘The child opened the door.’
- b. Idha ta pedhi-a.
 Saw.1SG the.NEUT.ACC.PL children. NEUT.ACC.PL
 ‘I saw the children.’
- c. Irthe *(o) Giorgos
 Came.3SG the.MASC.NOM.SG George.MASC.NOM.SG
 ‘George came.’

Bare nouns in argument position are generally disallowed in Greek (3a & b), apart from cases in which the bare noun is (i) governed by a lexical head (4a), and (ii) it is the object of a verb in focus position (4b).² In (4b) the noun *ghala* would be ungrammatical if placed in preverbal position without being stressed.

2. Articleless nouns in subject position are generally characterized as marked and are licit if the noun phrase is used (i) contrastively, (ii) in the scope of negation (Setatos 1995), and (iii) in the context of headlines and announcements (Marmaridou 1984; Sioupi 1999; Marinis 2003).

- (3) a. Maria irthe xthes.
 Mary.NOM came.3SG yesterday.
 'Mary came yesterday.'
- b. *Paghoto mu aresi.
 Ice-cream.NEUT.NOM.SG me.CLIT.GEN like.3SG
 'I like ice-cream.'
- (4) a. Ta pedhia efaghan mila ke portokalia.
 The children.NOM.PL ate.3PL apples.ACC.PL and oranges.ACC.PL
 'The children ate apples and oranges.'
- b. GHALA ipia, ochi nero.
 MILK.ACC.SG drunk.1SG not water.ACC
 'I drunk milk not water.'
- c. *Ghala ipia.
 milk.ACC.SG drunk.1SG
 'I drunk milk.'

Bare singular count nouns (BSCNs) in argument position are disallowed unless these are placed (i) after verbs of accomplishment (5a) (Marmaridou 1984; Sioupi 1999; Marinis 2003), and (ii) after light verbs, such as the verb *kano* 'do' or 'make' (5b) (Holton, Mackridge & Philippaki-Warburton 1997; Tsimpli & Stavrakaki 1999).

- (5) a. Echtisa spiti.
 Built.1SG.PAST house.ACC.SG
 'I built a house.'
- b. Ekana banio.
 Make.1SG.PAST bath.ACC.SG
 'I took a bath.'

The appearance of bare nouns in Greek is regulated thus by the noun class (e.g. count, mass), number marking (plural vs. singular), verb type (verbs of accomplishments and light verbs) and word order (focus vs. non-focused) (Marinis 2003). Additionally, bare nouns have a non-specific interpretation (Sioupi 1999).

From a theoretical point of view, the presence of a definite article has been argued crosslinguistically to account for the presence of a DP projection and thus, for rendering nominals into referring expressions of the type [+arg], whereas non-argumental nominals consist only of an NP layer (Longobardi 1994).

Following crosslinguistic analysis on the structure of the DP (Ritter 1991; Valois 1991), it has been proposed that the Greek DP has the following structure: A NumP to host number features, an FP (another label for AgrP) to host case features and a DP projection which encodes [\pm definiteness] (Panagiotidis 2000;

Alexiadou 2001; Alexiadou 2005). The structure of the definite articles in MG is given in (6) (Karanassios 1990; Alexiadou 2005), where the definite article is merged in the FP position, and is specified for ϕ -features and case but not for definiteness.³

- (6) $[_{DP} \text{Spec}[_{D'} D_{to} [_{FP} \text{Spec} [_{F'} F_{to} [_{NUMP} \text{Spec} [_{NUM'} F_{to} [_{NP} \text{Spec} [_{N'} N_{spiti} XP]]]]]]]]]$

For the definite article to get the definiteness specification it has to move to the D head when this is not occupied by a demonstrative pronoun.⁴ When the noun phrase has the [-def] specification then the D-head position is occupied by the indefinite article.

Additionally, the presence of the article with proper names or generics and following accounts on the status of the definite article crosslinguistically (Longobardi 1994; Vergnaud & Zubizarreta 1992) has led to proposals that the definite article in Greek is not always contentful, but it rather has an expletive (resumptive) use and serves as a mere spell-out of phi- (agreement) features within the noun phrase (Karanassios 1990; Tsimpli & Stavrakaki 1999). Tsimpli & Stavrakaki (1999: 50) argue for a dissociation between semantic (definiteness) and morpho-syntactic (case, phi-features) features arguing that the definite article can be characterized as a mere bundle of [-interpretable] features.

2.1.2 *The DP in Turkish*

Turkish is a head final language with an unmarked SOV word order. Turkish has no definite article and formal features, namely case and number, are marked on the noun (7).⁵ There are six cases in Turkish: nominative, accusative – (y)I, dative – (y)A, locative – DA, ablative – Dan and genitive – (n)I(n). The nominative case is not overtly marked and can be identified via stress shift. Additionally, gender is not grammaticalized in Turkish.

- (7) Bu güzel kadın-lar-ı seviyorum.
 These beautiful women.PL.ACC love.1SG
 'I love these beautiful women.'

3. Tsimpli & Stavrakaki (1999) propose a definite layer to for the [\pm]definiteness specification, which is also the locus for the indefinite article and the D head for the definite article, which head though is not specified for definiteness.

4. Cf. with Giusti (2002) according to which the definite article is merged as a Last Resort at the head of the D position and all pronouns occupy the SpecDP position.

5. Agreement between the nominal modifiers is not obligatory in Turkish, as in example (6).

Licit bare nouns in Turkish can be found in argument positions, both as subjects and objects.

- (8) a. Gemi geç-iyor.
Ship.NOM pass+by-prog
'The ship is passing by'
- b. Ayşe kitap okudu.
Ayşe book read.PAST
'Ayşe read a book' (Ketrez 2005: 36)

In Turkish case marking interacts with the definiteness or specificity of the noun. More specifically, direct objects bearing accusative case marking (8b) are interpreted as definite or specific, whereas bare, that is, non-case marked, nouns are interpreted as non-specific or non-referential (Enç 1991; Ketrez 2005 among others). Additionally, overtly case marked constituents exhibit properties of referential DP. That is, they can freely scramble (9a–b) and they can be pronominalized or dropped (9d). Contrary to this, bare, nouns (i) have to occur adjacent to the verb and no constituent apart from focus particles can intervene between the nominal and the verb (9c) and (ii) cannot be pronominalized or dropped (9e) (Ketrez 2005: 20–29).⁶

- (9) a. (kitab-ı) Ayşe (kitab-ı) dün kitab-ı okudu
book.ACC Ayşe.NOM yesterday read.PAST
'Ayşe read the book yesterday.' [specific/definite]
- b. (Bir kitab-ı) dün (Bir kitabı) okudum [specific/indefinite]
One book.ACC yesterday read.1P
'I read one book.' (I read one book that I found on the desk)
- c. dün kitap *(dün) okudum [non-specific/generic]
yesterday book read
'I read books'
- d. *Ayşe kitab_i oku-du, sonra o_i-nu/pro_i kütüphane-ye geri ver-di
Ayşe book read.PAST, then it.ACC/pro library.DAT back give.PAST
'Ayşe did book-reading, then returned it to the library.'
- e. Ayşe kitabı_i oku-du, sonra o_i-nu/pro_i kütüphane-ye geri ver-di
Ayşe book.ACC read.PAST, then it.ACC/pro library.DAT back give-PAST
'Ayşe read the book, then returned it to the library.' (Ketrez 2005: 48)

The question whether languages with no overt article in the noun phrase project a DP layer remains controversial. In languages without an overt marker for

6. Additionally, they can serve as answers to the wh-word *ne* 'what?' in which case, the non-case marked form obligatorily has a non-specific interpretation (Ketrez 2005: 29).

definiteness, accusative case is the most possible candidate for heading the DP. Ketrez (2005) proposes that there is a maximal category DP that closes off the noun phrase. More specifically, whenever DP projects, then the nominal is referential and has [+specific], [+definite] features (Ketrez 2005:53). With respect to case marking, Öztürk (2005) proposes that it can serve as a type-shifter in the same sense that an overt article has a type-shifting operation in languages that license one (cf. Longobardi 1994). Thus, non-overtly case marked nouns are analysed as NPs, which can undergo (pseudo)incorporation, whilst case marked noun phrases are referential DPs (previous example (8e)). The schema in (10) shows that the structure of the nominal phrases in Turkish (Ketrez 2004, 2005).

- (10) [_{DP} Spec [_{D'} D [NumP Spec [_{Num} Num [_{CIP} Spec [_{Cl} Cl [_{NP} Spec [_{N'} N XP]]]]]]]]]]⁷

In the present paper I adopt the position that Turkish has a DP projection with a different feature specification than that of the DP in Greek. Namely, the article in Greek constitutes a proclitic element with high degree of syncretism (case, number and gender) contrary to the agglutinative nature of the case morphemes in Turkish. This approach is compatible with minimalist views in L2A, according to which crosslinguistic variation lies in feature specification and what needs to be acquired are the relevant features and their realization (Herschensohn 2003). Additionally, following Lardiere (2005), the way the features are assembled in the two languages differs, with the definite article in Greek constituting a proclitic element that attached phonologically to the noun (Arvaniti 1991), whereas case constitutes a nominal suffix.

2.1.3 *Pronouns in Greek*

Greek has strong and clitic pronouns that inflect for case, number and gender. Strong pronouns in Greek exhibit properties of full referential noun phrases or DPs. That is, syntactically they appear as arguments (11a), they can conjoin (11b) and bear nuclear stress (11c); semantically they can introduce a new referent into discourse (11a). Clitic pronouns in Greek, on the other hand, are deficient forms which historically derive from the strong pronoun (aftos>tos) and exhibit properties of weak elements (Cardinaletti & Starke 1999). More specifically, they cannot

7. The classifier phrase (CIP) in Turkish is postulated to account for the fact that number in Turkish does not always pluralize the noun but can also act as a division marker and pluralize an event denoted by the predicate (see Schroeder 1999 for a functionalist perspective on plurality in Turkish & Ketrez 2005 for a generative view).

be coordinated (11b) or stressed (11c) and they need to be adjacent to their verbal host (10d).⁸

- (11) a. Aftos/ *tos ine o neos mathitis.
 Him.ACC.STRONG/CL is.3PR the.NOM new pupil
 ‘This is the new pupil’
- b. Idha afton/ *ton ke ton Janni.
 Saw him.STRONG/CL and the.ACC JOHN
 ‘I saw him and John’
- c. AFTON/ *TON idha
 HIM.STRONG/CL saw.1PAST
- d. Ton (*kala) akuo (kala).
 Him.ACC.CL well hear.1PR well.
 ‘I hear him well’

The semantic deficiency of clitic pronouns is attested in structures in which they are used resumptively (12a), they can double a (noun) phrases (12b) and can have a non-human or non-nominal referent (Anagnostopoulou 1994; Tsimpli & Stavrakaki 1999).

- (12) a. Tin kopelia pu (tin) kseri o Petros tin kseri i Maria.
 The girl who (her.CL) knows the Peter her.CL knows the Maria.
 ‘The girl whom Peter knows, Maria knows her (as well).’
- b. Ton idha to Jani xtes.
 Him.ACC.CL saw.1PAST the.ACC John yesterday
 ‘I saw John yesterday.’
- c. To ksero oti milises me ton Jani.
 It.ACC.CL know.1PR that spoke.2SG.PAST with the.ACC John
 ‘I know that you spoke with John.’

Additionally, clitics lack a referential index and acquire their ability to refer by pointing (via indexing) to an individual in discourse (Uriagereka 1995; Tsimpli & Stavrakaki 1999 for Greek). As such, one of the properties of clitics is that they need to be obligatorily linked to a referential DP (Anagnostopoulou & Giannakidou 1995).⁹ In (13a) the clitic is expected and required, whereas in (13b) its suppliance is infelicitous (Giannakidou & Merchant 1997; Dimitriadis 1994).

8. Clitics in Greek precede finite forms (proclitic elements) and follow what are considered to be non-finite forms, such as the imperative and gerunds (enclitic elements).

9. The clitic is also required in specific contexts, definite or indefinite. For example “Dhiavases ena profsato vivlio ja ton Chomsky?” (=Did you read a recent book about Chomsky?), Ne, (to) dhiavasa (=yes, I read it). I thank one of the reviewers for pointing this out.

- (13) a. Aghorases ta gialia?
 Buy.2SG.PAST the.ACC glasses.ACC.PL
 ‘Did you buy the glasses?’
 Ne, *(ta) aghorasa.
 Yes, them.ACC.CLIT bought.1SG.PAST
 ‘Yes, I bought them’
- b. Aghorases gialia?
 Buy.2SG.PAST glasses.ACC.PL
 ‘Did you buy glasses?’
 Ne, (*ta) aghorasa.
 Yes, them.ACC.CLIT bought.1SG.PAST
 ‘Yes, I did.’

From a theoretical perspective, there is currently no consensus in the literature on the analysis of the object clitic pronouns in Greek, i.e. the way it attaches to its verbal host (base-generation (Agouraki 1993) or movement (Anagnostopoulou 2003; Philippaki-Warburton & Spyropoulos 1999; Philippaki et al. 2004; Terzi 1999). In the present paper I adopt the analysis put forward by Mavrogiorgos (2007), who states that clitics are morphophonologically deficient elements with an impoverished structure. This impoverished structure gives rise to a hybrid status as both XP/X categories (cf. Chomsky 1995) and, more specifically, as φ P/ φ categories (mere spell-out of phi-features) (Déchaine & Wiltschko 2002). In order for clitics to be assigned case and to check their phi-features they have to move to their verbal host. This movement takes place in an incorporation fashion where clitics move as (argumental) phrases, that is φ Ps but land as heads, that is, they get stripped off during the derivation (Mavrogiorgos 2007; Belletti 1999; Corver & Delfitto 1999 for crosslinguistic references). In this account clitics start off as syntactic items, but within the course of the derivation they morphologically merge with their host, spelling out its phi-features and case, and hence becoming similar to lexical affixes.

In the context of the present study third person clitics will be contrasted to the definite article, with which they are morphophonologically similar (cf. Tables 1 and 2).

The morphophonological similarity between clitics and articles has also served as evidence for their structural similarity. Karanassios (1990, 1992) and Tsimpli & Stavrakaki (1999) have convincingly shown that the definite article and the clitic in Greek have a φ P categorial feature, as both clitics and determiners host uninterpretable features, that is, case, number and gender and have been claimed not to be inherently referential. Evidence for the latter comes from the use of the clitic in structures such as in (12a, b and c) and the use of the definite

Table 2. Third person direct object clitics in Modern Greek

	3rd person clitic		
	Masculine	Feminine	Neuter
Singular:			
Accusative	to(n)	ti(n)	to
Genitive	tu	tis	tu
Plural:			
Accusative	tus	tis	tus
Genitive	tus	tis	tus

article as an expletive, when used with proper names (3a) and generics (see Tsimpli & Stavrakaki 1999: 50 for more arguments).

Although, their structural similarity cannot be disputed certain aspects of the two D-elements cannot be overlooked. These are related to the fact that articles in Greek obligatorily appear as functional heads and give referentiality to the noun phrases, whereas clitics need to refer to a definite or specific discourse antecedent. Additionally, it has been claimed that articles PF-attach to whatever is on its right, which could be not only a noun, but also an adverb, or adjective (Mavrogiorgos 2007; Chondrogianni 2008). Clitics on the other hand, appear in the verbal domain and are selective with respect to their host. In terms of their internal structure, clitics have been claimed to have an impoverished internal structure, i.e. either lacking an N projection or having an impoverished lexical core (Mavrogiorgos 2005; Jakobowicz & Nash, in press). Finally, their presence is regulated by discourse properties, that is, they are not obligatorily present in every context.

2.1.4 *Pronouns in Turkish*

Turkish has both overt and null pronominal elements. Strong pronouns are overt, they inflect for case, number and person and behave like referential noun phrases. That is, they can be stressed and exclude co-reference with a c-commanding antecedent (14).

- (14) Elif_i onu_{*i/k}/ONU_{*i/k} beğeniyor.
 Elif_i s/he.ACC.like 3SG.PROG
 'Elif_i likes him/her_{*i/k}'

Turkish also allows null pronominal elements to appear in subject and object position. The null element *pro* in subject position is argued to be recovered through the rich verbal agreement morphology (15) (Kornfilt 1984; Özsoy 1988, although see Neeleman & Szendroi 2005 for a unification of subject and object drop).

- (15) Ben/*pro* seviyorum
 (I).NOM/*pro* love.PROG.1SG
 'I love'

Null objects in Turkish occur in the absence of object agreement on the verb in order to substitute a prominent discourse antecedent. That is, a null element *pro*¹⁰ is allowed to appear in D-linked contexts, in which the referent has already been introduced in discourse and thus it is easily recovered, as in the example below (Kornfilt 1997).

- (16) Buld-um!
 Find.PAST.1SG
 'I found (them, e.g. the keys)' (Kornfilt 1997)

Additionally, as examples (9d and c) previously showed, only referential DPs can be dropped, whilst dropping of non referential noun phrases results to ungrammaticality (Ketrez 2005).

Whereas the status of strong pronouns as full DP seems rather uncontroversial, the nature of the empty category remains open to discussion. Inçe (2004) and Öztürk (2006) show that the null element is a pronominal and not a null topic similar to the ones proposed by Huang (1987) for Chinese. In (15) the null object can be coindexed with the embedded subject.

- (17) Ahmet_i Hasan *pro*_i vur-unca, ağla-ma-ya başladı
 Ahmet Hasan hit.3SG.PAST when cry.3SG.PAST started.PAST
 'Ahmet started crying when Hasan hit him.' (İnce 2004: 3)

If it is agreed that *pro* is not of the Chinese type (Huang 1984), the question that arises is how the null element is licensed in the absence of agreement on the verb. With respect to the nature of the pronominal elements, in the present paper we adopt the view that the internal structure of pronominal elements can account for asymmetries in their distribution (external properties) and interpretation (binding principles) following recent accounts (Cardinaletti & Starke 1999 and Déchaine & Wiltschko 2002; Neeleman & Szendroi 2005). These accounts do not treat pronouns as primitives but decompose them into three further categories on the basis of their internal structure, that is, (pro-)DPs, (pro-)φPs and (pro-)NPs. If such a view is adopted, then the null elements do not need to be equivalent to full DPs, but they can have an impoverished structure as regular pronouns do (see clitics as φPs), which fails to be spelled out at PF. Gürel (2002) proposes that the null element in Turkish should not be considered the null equivalent to the overt

10. For further information regarding its binding properties see Gürel (2002).

strong pronoun, that is, a pro-DP, but that it should be analyzed as a constant, as it is free with respect to its binding properties, and thus it is a pro-NP (see Gürel (2002) for examples on distribution of the null element in subject and object position). Further arguments for the pro-NP status of the null element in Turkish can be found when examining object-drop in the language along with the agglutinative nature of overt pronouns (Neeleman & Szendroi 2005).

To summarize, Greek and Turkish languages exhibit a symmetry with respect to the licensing of strong pronouns; with respect to structurally deficient elements, that is, clitics and the null element, their licensing contexts overlap, when the retrieval of a definite already introduced discourse antecedent is involved.

3. L2A theories

Following Chomsky's (1995 onwards) organization of the language faculty, the language architecture consists of four basic components. The *Lexicon* which is the repository of formal features, among other features; the syntactic component known as the Computational system for human language C_{HL} or 'narrow' syntax, in which syntactic operations (*Agree*, *Merge*) are performed and syntactic structures are generated by combining lexical items drawn from the Lexicon. The C_{HL} interfaces with two external components: (i) the semantic or the conceptual-intentional component (system of thought), which maps the syntactic structure onto a Logical Form (LF), and (ii) the phonological component or the sensory-motor interface (speech system), which maps the syntactic representation onto a representation with a phonetic form (PF). The computational system is subject to the principle of Full Interpretation which dictates that any output from the 'narrow' syntax must satisfy the phonological representation (PF) i.e. it must contain only those elements that contribute to the phonological realization of a sentence as well as the semantic representation (LF) in that it must contain only those elements that contribute to the meaning of linguistic expressions. Or, put it another way, any output from the C_{HL} must be *legible* at the interfaces.

Formal features in the Lexicon are distinguished on the basis of whether they are 'visible' or can be interpreted at the interfaces. More particularly, interpretable are those features that are pertinent for LF-representation due to their intrinsic semantic import, whereas uninterpretable features are only relevant for syntactic operations and are not visible at LF, as they need to be erased before, otherwise the derivation crashes (Chomsky 1995 onwards). Nevertheless, uninterpretable features can bear phonological realization. Apart from the definition of interpretability with respect to its relation with the interfaces, this notion can also be defined as an asymmetric relation between interpretable and uninterpretable

features, whose values are established during an asymmetric relation (*Agree*). In this sense a more appropriate definition of interpretability is along the distinction between *inherent* and *contextual* features (Collins 1997; Corbett 2006). For example, number is an interpretable feature on a pronoun but uninterpretable on the agreeing verb, as gender is interpretable for nouns but uninterpretable for the agreeing elements, that is, determiners and adjectives.

Turning now to L2A theories, it is generally agreed that, whereas syntactic operations within the computational system (*Merge*, *Agree*) are universal, cross-linguistic parameterization is located in the *Lexicon*, as each language makes a *selection* of features from the universal repository of features, and more specifically at a subset of the Lexicon, namely in uninterpretable features.¹¹ The task of the L2 learner is then to *select* features and *assemble* them into lexical items. L2 acquisition theories are differentiated on the basis of whether L2 learners have access to the features in the Lexicon (representation deficit) or whether divergence from the L2 grammar is a problem located at the interfaces and more specifically, at the way features are assembled into lexical items in the L2, that is, at the syntax-morphology interface (Lardiere 1998, 2005). In order to capture the relationship within modules of the computational system (lexicon and computational system) and between the two external systems (articulatory-perceptual and conceptual-intentional) (Chomsky 1995 onwards) White (2006) recently introduced the terms 'external' and 'internal' interfaces.

Additionally, the different components of the language faculty – leaving aside the computational component – have been argued to be susceptible to external factors such as age and, more recently, to quality and quantity of input (Sorace 2005).

More specifically, according to the Full Transfer/Full Access hypothesis (FT/FAH) (Schwartz & Sprouse 1996) functional categories and features present in the L1 will form the initial state of the L2 grammar excluding the phonological matrices of lexical/morphological items. At later stages in acquisition the L2 learner will restructure her interlanguage to accommodate properties of the L2 input. Although restructuring of the interlanguage grammar is possible, successful acquisition of the L2 properties is not guaranteed. That is, when the L2 grammar is unable to accommodate properties of the L2 input, the learner resorts to UG options not instantiated in the L1, in order to arrive at an analysis more appropriate for the L2 input, although it may turn out to be different from that of the native speaker (White 2003). With respect to the role of age within the framework,

11. Uninterpretable features have also been proposed to be subject to crosslinguistic parameterization, although parameterization at the level of interpretable features is not excluded (Sorace 2005).

Schwartz (2004) proposes the Domain by Age Model (DAM), according to which children will pattern more like adults in the acquisition of syntax and more like L1 children in the acquisition of morphology, as the latter depends on probabilistic cues in the input. This assertion is based on the assumption that whereas syntactic operations remain intact during the course of acquisition, the phonological realization of features and the way they are assembled into lexical items in the L2 ('morphological competence', Lardiere 2005) can remain problematic for (adult) L2 learners (Lardiere 1998, 2000 on the Missing Surface Inflection Hypothesis).

The Failed Functional Features hypothesis (FFFH) developed by Hawkins and Chan (1997), based on Tsimpli & Roussou's (1991) and Smith & Tsimpli's (1995) account on acquisition, argues that functional features not available in the L1 will be inaccessible for post-critical period L2 learners. Additionally, continued exposure to the L2 will lead to progressive approximation in performance to the native speakers of the target grammar. Nevertheless, given that the functional features are no longer accessible, L2 learners will establish representations that diverge both from those of the native speakers and their L1s, but which are nevertheless UG constrained (Hawkins & Chan 1997: 216). The latter assertion is related to the assumption that principles of UG remain fully accessible and constrain grammar building.

The Interpretability Hypothesis (IH) (Tsimpli 2003) argues that uninterpretable features being the locus of crosslinguistic variation will also constitute a problematic area for L2 learners. The unavailability of uninterpretable features in their L1, which are nevertheless present in the target grammar, renders them unattainable for L2 learners. Two options are available within the IH. The first is that L2 learners will exhibit transfer of their L1 parametric values even at advanced stages of acquisition (Tsimpli 1997). The second (Tsimpli 2003) is that the L2 properties which cannot be analyzed due to their uninterpretable feature specification will be misanalyzed by the L2 learners, resulting in non-target representations and performance, even at advanced stages of acquisition. In order for the L2 learners to make up for the lack of accessibility to uninterpretable features, they will exploit the interpretable features available in the L2, which are accessible due to their salience at LF and their non-modular status. The IH capitalizes on the notion of misanalysis of the L2 input. More specifically, Tsimpli & Mastropavlou (to appear) identify two 'stages' in L2 acquisition. In the first 'stage', the L2 learners fail to analyze the input and as a result show true optionality in the use of morphosyntactic elements. In the second, L2 learners misanalyze the L2 input, that is, they build a non-target feature specification. This non-target feature specification exploits the interpretable features in the L2 and thus the distribution of the problematic elements is constrained and regularized.

Turning to the issue of input, Sorace (2005) argues that interface (or complex) phenomena are susceptible to the quality and quantity of input received (see Blom 2006 and Hulk & Cornips 2006 for the application of the significance of critical mass of input for interface phenomena, and more particularly gender). In this respect, complexity has been defined (a) with regard to the nature of the syntactic object to enter the syntactic computation (Jakubowicz et al. 1998; Granfeldt & Schlyter 2004), (b) the obligatoriness of the construction in every sentence independently of semantic or discourse choices (Jakubowicz et al. 1997; Sorace 2005) and (c) the integration of knowledge from other domains apart from syntax (“narrow” vs. interface phenomena, Sorace 2005).

Clitics in this respect seem possible candidates for two interfaces. On the one hand, due to their deficient forms and special distribution regulated by both their internal properties (Cardinaletti & Starke 1999) they seem to lie in the borderline between morphology and syntax. On the other, their presence is regulated by discourse.

Therefore, the acquisition of articles and clitics is interesting for L2A theories since it can potentially provide insights with respect to (i) the presence of L1 functional categories at the initial stage of interlanguage, (ii) the process of acquiring feature specification in the L2, and (iii) similarities and differences between different age populations with respect to the acquisition of functional categories and features, which have been claimed to be susceptible to effects of age and input.

4. Previous studies in the acquisition of clitics and articles in L1 and L2A

Crosslinguistic studies in the acquisition of the syntactic properties of articles and clitic pronouns have shown that both elements are subject to L1 transfer (Parodi et al. 2004; White 2003 on determiners), although the acquisition of the clitic pronoun has been reported to be related to other factors as well. White (1996) reports that two English-speaking children L2 learners of French exposed to the L2 before the age of 5 pattern like their French L1 counterparts, in that object clitics are delayed with respect to subject clitics, and that the later acquisition pattern follows that of the L1 children with respect to form and placement of the clitic, with very few errors of agreement (mostly gender) or position. Studies, on the other hand, examining the acquisition of object clitics by learners exposed to the L2 after puberty (primarily English learners of L2 French), found effects of L1 transfer (Towell & Hawkins 1994; Herschensohn 2000, 2004). Granfeldt and Schlyter (2004) report no strong transfer effects in their Swedish L2 learners of French; rather they propose that cliticization should be discussed in terms of age

and not only in terms of L1-L2 acquisition relation.¹² Belletti & Hamann's (2003) study of an early German-French L2 learner is one of the few studies to report transfer effects (misplacement of the clitic and gradual acquisition) with early bilinguals, suggesting that the unbalanced input received in the two languages may be a contributing factor towards transfer effects.

Data on the L1 acquisition of articles and clitics in Greek come primarily from longitudinal corpora (Stephany 1997; Christofidou 1998) from five children aged between 1;7 to 2;9 whose age and stage of acquisition varies.¹³ More specifically, the Stephany (1997) corpus comprises data from four children aged between 1;9 to 2;9 (Spiros is recorded at the age of 1;9, Janna at the ages of 1;11 and 2;9, Mairi at the ages of 1;9 and 2;9 and Maria at the age of 2;9). The Christofidou corpus comprises data from a monolingual child, Christos, aged between 1;7 and 2;8 and is the most consistent in terms of the frequency of recordings.

With respect to the acquisition of the definite article, Marinis (2003: 174–175) who examined all five children, reports that its development in Greek monolingual children is marked by four developmental phases. At Phase 1 there are no definite articles present, at Phase 2 definite articles are used in a lexically based fashion, that is, with specific types of nouns mainly kinship terms, as in *i mama* 'the mother' and their production is very low (ranging from 0% to 23%). At Phase 3 there is productive use of the definite articles and at Phase 4 L1 children have mastered its use. The transition from Phase 2 to Phase 3 corresponds to the transition from Stage I to Stage II as defined by the MLU. Similarly, the transition

12. The authors apply Rizzi's (2002) principles of Structural Economy and Categorical Uniformity to their findings. Both principles are UG compatible but their operation is clearly divided between L1 and L2A, with the former guiding L1 and the latter guiding (adult) L2 acquisition. The origin though of this divide, that is, why L2 learners should be susceptible to the specific principles and not the other, is left unaccounted for by the authors. Rizzi (2002: 23) notes that the principle of Categorical Uniformity is considered to be governing the syntax-semantics interface and to be distinct from the principles operative in the computational system proper, which are assumed to be inviolable. This would suggest that the acquisition of clitics constitutes for adult L2 learners an interface phenomenon and this is the reason why they adhere to this principle.

13. Stages are defined based on MLU criteria following Brown (1973) and on his criteria on productivity, that is, 90% of productive use. That is, at Stage I of acquisition MLU ranged from 1.00–1.99, Stage II ranged between 2.00 and 2.49, Stage III between 2.50 and 2.99 and Stage IV between 3.00 and 3.99. Of the children examined Christos is at Stage I at the age of 1;7–2, Spiros at 1;9 and Janna at 1;11, Christos is at Stage 2 between the ages of 2;0–2;5 and Mairi at the age of 1;9, Christos is at Stage III at the age of 2;6–2;8, Janna at the age of 2;5, Mairi at the age of 2;3–2;9 and Maria at the age of 2;3, and Stage IV Jana and Maria are at this stage at the age of 2;9.

Table 3. Clitics and determiners in L1 Greek

Stage	MLU	Children & age	Definite determiner (production)	Clitic pronoun (production)
I	1.00–1.99	Spiros, 1;9 Janna, 1;11	21.13% (45/213)	6.38% (3/47)
II	2.00–2.49	Mairi, 1;9	77% (294/384)	68.94% (111/161)
III	2.50–2.99	Janna, 2;5 Mairi, 2;3, 2;9 Maria, 2;3	85.35% (542/635)	90.37% (319/353)
IV	3.00–3.99	Janna, 2;9 Maria, 2;9	94.86% (277/292)	93.33% (98/105)

from Phase 3 to Phase 4 corresponds to the transition from Stage II to Stage III (Marinis 2003: 176).

With respect to the third person object clitics, Marinis (2000) based on data from Christos, reports that this child starts producing clitics at the age of 2;1, six months after the emergence of the definite article at the age of 1;8. Notice, though, that the emergence of the article at the age of 1;8 falls within Stage I/Phase 1, when its use is lexical and low (11%). The emergence of clitics at the age of 2;1 coincides with Stage II, when it is also observed that the use of articles becomes more systematic. Sinopoulou-Pavlatou (2005) examined clitic production in the speech of the four children from the Stephany corpus. Her data are consistent with that of Marinis, namely that L1 children at Stage I of acquisition produce the clitic 6.38% of the time. Clitic use becomes more productive at Stage II of acquisition, that is, it reaches 68.94% of production in obligatory contexts. Table 3 summarizes the findings on the production of clitics and determiners from the four children reported in Marinis (2003) and Sinopoulou-Pavlatou (2005).

The findings reported from the longitudinal data are supported by Tsakali and Wexler's (2003) experimental study on the production of third person clitic pronouns. Children aged 2;4–3;9 were divided into two groups of 2;4–2;9 and 3;0–3;9 respectively, and were tested on the production of clitics using Schaeffer's (2000) act-out task (see Section 4.3 for a description). The production of the clitic by the younger L1 group was 95% of the time and by the older 100%. Tsakali and Wexler (2003) account for this finding by attributing the lack of omission in L1 Greek to the fact that the Unique Checking Constraint (UCC) (Wexler 1998) is not operative in child Greek and thus no clitic omission is expected at all.¹⁴

14. The Unique Checking Constraint (UCC, Wexler 1998) is based on Sportiche's (1996) analysis of clitic constructions according to which two D projections are postulated to accommodate the intermediate movement of the clitic in Romance languages (Cf. Italian and French) which

These data corroborate towards the fact that although there is a stage at which Greek L1 children omit the clitic to a high percentage and clitics are produced later than definite articles, this stage is rather short and children overcome it rather quickly. That is, children acquiring Greek as their L1 with MLU lower than 3.5 have lower clitic omission rates than their MLU-matching counterparts speaking French or Italian (Jakubowicz et al. 1997; Hamann et al. 1996).¹⁵

The L2 acquisition of clitics and the definite article has been examined in various studies by Tsimpli and colleagues (Tsimpli 2003; Dimitrakopoulou et al. 2005; Tsimpli & Mastropavlou, to appear). Tsimpli (2003) examined the acquisition of clitics and definite articles by six bilingual adult Turkish- and Russian-speaking L2 learners of Greek aged between 27 and 46 years with first age of exposure after puberty. The data consisted in spontaneous production data elicited through questions regarding biographical details (e.g. length of residence, education). Results showed that all subjects apart from one produced the definite article at a percentage above 50%. With respect to the production of the third person direct object clitic, this was supplied significantly less compared to the definite article in the case of two subjects, but not for the others. Dimitrakopoulou et al. (2005) examined the production of the two D-elements by twenty adult speakers of a Slavic language (Russian or Serbian), who were also speakers of Georgian and/or Turkish. The age range of the subjects at the time of testing was between 22 to 61 years and their length of exposure varied between 3 and 12 years. The data consisted in oral data elicited through interviews, a story-telling task and an instruction giving task. L2 learners were divided into four groups depending on their length of exposure and age of first arrival: Group 1: length of exposure 3–4 years, age at arrival 19–23, Group 2: 3–4 years, age of exposure: 24+ years, Group 3: 10+ years, age at arrival: 19–23, Group 4: 10+ years, age at arrival: 24+. Statistical analysis showed that there is a developmental correlation between the clitic and the article for all groups but Group 1. At the same time, though, it was found that the omission rate of clitics was significantly higher for all groups but Group 2.

Tsimpli and Mastropavlou (to appear) examined the production of clitic pronouns and definite article by child and adult L2 learners of Greek. Data from the six adult Turkish- and Russian-speaking L2 learners exposed to the L2 after the age of 18 years were compared to two groups of Turkish-speaking child L2 learn-

also exhibit participial agreement, one under AgrO and one under PartP. Under this analysis, the production of the clitic in L1 Italian and French is delayed due to the fact that the child fails to check the D twice due to processing reasons and thus the clitic is omitted.

15. A problem of comparability arises with all these studies, as the way clitic production or omission has been counted seems to favour clitic omission (for comments see Pirvulescu 2006).

Table 4. Determiners and clitics and adult and child L2 learners (adapted from Tsimpli & Mastropavlou, to appear)

	Adult L2 learners		Younger child L2 learners		Older child L2 learners	
	Determiners	Clitics	Determiners	Clitics	Determiners	Clitics
subjects	78%	75%	23%	0%	90%	60%
	57%	80%	47%	30%	86%	37.5%
	61%	42%	89%	38%	95%	81%
	53%	10%	54%	0%	76%	0%
	10%	16%	67%	14%	100%	47%
	75%	65.5%				
Total	49%	37%	62%	27%	89%	56%

ers, the younger group ($n = 5$) was aged between 8 and 9 years old and the older group ($n = 5$) between 11 and 12 years old. The results from the younger group of child L2 learners and the adults showed that both groups produce the clitic and the determiner to the same extent. The older group of L2 children patterned differently, in that it differentiated between the two D-elements, producing more definite articles than clitic pronouns (Table 4).

Tsimpli and colleagues interpret these results in favour of the Interpretability Hypothesis (Tsimpli 2003). Namely, they argue that since both determiners and clitics are D-elements not intrinsically specified for interpretable features, they will cause problems to all groups of L2 learners. More specifically, Tsimpli & Mastropavlou (to appear) argue that whereas the D-category associate with clitics and determiners in Greek licenses arguments, in the L2s of the learners (Russian and Turkish), it is linked to a lexical category. This suggests that arguments are KPs or NPs but not DPs (see though Ketrez 2005 and Öztürk 2005 in Section 2.1.2 for a different analysis). As such, L2 learners will *misanalyse* clitics as the L1 option of pro-N elements, misrepresenting Case as a feature on a lexical rather than a D category. The clitic is then analyzed as a weak pronoun which can be omitted in contexts of specific reference, as in the L1 grammar. The developmental advantage of the determiner over the clitic is attributed to the morphophonological cues that the local *Agree* relationship established between the article and the noun. The (child) L2 learners who then produce the article to a high degree do not represent it in a target way as yet, but are rather ‘cued’ into its production by its frequency and locality of use.

Some methodological problems are at stake with respect to the aforementioned L2 study. The first refers to the lack of an independent proficiency measure that would give an indication of the language level of child and adult L2 learners. In this sense the two groups of learners are not directly comparable.

A more problematic aspect of the present study is presumably the nature of the child L2 group. Firstly, the exact age of onset for each child is not stated. From the age and the grade reported at the time of testing it can be deduced that children were exposed to the L2 after the age of 7 and sometimes even 8. This makes them 'late' learners and does not fit definitions of 'child' L2 acquirers following recent accounts by Meisel (2007), Schwartz (2003, 2004) and Unsworth (2005) who set the upper bound for child L2 acquisition at the age of 6 or 7; rather they are placed at the boundary between child and adult L2 acquisition. Moreover, it has been shown (Tzeveleku et al. 2004) that there is a high degree of variability with regard to proficiency level within each grade. As such, age and school grade cannot be predictors of the language abilities of children. The lack of proficiency measure could then be the reason for the high degree of within group variability in the production of clitics and determiners (notice for example that whereas an overall developmental correlation is found between clitics and determiners for L2 learners, some subjects exhibit a differential pattern), as well as the fact that the L1s are mixed (for example in Russian there is agreement within the DP, but not in Turkish, example (7)).

Additionally, in the absence of data pointing to the direction that the definite article or the clitic pronoun are not represented in a target-like manner (e.g. suppliance of the definite article with mass nouns in non-specific contexts, interpretative properties of the clitic in relation to the Turkish null pro-N element), the argument for misanalysis remains rather speculative.¹⁶

To summarize, previous research on the L1 acquisition of articles and clitic pronouns has shown that clitics are delayed with respect to articles, although to a lesser extent for Greek. L2 acquisition data are less conclusive with respect to the development of the phenomena, as for methodological reasons, it could not be concluded whether the delayed emergence of clitics reported was a general or an individual pattern influenced by factors such as the degree of exposure and/or the proficiency level of the subjects.

4.1 Hypotheses of the present study

In this study child L2 learners are compared to adult L2 learners using the same methodology in order to disentangle factors that have been claimed to influence similar phenomena, i.e. effects of age, structure and input in the acquisition of the

16. It could be argued of course that the lack of such examples is attributed to the UG-constrained nature of the interlanguage. Still, though, such an argument would render the IH rather unfalsifiable.

two D-elements. The questions and hypotheses that arise following the theoretical discussion in the previous sections can be summarized in the following points:

- i. Following the FFFH or the IH both structures are expected to be *equally* problematic for the L2 learners. This is going to be especially the case for adult L2 learners, who are going to exhibit an *equally* impaired acquisition pattern with respect to both D-elements.
- ii. The FT/FAH predicts that the initial state is going to be the L1, that is, omission of clitics and articles, but that further restructuring to the L2 properties is possible. Furthermore, according to DAM L2 children will exhibit the same acquisition pattern as adults in the domain of syntax but differently in the domain of morphology.¹⁷
- iii. If clitics but not articles are said to be susceptible to effects of age and/or the degree of input received (see Section 4), then it is expected that the L2 adults and the L2 children who receive reduced input in the L2 should have persistent problems with the acquisition of the clitic.

In the present study, these questions were examined by looking into the syntactic and discourse properties of the two D-elements.

5. The present study

5.1 Subjects

Seventy nine child L2 learners attending the primary minority schools in Thrace, Northern Greece and 30 adult L2 learners were tested. Minority primary schools are bilingual schools, in which both Greek and Turkish are equally taught in the curriculum. The age of the children at the time of testing ranged between 7 and 12 years old, with age of first exposure to the L2 between 5 and 6 years depending on whether they have attended kindergarten or not.¹⁸ All children belong to

17. As both third person clitics and the definite article are the spell-out of phi-features, erroneous syntax would be manifested by misplacement of the clitic or production of the determiner in infelicitous contexts. With regard to morphology, it could be expected that the acquisition of the feature specification and primarily gender, would be erroneous or 'default' (see Chondrogianni 2006 and 2008 for an overview of the acquisition of the syntactic and morphological properties of clitics and determiners in L2 Greek).

18. Attendance of kindergarten in Greece starts at the age of 4. In the minority population it is very rare that children are sent to schools at that age. Reasons can be traced to the fact that attendance is not compulsory, kindergartens are monolingual in Greek and they are not tai-

Table 5. L1 and L2 groups of participants

Group	N	AoO	LoE	AaToT (range)	MLU (range/mean)
child L1 (3 years)	6	0	2;9	2;08–3;08	2.67–4.47 (3.66)
child L1 (4 years)	6	0	4;6	4;04–4;07	3.63–5.68 (4.47)
child L1 (5 years)	6	0	5;4	5;00–5;07	5.42–8.10 (6.89)
child L1 (7–11)	30	0	7–11	7;01–11;06	6.65–9.7 (8.74)
L1 adults	10	0	27.5	27–55	8.15–9.80 (8.53)
child L2 learners	74	5–6	1–2	7–12	2.38–9.00 (5.38)
adult L2 learner	30	12–33	7–24	19–46	2.78–12.34 (6.75)

monolingual Turkish-speaking families and had no previous exposure to the L2 before formal schooling. The Turkish-speaking population in Greece is an indigenous mainly agricultural population contrary to the mostly immigrant population found in other European countries (Germany, France, the Netherlands). Nevertheless, children usually have no contact with the Greek language before formal schooling, as their communities are rather isolated with low integration into the wider community (Tsitselikis & Mavrommatis 2003). Thus, they listen to radio and watch television in Turkish. Also, minority school experience a very high drop out rate, which is twenty times the national average.

The adults were aged between 19 and 47 years at the time of testing and had systematic exposure to the L2 after the age of 12, the age of first exposure ranging from 12 to 33 years. The adults were mostly immigrants from Turkey that were recruited in vocational or adult language courses in Komotini, Xanthi and Athens.

A well-documented characteristic of the L2 school-aged population and of studies in L2 acquisition is that length of exposure (LoE) is not always a reliable predictor of L2 proficiency. In the present study, LoE was confounded with the amount of input L2 learners received. It was pertinent then that an independent measure be applied that would group child and adult L2 learners into comparable within- and between-subject groups. For the child L2 learners a further factor that was considered was the interplay between age and proficiency level. That is, it was attempted to have an equal number of children belonging to different proficiency levels at a single age and vice versa.¹⁹

lored to the needs of bilingual children, coupled with the mainly agricultural and traditional character of the minority society. It is indicative that in 2000 7,046 children were enrolled in primary minority schools, but only 300 attended public kindergartens (Tsitselikis & Mavrommatis 2003).

19. This was not always possible as there was a low number of children at certain proficiency levels.

Three control groups were also tested that served as MLU-matching and as age-matching controls. Eighteen younger L1 children aged 2;8 to 5;6 served as MLU-matching controls measured in MLUw. Fifty older L1 children aged 7 to 12 years old were age-matching controls. These children attended the 2nd to the 6th grade of primary schools in Athens. Ten L1 adults also served as controls.

The amount of input was also evaluated on the basis of teachers' questionnaires (Tzeveleku et al. 2004) and interviews with the L2 participants. The teachers' questionnaires covered issues of the language spoken at home by the parents, the children and the grandparents, the presence and the number of siblings and their age. More detailed information on language environment was obtained through oral interviews with children and adults before the experimental session as part of the warm-up process. During these interviews, the L2 learners were asked whether and how many hours they would watch TV programmes or listen to Greek radio, whether they had any friends with whom they interacted in Greek as well as whether they spoke Greek with their siblings or parents at all and if so, in which situations.

With regard to the L2 children, in the majority of cases it was found that they were primarily exposed to Turkish media (radio, TV) and that most of the children had Turkish-speaking peers. The picture is mixed in the case of the L2 adults. More specifically, female subjects tended to be more isolated and have less contact with Greek, whereas the male subjects would come in contact with Greek for work-related purposes.

5.2 Proficiency measure

Proficiency was measured in the present study by employing Whong-Barr & Schwartz's (2003) and Unsworth's (2005) definition of morphosyntactic competence. Oral discourse was elicited through a story-telling task. Three factors were taken into account: (i) verbal density measured as the ratio of verbs per terminable unit (T-unit) (Hunt 1971), (ii) lexical diversity measured in VOCD-stem (Malvern & Richards 2002) and (iii) ratio of errorfree utterances, excluding all the relevant phenomena under investigation. All scores from these independent measures were computed into a single score using factor analysis.

This analysis gave rise to four proficiency levels: a low, a lower intermediate, an upper intermediate and a high. Table 6 describes the distribution of subjects across proficiency levels. Between-groups comparisons per proficiency level were carried out in order to secure that the proficiency levels did not differ from each other.

Table 6. Proficiency levels for child and adult L2 learners

Proficiency level	L2 Children		L2 Adults		Comparisons
	N	Scores	N	Scores	
low	10	-2.49 – -1.23	6	-2.09 – 1.55	$z = -.365, p = .715$
lower intermediate	30	-1.12 – -.02	9	-1.02 – .01	$z = -.716, p = .474$
upper intermediate	30	.04 – -.97	8	.38 – .80	$z = -1.788, p = .074$
high	9	1.13 – 2.17	7	1.07 – 2.21	$z = -.159, p = .875$

Additionally post-hoc between group comparisons (Games-Howell) showed that for the L2 children at low proficiency their MLU-matching counterparts are the 3 year-olds, for the lower intermediate the 4 year olds, for the upper intermediate and high proficiency group the 4 and 5-year olds.

5.3 Experimental materials

Three experimental tasks were used to assess the production of articles and object clitics. The experiment was conducted in a quiet room at the children's school. Testing started with the story-telling task followed by the elicited production task either in the act-out or in the picture-stimuli mode. The total duration of the experiment varied from 20 to 30 minutes depending on the language proficiency of the participants.

The acquisition of articles was examined in the context of a story-telling task 'Oh, Frog, where are you?' (Mayer 1967). This picture story provides the context for testing the production of articles in various syntactic contexts (subject vs. object), controlling for factors such as inflectional class and grammatical gender in a more naturalistic way.

The acquisition of third person direct object clitic pronouns was examined within the context of the story-telling task as well as with an elicited production task using two types of stimuli, an act-out task and a picture-stimuli task.²⁰ The act-out task followed closely the protocol described by Schaeffer (2000). More specifically, a story between two animal characters was acted-out by the experimenter. A 'silly' puppet would then make a false statement about what happened in the story. Consecutively, the child was asked to judge the validity of the utterance expressed by the puppet (Truth-Value Judgment task), followed by the elicitation question 'What is X doing to Y?', which prompted the production of the clitic pronoun in a D-linked context, as in (18).

20. Only the results from the elicited production task are presented here.

- (18) Ti ekane o scilos sti ghata?
 ‘What did the dog do to the cat?’
 Tin cinighise.
 Her.CL chase.3PAST
 ‘He chased her.’

There were 12 contexts for the production of third person direct object pronoun plus 6 fillers, which resulted to 18 items in total. Gender and number was also controlled for.

6. Results

6.1 Acquisition of the definite article

The production of the definite article in the story-telling task was analyzed in terms of (i) production vs. omission, (ii) syntactic context (subject vs. object position), (iii) noun class (e.g. mass, BSCNs) and (iv) phi-features, especially gender attribution and agreement with the following noun. Here only the results of the first two variables are presented.

The results from the L1 child and adult groups are not presented in Table 7 as both younger and older exhibited a ceiling performance in the production of the definite article.

Statistical analysis (Kruskal-Wallis non-parametric test) on the interaction between production of the definite article and proficiency level showed that there was an overall significant interaction between production of the definite article and proficiency level for L2 children ($\chi^2 = 31.465$, $df = 3$, $p < .001$) and adults ($\chi^2 = 19.215$, $df = 3$, $p < .001$). Both L2 groups were subjected to post-hoc analy-

Table 7. The production of the definite article

Age group	L2 children			L2 adults		
	Proficiency level	N	DP production DP omission	N	DP production DP omission	DP omission
low	10	38/141 (26.95%)	103/141 (73.05%)	6	12/51 (19.25%)	39/51 (80.77%)
lower intermediate	30	455/543 (83.79%)	88/543 (16.21%)	9	39/127 (30.71%)	88/127 (69.29%)
upper intermediate	30	518/542 (95.98%)	24/542 (4.43%)	8	91/105 (86.67%)	14/105 (13.33%)
high	9	132/133 (99.52%)	1/133 (0.48%)	7	78/81 (96.30%)	3/81 (3.70%)

sis (Games-Howell) in order to determine whether there were any within group differences based on proficiency level. For the child L2 group, post-hoc analysis showed that there is a significant difference between the initial proficiency level and consecutive proficiency levels (low vs. lower intermediate: $p < .001$, vs. upper intermediate: $p < .001$, vs. high: $p < .001$), a marginal difference between intermediate groups ($p = .056$), a significant difference between lower-intermediate and high ($Z = -19.05$, $p = .004$), but not between upper intermediate and high ($Z = -4.62$, $p = .120$) suggesting a fast development of the definite article after the initial stage. In the case of L2 adults post-hoc tests (Games-Howell) showed that this interaction is significant after the lower intermediate proficiency level (low vs. lower intermediate, $Z = -19.44$, $p = .580$, lower intermediate form upper intermediate $p < .001$, lower intermediate from high $p < .001$).

Cross-group comparisons were carried out to examine whether at each proficiency level L2 children differed from L2 adults in the production of the definite article. A Mann-Whitney U test showed that overall the two groups differed in the production of the definite article ($Z = -2.420$, $p = .016$), but this differences were significant for the two intermediate stages ($Z = -3.545$, $p < .001$, $Z = -2.286$, $p = .034$), and not for the initial or high levels. This indicates that both L2 children and adults start from the same level but that children are faster at the acquisition of the article, but ultimately they reach the same degree of DP production.

L2 children were also compared against their language- and age-matching peers. Statistical analyses (Mann-Whitney U tests) examining the differences between groups with respect to the relevant constructions showed that L2 children differ from their MLU-matching peers at the first two proficiency levels (low level: $p < .001$ and lower intermediate: $p = .019$) but not at the two upper proficiency levels, whereas they differed overall from their age-matching peers ($p < .001$). L2 adults differed from the L1 adults in all proficiency levels apart from the last one (low: $p = .009$, lower intermediate, $p = .001$, upper intermediate: $p = .010$).

With regard to the interaction between the presence of the definite article and syntactic position it was found that there is a subject-object asymmetry in the realization of the definite article. Namely, L2 learners omitted more articles in subject than in object position. This pattern is consistent with findings in the L1 acquisition literature of Greek (Marinis 2003), where it is reported that children start omitting the determiner in object position, which constitute more restricted contexts for bare objects (example (4a) and Note 3). Additionally, L2 learners never produce a definite article with licit bare nouns.

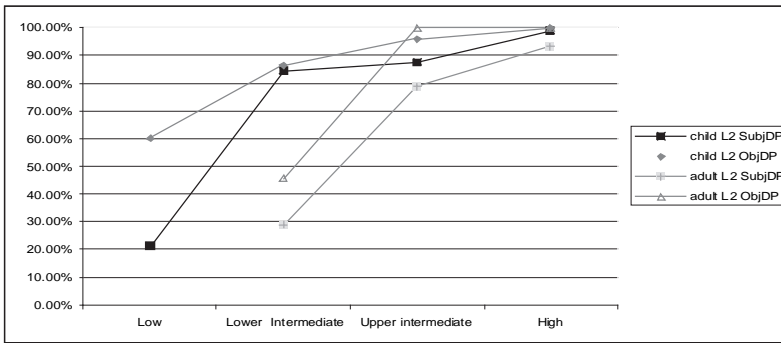


Figure 1. The production of the definite article in subject and object position by child and adult L2 learners

6.2 Acquisition of clitic pronouns

The acquisition of clitic pronouns was examined in two different contexts: (i) in the story-telling task, and (ii) in an elicited production task. Responses were coded as three basic types: (i) clitics supplied, (ii) lexical complements, and (iii) object omission.

6.2.1 *Clitics in the story-telling task*

The production of clitics in the story-telling task was counted following Pirvulescu's (2006:227) definition of 'clitic-contexts', according to which "the referent is the topic of the discussion; it is contained in the question/assertion in the immediately preceding discourse". In addition, the verbs' transitivity and their use by L1 children and adults were also taken into consideration (Cummins & Roberge 2005). As Pirvulescu (2006:230) observes, the notion of clitic context is not as straightforward, as it is the case that L1 adults will produce a null element in cases, where a clitic is by definition required. In the absence, though, of a detailed analysis of the pragmatic, semantic and lexical constraints on these constructions in both child and adult production, it does not seem possible to distinguish clearly between licit or illicit contexts.

In the present study this problem was addressed by examining the oral data of the L1 population, that is, the younger and older L1 children and the L1 adults. Verbs were examined from the point of view of complements that they would take in clitic contexts and also on the basis of their transitivity requirements. Such an examination of the data and the establishment of a definition of what constitutes 'illicit object omission' was important for the following reasons: (i) Turkish is a null object language and allows the use of null elements in contexts where Greek would use a clitic pronoun, (ii) at the same time it was observed that both L1 chil-

dren and adults produce null objects in contexts that could qualify as clitic contexts,²¹ (iii) the classification of a specific context as 'clitic context' without having relevant information on its use by L1 speakers would penalize the L2 learners for omitting the clitic in contexts, where it is not even produced by L1 speakers. One such verb is the verb *fonazo*, 'shout' (intransitive) or 'call' (transitive), which can be used both intransitively and with a (clitic) complement:

- (19) O vatrachos vgheni ecco. ce meta pane na to psaksune.
the frog goes out and afterwards go.3PL PART. to.ACC.CL look for
'The frog goes out and afterwards they go to look or it.'
- (20) ce meta vghice ekso ce epsachne pali ce fonaze.
And then went out and look.3SG.IMP again and shout.3SG.IMP
'And then (the boy) went out and was looking (for it, meaning the frog) again
and was calling it (meaning the frog).' (young L1 child, 4;7 years old)

The verb *citazo* 'look at', on the other hand, produced more clitic complements. Compare an ungrammatical utterance by a low proficiency child L2 learner to the one produced by a 9-year old L1 child.²²

- (21) pedhi nero ce vatrachos Ø citai.
child water and frog Ø is looking.
'The child is in the water and the frog is looking (at them).'
(child L2, low proficiency level)
- (22) ce to vatrachaci ine apo kato ce tus citai.
And the frog is underneath and them.ACC.CL looking
'And the frog is underneath and is looking at them.'
(older L1 child, 9;6 years)

After having established felicitous 'clitic contexts' in Greek, the errors were further classified into those of omission (23) and of commission (substitution) (24).

21. In particular, three verbs were examined that were very frequent in the learners' speech and tended to be used both transitively and intransitively by both L1 and L2 speakers. These were the verbs: *fonazo* 'shout' or 'call', *citazo* 'look at' and *psachno* 'look for'. An effect of age and verb was found in both L1 and L2 groups. That is, L1 children aged 3 to 5 tend to produce more null objects than older L1 children and L1 adults and this was statistically significant. At the same time there was a significant difference in the types of arguments produced for each verb, with the verb 'look at' eliciting significantly more clitics and overt DPs than the other two verbs (for more details see Chondrogianni 2008).

22. Verbal transitivity in Greek was then found to interact with the intrinsic semantic properties of the verb (Aktionsart) and its grammatical aspect (perfective, imperfective) among other factors (Chondrogianni 2008).

Table 8. L1 children's and adults' production of clitics in 'clitic-contexts'

Age group	N	CL	DP	Null CL
3 to 5 year-olds	18	14/16 (87.5%)	1/16 (6.25%)	1/16 (6.25%)
7 to 11 year-olds	30	34/35 (97.14%)	0/35 (0%)	1/35 (2.86%)
L1 adults	10	48/48 (100%)	0/48 (0%)	0/48 (0%)

- (23) *epiase* *to* *vatrachi ce* \emptyset *pire.*
 Caught.3SG.PAST the.ACC frog and \emptyset took.3SG.PAST
 '(The child) caught the frog and took it.'
- (24) a. *Ena pedhi epjase ena vatracho ce scilo citazi afto.* [strong pronoun]
 A child caught a frog and dog looks at *it.STRONG*
 'A child caught a frog and the dog is looking at it.'
- b. *anighi to parathiro ce dhen vrican to vatrachi.* [full NP]
 opens the window and did not find the frog.
*ce pighe spiti na vrun to vatrachi.*²³
 and went home to find the frog
 '(The child) opens the window and did not find the frog. And he went home to find the frog.'

Table 8 summarizes the production of clitics out of all the clitic contexts, as well as other structures produced by younger and older L1 children and adults.²⁴

Turning now to the L2 learners the production of clitics was optional and dependent on discourse organization and proficiency level, there were no clitic contexts in the first proficiency levels in case of the adults. Overall a subset of participants in each group produced clitics in the story-telling task.

As far as child L2 learners are concerned, a Kruskal-Wallis test on the interaction between construction and proficiency level showed that there is a significant interaction between the production of clitics ($\chi^2 = 10.349$, $p = .016$) and DPs ($\chi^2 = 15.982$, $p = .001$) and proficiency level, but not between the production of zero objects and proficiency level.

For the L2 adults a Kruskal-Wallis test showed that the interaction between the production of the clitic and proficiency level was not significant due to the high standard deviation within proficiency levels regarding clitic production ($\chi^2 = 2.560$, $p = .266$). The same holds for DPs ($\chi^2 = 2.560$, $p = .266$) and null objects ($\chi^2 = .964$, $p = .617$). Post hoc tests also revealed that there was a significant difference in the production of the clitic between the lower intermediate and high

23. This context can also be regarded as a felicitous context for clitic doubling.

24. For reasons of exposition, the results for the younger and older L1 children are presented together, although a developmental pattern was observed within this group.

Table 9. Production of clitics (percentages) and relevant structures in story-telling task

Proficiency level	L2 children				L2 adults			
	N	CL	DP	Null CL	N	CL	DP	Null CL
low	4	0/7 (0%)	4/7 (57.14%)	3/7 (42.86%)	–	–	–	–
lower intermediate	19	24/43 (55.82%)	6/43 (13.95%)	13/43 (30.23%)	2	0/2 (0%)	1/2 (50%)	1/2 (50%)
upper intermediate	19	41/51 (80.4%)	4/51 (7.84%)	6/51 (11.76%)	4	4/8 (50%)	1/8 (12.5%)	3/8 (37.5%)
high	8	30/31 (96.78%)	0/31 (0%)	1/31 (3.22%)	5	14/15 (93.33%)	0/1 (0%)	1/15 (6.67%)

proficiency groups ($p = .035$) but this was not strong enough in order to influence the overall significance. Another factor for the lack of significance could also be the low number of subject that produced the clitic in this task.

A Mann-Whitney U test examining differences between groups (L2 children vs. L2 adults) on the constructions showed that the two groups do not differ from each other on any of the constructions at any proficiency level (clitics: $Z = -.8750$, $p = .382$, DPs: $Z = -.249$, $p = .803$, zero clitic: $Z = -.814$, $p = .416$). Although L2 children proportionately produced more clitics than adults at the lower intermediate and at the upper intermediate level this difference could not reach significance due to the high standard deviation observed in both groups.

When child L2 learners were compared to their MLU-matching controls, it was observed that child L2 learners differ from their L1 counterparts in the production of clitics ($p = .003$) and DPs ($p = .003$), but not in the production of null objects ($p = .517$).

As far as age-matching counterparts are concerned, it was observed that child L2 learners differ from their L1 age-matching peers in all three constructions (clitics: $p = .000$, DPs: $p = .011$, null objects: $p = .001$) and from L1 adults (clitics: $p < .001$, DPs: $p = .011$, null objects: $p = .001$). Furthermore, the two L1 populations did not significantly differ from each other. L2 adults differed from L1 adults with respect to the production of the clitic ($p = .007$, DPs: $p = .167$, null clitic: $p = .039$) and the null clitic, but not with respect to the DPs produced.

6.2.2 *The production of object clitics in the act-out task*

Younger and older L1 children and L1 adults produced the clitic to a high degree. The types of other L2 responses produced instead of a clitic comprised mainly DPs and very few null objects (Table 10).

Table 10. Mean percentage of clitic production by L1 children and adults in the act-out task

Subjects	N	Clitic	DP	Null CL
3 to 5 year olds	18	95%	4%	1%
7 to 11 year olds	30	98.5%	1.5%	0%
L1 adults	10	97.5%	2.5%	0%

Table 11. Mean percentage of clitic production by older L2 children and adults in the act-out task

	L2 children				L2 adults			
	N	CL	DP	Null CL	N	CL	DP	Null CL
Low	10	2% (6.32)	42.8%	55.2%	6	0%	75%	25%
Lower	28	23.5% (36.1)	35.4%	41.2%	9	15.2% (24.56)	51.9%	32.9%
Upper	30	71.4% (39.38)	10.6%	18%	8	15.6% (9.65)	35.8%	49.3%
High	6	93.3% (16.33)	6.7%	0%	7	23.8% (25.80)	38.2%	38%

Child and adult L2 learners on the other hand have a very low production of the clitic initially (Table 11).²⁵ At the same time they produce a high rate of both null objects and DPs.

For the L2 children statistical analysis (Kruskal-Wallis test) showed that overall there is a significant interaction between proficiency level and all constructions, that is, clitics ($\chi^2 = 34,121$, $df = 3$, $p = .000$), DPs ($\chi^2 = 18.635$, $df = 3$, $p = .000$) and zero clitics ($\chi^2 = 16.762$, $df = 3$, $p = .001$). Post-hoc tests (Games-Howell) also showed that there is a significant difference in the production of clitics between each proficiency level. For L2 children there is a marginal significant difference between the low and the lower intermediate level ($p = .04$). The difference becomes more significant after the lower intermediate level ($p < .001$ in all comparisons, but not between the upper intermediate and high, $p = .081$), suggesting an initial slow production of the clitic.

For the L2 adults the production of the clitic remains quite low throughout. A Kruskal-Wallis non-parametric test was performed on the data to check whether there was a significant interaction between proficiency level and construction. Results show that overall a significant interaction was found between proficiency level and the production of the clitic ($\chi^2 = 10.899$, $df = 3$, $p = .012$), but this is primarily caused by the difference between the initial proficiency level and consecutive proficiency levels as post-hoc tests revealed (Games-Howell) (low to upper

25. For practical reasons, e.g. illness, interruption by teachers or pupils it was not possible to complete the task with five children. Thus, the total number of children in this task is 74.

$p = .011$, to high, $p < .001$). Also, in case of the production of null objects there was a significant difference between the two upper proficiency levels, that is upper intermediate and high with respect to the production of null objects ($p < .001$).

Comparing L2 children to L2 adults a Mann-Whitney U test showed that L2 children do not differ from L2 adults in the first two proficiency levels, but that they do differ in the two upper proficiency levels with respect to all three constructions, that is, clitics ($p = .003$, $p = .001$), DPs ($p = .002$, $p = .012$) and zero objects ($p = .010$, $p = .001$).

Comparing L2 children to their MLU-matching and age-matching counterparts, it was found that L2 children differ from their MLU-matching counterparts at all proficiency levels apart from the high one and significantly differ from their age-matching counterparts in both the production of clitics and zero objects. Also adult L2 learners significantly differ from the adult L1 counterparts ($p = .001$).

6.2.3 *Comparing the production of clitics across tasks*

The various tasks used for the production of the direct object clitic give the possibility of having comparable across tasks results. As it was previously mentioned, in L1 acquisition studies it has been observed that the production of the clitic varies depending on the task (elicited vs. naturalistic production), a difference, which primarily derives from the way clitics are counted (verbal transitivity vs. clitic context) (Pirvulescu 2006). Although in the present study the production of the clitic in the story-telling task was counted following the 'clitic context' definition in order to make it more comparable to the elicited production task, the latter involved two further operations: (i) the focusing of the verb to be contrasted with the utterance expressed by the puppet, (ii) followed by the replacement of the discourse topic via the clitic pronoun (cf. Perez-Leroux et al. 2005). Thus, the elicited production task provided a strong definite context for the production of the clitic, where the antecedent is prominent in discourse and a clitic needs to be supplied, whereas in the story-telling task the antecedent is sometimes implied or not clearly stated and thus L2 learners could opt for a higher degree of clitic drop or non-expressed object noun phrase.

The questions that arise at this point are: (i) Are there any differences in the production of the clitic pronoun among the different tasks?, (ii) If there are differences/similarities among tasks, is it going to manifest itself in the same manner for child and adult L2 learners or do the two populations differ in this respect? (iii) What are the possible explanations for the similarities/differences, if any, between the two age groups?

Statistical analyses showed that the above questions are interrelated and cannot be answered independently of each other. That is, as far as question (i) is concerned, it is the case that it can be answered negatively for the L2 children, but

positively for the L2 adults. Across tasks comparisons for the elicited production and for the story-telling task per group showed that the L2 children did not differ significantly across tasks. For the L2 adults, though, there was a significant difference in the production of the clitic between the story-telling task and the elicited production task, with learners producing more clitics in the story telling task than in the elicited production task (Question (ii)). The first proficiency group of adult L2 learners produced no clitics at all and there were also no clitic contexts to be taken into account. The upper two though proficiency groups produced clitics to a percentage of 50% and 93.33% respectively.

For the adult L2ers then the amount of clitics produced in the story telling task was higher than the amount of clitics produced in the elicited production task. Or, put it another way, the production of the clitic in the story-telling task does not entail the production of the clitic in the elicited production tasks. This was also confirmed by statistical analysis (Wilcoxon signed ranks test), where it was found that adult L2 learners produced more clitics in the story-telling task than in the elicited production task at the upper intermediate ($p = .012$) and high proficiency level ($p = .001$).

Thus, whereas L2 children exhibited a rather homogeneous behaviour in all tasks, L2 adults performed better in the story-telling task, but worse in the elicited production task.²⁶

6.2.4 *Comparing the production of clitics and articles*

It was observed in the previous sections that L2 children differ from L2 adults with respect to the production of the clitic and the definite article. The present section examines the extent to which within each group there was a difference in the production of the two D-elements.

For the child L2 group a Wilcoxon Signed rank test showed that there is a significant difference in the scores of clitics in both tasks (story-telling and elicited production tasks) when compared to those of articles. More specifically, L2 children at the lower and upper intermediate level produced more articles than clitics ($p = .004$ and $p = .05$), whereas there was no significant difference in the lower and high proficiency level. In the case of the production of the clitic in the elicited production task, L2 children produced more articles than clitics in all proficiency levels apart from the last one (low: $p = .005$, lower: $p < .001$, upper: $p < .001$ and high: $p = .068$).

26. It should be noted that certain children produced more clitics in the story-telling than in the act-out task as well, but these cases were few and did not affect the overall group significance. Furthermore, these children belonged to the two lower proficiency levels.

The same pattern was observed in the case of L2 adults, that is, the production of the clitic preceded the production of the article, but this difference persisted until the higher proficiency level in case of the elicited production task, but not the story telling task. In more detail, after comparing the production of articles and clitics in the story task, a significant difference was found in the two intermediate groups ($p = .012$, $p = .017$), but not in the upper one ($p = .317$).²⁷ There was no difference between the production of the clitic and the articles when compared to the elicited production task at the low proficiency level ($Z = -1.000$, $p = .317$), but there was a difference at all consecutive levels (lower: $Z = -2.366$, $p = .018$, upper: $Z = -2.521$, $p = .012$, and high: $Z = -2.371$, $p = .018$).²⁸

6.3 Are L2 children better acquirers than adults?

The data presented so far suggests that child L2 learners are better and faster acquirers than the L2 adults. A closer examination though of the child L2 results shows that stabilization of an interlanguage form for L2 children is also possible, as the following tables on the production of articles and clitics depending on proficiency level and age (Tables 12 & 13).

Stabilization in this case primarily involves the use of clitics. It is observed that L2 children aged 10 years old after receiving 5 years of instruction in Greek still belong to a low proficiency level and in terms of the constructions investigated, they still have a low production of the clitic pronoun.²⁹ Whether this stabiliza-

27. Note that no statistics were computed for the low proficiency level since no clitic contexts were elicited.

28. As one of the reviewers observes, since there was a task effect in the case of the L2 adults with respect to the production of the clitic, it could also be the case that there was a task effect in the case of the production of the article. It should be noted here that the article exhibited an asymmetrical acquisition pattern also when compared to the clitic in one single task (story-telling). Additionally, the production of the article was also examined in the elicited production task, and more specifically, in the items in which L2 learners produced a lexical noun phrase (Chondrogianni 2008). The findings from this analysis indicate a similar pattern to the one in the story-telling task. Finally, the discrepancy between the two tasks allows for a grammatical explanation (see Section 7).

29. As one of the reviewers points out, five years of instruction cannot be translated into amount of input or frequency of use of (optionally) transitive verbs with clitics. As it was shown in Section 6.2.1 clitic production can be optional and depends on discourse factors as well as the grammatical and lexical properties of the verbs. To us, two separate issues are at stake here. The one refers to the quality of input, which can be ambiguous and not provide enough triggers for the production of the clitic. The other issue refers to the quantity of input received in terms of overall exposure, in the sense of 'critical mass,' and this was measured in the present study with

Table 12. Production of the definite article per age and proficiency level

Age Proficiency level	7	8	9	10	11
L	14/83 (16.86%) (n = 6)	8/24 (33.33%) (n = 1)	13/20 (65%) (n = 2)	3/14 (21.43%) (n = 1)	
LI	112/146 (69.19%) (n = 8)	112/114 (98.25%) (n = 7)	170/191 (89%) (n = 10)	61/92 (66.30%) (n = 5)	
UI	41/49 (83.67%) (n = 4)	75/77 (97.40%) (n = 5)	118/123 (95.93%) (n = 6)	172/178 (96.63%) (n = 8)	112/115 (97.66%) (n = 7)
H		14/14 (100.00%) (n = 1)	22/23 (95.65%) (n = 1)	65/65 (100%) (n = 4)	31/31 (100%) (n = 3)

Table 13. Production of clitics per proficiency level and age (act-out task)

Age Proficiency level	7	8	9	10	11
L	0%	0%	10%	0%	
LI	29.05%	16.67%	24.5%	28%	
UI	45.83%	80%	61.67%	73.75%	84.7%
H		60%	100%	100%	100%

tion is going to be permanent, i.e. become fossilization, or lead to development (Lakshmanan 2005) is something that needs to be further investigated by looking into learners who were exposed to the L2 as children but have fossilized at a certain stage before successful ultimate attainment.³⁰

questionnaires and interviews (Section 5.1). The latter is in line with the point put forward in the present paper, namely that certain linguistic structures, which are optional and depend on the integration of knowledge from various domains, can exhibit a delayed acquisition pattern, when exposure to the L2 is limited.

30. Selinker & Lakshmanan (1992) propose that stabilization may lead to development for the L2 children as opposed to fossilization in case of the L2 adults, because children may be more successful than adults in the reanalysis of the target language input.

7. Discussion and concluding remarks

The results reported in the present study seem to suggest both an effect of structure and of age in the L2A of third person direct object clitics and the definite article. More specifically, the data from the production tasks showed that initially there is transfer of L1 properties, as the two D-elements are missing from child and adult L2 learners' interlanguage or they are produced to a low degree. At intermediate stages of acquisition an asymmetrical pattern is observed between the production of clitics and articles, with the latter reaching target-like performance at the high proficiency level and only in the case of L2 children. The L2 adults were less successful in the production of the clitic, and, additionally, its mastery was task-dependent, as a sharp contrast was exhibited between the story-telling and the act-out task. Consecutively, the effect of structure is evidenced in the asymmetrical acquisition pattern of the definite article as opposed to that of the morphophonologically similar clitic pronoun. The effects of age are more difficult to interpret since the acquisition of the clitic in case of the adults seemed to be task dependent.

How can these results be explained in light of L2A theories? A first possible explanation for the initial lack of clitics and articles to consider is transfer of the L1 properties. Although transfer, as it is attested in the initial lack of articles and the persistent use of null objects, seems to be one contributing factor, it cannot fully account for the later asymmetrical acquisition pattern of the two D-elements. Full Transfer would predict that both elements would be equally missing from the L2 learners' initial state. This is partially true though, since L2 learners do not simply use null objects; rather, full lexical complements are also produced, which is a UG or language-allowed option, as can be seen from the L1 acquisition data. In this sense it can be argued that L2A is UG-constrained. Moreover, mere transfer cannot explain why clitic omission is persistent until later stages of acquisition.

These data are also problematic for the Interpretability Hypothesis (Tsimpili 2003) or the Failed Functional Features Hypothesis (Hawkins & Chan 1997), as both theories predict that the two D-elements would be *equally* missing from the initial state and due to their common uninterpretable features they will not be acquired, something which is not supported by the data.

Since mere transfer cannot account for the present results, further explanations need to be sought in the properties of the L2 system. Two questions need to be answered: (i) why clitics are delayed and articles are acquired early, and (ii) why adult L2 learners differentiate between the two tasks.

Starting from the second part of the first question, the definite article in Greek appears consistently with all types of nouns (see Section 2.1.1). The task of the Turkish L2 learner of Greek is to figure out that nouns can be turned into argu-

ments by producing an overt inflectional element before the noun. The agree relationship between D-N (cf. Tsimpli & Mastropavlou, to appear), its consistency and systematicity of occurrence then guide the L2 learner into the acquisition of the definite article in Greek. Notice that early acquisition of the definite article has also been reported in L1 Greek (Section 4). This is in line with the pattern observed in languages such as French, Italian or Spanish, where the determiner is also used expletively and systematically and contrasts with findings from languages such as German or English, in which the learner is further faced with the task of establishing the types of nouns that can be preceded by the determiner as well as the syntactic positions in which the determiner is obligatory (Kupisch 2003). The Turkish L2 learner then is able to *reassemble* (Lardiere 2005) the features related to definiteness and are realized on a lexical head in the L1 into a proclitic element, which is the spell-out of phi-features in the L2. This is evidenced by the fact that both child and adult L2 learners exhibit a subject-object asymmetry in the production of the definite article and do not produce it in illicit contexts, indicating thus that they represent it in a target way and are not merely guided by morphophonological cues. In this sense the L2 learners have acquired that the definite article is a spell-out of D and that it assigns reference to the entire noun phrase. If it is to be pursued that clitics and articles should have a similar pattern and Case as a lexical feature on N cannot be reset by L2 learners (Tsimpli & Mastropavlou, to appear), then it is problematic why articles do not exhibit any deviant properties.

With regard to the first part of question (i) and question (ii) we will attempt to answer them by reducing them to a single phenomenon. This is related to the inherent properties of the clitic as (i) a morphosyntactic deficient form, and (ii) its dependence on the syntax-discourse interface. Before we continue the discussion, let us say that, although transfer of the pro-N properties of the null element from the L1 is a logical possibility which could be at work in the L2 learners' interlanguage in the present study, the argument towards misanalysis and misrepresentation of Case cannot be asserted on the basis of the present data, given also the findings from the acquisition of the article. If the demand for the parallel treatment of the clitic and the article from (at least) an acquisition point of view is abandoned, then there is no need to argue that the article is being misanalyzed, although it is produced to a high degree; instead, one could focus on the properties of the clitic that render it difficult to acquire.

More particularly, and with regard to question (i), it was outlined in Section 2.1.3 that clitics constitute complex items in terms of internal structure being both $\phi P/\phi$ elements, that is, a bundle of phi-features (Mavrogiorgos 2007) that appear non-canonically as arguments of the verb and whose occurrence depends on discourse factors. They lie, thus, in the borderline of morphosyntax, as they

are arguments with a deficient spell-out, which for some researchers lack a lexical core (Section 2.1.3). As such, they can incorporate on the verb to check their case and referentiality features, but at the same time they can act as pure resumptive elements, i.e. spell-out of phi-features in case of structures, such as clitic doubling. It is maintained then that L2 children, when receiving sufficient input, are capable of integrating knowledge from both the morphology-syntax and the syntax-discourse interface. For the L2 adult the first domain seems rather problematic. That is, the more resumptive the use of the clitic is, the more omission it triggers.

For the L2 adults, there seems to be a dissociation between morphology and syntax (see MSIH). In this sense, it can be argued that the discrepancy found in case of adults with respect to the acquisition of clitics is on the one hand linked to the degree of deficiency of the clitic and to discourse properties, on the other. More precisely, one possible explanation that can be entertained at this stage is motivated by Anagnostopoulou & Giannakidou's (henceforth A&G) (1995) analysis of clitic doubling (CD) and the conditions that govern its occurrence in Greek. Thus, in Greek the DP can be doubled by a clitic and this has been suggested to be regulated by the Prominence Condition (Heim 1982), which requires the referent of a pronoun be a prominent discourse-entity (A&G 1995:3). Whereas in simple clitic context, like the ones found in the story-telling task, a definite DP previously introduced is replaced, in order for CD to occur a DP needs not be just definite, but also prominent in discourse. It could be, thus argued that the elicited-production task could provide for the L2 learners a felicitous context for the doubling of a prominent DP, and it was interpreted as such by the adult L2 learners.³¹ This would suggest that the L2 learners differentiate between the two uses of the clitic, i.e. its referential use and its resumptive use (cf. Tsimpli & Sorace 2006 for similar observations). This claim is further supported by the examination of the structures produced instead of the clitic. As Table 9 shows, L2 adults produce full lexical noun phrases. In the majority of these utterances the verb is placed in verb initial position and bears contrastive focus (to oppose to what was previously uttered by the puppet) (Chondrogianni 2008). This suggests that adult L2 learners have the possibility of acquiring the focusing properties in Greek, but have persistent problems with the use of the clitic as a true spell-out of phi-features. Child L2 learners on the other hand, when not affected by the degree of input received (Blom 2006; Hulk & Cornips 2006) can acquire clitics as deficient arguments, that is, as a spell-out of features. This suggests that both age and input could affect complex operations which need the integration of different domains. The degree to which clitics are susceptible to the degree of critical mass can be

31. Analysis of the L1 data showed that some subjects produced the CD contexts. The same response is also documented by Tsakali & Wexler (2003).

seen in Tables 12 and 13 coupled with the subjects profile in Section 5.1. It is the case then that 10 year-olds who have been exposed to the L2 for 5 years, belong to a low proficiency level and have low production of the definite article and the clitic, with the main effect of the asymmetrical acquisition of the two D-elements being apparent, although subjects at an older age should be examined in order to see stabilization of a structure (Laloi et al. 2005).

Taken all together, these results suggest that transfer was modular and it affected the two D-elements to different degrees. A delayed acquisition of the clitic was attested in both learner populations, which accounts for similarities in the syntactic domain for child and adult L2 learners. The differences, though, found with respect to the acquisition of clitics in the elicited production task and more specifically, in contexts where either a resumptive clitic could be produced or a prominent discourse use of the clitic is required, point towards the direction of a coupling of age and input effects in these domains affecting both adult and child L2 learners.

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PART III

Morphological variability

The development of copula and auxiliary *be* and overgeneration of *be* in child L2 English

Elena Gavrusseva
University of Iowa

This article examines an asymmetry in the acquisition of copula and auxiliary *be* in a longitudinal corpus of English-acquiring consecutive bilinguals (ages 6;4–9;2). I argue that a delay in the productive use of auxiliary *be* vis-à-vis the copula can be explained under a theory of early L2 grammar that assumes an underspecified AspP. If aspectual features are taken to be underspecified in the initial state, structures requiring aspectual specification are expected to appear in a non-finite form (bare *-ing* or bare stem). These predictions are borne out in the L2 data as *-ing* forms and bare stems occur in non-finite and often aspectually inappropriate contexts and that the aspectual errors occur while the copula is used in an adult-like way.

1. Introduction

Studies of child L2 in consecutive bilingual contexts report that children acquiring languages like English and French produce non-finite root declaratives akin in form to Root Infinitive (RI) utterances in L1 acquisition (Armon-Lotem 1997; Gavrusseva & Lardiere 1996; Grondin & White 1996; Haznedar & Schwartz 1997; Prevóst 1997; Prevóst & White 2000). Non-finite predicates in child L2 English show extensive omissions of tense/agreement markers (3PSG *-s*, past tense *-ed*, auxiliaries, copula, etc.) and therefore appear as bare stems, bare *-ing* forms, and copulaless predicatives. Some examples of typical early RI-like utterances are given in (1) (the data are from a 6;9 year-old girl whose L1 is Russian; omitted constituents are in square brackets):

- (1) a. [Girl] draw (cf. 'The girl is drawing') (Alla, file 4)
- b. [In] October [I] be seven (cf. 'In October I'll be seven') (Alla, f. 4)
- c. Sometimes cake sweet (cf. 'Sometimes cake is sweet') (Alla, f. 4)

Table 1. Omission rates of copula and auxiliary *be* across acquisition contexts

Study	Context	Overt copula	Null copula	Overt auxiliary	Null auxiliary
Becker 2000 ¹	L1	72.4% (949)	27.6%	36.2% (831)	63.8%
Joseph et al. 2002 [stages 1–3]	L1	62% (464)	38% (284)	34% (53)	66% (103)
Joseph et al. 2002 [stages 1–3]	SLI	68.3% (1750)	31.7% (812)	35% (245)	65% (456)
Haznedar 2001 [samples 1–22]	Child L2	91% (437)	9% (42)	42.5% (137)	57.5% (186)
Ionin & Wexler 2002	Child L2	83%	17% (69)	66%	34% (158)

The issues central to an analysis of the productions in (1) involve the nature of syntactic representations, in particular the availability of functional architecture and the values of syntactic features associated with functional heads. In this article, I examine these issues by focusing on the acquisition of finiteness in structures requiring either copula *be* or auxiliary *be* as in (1a) and (1c). My interest in these constructions is motivated by an empirical observation about child English that suggests a developmental asymmetry between these two categories. A comparison of statistical tendencies in Becker (2000), Haznedar (2001), Ionin & Wexler (2002), Joseph, Serratrice & Conti-Ramsden (2002) indicates that during an optionally finite stage the omission rates of auxiliary *be* far exceed those of the copula in the data of monolingual normally-developing English children, SLI English children, and child L2 learners of English. Consider the distributions in Table 1 compiled from the respective sources.²

1. The data on copula omissions from Becker (2000) include only nominal predicatives (e.g. 'He's a dog'). According to Becker (2000: 134), copula omission rates are much lower in locatives (e.g. 'Foot in the water') and adjectival predicates (e.g. 'Her thirsty'): 20.9% and 46.2% respectively. The studies included in Table 1 did not separate copula omissions by predicate type. In Gavruseva & Meisterheim (2003), we examined copula omissions by predicate type using the child L2 data that are discussed here. No differences in copula omission rates by predicate type were found between nominal and locative predicatives.

2. The numbers in parentheses in Becker (2000: 145) indicate the total number of contexts out of which the percentage was calculated. The figures exclude the contexts from Eve's data because her development is quite distinct from the other children studied in Becker. The percentages for Joseph et al.'s (2002) data were calculated based on their Table 2 (p. 148) by averaging the number of contexts in each category across the children and three developmental stages (within each stage, the copula-auxiliary asymmetry holds). Child L2 statistics come from Tables A1 and A2 in Haznedar (2001: 32–33) and from Table 1 in Ionin & Wexler (2002: 106) who report only the number of omissions in obligatory contexts. It is also important to point out that Brown (1973) observes the copula-auxiliary asymmetry and that a similar asymmetry is also reported for other languages, for examples, child Italian (Caprin & Guasti 2006).

The data in Table 1 suggest that auxiliary *be* lags behind the copula in development, despite the fact that the morphological spell-outs of the two non-thematic verbs are identical (*am, is, are, was, were*). The child facts in Table 1 inspire the following research questions: (a) Why should the copula-auxiliary asymmetry be found in child language development across a variety of contexts? (b) Does the asymmetry in child L2 follow from the same syntactic properties as in child L1, thereby suggesting some deeper similarities between child L2 and child L1 acquisition?³

A plausible account of the cop-aux asymmetry in child L1 could be proposed within the Unique Checking Constraint (UCC) model of the Optional Infinitive stage (Wexler 1998). In Wexler's model, copula and auxiliary omissions are licensed by the same principles that allow non-finite thematic verbs to be used as root predicates (i.e., by the optional omission of Tns or Agr). While Wexler does not address the copula-auxiliary asymmetry directly, his analysis of auxiliary omissions in Italian *passato prossimo* structures (e.g. 'Maria ha mangiata' [Maria have.3PSG eaten] meaning 'Mary ate') points to a possible solution within the UCC model. According to Wexler, a copula and auxiliaries share the same set of syntactic features (namely, tns/agr and D[an EPP-like feature]) but are base-generated in distinct functional projections, TP and AuxP respectively. Consider the representations in (2) based on Wexler's example (53) (1998:73):

- (2) a. AgrS [Tns_[D] BE] [DP V...] (copula)
 b. AgrS Tns_[D] [Aux_[D] BE] [DP V...] (auxiliary)

As long as UCC is operative in child grammar, the D-feature on functional heads can be checked only once via subject DP movement to the Spec of Tns and/or Aux. The feature composition in (2a) allows for the D-feature to be checked in a single step, unlike in (2b), where both Tns and Aux are specified for D. The derivation in (2b) requires that D-checking proceed in two steps, first against Aux and then against Tns, and therefore is ruled out by the UCC. Because (2b) is illicit in child grammar, the surface spell-out lacks an auxiliary and consists solely of a bare participle (e.g. a bare *-ing* form as in 'Me drawing' in child English or a bare past participle as in 'Maria mangiata' in child Italian). Copular predicatives, by contrast, appear in a finite form as no violation of UCC is expected to occur. In summary, the copula-auxiliary asymmetry in L1 acquisition could be attributed to the workings of UCC. It is noted, however, that a UCC-based analysis does not extend to

3. I put aside the comparisons between child L2/L1 and SLI and focus on comparing the relevant structures in normally developing children. While the comparisons of typical and atypical language development are important in and of themselves, they lie outside the scope of this research.

consecutive child L2 contexts because Wexler (1998) views UCC as a principle that is subject to maturational growth at ages 2–3. If UCC matures at such an early age, it cannot constrain grammatical development in late childhood.

According to Table 1, the copula-auxiliary asymmetry is robustly present in children acquiring English as consecutive bilinguals. In consecutive bilingualism, exposure to an L2 begins roughly at ages 4–8, when children's native language (L1) is fully in place. Language acquisition proceeds in a naturalistic context with minimal or no explicit instruction. Child L2 is therefore akin to child L1 in that it falls within the critical period, which puts child L2ers into a learner population who is likely to develop native-like knowledge of a second language (Johnson & Newport 1989). On the other hand, consecutive bilinguals are also likely to experience some L1 influence while acquiring L2 grammars. How extensive an influence L1 exerts on L2 remains an empirical issue that can be investigated by comparing errors and patterns of development across child L1 and child L2 contexts. Child L2 errors that are similar in form and sequence to L1 errors and that can be used to single out acquisition stages are considered 'developmental' in nature (i.e. they arise independently of a child's L1). These errors can be used to build an argument for treating child L2 grammars as being constrained by the same grammatical mechanisms that are operative in child L1 (see Schwartz 2004 for discussion). Errors that are specific either to child L1 or child L2 would constitute evidence for analyzing L1 and L2 as having distinct properties. Some of these properties are likely to be compatible with UG-options and in the case of child L2, some properties might be traceable to L1 influence, provided that L2 children of the same L1 background exhibit those errors on a systematic basis.

One of the goals of this article is to shed light on the grammatical origin of structures involving omissions of copula and auxiliary *be* through a detailed examination of their error patterns in the child L2 data. What follows are some preliminary empirical observations that define the scope of analysis.

In terms of development, utterances missing copula or auxiliary *be* are observed during an optionally finite stage when child L2 learners extensively omit inflectional morphology on lexical verbs. Auxiliariless structures appear either as bare stems or as bare *-ing* participles, as shown in (3) (adult interpretations are based on conversational context and extra-linguistic information):

- (3) a. This time I watch your car (Alla, file 5)
 (cf. 'This time I'm watching your car')
- b. This girl showing here fingers like this too (Alla, file 5)
 (cf. 'This girl is showing [her] fingers here like this too')

Furthermore, while dropping auxiliary *be*, some L2 children do not use *-ing* forms with appropriate aspectual semantics. (4) illustrates the use of *-ing* in a habitual context:

- (4) When you coming, we play (Dasha, file 7)
(cf. 'When you come [to my house] we play')

Some children in the copula-auxiliary asymmetry stage also produce utterances containing an 'extra' *be* (Ionin & Wexler (2002) describe such utterances as 'over-generation of *be*' errors.) Some examples are given in (5) (the meaning is based on the context of interaction). Notice that the utterances vary in temporal reference (present or past), irrespective of the present form of *be*.⁴

- (5) a. Who is tell her? (cf. 'Who told her?') (Toshiko, file 9)
b. Because she's have a five (Sultana, file 5)
(cf. 'Because she has five [cards]')

Taken together, these empirical observations raise the following questions: (a) First, if utterances with missing auxiliary are found during an optionally finite stage, do the properties of these utterances (e.g. surface spell-outs, misuse of aspectual *-ing* semantics, developmental lag of auxiliary *be*) follow from the syntactic nature of an optionally finite grammar? (b) Second, how do overgeneration of *be* errors fit in with the copula-auxiliary asymmetry (e.g. does overgenerated *be* emerge during an 'auxiliary *be* omission' stage?) Clearly, answering these questions requires a theory of an optionally finite stage and an analysis of copula and auxiliary *be* in terms of syntactic features.

The article tackles these issues and is organized as follows. Section 2 outlines Gavruseva's (2003, 2004) framework that serves as a departure point for the analysis of early child syntax. Section 3 provides an overview of the child L2 data. Section 4 presents an analysis of the copula-auxiliary asymmetry and Section 5 addresses overgeneration of *be* errors. Section 6 concludes the article.

2. Child L2 initial state: The underspecification of AspP hypothesis

Much current debate in the L2 literature has focused on the nature of L2 initial state, with theories differing on the issue of functional categories and their speci-

4. It is unlikely that examples in (5) illustrate omissions of *-ing* (i.e. it is not the case that the children supply auxiliary *be* and omit *-ing* morphology, so that (5a) is to be interpreted as 'Who is telling her?' and (5b) means 'Because she's having a five'.) The reason is that overgenerated *be* does not appear in progressive/ongoing aspectual contexts.

fication. The theoretical positions range from the Minimal Trees hypothesis that argues for the presence of lexical projections only (Vainikka & Young-Scholten 1996) to the Full Access to UG hypothesis that claims full availability of functional architecture (Epstein, Flynn & Martohardjono 1996) and the Full Access/ Full Transfer hypothesis that purports full access to functional architecture both via UG and a learner's L1 (Schwartz & Sprouse 1996). In this article, I assume a version of the underspecification theory of RIs, arguing that child L2 RIs are true non-finites that result from an underspecified Aspect Phrase. The proposed line of analysis differs from some recent approaches that view child L2 (and adult L2) RIs as fully specified for syntactic tense and agreement (e.g. Haznedar & Schwartz 1997). On these approaches, the surface form of non-finites is attributed to the problems in mapping from abstract syntactic *tns/agr* features to the corresponding surface morphology. While the issues concerning the nature of RIs in child L2 are far from being settled, one advantage of the approach that assumes an underspecified Asp head is that it allows us to derive the copula-auxiliary asymmetry across the acquisition contexts (e.g. L1 and child L2), by assuming the differences in aspectual values between copula and auxiliary *be*.

In what follows I first discuss the feature specifications of copula and auxiliary *be* and then present a theory developed in Gavruseva (2002, 2003, 2004) that attributes RIs to the underspecified nature of Aspect Phrase in child grammars. In the final subsection, I discuss the implications of the theory for the child L2 initial state and the developmental issues outlined in Section 1.

2.1 Auxiliaries *be* and *have* as spell-outs of aspectual heads

The evidence that copula and auxiliary *be* have distinct aspectual specifications comes from a comparative examination of the present tense paradigms in English and French. In Gavruseva (2004), I discuss the data in (6) from Guéron (2002) showing how English and French present tense forms differ in aspectual semantics.

- (6) a. Marie mange une pomme maintenant.
 Marie eat.3PSG an apple now
 'Mary is eating an apple now'
- b. Marie mange une pomme depuis hier.
 Marie eat.3PSG an apple since yesterday
 'Mary has been eating an apple since yesterday'
- c. Marie mange des pommes chaque jour.
 Marie eat.3PSG DET.INDEF apples every day
 'Mary eats apples every day'

Examples (6) show that the form *mange.3PSG.Pres* ('eats') can be used to indicate ongoing eventualities (6a), eventualities that began in the past and continue into the present (6b) (the so-called 'extended present'), and habitual eventualities (6c). By contrast, English is argued to have 'defective' simple present because inflected verbs typically have a habitual reading:⁵

- (7) a. What is Mary doing now? *She eats an apple (now).
 b. *Mary eats an apple since yesterday.
 c. Mary eats apples every day.

Guéron (2002) interprets the facts in (6)–(7) as evidence that English lacks an imperfective (IMP) aspectual morpheme whose availability in a language is held responsible for the varied aspectual semantics of present tense. According to Guéron, the IMP morpheme (which in the case of French simple present is morphologically null) consists of the features [+extended] ([+ext]) and [–bounded] ([–bnd]). The latter fuse with the tense morpheme in the syntax to ensure all of the aspectual contrasts in (6).

In Gavrusseva (2004), I elaborate on Guéron's (2002) analysis and propose that the defective aspectual semantics of present tense in English result from the IMP features [+ext] and [–bnd] being distributed across several aspectual heads as opposed to being fused in one aspectual morpheme/head. For example, the [–bnd] feature is spelled out as auxiliary *be* (and possibly *-ing*) and is better captured by the specification [+progressive] in English.⁶ The [+ext] feature is encoded in auxiliary *have* (capturing the fact that the temporal interval extends into the past), with '*be* and *-ing*' supplying the progressive semantics. Habitual interpretations,

5. In some pragmatic contexts (e.g. sports broadcasting), simple present can be used to denote ongoing events if those occur in succession.

6. It is an interesting theoretical question whether *be* and *-ing* have identical or slightly different aspectual specifications and whether both are associated with distinct aspectual heads in the syntax. For example, the [–bnd]/[+progressive] feature could be exclusively associated with auxiliary *be*, with *-ing* encoding some closely related semantics that are compatible with the [–bnd]/[+progressive] feature, such as [+durative]. Whether *-ing* is analyzed as semantically distinct from or similar to *be* might have some bearing on the question concerning an analysis of *be* and *-ing* as distinct functional heads. If *be* and *-ing* are both [–bnd]/[+progressive], it means that both morphemes are specified for grammatical aspectual features, which need to be checked in the syntax. On this approach, *be* could correspond to an external Asp head that fuses with T and *-ing* could correspond to a VP-internal Asp head that fuses exclusively with V. However, if *-ing* is analyzed as having more general aspectual semantics (not encoded in the functional architecture of the language), it does not have to project an independent functional head and could merge with V in the morphological component (Baker 2003). I will return to this point in Section 4.2.

by contrast, are conferred on verbs in simple present by a null [+habitual] aspectual operator. This proposal explains why English has periphrastic constructions in (8) and singles out auxiliaries *be* and *have* as spell-outs of aspectual heads:

- (8) a. Mary is_[-BND] eating_[-BND] an apple (now).
 b. Mary has_[+EXT] been_[-BND] eating_[-BND] an apple (since yesterday).

Also observe that the respective auxiliaries can be inflected for tense and agreement, which suggests that these elements are syntactically related at least to AgrP, TP, and AspP.⁷

2.2 The role of aspect in an optionally finite stage

In Gavruseva (2003, 2004), following Guéron (2002), Guéron & Hoekstra (1995), I proposed that aspectual features must fuse with Tns (i.e., head-adjoin to Tns) in the context of a syntactic temporal chain (T-chain) to yield a representation temporally and aspectually interpretable at LF:

- (9) CP...TO_i ...Tns_i ...AspP...VP⁸ (based on Guéron & Hoekstra 1995)

Furthermore, in proposing that Tns and Asp are syntactically related, I also argued that the syntactic licensing of T-chains is subject to the constraint in (10) (Gavruseva 2003):

- (10) *Constraint on the syntactic licensing of temporal chains:*
 The Tense Operator (TO) cannot bind Tns unless the VP predicate is specified for syntactic aspectual features.

7. An anonymous reviewer asks why auxiliaries *be* and *have* cannot be analyzed solely as tns/agr spell-outs, independent of AspP. If the cross-linguistic comparative evidence is not convincing, one could consider the role of auxiliaries in the sentences such as 'John should be reading' or 'John will have been reading by 5 o'clock' where auxiliaries *be* and *have* appear in modal constructions. Modal verbs are traditionally analyzed as [+tense] elements. If *be* and *have* were exclusively tns/agr markers, they should not be appearing in these modal constructions, but they do so (in a non-finite form) and the reason is that they are markers of aspect.

8. In (9), the T-chain is based on Guéron & Hoekstra (G&H) (1995) and contains a Tense Operator (TO) in the Spec of CP. The role of the TO is to 'fix' temporal reference of tense features under T. In G&H's approach, the TO binds T without checking the status of AspP. The addition of AspP to the T-chain and the constraint in (10) is my extension of G&H's analysis.

Constraint (10) suggests that it is not possible to have finiteness (i.e., *tns/agr*) without the syntactic specification for aspect.⁹ In other words, for a predicate to be finite it must be specified for aspect via checking of aspectual features that define an aspectual system of a language L.

A noteworthy difference between *Tns* and *Asp* is that *Tns* features enter into a quite straightforward featural opposition [+/- past], which is likely to be attested in all human languages. Aspect, on the other hand, is a more 'fickle' syntactic category in that it is much more crosslinguistically diverse. Typologically, languages differ both in the inventory of syntactic aspectual morphemes and the combinatorial possibilities available for these morphemes. For example, English and Slavic have strictly binary aspectual oppositions (imperfective/perfective and progressive/generic (non-progressive), respectively). On the other hand, Guyanese creole makes use of several aspectual particles (progressive, durative, habitual) that do not appear to be mutually exclusive as all three can be part of a syntactic representation (see Cinque 1999 for examples and further discussion). Crosslinguistic differences also extend to how aspect interacts with tense in the morphosyntax. For example, the IMP aspect and tense in French are fused in the present and past inflectional paradigms yielding the *Imparfait* tense, a category that is quite distinct from the 'pure' IMP aspect in Slavic, which is morphologically independent of *Tns*. In English, the [-*bnd*]/[+progressive] feature can appear independently of tense in non-finite contexts (e.g. 'John saw him dancing'). In finite root contexts, it appears as fused with *tns/agr* features in auxiliaries *be* and *have*. Given that the inventory of aspectual features is parameterized across languages, a child has to specify the features of *AspP* from positive evidence and integrate them into binary or non-binary oppositions, while [+/-past] features might very well come 'for free', a binary specification drawn directly from UG.

In Gavruseva (2003), I capitalize on the parameterized nature of *Asp* to put forth a hypothesis that early child L1 grammars are initially underspecified for grammatical aspect. This property of children's syntax leaves VP predicates unspecified for syntactic aspectual features, which precludes proper licensing of the T-chain. The underspecified nature of syntactic representations is reflected in the prolific use of non-finite predicates, a period known as the RI stage. One empirical prediction of this analysis is that English-acquiring children in the RI stage are expected to make no aspectual distinction between *-ing* forms and *non-ing* (bare) forms as the relevant aspectual features are assumed to be underspecified. If so, the sentences in (11) could appear in the same aspectual contexts (e.g., progressive):

9. It is noted that it is possible to have aspectual specification in the absence of finiteness via lexical aspect semantics of verbal predicates (e.g. *telic/atelic*).

- (11) a. Mommy feed ducks
 b. Mommy feeding ducks

Furthermore, with aspectual features underspecified, children are expected to make aspectual errors (for example, by using *-ing* forms for habitual eventualities). The non-adult aspectual uses of both forms should disappear once children figure out the aspectual values of the functional Asp heads and posit the grammatical distinction central to the aspectual system of English (i.e. progressive/non-progressive (or generic)).

Returning to the acquisition of copula and auxiliary *be*, Gavruseva's (2003, 2004) approach predicts a developmental asymmetry between the two elements. The syntactic analyses suggest that copula *be* in English is specified solely for *tns/agr* features (Heycock 1994), which makes its syntactic acquisition independent of Asp. By contrast, auxiliary *be* carries the aspectual [-bnd]/[+progressive] feature along with *tns/agr*. In a grammar underspecified for Asp, auxiliary *be* will be omitted as long as its aspectual feature remains unspecified. The copula-auxiliary asymmetry in syntactic development follows from this approach. English-acquiring children should go through a stage when utterances with an overt copula co-exist with utterances in (11). On Gavruseva's approach, one also expects an earlier stage when children use a zero copula, along with sentences in (11). After all, children have to learn the finite variants of copula *be* from the input, which may take some time, and so a (possibly) brief non-finite stage should precede an optionally finite stage.

In Gavruseva (2004), I suggest that the underspecification of Asp proposal can also be extended to child L2 acquisition. The child L2 initial state is thus characterized by syntactic representations lacking in the L2 target-appropriate aspectual features.¹⁰ L2 English-acquiring children are therefore expected to be like L1-acquiring peers in producing sentences in (11), making aspectual errors involving *-ing* and bare forms, and exhibiting the copula-auxiliary asymmetry in syntactic development. Naturally, there exists an alternative possibility, namely that the child L2 initial state might also be characterized by aspectual features transferred from a child's L1 (Schwartz & Sprouse 1996). If these features are distinct from what the target language has, there should be a difference in developmental patterns between child L1 and child L2. Furthermore, if a child's L1 exerts a developmental influence, there should be differences in aspectual errors between L2 children of various L1 backgrounds. Which of the two possibilities

10. The claim that AspP is underspecified in child L2 does not preclude the availability of the projection in clausal architecture. The knowledge that AspP is needed for a sentence to be interpreted aspectually at LF presumably comes from UG.

(underspecified child L2 grammar vs. L1-influenced child L2 grammar) is the more plausible characterization of the child L2 initial state remains an empirical issue. In this article, I put to an empirical test the predictions of the underspecified Asp approach by investigating the copula-auxiliary development in the longitudinal child L2 data.

3. Data and method

The data used in this investigation come from a longitudinal study of five consecutive English-acquiring bilinguals, all female (ages of first exposure 6;4–9;2). The children were tape-recorded during spontaneous play with a native speaker of English for a time period ranging from 3 to 8 months. (Two of the children, Sultana and Tamara, are siblings and were tape-recorded in the same play sessions.) Data collection was arranged almost immediately after the children arrived in the US with their parents who were visiting scholars or researchers. The children's ages in Table 2 correspond to the time when they were first exposed to English in a school setting. The children were naturalistic acquirers, having received no formal English instruction prior to their arrival and during their stay in the US. In files 1–2, all children's utterances consisted of single words and occasional two-word combinations, which indicates that the child participants were at comparable developmental stages at the onset of the study.

The play sessions were transcribed and checked for accuracy by two native speakers of English (a single session was approximately 60 minutes in length). The

Table 2. Data collection schedules

File #	Toshiko(6;4) L1-Japanese	Dasha (8;1) L1-Russian	Alla (6;9) L1-Russian	Tamara (7;10) & Sultana (9;2) L1-Azerbaijani
File 1	Oct. 4, '00	Nov. 14, '94	July 13, '00	Oct. 5, '00
File 2	Oct. 25, '00	Nov. 30, '94	Aug. 30, '00	Nov. 27, '00
File 3	Nov. 29, '00	Dec. 7, '94	Sept.14, '00	Jan. 14, '01
File 4	Dec. 15, '00	Dec. 18, '94	Sept.28, '00	Mar. 31, '01
File 5	Jan. 24, '01	Jan. 13, '95	Nov. 5, '00	Apr. 21, '01
File 6	Feb. 21, '01	Jan. 20, '95	Dec. 3, '00	May 19, '01
File 7	Mar. 21, '01	Jan. 27, '95	Jan. 14, '01	June 10, '01
File 8	Apr. 11, '01	Feb. 10, '95	Mar. 4, '01	
File 9	May 2, '01	Feb. 17, '95	Mar.24, '01	
File 10	May 23, '01	Mar. 3, '95	Apr. 4, '01	
# of months	7.2 months	3.2 months	8.3 months	8 months

utterances coded for the analysis consisted of declaratives with pronominal and NP subjects. The utterances where the copula was used with a demonstrative, a *wh*-word, or dummy subject (e.g. ‘That’s cool’, ‘It’s okay’, ‘What’s that?’, or ‘This is good’) were analyzed separately and were not included in the overall rates of suppliance/omission. (There is always some doubt whether a copula in these expressions is analyzed as an independent category by children, especially in the early files).¹¹ Repetitions, incomplete, and unintelligible utterances were also excluded from the analysis.

It is important to mention that the observation periods were unevenly spread out across the children and that the data sampling sessions were not as frequent in some cases as would be desirable (sometimes the children’s parents cancelled an appointment, on other occasions a child participant got sick, a few recordings of Tamara and Sultana turn out to be corrupt, etc.). These limitations of spontaneous data are hardly avoidable and certainly limit the ways in which the available data can be analyzed. For example, a particular developmental pattern might be not as pronounced in one child as opposed to another due to the differences in sampling frequencies. In Dasha’s case specifically, a smaller number of observation sessions limits the ways in which her development can be compared to the overall development in other children. Yet, an analysis of the data did reveal the patterns common to all children, and in particular, made it possible to focus on the early emergence of various forms of *be*. The next section discusses the relevant developmental patterns.

4. Results

4.1 Copula and auxiliary *be* in the child L2 data

Recall the predictions of the underspecified AspP hypothesis:

1. A non-finite stage should precede an optionally finite stage.
2. Bare *-ing* forms and bare stems should be used in similar aspectual contexts (i.e. aspectual errors with both forms are expected).
3. The copula-auxiliary asymmetry in an optionally finite stage is expected.

11. There is a possibility that in utterances starting with ‘this is’ the copula might be analyzed as a separate morpheme because it appears in an uncontracted form. Nevertheless, such utterances were excluded because the unit ‘this is’ sometimes showed up in sentences like ‘This is Mary make pizza’ (meaning ‘Mary made the pizza’). Productions of this sort suggest that ‘this is’ might be used in a formulaic way.

Table 3. Use of copula and auxiliary *be* in Alla's data

	Use of copula <i>be</i>		Stems and (aux. <i>be</i>) + <i>-ing</i> in progressive contexts		
	Overt <i>be</i>	Null <i>be</i>	bare stem	bare <i>-ing</i>	<i>be.Fin</i> + <i>-ing</i>
file 3	50% (1)	50% (1)	100% (7)	0	0
file 4	0	100% (2)	100% (7)	0	0
file 5	89% (8)	11% (1)	80% (4)	0	20% (1)
file 6	75% (6)	25% (2)	0	14% (1)	86% (6)
file 7	100%(16)	0	0	0	100% (5)
file 8	100% (12)	0	0	0	100% (4)
file 9	100% (9)	0	0	0	100% (7)
file 10	100% (10)	0	0	0	100% (14)

The child L2 developmental trends largely support the predictions in (1–3):

- a. Children go through a non-finite stage and transition to an optionally finite stage (the transition is marked by the acquisition of copula *be*).
- b. While all children aspectually misuse bare stems in progressive contexts, not all children make aspectual errors with *-ing* forms.
- c. All children show the copula-auxiliary asymmetry in development. (The missing auxiliary structures in some children consist mainly of bare stems. In other children, a mixture of bare stems and bare *-ing* forms is observed.)

What follows is an analysis of individual child data.

Table 3 presents a file-by-file analysis of bare stems and bare *-ing* forms, along with the uses of the copula and auxiliary in Alla's data (L1-Russian). (Bare stems in ongoing contexts are taken to be non-finite versions of *be* + *-ing* constructions.)

Files 3–4 capture a non-finite stage in Alla's L2 development.¹² This stage is characterized by a small number of copulaless predicatives and aspectual misuses of bare stems in progressive contexts (cf. examples (1) earlier). There is no evidence of *-ing* morphology in these files.

File 5 shows a noticeable increase in finite predicatives and the first use of a finite auxiliary *be*. In this file, bare stems are still used with progressive semantics. File 5 signifies a transition to an optionally finite stage, which is marked by the acquisition of the copula. Concurrently, it illustrates the copula-auxiliary asymmetry in language development, with auxiliariless structures appearing as bare stems. Alla's data suggest that in some children the copula-auxiliary asymmetry

12. An anonymous reviewer asks if there were other markers of finiteness during this stage (e.g. past tense or 3PSG *-s*). In all L2 children discussed here, a non-finite stage preceded a finite stage and was distinguished by the exclusive presence of copulaless predicates and bare stems. In some children, bare *-ing* forms emerged during a non-finite stage.

Table 4. Use of copula and auxiliary *be* in Dasha's data¹³

	Use of copula <i>be</i>		Stems and (aux. <i>be</i>) + <i>-ing</i> in progressive contexts		
	Overt <i>be</i>	Null <i>be</i>	bare stem	bare <i>-ing</i>	<i>be.Fin</i> + <i>-ing</i>
file 1	0	100% (6)	0	0	0
file 2	100%(1)	0	0	0	0
file 3	81% (13)	19% (3)	52% (15)	48% (14)	0
file 4	73% (24)	27% (9)	46% (6)	46% (6)	8% (1)
file 5	100% (2)	0	0	0	0
file 6	78% (36)	12% (10)	64% (18)	29% (8)	7% (2)
file 7	80% (4)	20% (1)	33% (2)	67% (4)	0
file 8	97% (37)	3% (1)	36% 5	64% (9)	0
file 9	86% (7)	14% (1)	31% (4)	54% (7)	15% (2)
file 10	67% (2)	33% (1)	0	50% (1)	50% (1)
Total	80% (126)	20% (32)	48% (50)	47% (49)	5% (6)

shows up not so much as a discrepancy between finite predicatives and bare *-ing* structures, but rather as an aspectual misuse of bare stems that appear alongside finite predicatives. The fact that the overt copula emerges prior to the overt auxiliary provides a further piece of evidence for the copula-auxiliary asymmetry in Alla's L2 acquisition.

In terms of development, file 6 is especially noteworthy. In this file, bare stems are no longer used in progressive contexts and the rates of overt auxiliary *be* catch up with those of the overt copula. I interpret these two trends as evidence that Alla has discovered the [-bnd]/[+progressive] feature of *be* by file 6. From file 7 onwards, copula and auxiliary omission errors are no longer attested. Aspectual errors involving *-ing* and bare forms are also absent.

An analysis of patterns in Dasha (8;1) further supports the predictions of the AspP hypothesis and points to some interesting individual differences with Alla, despite the fact that both girls have Russian as L1. Consider Table 4.

File 1 corresponds to a non-finite stage, which consists of copulaless predicatives. In file 3, there is evidence for the onset of an optionally finite stage and the copula-auxiliary asymmetry as copula *be* is consistently overt, while structures requiring auxiliary *be* appear as bare stems and bare *-ing* forms. This pattern continues into file 10, comprising 3.2 months of language samples.) Furthermore, some non-finite *-ing* predicates have non-target-like aspectual semantics such as habitual and perfective, as predicted by the AspP hypothesis. Consider the uses

13. Table 4 presents the totals for each utterance category because files 1–10 comprise an optionally finite stage (there is no clear transition to a finite stage during the observation period).

Table 5. Use of copula and auxiliary *be* in Toshiko's data

	Use of copula <i>be</i>		Stems and (aux. <i>be</i>) + <i>-ing</i> in progressive contexts		
	Overt <i>be</i>	Null <i>be</i>	bare stem	bare <i>-ing</i>	<i>be.Fin</i> + <i>-ing</i>
file 3	0	100% (2)	0	0	0
file 4	75% (3)	25% (1)	100% (3)	0	0
file 5	78% (14)	22% (4)	25% (2)	25% (2)	50% (4)
file 6	100% (22)	0	100% (3)	0	0
file 7	74% (14)	26% (5)	0	0	100% (2)
file 8	87% (13)	13% (2)	33% (3)	0	67% (6)
file 9	80% (4)	20% (1)	14% (1)	29% (2)	57% (4)
file 10	100% (30)	0	0	40% (4)	60% (6)
Total	87% (100)	13% (15)	29% (12)	19% (8)	52% (22)

in (12) and consult Appendix I for more examples (adult-like interpretations are based on contextual information):

- (12) a. And nobody asking me (cf. 'And nobody asked me.') (file 7)
 b. When you coming, we play (cf. 'When you come we play.') (f. 7)

Thus, it appears that Dasha aspectually misuses both bare stems and *-ing* forms, although errors with bare stems are much more prevalent. This pattern is quite distinct from the one observed in Alla who did not make aspectual errors with *-ing* and showed hardly any auxiliary *be* omissions with *-ing* predicates. (Recall that Alla's auxiliaries structures consisted mainly of bare stems.) Given that auxiliary *be* is non-existent in files 1–3 and is used inconsistently in files 4–10, it is possible to conclude that the [-bnd]/[+progressive] aspectual feature is not yet fully acquired by the child. The developmental patterns in Dasha's data are thus consistent with the grammar underspecified for AspP. (More on the individual differences and other possible sources of *-ing* misuse will be said in Section 4.2.)

Next, consider the data on *be* forms and bare predicates in the L1-Japanese child learner, Toshiko (Table 5). (The totals are given because files 3–10 correspond to an optionally finite stage.)

In Toshiko's data, bare stems and *-ing* forms are not large in number and therefore the patterns are only suggestive. Nevertheless, they point in the direction of the outlined predictions and are similar to those in Dasha's data in the following respects: (a) File 3 contains only non-finite predicates, (b) File 4 signifies the beginning of an optionally finite stage marked by the appearance of a finite copula; (c) both bare stems and bare *-ing* forms are used in progressive contexts in files 4–10; d) the copula-auxiliary asymmetry is clearly present (the finiteness rate for the copula is 87%, whereas the rate for the auxiliary is 52%). As in Dasha's case (and unlike Alla's case), the emergence of auxiliary *be* does not expunge the use

Table 6. Use of copula and auxiliary *be* in Sultana's data

	Use of copula <i>be</i>		Stems and (aux. <i>be</i>) + <i>-ing</i> in progressive contexts		
	Overt <i>be</i>	Null <i>be</i>	bare stem	bare <i>-ing</i>	<i>be.Fin</i> + <i>-ing</i>
file 2	57% (4)	43% (3)	100% (2)	0	0
file 3	82% (28)	18% (6)	0	0	0
file 4	63% (19)	37% (11)	50% (1)	0	50% (1)
file 5	88% (14)	12% (2)	0	40% (2)	60% (3)
file 6	75% (12)	25% (4)	0	8% (1)	92% (12)
file 7	92% (11)	8% (1)	0	0	100% (7)

of bare stems and bare *-ing* forms from progressive contexts. (I will return to this observation in the discussion section.) No aspectual misuses of *-ing* predicates are attested.

With respect to Sultana's and Tamar's data (L1-Azerbaijani), it is first noted that the progressive contexts are few in number in the early files, which limits an analysis of these children's data. Second, more extended time breaks separate the early files – files 2 and 3 are separated by 1.5 months and files 3 and 4 are separated by 2.5 months (some recordings turned out to be corrupt). Because some developmental data on the early stages are missing, the results might not capture the developmental picture adequately and should therefore be interpreted with caution. Table 6 captures the patterns in Sultana's (9;2) data.

Files 2–4 contain no tokens of *-ing* forms and show only three uses of bare stems (auxiliaryless structures) in progressive contexts, which makes the evidence for the copula-auxiliary asymmetry quite tentative. Yet, it is noteworthy that the rate of a finite copula reaches 82% in file 3 when *be* + *-ing* structures are non-existent. Auxiliary *be* is consistently finite by files 6–7 that contain only one bare *-ing* form and no bare stems. One noticeable pattern separates Sultana from the other children – the aspectual misuses of *-ing* forms occur in both finite and non-finite contexts, persist throughout the observation period, and exhibit a range of aspectual meanings associated with an IMP feature (e.g. ongoing, habitual, and extended present). The aspectual misuses of finite *be* + *-ing* structures are not congruent with the predictions because the consistent use of the finite auxiliary *be* is considered as evidence for the acquisition of the [-bnd]/[+progressive] feature. Consider some examples in (13) (please refer to Appendix I for a complete list of utterances):

- (13) a. She's looking for my card. (file 4)
 b. I'm giving to her, she's taking
 (cf. 'I give [it] to her and she takes [it].') (file 7)
 c. We was waiting you. (cf. 'We've been waiting for you.') (file 3)

Table 7. Use of copula and auxiliary *be* in Tamara's data

	Use of copula <i>be</i>		Stems and (aux. <i>be</i>) + <i>-ing</i> in progressive contexts		
	Overt <i>be</i>	Null <i>be</i>	bare stem	bare <i>-ing</i>	<i>be.Fin</i> + <i>-ing</i>
file 2	0	0	0	0	0
file 3	56% (5)	44% (4)	0	0	100% (1)
file 4	100% (8)	0	5% (1)	28% (5)	67% (12)
file 5	100% (11)	0	0	0	100% (9)
file 6	100% (6)	0	0	11% (1)	89% (8)
file 7	100% (8)	0	0	0	100% (1)

The misuses of the finite *be* + *-ing* (13b&c) raise a question about the aspectual specification of the auxiliary: could it be that the inappropriate semantics stem from an aspectual misanalysis of *be* (and *-ing*)? And furthermore, could this misanalysis have resulted from L1-transfer? I will address this question in Section 4.2.

Consider now Table 7, which is based on Tamara's (7;10) data.

Early files 2–3, which are most important for analysis, contain no instances of bare predicates and only one token of the finite auxiliary. The evidence for an optionally finite stage comes exclusively from predicatives in file 3, half of which appear in a finite form. There is some evidence for the copula-auxiliary asymmetry in file 4, which contains only finite predicatives (in fact, copula *be* is finite from file 4 onwards) and a few bare *-ing* forms. File 4 also shows an increase in finite *be* + *-ing* structures, which occur at the rate of 67%. The distribution of *be* forms in files 5–7 indicate that Tamara has acquired the [-bnd]/[+progressive] feature: *be* + *-ing* structures are almost exclusively finite. In files 2–7, all *-ing* forms are used in aspectually appropriate contexts.

4.2 Discussion

An analysis of predicatives in the L2 data revealed a very consistent pattern across the children. Copula *be* emerges early, certainly prior to auxiliary *be*, and reaches high finiteness levels within the first two months of L2 acquisition. The early acquisition of copula *be* marks a transition to an optionally finite stage and results in the copula-auxiliary asymmetry in language development. That all children are highly consistent in acquiring copula *be* fast and early accords with the proposal that grammatical categories requiring no aspectual specification should present no problem in language development. The robust finiteness of copula *be* might also suggest that this element may emerge independently of children's L1. This conclusion is supported by the fact that the L1s in the study – Russian, Japanese, Azerbaijani – have different morphological expressions for a copula: in Azerbaijani,

a copula is realized as an enclitic; in Russian, there is no overt copula in present tense; in Japanese, the use of an overt copula is subject to stylistic and discourse factors. These differences do not seem to show up as individual differences in the children's data.

Auxiliary *be*, on the other hand, follows quite distinct patterns. In contrast to the copula, it is aspectually specified as [-bnd]/[+progressive] and combines with another aspectually marked category (*-ing* form). In the child L2 data, the two aspectual elements either emerge simultaneously (as seen in Alla's data), or *be* is delayed with respect to *-ing*, which results in a stage where finite *be +ing* structures alternate with bare *-ing* forms (the pattern common to the other four children). Furthermore, some children aspectually misuse non-finite *-ing* forms (Dasha), whereas others misuse both finite and non-finite *-ing* forms (Sultana). Yet, in other children, no aspectual misuses of *-ing* forms are found, regardless of how *be* emerges.

Individual child differences in the acquisition of auxiliary *be* are expected under the theory that assumes the underspecification of AspP. If the initial state includes an underspecified AspP with no aspectual values, children should treat *-ing* forms and bare stems alike by using them in similar aspectual contexts. All children use bare stems with progressive semantics, which lends support to the underspecification hypothesis.¹⁴ The fact that *-ing* was used correctly by some children from the beginning does not constitute evidence against the AspP hypothesis, but rather suggests that children may take different paths towards the specification of Asp. The L2 data analyzed here suggests that child differences begin at a point when the first *-ing* forms appear in the production data.

The evidence suggests that for some children (Dasha is a case in point), *-ing* predicates are truly interchangeable with bare stems; hence, aspectual errors are observed with both predicate types. These children's early grammars make no formal aspectual distinctions and morpheme *-ing* remains aspectually unanalyzed (or, alternatively, is not assigned the status of a formal feature; see Note

14. An anonymous reviewer points out that aspectual errors with *-ing* forms are not as frequent as those with bare stems. Could this fact imply a possibility that child learners draw a subtle aspectual difference between *-ing* predicates and bare stems? It is plausible that children do assign some semantic value to *-ing* forms (e.g. [+durative]), which would explain their clustering in progressive contexts. But in doing so, they do not yet treat this value as a feature that encodes aspect syntactically (*-ing*, then, would have to combine with V_s in the morphological component). Children might use this semantic value to define an aspectual class of predicates (e.g. activities/processes). This line of analysis would imply that *-ing* is simply used for aspectual distinctions at the level of lexical (inner) aspect. A child's aspectual system would have to be analyzed as being based on lexical verb classes as opposed to aspectual formal features. This analysis echoes the aspect-before-tense hypothesis of Antinucci & Miller (1976).

14). The disappearance of bare stems from progressive contexts can be taken as evidence that *-ing* is treated as a formal aspectual marker. If a child assigns the [-bnd]/[+progressive] feature to *-ing* correctly, no aspectual errors with (*be*) + *-ing* should occur. If, on the other hand, a child assigns an incorrect aspectual feature (e.g. [+IMP], via L1-transfer), aspectual errors with (*be*) + *-ing* are expected. The path of correct feature assignment is clearly observed in Alla's, Toshiko's, and Tamara's data, whereas the path of incorrect feature assignment can be proposed for Sultana's and Dasha's data. In Sultana's and Dasha's case, the patterns of *-ing* misuse could attest to some L1-influence from Azerbaijani and Russian, the languages that have an imperfective morpheme in their inventory. The transfer of [+IMP] from L1 would account for the non-adult interpretations of *-ing* forms in these girls' data. Thus, the underspecification approach allows for all of the observed scenarios.

There are two residual questions that remain to be addressed: (a) Why doesn't L1 seem to affect the aspectual feature specification process in all L2 children? and (b) Why don't *be* and *-ing* emerge simultaneously in some children (in other words, why does the specification of *-ing* often precede the specification of *be*)? An answer to the first question will be necessarily speculative. It could be the case that a child's age of first exposure to L2 may determine the extent of L1 influence (the older the child, the more L1-influence one might expect in developmental patterns). Sultana (9;2) and Dasha (8;1) are the oldest of the five child participants and they are the only ones who use (*be*) + *-ing* constructions with inappropriate aspectual semantics. (I also note that Dasha misuses *-ing* only in non-finite contexts, at a stage when both bare stems and bare *-ing* were argued to be aspectually underspecified. So, in her case, the errors could have stemmed either from L1-transfer, or the underspecified AspP.) As for the second question, the developmental delay of *be* with respect to *-ing* could be explained if *-ing* does not project an aspectual head in child language and merges with a verb stem in the morphological component (in line with Baker 2003). If a lexical verb + *-ing* merger is morphological in nature, bare *-ing* predicates are syntactically non-finite (the absence of an aspectual head would prevent the syntactic T-chain licensing).¹⁵ Semantically, however, bare *-ing* predicates could be adult-like, provided that *-ing* is given an analysis compatible with progressive aspect (e.g., [+durative]). It is possible that a further, more refined, specification of *-ing* at later stages bootstraps some children into the discovery of aspectual *be*. If *-ing* does not yet project an aspectual head, but is assigned a formal aspectual meaning (i.e. a meaning independent of a verb's aspectual class), a child

15. An anonymous reviewer points out that the 'morphological merger of *-ing*' approach predicts a greater frequency of null subjects with bare *-ing* forms vs. finite *be* + *-ing* structures. Future research can test this prediction.

is forced to look for an element that could be assigned an aspectual value compatible with the aspectual meaning of *-ing*. When a child discovers that auxiliary *be* could be such an element, he or she matches it up with a [-bnd]/[+progressive] aspectual head and *be + -ing* constructions become productively finite.

5. Developmental patterns with overgenerated *be*

In this section, I focus on another pattern involving the use of *be* – utterances where *be* is ‘overgenerated’. By ‘overgeneration’, I mean, following Ionin & Wexler (2002), the appearance of *be* in declaratives that require affixal or irregular inflection in adult grammar, as shown in (14):

- (14) a. We were take in the game, the colors (Tamara, file 6)
(cf. ‘We took the colors in the game.’)
b. He’s wake up (cf. ‘He wakes up.’) (Toshiko, file 9)

In (14), *be* appears in non-progressive contexts (perfective in (14a) and ‘narrative’ present in (14b), where the utterance is placed into a sequence of narrated events), suggesting that the children’s error truly consists in inserting *be* as opposed to omitting *-ing*.¹⁶

The L2 data examined here illustrate that overgenerated *be* can also function as a dummy auxiliary (akin to dummy *do*). Consider examples in (15) (the interpretations are based on conversational context):

- (15) a. You aren’t say to me, ‘Ask this one.’ (Sultana, file 5)
(cf. You didn’t say to me, ‘Ask [for] this one.’)
b. Are you won? (cf. ‘Did you win?’) (Tamara, file 6)

Interestingly, the misuses of *be* as a dummy verb occur in the same files where *be* is used in lieu of inflection. This suggests that the two patterns might be related and therefore should be both considered in the analysis. The goal of the forthcoming discussion is to examine overgenerated *be*-structures and ‘*be* as a dummy auxiliary’ structures in light of the issues suggested by the underspecified AspP hypothesis. If the presence of overgenerated *be* in (14) suggests that an utterance is underlyingly finite and if finiteness (tns/agr) is not independent of Asp (under

16. Progressive contexts with overgenerated *be* are very rare and come exclusively from Toshiko’s data:

- (i) a. I’m use it red and blue and white (file 6)
b. What are you draw? (file 7)
c. We’re make big circle (file 7)

the constraint in (10)), then an analysis of (14) in terms of aspectual properties should shed light on the acquisition of AspP. The same reasoning applies to the utterances in (15).

This section is organized as follows. First, I examine aspectual semantics of verbs that appear with *be*, using lexical aspectual distinctions such as punctual/non-punctual and stative/eventive. Next, I investigate the developmental relationship between overgenerated *be* and affixal morphology, arguing that *be* neither precedes the emergence of inflection, nor does it serve as its substitute. Finally, I propose a unified analysis for (14) and (15) and explain how overgenerated *be* patterns are informative for understanding what children know about AspP at early stages.

5.1 Aspectual constraints on overgenerated *be* in the child L2 data

As Table 8 indicates, 4 out of 5 child participants produce overgenerated *be*, yet there is much individual variation in its frequency (the range is from 5% to 36% when *be* is viewed proportionally to finite utterances).

Table 8 also shows the suppliance rate for copula *be* in the file that contains the first use(s) of overgenerated *be*. In all children, *be* is overgenerated at a point when copula *be* is consistently used (the range is 63% to 100%), possibly suggesting a connection between these two developments.

A file-by-file analysis of overgenerated *be* suggests that it is a relatively short-lived phenomenon in some children. For example, in Sultana's data, *be* is restricted to files 4–5 and in Tamara's data, *be* is mainly found in file 6. In other children's data (e.g. Toshiko), *be* is scattered across most observation samples. In all children, overgenerated *be*-utterances have free temporal reference (present, past, and future). Yet, the use of overgenerated *be* is not unconstrained. An examination of predicates in *be*-utterances by aspectual type reveals that *be* co-occurs mainly with stative verbs (e.g. *like*, *want*, etc.) and punctual verbs (e.g. *take*, *put*, *come*, etc.). Consider Table 9 that compares the finiteness rates of punctuals and

Table 8. Frequency of overgenerated *be* in relation to finite lexical verbs (past and 3PSG present)

	Alla [files 3–10]	Dasha [files 2–10]	Toshiko [files 3–10]	Sultana [files 2–7]	Tamara [files 3–7]
<i>be</i> /finite lexical VP	(0/105)	5% (4/75)	36% (24/67)	14% (8/57)	11% (6/53)
copula %		81% [file 3]	78% [file 5]	63% [file 4]	100% [file 4]
file # with <i>be</i>		files 3–6	files 5–10	files 4–5	files 4–7

Table 9. Finiteness by aspectual predicate type (overgenerated *be* vs. finite/non-finite lexical VPs in past tense and 3PSG)

Category of utterance	Punctuals	Statives	Non-punctuals
Overgenerated <i>be</i>	49% (20)	34% (14)	17% (7) ¹⁷
Finite lexical VP	52% (156)	33% (100)	15% (44)
Non-finite lexical VP	30% (63)	26% (55)	43% (90)

statives in overgenerated *be* contexts to the rates of finite lexical verbs (regular and irregular) from the same aspectual classes.¹⁸

According to Table 9, finiteness rates differ by aspectual predicate type. It is clear from Table 9 that overgenerated *be* is aspectually constrained as it mainly clusters in utterances that contain either a punctual or stative predicate (83% combined rate). In this way, *be* patterns with inflectional morphology that also tends to appear on punctual and stative predicates (85% combined rate). Non-punctuals (i.e. eventive predicates that are neither statives nor punctuals) receive finiteness markings at much lower rates (combining overgenerated *be* contexts with lexical VPs in the non-punctual category, 36% (51/141) of non-punctuals are finite). In section 5.3, I will explain how the appearance of *be* with punctual and stative predicates bears on the underspecified AspP hypothesis.

5.2 Overgenerated *be* and inflectional morphology

The evidence indicates that the L2 children can use one and the same lexical verb either with overgenerated *be* or with inflectional morphology. Thus, at first glance, *be* and inflection appear to be in complementary distribution. Consider the productions in (16) from Sultana's data and note that the *be*/inflection contrasts come from the same files:

17. Dasha's utterance 'Elephant is do like this' was excluded from the counts because the meaning of 'do' is not clear from the context (e.g. it could mean 'skip', 'go', etc.).

18. Children's finite and non-finite utterances were divided into three categories based on lexical aspect of the root predicate (punctuals, statives, and non-punctual eventives). Aspectual tests from Shirai & Andersen (1995) were used to separate lexical verbs into the relevant classes. Statives are awkward with habitual semantics (e.g. '??She always likes to copy'). Punctuals do not combine with durative adverbials such as 'for 10 minutes' (e.g. '??It came with a 'k' for ten minutes.'). Non-punctuals, on the other hand, do combine with durative adverbials (e.g. 'He ate this for 10 minutes.' or 'He ate for ten minutes.'). See Appendix II for the breakdown of children's utterances by aspectual class. In Table 9, finite lexical VPs consist of past tense predicates and 3PSG predicates. Non-finite lexical VPs consist of utterances with past tense interpretation and 3PSG contexts.

- (16) a. She's want to play everyone (file 4)
 b. If she wants to... (file 4)
 c. She's like to copy (file 5)
 d. Yeah, she likes jokes (file 5)

However, in some utterances, *be* is used with finite predicates. While some of these errors clearly involve the misuses of *be* as a dummy verb (e.g. 17a), other errors illustrate the overgeneration phenomenon (17b–d):

- (17) a. I'm not eated you very well (Dasha, file 3)
 (cf. 'I didn't eat you very well')
 b. She's forgot (cf. 'She forgot') (Tamara, file 4)
 c. It's comed with 'k' (cf. 'It came with [a] 'k') (Tamara, file 6)
 d. Pig's likes this girl (cf. '[The] pig likes this girl') (Toshiko, file 8)

Furthermore, 'be + finite verb' constructions form minimal pairs with inflected VP counterparts in some children's data. Sultana's productions in (18) illustrate the point:

- (18) a. She's forgot her cards in here (file 4)
 b. I forgot (file 4)
 c. She's wanted draw castle (file 4)
 d. Tamara wanted look my cards (file 4)

The data in (16)–(18) suggest that overgenerated *be* does not developmentally precede inflectional morphology. Thus, an analysis of overgenerated *be* should account for at least three developmental trends: (a) co-occurrence of *be* with bare stems and finite verbs, (b) occurrence of *be* with mainly punctuals and statives, and (c) individual variation in the extent to which various children make use of overgenerated *be*.

5.3 Overgenerated *be* as a misanalyzed non-aspectual category

Let us assume, following Ionin & Wexler (I&W) (2002), that overgenerated *be* functions as a finiteness marker in child L2 English. I&W's proposal is that *be*-errors arise as a 'side product' of acquiring (overt) syntactic V⁰-to-I⁰ movement earlier than LF-affix lowering. The child L2 patterns lend some support to I&W's idea: overgenerated *be* emerges after the copula has started to show up reliably in predicatives. However, as demonstrated above, children do not overgenerate *be* to the exclusion of inflectional morphology, allowing *be* to combine both with non-finite and finite lexical VPs from the very beginning. In addition, *be* has been shown to be overgenerated mainly with stative and punctual VPs. The latter two

patterns suggest that an earlier V^0 -to- I^0 cannot be solely responsible for overgeneration and distribution of *be* in the children's language.

In this article, I propose that all types of *be*-errors, including the misuses of *be* as a dummy auxiliary, could be attributed to a combination of two factors: the acquisition of the copula (its full morphological paradigm and the V^0 -to- I^0 properties) and a misanalysis of other contracted 's forms in the input as instances of *be*. (19) gives examples of positive evidence that is likely to mislead child learners into thinking that *be* supports tns/agr features in the following sentences:

- (19) a. How's that grab you? (cf. 'How does that grab you?')
 b. What's that mean? (cf. 'What does that mean?')
 c. He's got it (cf. 'He has got it.')

- d. He's run away (cf. 'He has run away.')

- e. Let's go (cf. 'Let us go.')

(19) show that the 3PPL pronoun *us* and auxiliaries *do* and *have* can appear in the guise of contracted 's in the input. Observe that the contracted 's co-occurs with both bare (*grab*, *mean*, *go*) and inflected (*got*, *run*) VPs and that the temporal contexts with 's include present, past, and future/modal reference.

Now imagine that a child who has acquired the full and contracted forms of the copula but not the other auxiliaries (e.g. *do*, *have*, *be*) encounters the data in (19). It is not implausible that the instances of contracted 's in (19) could be analyzed as the forms of *be*. As a result of misanalysis, a child could then assume that *be* works as a generic finiteness marker that supports tns/agr morphology in all temporal contexts and combines with inflected and uninflected verb forms. On this approach, overgenerated *be* in declaratives and auxiliary-like *be* in interrogatives and negatives are both viewed as dummy auxiliary elements that combine with a lexical verb. Finally, I note that children's use of dummy *be* in declaratives is not incompatible with adult English which allows dummy *do* to be used in emphatic contexts (e.g. 'John does smoke:'). Child grammars differ from adult English in that the dummy *be* option has no pragmatic content and therefore represents a purely grammatical alternative (the spell-out of tns/agr features).

Table 10 captures the distribution of bare and inflected VPs that combine with overgenerated/dummy *be* across different sentence types.

The co-occurrence of *be* with inflected predicates raises the question about the syntactic category of these lexical items. An obvious approach to past tense forms (e.g. 'It's comed with 'k' or 'I'm not ever saw this') is to treat them as past participles: whenever a child uses a past tense VP with *be* an utterance is anchored in past tense. It is harder to think of a plausible grammatical category for 3rd person singulars. One possibility is that the latter might be performance errors or unanalyzed forms. In the case of overgenerated *be*, all three utterances come from

Table 10. Overgenerated/dummy *be* and the form of root predicate¹⁹

	'be' in declaratives (overgenerated 'be')	'be' in interrogatives and negatives (<i>'be'</i> as a dummy verb)
'be' + bare stem	74% (29/39)	27% (3/11)
'be' + past form	18% (7/39)	45% (5/11)
'be' + 3PSG form	8% (3/45)	27% (3/11)

Toshiko who is the slowest to acquire inflectional morphology and who overgenerates *be* the most. None of the other children combined *be* with 3PSG forms.²⁰

Next, I consider the finding that *be* is overgenerated mainly with stative and punctual predicates. If utterances with overgenerated *be* are finite, then, under the approach to syntactic tense chains assumed here, the VP predicates must be specified for aspectual features. (Otherwise, the T-chain would not be licensed.) What aspectual specification do statives and punctuals have that distinguishes them from non-punctual eventives? (Recall that the finiteness rate for non-punctuals is much lower, both in overgenerated *be* and inflectional morphology contexts.) In Gavrusseva (2002, 2004), I argue that statives and punctuals contrast on the telic/atelic aspectual dimension, with statives being inherently specified as [-telic] and punctuals being specified as [+telic]. (Non-punctuals, on the other hand, are not inherently specified for telicity and therefore represent an aspectually distinct class.) If children begin to build aspectual oppositions by drawing on lexical aspect semantics, then statives and punctuals will be singled out as aspectual classes and assigned an interpretable aspectual feature [\pm telic] that will be checked in the AspP projection. The overgeneration of *be* in punctual and stative contexts, then, attests to the emergence of a rudimentary (i.e. lexically-based) aspectual system in children's grammar and supports the idea that syntactic T-chain licensing is not independent of Asp. (See Gavrusseva (2004) for further explanations of how lexical aspect bootstraps children into the acquisition of grammatical aspect categories.)

Last but not least, I consider the issue of individual variation in the use of overgenerated *be*. The L2 data show several distinct developmental possibilities for structures with overgenerated *be*: (a) extensive use of *be* (Toshiko), (b) use of *be* during a restricted time period (Sultana and Tamara), (c) sporadic uses of *be*

19. The utterances with 'put' were excluded because it is impossible to determine the verb's finiteness status.

20. Alla also misused *be* with 3rd person singulars, however, her three utterances all contain 's as a clitic on a wh-element 'what' (e.g. 'What's that means?'). It is possible that *what's* is an unanalyzed amalgam and so Alla's utterances could be simply performance errors. (Please see Appendix II for Alla's utterances with *be*-errors.)

(Dasha), (d) no uses of overgenerated *be* (Alla). It seems to me that an input-mis-analysis approach accounts well for this range of patterns. Evidently, some children avoid the trap of misanalysis, whereas other children use *be* as an alternative to inflection, differing in how long and how frequently they use it. Furthermore, evidence from the recent studies of L1 acquisition of INFL suggests that English-speaking monolinguals also overgenerate *be*, with individual differences similar to those described for the child L2 data. For example, one child (SL) in Tesan and Thornton (2004) overgenerated *be* at 60%–80% compared with 20%–40% for inflectional morphology at ages 1;11.26–2;1.09; another child (CM) used *be* at 23% at age 1;11.25, and a third child (CW) produced *be* at 20% and below at ages 2;0.12–2;7.3. Importantly, just like in child L2 English, overgenerated *be* did not developmentally precede inflectional morphology, functioning as an alternative spell-out for INFL. The presence of the overgenerated *be* phenomenon in L1 English and the similarity of L1–L2 developmental patterns suggest that misuses of *be* constitute a developmental error in child L2 and are unlikely to reflect influence from children's L1.

6. Conclusions

This investigation showed that children acquiring English as L2 converge quickly on the feature specifications of copula *be*, producing predicatives in abundance and with few *be* omissions. It was also demonstrated that children treat copula *be* and auxiliary *be* as distinct syntactic categories, despite the fact that the two elements have identical morphological spell-outs. Developmentally, this difference shows up as the copula-auxiliary asymmetry, a stage in syntactic development which is characterized by the greater frequency of auxiliary omissions than copula omissions. The copula-auxiliary asymmetry was attributed to the difference in aspectual specification between the two items. It was argued that auxiliary *be* carries an aspectual feature [-bnd], whereas the copula is devoid of syntactic aspectual specification. In the framework adopted for the analysis of child L2 data, syntactic aspectual features were assumed to be underspecified. The underspecified nature of early child grammar was argued to be reflected in the morphosyntactic ill-formedness of structures requiring aspectual specification (e.g. missing auxiliary *be*, copula-auxiliary asymmetry, non-finite root predicates, etc.).

Furthermore, two other uses of *be* were identified in the L2 data: overgeneration of *be* in non-progressive contexts and *be*-as-a-dummy-auxiliary. A number of properties of overgenerated *be* were established: emergence after the copula is produced at 63%–100% rate, free temporal reference, co-occurrence with finite and non-finite verbs, clustering with punctual and stative VPs, and large indi-

vidual differences in the extent to which non-adult uses of *be* were attested in the child data. It was argued that non-adult *be* functions as a spell-out of tns/agr features (on a par with inflectional morphology and copula *be*) and results from children's misanalysis of input, which disguises the uses of other auxiliaries (*do* and *have*) in the form of contracted 's. If children know copula *be* but do not know the morphological spell-outs of the auxiliaries, they are likely to mistakenly analyze 's as *be* in sentences like 'How's that grab you?' or 'He's done it'. After *be* has been afforded the status of a generic finiteness marker and incorporated into a child's grammar, misuses of *be* may persist for several months in some children. In other children, the misanalysis of *be* may be short-lived and unlearned within a 2-month period. On either scenario, *be* will exhibit the same range of properties as described above. The aspectual properties of *be* (the occurrence with punctual and stative predicates) were attributed to the underspecified nature of AspP in children's grammar. Thus, by examining the patterns of *be*-errors in child L2 English, I hope to have contributed to a better understanding of early syntactic development in consecutive L2 acquisition.

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Appendix I. Aspectual errors with *-ing* forms

Dasha's data

File 6:

Why you only sitting here? (cf. 'Why do you only sit here?')

I'm not telling her, 'This is stupid game' (cf. 'I didn't tell her, 'This is a stupid game')

File 7:

And nobody asking me (cf. 'And nobody asked me')

When you coming, we play (cf. 'When you come [to my house] we play')

Annie always doing um /?/ (cf. 'Annie always does /?/')

You mom coming (cf. 'You mom's come')

Sultana's data

File 4:

What do you doing in...um...when...[Researcher: When I don't see you?]

What do you doing every day? (cf. 'What do you do every day?')

I know where do you going (cf. 'I know where you go')

We was waiting for you (cf. 'We've been waiting for you')

File 5:

I like draw and somebody's coloring (cf. 'I like to draw while somebody colors')

She can't play when it's snowing (cf. 'She can't play when it snows')

File 6:

This is a room about ...you're doing washing, you're washing thingies, your thingies

(cf. 'This is a room where you do washing, where you wash your thingies')

File 7:

She always sitting over there (cf. 'She always sits over there')

I'm giving to her, she's taking (cf. 'I give [it] to her and she takes [it]')

[Researcher: You put paper in here] and then you writing? (cf. 'And then you will write?')

Children sometimes from my class say to me come to their birthday and I'm bringing, I'm bringing presents (cf. 'And I bring [them] presents')

Appendix II. Utterances with overgenerated *be*

Dasha's data

Stative predicates:

Mine is look stupid (file 3) ('Mine looks stupid')

Non-punctual predicates:

Ryan is go to Italy (file 3) ('Ryan went to Italy')
Elephant is do like this (file 6) ('The elephant does it like this')
It is stay here (file 6) ('It stays here')

Tamara's data

Punctual predicates:

She's forgot and... (file 4) ('She forgot')
She was put this over here (file 6) ('She put this over here')
We were take in the- in the game, the colors (file 6) ('We took the colors in the game')
I'm finished all the rooms (file 6) ('I've finished all the rooms')
It's comed with 'k' (file 6) ('It came with a 'k')

Stative predicates:

Then we're three know that room (file 6) ('Then the three of us know that room')

Sultana's data

Punctual predicates:

She wanted she's won (file 4) ('She wanted to be the one who'd win')
She's forgot her cards in here (file 4) ('She forgot her cards in here')

Stative predicates:

She's want to play every one (file 4) ('She wants to play with every [card]')
Alla's have it, like this card (file 4) ('Alla has a card like this')
She's wanted draw castle (file 4) ('She wanted to draw a castle')
She's like to copy (file 5) ('She likes to copy')
Because she's have a five (file 5) ('Because she has five')
Who's have which one? (file 5) ('Who has which one?')

Toshiko's data

Punctual predicates:

It's my friends is give it to me (file 7) ('It's my friend who gave it to me')
I'm pick little one (file 8) ('I'll pick a little one')
He's put in the here (file 8) ('He put it in here')
I'm got every color (file 8) ('I got every color' or 'I've got every color')
I'm pick yellow (file 8) ('I'll pick yellow')
This one my Japan friends is give to me (file 9) ('My Japanese friend gave this one to me')
Who is tell her? (file 9) ('Who told her?')
Who is tell dragon this, where to go? (file 9) ('Who told the dragon where to go?')
He's fall down (file 9) ('He falls down')
He's wake up (file 9) ('He wakes up')
He's go away (file 9) ('He goes away')
He's spit like flash (file 10) ('He spits out flash')
Is come a tornado sometimes (file 10) ('There comes a tornado sometimes')

Stative predicates:

Little people is sit down there (file 6) ('The little person sits down there')
 Big people is like sit there (file 6) ('The big person, like, sits there')
 Little people is goes right here (file 6) ('The little person goes [=belongs] right here')
 Pig's likes this girl (file 8) ('The pig likes this girl')
 START is...is means "super quiet read a book" (file 9) ('START means "super quiet read a book"')
 This one is live in the water (file 10) ('This one lives in the water')

Non-punctual predicates:

I'm eat it (file 5) ('I ate it')
 He's eat banana (file 9) ('He eats a banana')
 And last time he's draw like a pen (file 10) ('And last time he drew, like, a pen')
 He's something eat this (file 10) ('He ate something, this')
 He's eat this (file 10) ('He ate this')

Appendix III. Utterances with *be* as a dummy verb**Dasha's data**

I'm not eated you (file 3) ('I haven't eaten you')
 I'm not really eated you (file 3) ('I haven't really eaten you')
 I'm not eated you very well (file 3) ('I haven't eaten you very well')
 Is it do pee-pee? (file 9) ('Did it pee?')

Alla's data

What's that means? (file 6) ('What does that mean?')
 What's this says over here? (file 8) ('What does this say over here?')
 What's that means? (file 8) ('What does that mean?')

Tamara's data

Are you won? (file 6) ('Did you win?')

Sultana's data

You aren't say to me, "Ask this one." (file 5) ('You didn't say to me...')
 Tamara: I didn't say that! S's response: Of course you are! (file 5) ('Of course you did!')

Toshiko's data

I'm not ever saw this (file 10) ('I've never seen this')

Truncation in child L2 acquisition

Evidence from verbless utterances

Philippe Prévost

Laval University

This chapter examines the nature of verbless utterances, namely utterances requiring a copula or a lexical verb in the target language, in longitudinal production data of two English-speaking children learning French (aged 5;4 and 5;8 at the onset of acquisition). It is suggested that such utterances are projections of lexical categories, much like root infinitives. This is argued to support the Truncation Hypothesis in child L2 acquisition, according to which root declaratives may be underlied by either functional or lexical projections in the early stages (Prévost & White 2000a). This contrasts with proposals by Ionin and Wexler (2002) that verbless utterances stem from access problems to the relevant lexical forms.

Introduction

The production of verbless utterances, namely utterances requiring a verb in the target language, has recently attracted the attention of researchers in child second language (L2) acquisition, especially with respect to the omission of copula *be* and auxiliary *be* in English (e.g. Gavruseva 2002; Gavruseva & Meisterheim 2003; Haznedar 2001; Ionin & Wexler 2002; Lakshmanan 1993/1994). Assuming that copula *be* and auxiliary *be* are grammatical reflex of finiteness and the T(ense) projection, the issue is whether or not functional projections are present in early child L2 grammars.¹ This research question is part of a larger debate concerning the nature of early grammars in L2 acquisition, in particular whether initial systems are limited to lexical categories or contain functional projections as well. Results so far suggest that copula *be* and auxiliary *be* are among the first grammatical elements produced by child L2 learners, and that they are almost always used in the finite form from the outset, which provides strong evidence for the early availability of

1. In this paper, copula *be* and auxiliary *be* are assumed to be generated in I.

Infl in child L2 acquisition. However, cases of copula omission are also reported. For instance, in child L2 English Gavruseva (2002) and Ionin & Wexler (2002) found that the copula is omitted in 15% of the contexts where it should obligatorily occur. For these authors, copula omission involves a null morpheme. Functional categories, equipped with the relevant tense and agreement features, are assumed to be present in the underlying representation, and the learners are deemed to have difficulties accessing the relevant morphological form (see Haznedar & Schwartz 1997; Lardiere 1998, 2000; Prévost & White 2000a, b).

In the present paper, we argue against this analysis and propose that copula omission, which extends to verb omission in general, in fact does not involve the projection of any phrasal functional category. Instead, utterances from which the verb is absent result from truncation and are represented as root NPs, APs or PPs (see Prévost 1997; Prévost & White 2000a). According to the Truncation hypothesis, functional categories are assumed to be present in child grammars, but Rizzi's (1993/1994) CP=root principle is held to be underspecified initially, which means that the root of main declarative clauses may not only be CP, it may also be TP, VP, NP, etc.² If verbless utterances are analyzed as lexical phrases, e.g. as small clauses (in the sense of Stowell 1981), i.e. lacking an TP node, then they should be restricted to contexts where truncation is assumed to be able to take place, such as root contexts, in contrast to truncation-incompatible contexts, namely clauses where a CP and all other functional categories appearing below it must be projected, such as *wh*-questions and embedded clauses (see Rizzi 1993/1994, 2000).³

I examine longitudinal production data from two L1-English children learning French (Lightbown 1977). The findings confirm the prediction of the Truncation hypothesis: verb omission is found in root declarative contexts, but only rarely in *wh*-questions and embedded clauses. The results are compared to similar work undertaken in L1 acquisition, in an attempt to position child L2 learning

2. More recently, Rizzi (2000) proposed that two principles are in competition in early grammars, namely the Structural Economy Principle ("Use the minimum of structure consistent with well-formedness constraints") and the Categorical Uniformity Principle ("Assume a unique canonical structural realization for a given semantic type"). Adult grammars are assumed to be constrained by Categorical Uniformity, which yields a uniform projection for the semantic type "proposition", i.e. CP. As for child grammars, Rizzi claims that they follow Structural Economy, which make the learners project representations smaller than CPs, and hence produce RIs.

3. In case of lexical verb omission, as pointed out by an anonymous reviewer, it would be impossible to tell whether the omission involves a finite or nonfinite verb. While this is correct, the point is that the Truncation hypothesis predicts that verbs in general may be omitted and that omission should be restricted to root declaratives. In the results reported below, I discuss both copula omission and lexical omission.

with respect to child L1 acquisition, especially when the acquisition of the foreign language starts early, namely at around age five.

1. Verbless utterances in L1 acquisition

Verbless utterances are observed in child speech from different languages, as illustrated below. Such sentences may involve the omission of the copula, as in (1) through (3) (from English, Italian, and French), or of a lexical verb, as in (4).

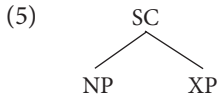
- (1) a. Lisa naughty
 b. Hand cold
 c. It in bag (Radford 1990)
- (2) a. Pallo butto (Raffaello, 1;11.25)
 paolo ugly
 b. Ette bee (Rosa, 2;10.14)
 this sheep (Franchi 2006)
- (3) a. Moi, pas l'hippopotame. (Anne, 2;2.20)
 me not the hippopotamus
 b. Méchant, la feuille. (Tom, 2;4.9)
 nasty the leaf (De Cat & Tsoulas 2007)
- (4) a. Wayne coat.
 b. Ashley door. (Radford 1990)
 c. Kendall book. (Bowerman 1973)

As far as lexical verb omission is concerned, it is the context that tells the researcher that the utterance lacks a lexical verb and that it is not an attempt on the part of the child to express something else, such as possession, as in (4a) and (4c).

The incidence of verbless utterances can be quite high initially. For example, Caprin & Guasti (2006) looked at spontaneous production data from 59 children learning Italian (aged 22 to 35 months). These children were divided into three groups based on their MLU-w values. The study focused on copula production and omission. The production rate of copula in obligatory contexts was found to be below 50% in the younger group (46.6%) (MLU-w between 1.0 and 1.49). It climbed to 61.7% in Group 2 (MLU-w between 1.5 and 1.99) and reached 80% in Group 3 (MLU-w between 2.0 and 3.1).⁴

4. To my knowledge, the incidence of copula omission has not been investigated in detail in L1 French, which unfortunately prevents direct comparisons between the results on verbless utterances in L2 French reported in this paper and what happens in child L1 French.

For Radford (1990), verbless sentences are evidence of the existence of a lexical stage in the initial phase of L1 acquisition, whereby the first utterances produced by children are instances of small clauses deprived of functional layers, in particular IP, as illustrated in (5).

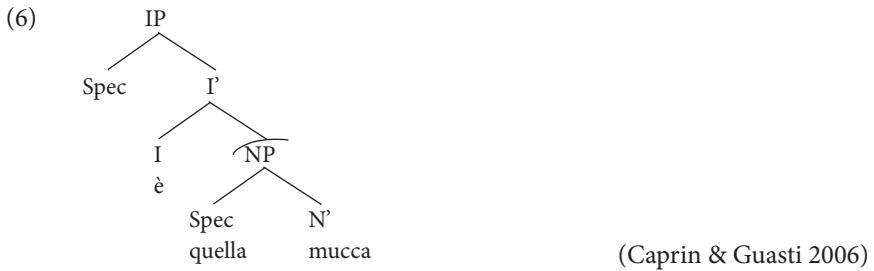


Radford further argues that the Case Filter is not operative in early child L1, as illustrated by the sentences in (4). Such sentences lack an (overt) verb, which means that the object is caseless.

However, it is not the case that early child utterances systematically lack a copula or a lexical verb. In the data reviewed by Caprin & Guasti (2006), although the production rate of the copula is below 50% in the least-proficient group, it is not 0%, in contrast to what Radford's hypothesis would predict. Assuming that the copula is an instantiation of T, the fact that copular sentences are indeed found initially suggests that functional categories are present in underlying child grammars. In fact, functional categories may not be systematically projected, as claimed by underspecification accounts such as the Truncation Hypothesis (Rizzi 1993/1994, 2000) and the Tense underspecification hypothesis (Wexler 1994).

Interestingly, Caprin & Guasti (2006) found that copular omission was much higher in declarative utterances than in *wh*-clauses. In the latter contexts, copular production was over 94%, even in Group 1 (although only two contexts were identified in the 15 children involved). Similar results are reported on longitudinal data from three children learning Italian (Franchi 2006). Data collection began at 1;7 and ended at around 3 (2;7 in one case). The total omission ratio in root declaratives was quite similar in the three children, between 37% and 50% (707/1587 in total). In contrast, the ratio was at most 2% in *wh*-contexts. In fact, only two instances of copula omission were found in the data (out of 419 contexts). As claimed by the researchers, these findings are compatible with the Truncation hypothesis since in *wh*-contexts, the entire functional apparatus must be projected, including T, which prevents copula omission.⁵ In contrast, root declarative utterances may involve truncation, namely root declaratives may be VPs or small clauses, i.e. lexical projections (Stowell 1981). Since T is not systematically projected in the early stages of acquisition, the copula may be omitted. For example, the utterance *Quella (è) mucca* 'That (is) cow' would be a simple NP, with truncation occurring below I', as in (6).

5. Roeper & Rohrbacher (1994) found instances of null auxiliary *be* utterances and root infinitives in child *wh*-questions, but this seems to be largely restricted to L1 English.



An alternative to a Truncation account for copula omission is proposed by Becker (2002, 2004) who looked at the type of predicates with which missing copula occurs. In spontaneous production data from four children learning English, Becker (2002, 2004) found that copula omission is higher with locative predicates than with nominal predicates. According to Becker, the difference is related to semantic differences between the two types of predicates: nominal predicates tend to denote permanent or inherent properties (as in *This is a girl*), while locative predicates denote temporary or noninherent ones (e.g. *My pen is down there*). Becker draws a parallel between this distinction and that between individual-stage (IL) and stage level (SL) predicates (Carlson 1977). Following proposals by Schmitt (1992), Becker assumes that IL predicates are nonaspectual in contrast to SL predicates, which involve the projection of an Asp(ect) phrase. She further assumes that the copula is the grammatical reflex of the temporal anchoring of a clause, where temporal anchoring is defined as the binding relationship between T and a tense operator in C (following Guéron & Hoekstra 1995). In child grammars, Becker proposes that temporal anchoring may be realized as the binding between the tense operator and Asp. The T phrase may be projected, but it is not bound. Hence, the temporal anchoring of a clause containing an aspectual predicate (i.e. an SL predicate) does not result in an overt copula – in fact, the utterance is untensed. With IL predicates, T is present in the clause and it binds the tense operator in C. Crucially, Asp is not projected. As a grammatical reflex of T, the copula is overtly expressed. Interestingly, Becker notes, the pattern found in child English is strikingly similar to what is found in adult languages, such as Hebrew. In this language, the copula is overt when the predicate denotes a permanent or inherent property; it can be null when the property denoted by the predicate is temporary or noninherent (Greenberg 1994). This fact provides further support for the view that children's output is constrained by grammatical principles.

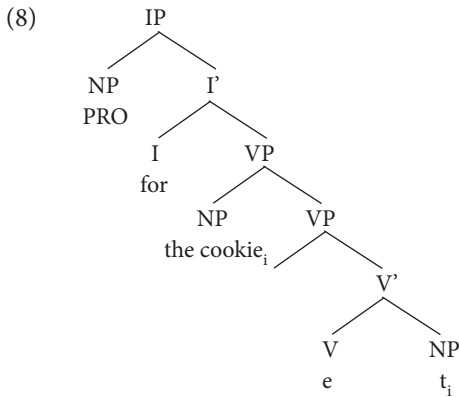
2. Verbless utterances in L2 acquisition

Verbless utterances have also been attested in early child L2 acquisition, and a similar debate as in L1 acquisition has been unfolding: should omission of grammatical morphemes reflect some kind of a representational deficit, in the sense that corresponding functional categories (in particular T) and their features are absent from underlying grammars, as mainly argued by Vainikka & Young-Scholten (1996) and Hawkins & Liszka (2003) in adult L2 acquisition, or should it stem from something else? In particular, failure to provide particular forms may be due to the underspecification of functional categories or principles, such as the CP=root principle in early systems (Prévost 1997; Prévost & White 2000a). Alternatively, it may stem from a problem in lexical access or from a mapping problem between the syntax and morphology (Haznedar & Schwartz 1997; Lardiere 1998, 2000; Prévost & White 2000b).

According to Lakshmanan (1993/1994), instances of verbless utterances in child L2 speech are restricted to cases of copula omission, although no exact figures are provided. It is important to note, however, that the copula is not altogether absent from early child L2 production, suggesting that functional categories are available. Lakshmanan further observes that the copula may be used instead of lexical verbs, sometimes accompanied by the preposition *for*. The examples given in (7) are taken from early spontaneous production samples from Marta, a Spanish-speaking child learning English (between ages 4 and 4;8).

- (7) a. Christine is the class. (= Christine teaches the class)
b. Carolin is for English and Espagnol. (= Carolina speaks English and Spanish)
c. This is the boy for the cookies. (Picture of boy eating cookies)

Moreover, although there are no lexical verbs in the first samples, sentences such as (4), i.e. involving the juxtaposition of two nominal entities, are absent from the data. For Lakshmanan, the preposition *for* is a Case marker for the object of the (implicit) verb. It would be located in I, and the object would move to a preverbal position for Case reasons, as illustrated in (8).



Under this analysis, then, both functional categories and the Case-filter are available in the very first interlanguage grammars developed by child L2 learners.

Haznedar (2001) looked at the development of IP in spontaneous production data from a Turkish-speaking child, Erdem, learning English. 46 samples were investigated over a period of 18 months, between the ages of 4;4 and 6. The first instances of the copula are observed in the first samples, but most of the utterances in which they appear seem to be routines (e.g. *This is X*, *It's a X*). The first obligatory contexts for the copula occur at sample 5, and the copula is not provided. In fact, between samples 5 and 7, there are 10 obligatory contexts for *be* and 9 omissions, as in (9).

- (9) Int: Where is your dad now?
Erdem: My dad school. (Erdem, Sample 5)

However, the period of omission is short-lived as evidenced by the high production rate of the copula reported as of sample 8 (75%–100% between samples 8 and 15). Moreover, the incidence is systematically over 90% as of sample 16. Note that the study does not report any instance of lexical verb omission.

In their investigation of 20 L1-Russian children learning English (age 3;9–13;10), of whom half had had less than a year of exposure to the L2 at the time of the study, Ionin & Wexler (2002) report a highly significant difference between the omission of copula *be* (16% in total) and that of past tense *-ed* (58%). Omission of 3rd person *-s* was even higher, at 78%. According to the authors, the early mastering of suppletive morphology, compared to inflectional morphology, is related to the raising versus non-raising status of the verbs implicated. As is well-known, thematic verbs do not raise overtly in English. The learners are thus claimed to relate morphological marking to verbs that undergo raising, such as the copula, before relating inflectional morphology to thematic verbs (in V). A parallel is drawn between these findings and the connection between richness of inflectional

morphology and verb-raising observed cross-linguistically, whereby verb-raising languages tend to have a richer morphological paradigm than non-verb-raising ones (see Vikner 1997, among others). Utterances where the copula has been omitted are analyzed as cases of missing inflection, insofar as the functional categories are assumed to be projected and the relevant features fully specified, but the learners are held to have difficulties retrieving the appropriate forms from the lexicon (see Haznedar & Schwartz 1997; Lardiere 1998, 2000; Prévost & White 2000b).

A similar conclusion is reached by Gavruseva & Meisterheim (2003) who investigated Becker's (2002, 2004) proposal for copula omission in L1 English in a longitudinal corpus of spontaneous production of five child L2 learners of English. The children were aged between 6;4 and 9;2 when the study began and they had been exposed to a maximum of two months at the time of their first recording. The children were followed for 5 to 9 months. Copula omission was observed, but unlike what Becker reported for L1 child English, no significant difference was found between SL and IL predicates (20% vs. 9% respectively), although omission tended to occur more often with the former. Furthermore, copula omission with SL predicates was much lower than the ratios reported by Becker (who found omission rates as high as 80% with locative predicates and 53% with SL adjectives, e.g. adjectives denoting physical sensations (e.g. *sick*) or emotions (e.g. *happy*)). For Gavruseva & Meisterheim (2003), T is present in all utterances from which the copula has been omitted, may they involve an SL or an IL predicate, in contrast to Becker's proposal. Copula omission would stem from a problem of lexical access, along the lines of Ionin & Wexler (2002).

Myles (2005) presents yet a different view of the early systems built by young L2 learners, although the data that she analyzed come from older learners. She followed the acquisition of French morphosyntax by 14 Anglophone pre-adolescents aged 12–13 at the time of their first interview (year 1). By then, they had been exposed to French for one year in a classroom context. A second recording took place a year later (year 2), with the same experimental task, namely an elicited verbal narrative based on a cartoon story. Myles reports that the incidence of utterances containing a verb is quite low at year 1, averaging 54.6% of all utterances produced by the children. For seven of the learners, the incidence of utterances containing a verb is below 50%. At year 2, it raises to 75.7%. For Myles, the first stages of L2 acquisition are lexical in nature, much like Vainikka and Young-Scholten's (1996)

claims for adult L2 acquisition.⁶ As an explanation for the transition from the VP-stage to a functional stage, Myles suggests that the copula and auxiliaries *être* and *avoir* act as a trigger for the projection of functional layers (see Hawkins 2001). Although the transition from the lexical to the functional stage may be supported in the case of Myles' learners, in many other situations, the production ratio of the copula is so high in the early phases of acquisition that evidence for the existence of a previous lexical stage may be extremely difficult to detect.

In the present paper, I pursue the investigation of L2 French by young learners, focusing on the production of verbless utterances by children who started the acquisition process earlier than those investigated by Myles. I also investigate to what extent my findings compare with what has been reported so far on verb omission in L1 and L2 acquisition. In particular, I look at the types of clauses where verb omission is found (root declaratives vs. CPs) and, in the case of copula omission, the types of predicates with which it occurs (SL vs. IL). Because of the lack of comparative data in L1 and L2 child French, the comparisons will mainly involve L1 and L2 child English, and child L1 Italian.

3. Methodology

The spontaneous L2 French data analyzed in the present study were collected longitudinally from two English-speaking children living in Montreal, Kenny and Greg (Lightbown 1977). The total corpus contains about 3450 utterances. At the time of their first interviews, the children had just been enrolled in a normal French-speaking kindergarten. Kenny and Greg were then aged 5;4 and 5;8 respectively (see Table 1). Greg had already been exposed to French for 5 months whereas Kenny had just started his first month of acquisition. The data were collected over two years or so. In general, the recordings took place once a month or once every two months. In Greg's case, there was a four-month delay between his first two interviews. In all, 20 samples were collected from Kenny and 13 from Greg. In previous work, the two children were found to produce inflectional errors up during a certain period. In particular, they used root infinitives (RIs) dur-

6. Prior to the lexical stage, Myles (2005) argues that L2 learners produce utterances that receive no syntactic analysis. These utterances would be simple mappings between semantic representations and phonological strings, for example [give name] = [je m'appelle]. According to Myles, this would account for the unanalyzed chunks used initially by L2 learners to break into the communicative situation. At that stage, many utterances only consist of juxtapositions of NPs, as in *Nom... le garçon?* 'Name... the boy?'. VPs would appear later because they are more structurally complex than NPs.

ing the first 18 months of acquisition (Prévost 1997; Prévost & White 2000a) (see Table 3 below for more detail). In this paper, the incidence of their verbless utterances will be compared, among other things, to that of their RIs.⁷

Deciding about the verbless status of an utterance may not be an easy task, especially when the utterance may involve a single phrase, such as *Mon camion vert* 'My green truck'. Such sequences can exist on their own in French, as a sole DP, for example as an elliptical answer to a question such as *Qu'est-ce que tu cherches?* 'What are looking for?'. Alternatively, it could be an utterance with a missing copula, as an answer to a question such as *De quelle couleur est ton camion?* 'What color is your truck?'. In order to decide about the nature of the child utterances, the discursive and situational context was taken into account. Only clear cases of verbless utterances that should include a verbal element in the target language were retained for analysis.⁸

One aspect of verb omission that is not addressed in this study is auxiliary omission. We know that such elements may be omitted by child learners, be it in L1 or L2 acquisition. Since *être* 'be' is also an auxiliary in French, it would have been interesting to compare *être* omission in copular contexts and auxiliary contexts, i.e. where auxiliary *be* selects a verbal predicate, as in passive constructions and compound tenses such as the perfective past (or *passé composé*) where the past participle of the verb must accompany the auxiliary. It is often assumed that auxiliaries develop later than the copula (see, e.g. Dulay & Burt 1974), which means that auxiliary omission should last longer than copula omission, assuming that auxiliary constructions are used early on.⁹ Unfortunately, such a comparison is difficult to make in French, given that the form of the past participle is very often homophonous with the infinitival form of the verb (as *arrivé* 'arrived' and *arriver* 'arrive.INF' [aʁive]). In some cases, it is possible to tell between the two forms, as with past participles of verbs ending in *-ir* (e.g. *partir* 'go') and *-re* (e.g. *descendre* 'go down'). But these verbs are too scarce in the data, which prevented us from performing valid statistical analyses (see Section 5 for more discussion).

7. Although Prévost (1997) and Prévost & White (2000a) looked at Kenny's and Greg's data, they did not investigate the incidence and nature of verbless utterances.

8. This methodology may result in an underestimation of the actual number of verbless utterances produced by the children. Note that the analyses were solely based on the written transcriptions of the recordings. In future research, audio files should also be investigated.

9. This is what is reported in Erdem's data by Haznedar (2001). Although copula *be* and auxiliary *be* develop at around the same time, low omission rates in obligatory contexts are more rapidly attained in the case of the copula.

4. Results

The results are organized as follows: I first report the total number of verbless utterances, comparing declarative and *wh*-contexts. I then focus of the different types of verbless utterances, looking at the omission of copula and lexical verbs in detail, and at the type of predicates involved (SL and IL).

4.1 Incidence of verbless utterances

Tables 1 and 2 report the number of declarative sentences produced by each child, distinguishing between finite declaratives, root infinitives (RIs) and verbless declaratives. The percentage of verbless sentences is then given. As can be seen in Table 1, verb omission in Kenny's data can be quite high in the early samples (between 30% to 84% until month 6). There is then a decline to between 9% and 18% until month 15. A sharp decline to below 5% is then observed, i.e. as of month 18. There is a highly significant difference between the incidence of verb-

Table 1. Number of finite, nonfinite and verbless declaratives in Kenny's data

Months	Finite decl	RI	Verbless	Total decl	% Verbless
0.3	0	1	0	0	0
0.5	1	0	5	6	83.3
1	5	0	0	5	0
2	4	1	9	14	64.3
3	6	4	12	22	54.5
4	18	0	8	26	30.8
5	17	5	3	25	12
7	37	6	7	40	17.5
8	25	7	6	38	15.8
9	14	5	0	19	0
9.5	23	8	7	38	18.4
10	25	5	3	33	9.1
11	33	6	9	48	18.8
14	67	10	7	84	8.3
15	73	11	8	92	8.7
18	100	7	5	112	4.5
20	109	1	0	110	0
25	133	1	3	137	2.2
27	136	1	2	139	1.4
29	146	0	0	146	0

Table 2. Number of finite, nonfinite and verbless declaratives in Greg's data

Months	Finite decl	RI	Verbless	Total decl	% Verbless
5	36	7	10	53	18.9
9.5	36	3	12	51	24.5
10	66	13	2	71	2.8
11	22	2	9	34	26.5
14	131	13	14	158	8.9
15	206	13	10	229	4.4
18	124	7	2	133	1.5
20	154	2	3	159	1.9
25	309	1	4	314	1.3
27	218	0	2	220	0.9
29	226	1	3	230	1.3

less sentences before month 18 ($84/490 = 17.1\%$) and after month 18 ($10/644 = 1.6\%$) ($\chi^2 = 86.967$; $p < .0001$). Examples of verbless utterances are given in (10) through (12).

(10) Kenny: Moi # (ai) deux mon garçons. (Kenny, month 0.5)

me (have) two my boys

Int: T' as deux p'tits frères?

you have two little brothers

Int: Oui.

yes

(11) %com: Something is falling again.

Int: Ça tombe souvent hein?

it falls often eh

Kenny: (C'est) Très difficile. (Kenny, month 2)

(it's) very difficult

Int: C'est très difficile.

it is very difficult

(12) Int: Veux+tu que je tienne le pied?

want you that I hold the foot

Kenny: Yike ici [/] ici (est) le ours. (Kenny, month 2)

here (is) the bear

The pattern of verb omission in Greg's data is quite similar to Kenny's despite lower omission rates (Table 2). Recall, however, that Greg's data started being collected later than Kenny's, so a period of high incidence of verbless utterances may have been missed. This notwithstanding, a clear omission period can be identified in Greg up until month 14 (between 9% and 30%). As of month 15, the omission

Table 3. Incidence of RIs after and before month 18 in both children
(from Prévost & White 2000a)

Period	Kenny	Greg
Before month 18	69/417 (16.5%)	51/548 (9.3%)
After month 18	10/634 (1.6%)	11/1042 (1.1%)

rate falls to below 5%. The difference between the incidence of verbless utterances before month 15 (47/367 = 12.8%) and after month 15 (24/1285 = 1.9%) is highly significant ($\chi^2 = 83.048$, $p < .0001$). Examples are given in (13) through (15).

- (13) Int: Mmhm woops!
 Greg: Train (est) comme ça. (Greg, month 9.5)
 train (is) like this
- (14) Greg: Ça [: wh] [//] (c'est) pour le train ça. (Greg, month 9.5)
 this (it's) for the train this
- (15) %com: Greg's brother (Eric) has just arrived.
 Greg: Hey mon frère (est) ici! (Greg, month 11)
 my brother (is) here
 Int: Oui y s'appelle comment ton frère?
 yes he is called how your brother
 Greg: Eric y +/.
 Eric he

Interestingly, the drop in the incidence of verbless utterances corresponds to that of RIs in both children. As shown in previous work (Prévost 1997; Prévost & White 2000a), and as can be reconstructed from Tables 1 and 2, the incidence of RIs is significantly higher before month 18 than after month 18. This is summarized in Table 3.

Another similarity between verbless utterances and RIs concern subject types. In particular, when a pronominal subject is used, it is almost always a strong pronoun, such as *moi* 'me' or *lui* 'him', and not a clitic. Prévost & White (2000a) report a strong contingency between pronoun type and finiteness, such that strong pronouns tend to occur as subjects of RIs rather than of finite declaratives. In Kenny, strong subject pronouns occur in 59.2% of his RIs versus 15.4% of his finite declaratives. In Greg, the difference is 25.9% versus 5.4%. Similarly, a total of 23 verbless utterances exhibiting a pronominal subject were found in the data (17 in Kenny and 6 in Greg). All of them but one involve a strong pronoun (for some detail and examples of such utterances, see Sections 4.2.1 and 4.2.2). The one exception is *Moi je monsieur* 'Me I mister' (Greg, month 14), where the nominative clitic *je* is used.

4.2 Types of verbless utterances

We now turn to the different types of verbless declaratives found during the first 18 months of acquisition for Kenny and the first 15 months for Greg. Two major types emerge, one where a lexical verb has been omitted and one involving copula omission. Tables 4 and 5 compare the two omission types in both children. As can be seen, the omission of the copula far outnumbers that of lexical verbs (71.4% vs. 22.6% for Kenny and 66% vs. 25.5% for Greg). (In Tables 4 and 5, the column Lex/cop corresponds to cases where it has been impossible to decide between the omission of a lexical verb or the copula.) This is somewhat consistent with the findings of Lakshmanan on child L2 English, although her reported cases of lexical verb omissions are truly cases of substitutions since they involve the use of the copula instead of the verb itself – often followed by the preposition *for*). In the L2 French data reviewed here, no particular preposition is found; the phrases involved are simply juxtaposed to each other, as in (10) above.

The next two tables compare the omission and the overt production of copular and lexical verbs in the data. Sequences involving an auxiliary and a past participle have been ignored, as well as potential routines such as *C'est XP* 'It's XP'. The various comparisons confirm what was observed in Tables 4 and 5, namely the higher ratio of copula omission compared to lexical verb omission. In Kenny's data (Table 6), omission of the two types of verbs is high in the first 3 to 4 months

Table 4. Verbless utterance types in Kenny's data

Months	Copula	Lexical	Lex/Cop	Total	% Copula	% Lexical
0.3	0	0	0	0	–	–
0.5	4	1	0	5	80	20
1	0	0	0	0	–	–
2	6	3	0	9	66.7	33.3
3	7	3	2	12	58.3	25
4	3	5	0	8	37.5	62.5
5	3	0	0	3	100	0
7	7	0	0	7	100	0
8	4	2	0	6	66.7	33.3
9	0	0	0	0	–	–
9.5	7	0	0	7	100	0
10	2	1	0	3	66.7	33.3
11	5	3	1	9	55.6	33
14	6	1	0	7	85.7	14.3
15	6	0	2	8	75	0
<i>Total</i>	60	19	5	84	71.4	22.6

Table 5. Verbless utterance types in Greg's data

Months	Copula	Lexical	Cop/Lex	Total	% Copula	% Lexical
5	7	3	0	10	70	30
9.5	5	4	3	12	41.7	33.3
10	2	0	0	2	100	0
11	7	2	0	9	77.8	22.2
14	10	3	1	14	71.4	21.4
<i>Total</i>	<i>31</i>	<i>12</i>	<i>4</i>	<i>47</i>	<i>66</i>	<i>25.5</i>

Table 6. Comparison of production vs. omission of copular and lexical verbs (Kenny's data)

Month	Copula				Lexical verbs			
	Overt	Omitted	Total	% Omission	Overt	Omitted	Total	% Omission
0.3	0	0	0	–	1	0	1	0
0.5	1	4	5	80	0	1	1	100
1	0	0	0	–	5	0	5	0
2	1	6	7	85.7	4	3	7	42.9
3	4	7	11	63.6	6	3	9	33.3
4	6	3	9	33.3	12	5	17	29.4
5	6	3	9	33.3	14	0	14	0
7	19	7	26	26.9	16	0	16	0
8	10	4	14	28.6	18	2	20	10
9	10	0	10	0	8	0	8	0
9.5	14	7	21	33.3	13	0	13	0
10	16	2	18	11.1	13	1	14	7.1
11	12	5	17	29.4	20	3	23	13
14	22	6	28	21.4	48	1	49	2
15	21	6	27	22.2	53	0	53	0
<i>Total</i>	<i>142</i>	<i>60</i>	<i>202</i>	<i>29.7</i>	<i>231</i>	<i>19</i>	<i>250</i>	<i>7.6</i>

(with copula omission always higher), and then declines, in the case of copula omission, to a lower, but stable, ratio (between 20% and 30%), and to a very low level in the case of lexical verb omission (at most 13% in the next 8 months). In general, the rate of copula omission is significantly higher than that of missing lexical verbs ($\chi^2 = 37.844$, $p < .0001$).

In general, the findings are similar in Greg's case (Table 7), insofar as the omission rate of the copula is much higher (globally six times higher) than that of lexical verbs throughout the data ($\chi^2 = 45.75$, $p < .0001$). However, in contrast to what we saw with Kenny, there is no initial period where omission is more frequent than in the rest of the data. This could be due to the fact that Greg's data did

Table 7. Comparison of production vs. omission of copular and lexical verbs (Greg's data)

Month	Copula				Lexical verbs			
	Overt	Omitted	Total	% Omission	Overt	Omitted	Total	% Omission
5	5	7	12	58.3	18	3	21	14.3
9.5	9	5	14	35.7	19	4	23	17.4
10	10	2	12	16.7	40	0	40	0
11	8	7	15	46.7	15	2	17	11.8
14	23	10	33	30.3	108	3	111	2.7
<i>Total</i>	<i>55</i>	<i>31</i>	<i>86</i>	<i>36</i>	<i>200</i>	<i>12</i>	<i>212</i>	<i>5.7</i>

not start being collected as early as with Kenny. It could therefore be the case that an initial period of higher omission rates was overlooked, as mentioned above. Globally, the two children display comparable levels of omission with both the copula (around one third) and lexical verbs (below 10%).

4.3 Verb omission in CP-clauses

In Section 4.1, we saw that verbless utterances and root infinitives were found to occur during a similar period of time. Another similarity between these two types of utterances is that they are confined to root declarative contexts: very few occur in questions and embedded clauses. Although the emergence of questions and subordinates is delayed in the two children (see Grondin and White 1996), such clauses are produced during the period where RIs and verbless clauses are used. Prévost & White (2000a) reported a 6.1% and 3.8% incidence rate of nonfinite verbs in CP-clauses in Kenny and Greg respectively, compared to 16.5% and 9.3% for root declaratives. The findings on the incidence of verbless CP-clauses are reported in Tables 8 and 9. There, a difference is made between omission and production of the copula and lexical verbs in CPs, so as precise comparisons could be drawn with the findings in root declaratives. Note that these tables do not take into account the production of CPs involving an auxiliary and a past participle. Routines, such as *C'est XP?* 'It is XP?', *C'est quoi?* 'It's what?', and *Où est XP?* 'Where is XP?' are also excluded.

In general, the incidence of verbless CPs is very low, may it concern copula or lexical verb omission. As shown in Table 8, Kenny only used eight verbless CPs (five with a missing copula and three with a missing lexical verb), which accounts for as low as 2.4% of the corresponding CP-clauses (8/329). Up until (and including) month 15, the ratio of verb omission is 4/81 (4.9%), compared to 79 missing verbs in 452 root declaratives (17.5%) (recall Table 6). This difference is

Table 8. Incidence of CPs with and without verbs in Kenny's data

Month	Copula				Lexical verbs			
	Overt	Omitted	Total	% Omission	Overt	Omitted	Total	% Omission
0.3	0	0	0	–	0	0	0	–
0.5	0	0	0	–	0	0	0	–
1	1	0	1	0	0	0	0	–
2	0	0	0	–	0	0	0	–
3	1	0	1	0	1	0	1	0
4	2	0	2	0	0	0	0	–
5	3	0	3	0	0	0	0	–
7	3	0	3	0	0	0	0	–
8	2	0	2	0	1	0	1	0
9	0	0	0	–	5	0	5	0
9.5	3	0	3	0	5	0	5	0
10	4	0	4	0	11	0	11	0
11	0	1	1	100	7	0	7	0
14	4	1	5	20	3	1	4	25
15	8	1	9	11.1	13	0	13	0
18	7	1	8	12.5	37	2	39	5.1
20	6	0	6	0	16	0	16	0
25	12	0	12	0	32	0	32	0
27	9	1	10	10	57	0	57	0
29	9	0	9	0	59	0	59	0
<i>Total</i>	<i>74</i>	<i>5</i>	<i>79</i>	<i>6.3</i>	<i>247</i>	<i>3</i>	<i>250</i>	<i>1.2</i>

highly significant ($\chi^2 = 8.215$, $p = .0042$). The difference between root declaratives and CP-clauses is also striking when missing copula is solely taken into account. During the first 15 months, the ratio of copula omission is 60/202 (29.7%) in root declaratives versus 3/34 (8.8%) in CPs ($\chi^2 = 6.483$, $p = .0109$). As to lexical verb omission, it is also much lower in CP-clauses ($1/47 = 2.1\%$) than in root declaratives ($19/259 = 7.6\%$) during that same period, although in both cases the incidence is below 10%, which in turn explains why the difference is not significant ($\chi^2 = 1.886$, $p = .1696$).

The same tendencies can be observed in Greg's data. As shown in Table 9, only seven CPs involve a missing verb out of 492 (1.4%). Between months 5 and 14, omission amounts to one out of 59 CPs produced (1.7%). There is no missing copula during that period (0/16), which sharply contrasts with the 36% omission rate found in his root declaratives (31/86) (see Table 7 above). As with Kenny, the omission rate of lexical verbs is very low in CPs ($1/43 = 2.3\%$) and in root declaratives ($12/212 = 5.7\%$). The difference does not reach statistical significance ($\chi^2 = .822$, $p = .3647$).

Table 9. Incidence of CPs with and without verbs in Greg's data

Month	Copula				Lexical verbs			
	Overt	Omitted	Total	% Omission	Overt	Omitted	Total	% Omission
5	0	0	0	–	2	0	2	0
9.5	1	0	1	0	3	0	3	0
10	2	0	2	0	5	0	5	0
11	7	0	7	0	0	0	0	–
14	6	0	6	0	32	1	33	3
15	6	0	6	0	45	2	47	4.2
18	8	0	8	0	29	0	29	0
20	3	1	4	25	33	0	33	0
25	23	1	24	4.2	115	1	116	0.9
27	14	0	14	0	69	0	69	0
29	12	0	12	0	70	1	71	1.4
<i>Total</i>	82	2	84	2.4	403	5	408	1.2

Some examples of the children's CPs missing either the copula or a lexical verb are given in (16) and (17) respectively.

- (16) a. Hey où (est) le autre oreille? (Kenny, month 15)
 where (is) the other ear
 b. Où (est) le papier? (Kenny, month 18)
 where (is) the paper
 c. Ben quoi (est) ça? (Greg, month 20)
 well what (is) that
 d. Mais où (sont) tous les trains? (Greg, month 25)
 but where (are) all the trains
- (17) a. Well est-ce que toi (as) rouge ici? (Kenny, month 15)
 Qu you (have) red here
 b. Qu'est-ce que (il y a) dans là? (Greg, month 14)
 what there is in there

Most cases of missing copula are predicative questions starting with *où* 'where', as in (16). In fact, three of Kenny's instances of missing copula are of this type. In the interviews where these utterances were produced, Kenny used over 20 target-like predicative *où*-questions, i.e. containing an overt copula. Although these questions were not included in the statistics reported in Table 8, since the sequence *Où est XP?* 'Where is XP?' may be considered a routine, it is quite clear that the incidence of missing copula in CPs is extremely low, which suggests that the few cases should be considered performance errors. Similar tendencies obtain in Greg's data.

The comparison between the incidence of verb omission in root declaratives and CPs, and especially the findings on missing copula, strongly suggests that verb omission is subject to structural constraints. They also suggest that the end of the verb omission period does not correspond to the development of the CP layer. As can be seen in Tables 8 and 9, CP-clauses emerge at around month 3 in Kenny's data and become productive as of month 10, while verbless utterances sharply decline as of month 18. In Greg's case, CPs are produced as of the first recording at month 5, and are present in every subsequent interview. Particularly interesting is the sample obtained at month 14, the last recording of the verb omission period in his case. There, a total of 39 CPs were produced, with only one containing a missing verb.

We now discuss the omission of lexical verbs and of the copula in more detail.

4.3.1 Omission of lexical verbs

Most of the missing lexical verbs are *avoir* 'have', *faire* 'do', and *mettre* 'put', as shown in the examples below. In some cases, both the verb and the subject are missing, as in (18) through (21).

- (18) Rouge dans ça. (= Je mets/vais mettre du rouge dans ça) (K., month 4)
 red in this I put will put some red in this
- (19) Int: Non pis [: heu:].
 No then hmm
 Kenny: Oui bleu là. (=Je vais/veux mettre du bleu là) (K., month 10)
 yes blue there I will/want to put some blue here
 Int: Le bleu.
 the blue
 %com: Kenny is drawing some clouds.
- (20) Kenny: Ça comme ça. (Kenny, month 10)
 this like this
 Kenny: Moi <faire une> [//] faire ça comme ça.
 me do.INF one do.INF this like this
- (21) Kenny: Maman où sont les oreilles?
 mommy where are the ears
 Greg: Pas les oreilles. (= Il n'y a /il n'a pas d'oreilles) (Greg, month 14)
 not the ears there is he has no ears
 Int: Y a plus d'oreilles.
 there is / he has no+more ears

In other cases, the subject is present, as in (22) and (23). In most of these utterances, the subject is a strong pronoun, such as *moi* 'me'.

- (22) Kenny: *Moi deux petits frères.* (= *Moi, j'ai deux petits frères*) (K., mth 3)
 me two little brothers me I have two little brothers
 Int: *T' as un p'tit bébé hein?*
 you have a little baby uh
 Kenny: *Oui.*
 yes
- (23) Int: *Oh regarde Greg comme il est beau le costume de Kenny!*
 oh look G. how it is beautiful the suit of K.
 Greg: *Moi <le xx comme ça> [//] le même comme ça mais pas le +/.*
 me the like this the same like this but not the
 (= *Moi j'ai le même*) (Greg, month 14)
 me I have the same

In some cases, it is not clear whether the subject is missing or whether only the verb has been omitted, as illustrated in (24) and (25).

- (24) Int: *Est+ce que tu vas en mettre ici des fenêtres mmm?*
 Qu you will some put here some windows
 Kenny: *Une grosse fenêtre ici.*
 a big window here
 (= *une fenêtre va ici / je vais mettre une fenêtre ici*)
 a windows goes here I will put a window here
 Int: *Oh la la! (Kenny, month 8)*
 oh dear
- (25) Greg: *Non pas les animaux ici.* (= *les animaux ne vont pas ici*)
 no not the animals here the animals NEG go not here
 / *On ne peut pas mettre les animaux ici*)
 one NEG can not put the animals here (Greg, month 9.5)
 Kenny: *Oui.*
 yes
 Greg: *<Juste ici> [//] juste là.*
 just here just there

4.2.2 Omission of the copula

In Section 1, we saw that in L1 child English, a correlation between copula omission and predicate types is reported, whereby omission is more likely to occur with SL predicates than IL ones (Becker 2002, 2004). In L2 child English, such a contingency is not observed (Gavruseva & Meisterheim 2003). An analysis of

Kenny's and Greg's data was thus undertaken to investigate the characteristics of copula omission in child L2 French and see whether it patterns with child L2 English. As said before, there has unfortunately been no detailed investigation of copula omission in child L1 French to which our results could be confronted. SL predicates include adverbials (e.g. *ici* 'here') and PPs denoting noninherent or temporary properties. As to IL predicates, they mostly involve DPs and adjectives denoting color, size, and aesthetic properties (e.g. *joli* 'beautiful') referring to inherent or permanent properties of the subject. The results are based on utterances containing an overt subject. As before, routines such as *C'est XP* 'This is XP' and *Où est XP?* 'Where is XP?' were excluded from the statistics.

As can be seen in Tables 10 and 11, the figures are low. This is partly due to the fact that a high number of copula constructions produced by the children do not include an overt subject, which means that they do not appear in the calculations. Second, in some cases, a clear interpretation of the predicate could not be reached. In terms of number of tokens, both children produced more SL than IL predicates. However, with respect to ratios of missing copula, different patterns emerge. In Kenny's data, the ratio of missing copula is higher with SL predicates than with IL predicates (Table 10), while the opposite trend is observed in Greg's (Table 11). Note, however, that Greg's results on IL predicates are based on very few tokens. Despite these differing behaviors, there is no statistical contingency between the

Table 10. Overt and missing copula with SL and IL predicate types in Kenny's data

Month	SL predicates			IL predicates		
	Overt	Null	%Null	Overt	Null	% Null
0.3	0	0	–	0	0	–
0.5	0	0	–	0	0	–
1	0	0	–	0	0	–
2	0	2	100	1	2	66.6
3	1	4	80	2	1	33.3
4	2	1	33.3	2	1	33.3
5	4	1	20	0	1	100
7	1	4	80	7	0	0
8	4	1	20	3	1	25
9	3	0	0	2	0	0
9.5	2	5	71.4	1	2	66.6
10	8	2	20	3	0	0
11	3	3	50	2	0	0
14	12	4	25	2	0	0
15	10	3	23.1	6	1	14.3
<i>Total</i>	50	30	37.5	31	9	22.5

Table 11. Overt and missing copula with SL and IL predicate types in Greg's data

Month	SL predicates			IL predicates		
	Overt	Null	%Null	Overt	Null	%Null
5	4	5	55.6	0	0	–
9.5	5	4	44.4	0	0	–
10	7	0	0	1	1	50
11	2	5	71.4	0	0	–
14	14	6	30	1	1	50
<i>Total</i>	32	20	38.5	2	2	50

status of the copula (overt or missing) and the nature of the predicate (SL or IL) in neither child (Kenny: $\chi^2 = 2.735$, $p = .0982$; Greg: $\chi^2 = .207$, $p = .6489$).

Tables 12 and 13 further break the results on copula production and omission with SL and IL predicates according to the types of predicates, such as NPs, PPs, APs, and adverbials. In child L1 English, Becker (2002, 2004) found that the ratio of missing copula is at around 20% in IL nominal and adjectival predicates, vs. 56% and 80% with SL adjectival and adverbial ones. Such differences were not observed in child L2 English by Gavrusseva and Meisterheim (2003). In both Kenny and Greg, the most frequent SL predicates express the location of an object, either via a PP or an adverb (such as *ici* 'here' or *là* 'there'), e.g. DP + *ici/là* and *ici/là* + DP. The latter case may be a direct translation of the English phrase *Here (is) DP*, which is ungrammatical in French. Some examples are given in (26).

- (26) a. Int: C'est ta ferme?
it's your farm
Kenny: Oui ici (est) la ferme de moi. (Kenny, month 3)
yes here is the farm of me
- b. Int: Il est sur le bateau?
he is on the boat
Kenny: Oui.
yes
Kenny: Non toi (es) dans le l'eau. (Kenny, month 11)
no you (are) in the water
- c. Int: Une jaune.
a yellow
Greg: Ok l' autre (est) ici. (Greg, month 5)
ok the other one (is) here

Table 12. Overt and missing copula according to predicate types in Kenny's data

Type	SL predicates			IL predicates		
	Overt	Null	%Null	Overt	Null	%Null
Loc (Adv/PP)	24	25	51	0	0	–
NP	8	2	20	11	5	31.2
AP	10	0	0	16	2	11.1
PP	1	0	0	4	1	20
Numeral	6	3	33.3	0	1	100
CP	1	0	0	0	0	–
<i>Total</i>	<i>50</i>	<i>30</i>	<i>37.5</i>	<i>31</i>	<i>9</i>	<i>22.5</i>

Table 13. Overt and missing copula according to predicate types in Greg's data

Type	SL predicates			IL predicates		
	Overt	Null	%Null	Overt	Null	%Null
Loc (Adv/PP)	14	19	57.6	0	0	–
NP	1	1	50	1	2	66.7
AP	12	0	0	1	0	0
PP	4	0	0	0	0	–
CP	1	0	0	0	0	–
<i>Total</i>	<i>32</i>	<i>20</i>	<i>38.5</i>	<i>2</i>	<i>2</i>	<i>50</i>

The proportion of omitted copula with SL predicates expressing location is 24/59 (51%) in Kenny and 19/33 (57.6%) in Greg.¹⁰ However, this finding does not extend to other SL predicate types. In particular, with APs, no instance of missing copula was found. With SL nominal predicates, the ratio of copula omission is 20% in Kenny and 50% in Greg, but the latter result is based on two tokens only. Note that in Kenny, copula omission is higher with IL adjectival predicates (11.1%) than with SL ones (0%). Finally, in Kenny's data, some copula-free SL predicates involve numerals, which all correspond to the child telling his age or the age of somebody else, as in (27a). This again seems to be a translation from English where *be* is used. This is a common error observed in the data, even in the later samples, (see (27b)), and in English-speaking learners in general, as French requires the use of *avoir* 'have' in such cases.¹¹

10. In Greg's data, all utterances but one involving copula omission and an SL predicate exhibit an adverbial.

11. This was also found in Greg's data, as shown in (i):

(i) *Parce que Kenny il est sept.* (Greg, month 18)
 because K. he is seven

- (27) a. Int: Sont-tu plus vieux qu' toi?
 Are Qu more old than you
 Kenny: Un (est) trois. (Kenny, month 0.5)
 one (is) three
- b. Lui est treize ans. (Kenny, month 20)
 Him is thirteen years

Turning to IL predicates, the most common types involve an NP or an AP. In Kenny's data, the ratios of missing copula in these contexts are 31.2% (as said above) and 11.1% respectively. Some examples are given in (28) and (29). An additional 20% of IL predicates involving a PP is also copula-free in his data, as in (30). In Greg, the proportion of missing copula with an IL nominal is 66.7%, but this was calculated over three utterances only.

- (28) a. Toi (es) stupide. (Kenny, month 9)
 you (are) stupid
- b. Toi (es) plus grand de [/] de la porte. (Kenny, month 15)
 you (are) more tall than than the door
- (29) a. Int: Non c'est-tu un bébé ça?
 no it's qu a baby this
 Kenny: Non ça (est) un bébé.
 no this (is) a baby
 Int: Oui ça c'est des bébés. (Kenny, month 3)
 yes this it's some babies
- b. Greg: Moi je (suis) une monsieur.
 me I (am) a mister
 Int: Oui.
 yes
 Greg: Toi tu es une madame. (Greg, month 14)
 you you are a lady
- (30) Int: Ah y [/] y tombe.
 ah he he falls
 Kenny: Ah <ma nez> [//] mon nez.
 ah my nose my nose
 Int: Sa tête?
 his head
 Kenny: Mon [/] son [//] le nez [:heu:] [//] ça (est) à le kangourou.
 my his the nose hmm this (is) to the kangaroo
 (Kenny, month 9.5)

To summarize, the data examined here display similarities with the findings in child L2 English, since there is no general contingency between the type of predicate (IL and SL) and the status of the copula (present or absent). Moreover, although the omission of the copula may be high with adverbials and PPs expressing location, it is very low on other types of SL predicates, such as NPs and APs. In contrast, omission with nominal and adjectival IL predicates is much higher. These results differ from Becker's results on child L1 English.

5. Discussion and conclusion

In this paper, we have seen that verbless utterances that require a verb in the target language can be found in early child L2 data, which confirms findings reported in other studies. The omitted verb may be the copula or a lexical verb, which differs from Lakshmanan (1993/1994) who only reported cases of missing copula in child L2 English.¹² In the data reviewed here, verbless utterances were found to follow the pattern of RIs, in the sense that both types of utterances disappear at about the same time, at around month 18. Moreover, verbless clauses were almost entirely absent from the CP-domain, although children may produce both CP-clauses and verbless root declaratives during the same interviews. This suggests that the occurrence of verb omission is structurally determined, which is similar to what is reported in child L1 Italian (Franchi 2006; Caprin & Guasti 2006). In particular, the findings on verbless utterances support the Truncation hypothesis since in CP-clauses the whole array of functional structure must be projected, which prevents verb omission. In contrast, truncation may take place in root declaratives, which means that the root of the utterances produced by the learners may be VP (which underlies RIs) or other lexical projections (which underlies verb omission).

In recent studies, it has been argued that truncation stems from computational limitations in children (Prévost 1997, 2004), whereby the systematic projection of full-fledged structures is computationally costly. This is based on the observation that a wide range of properties of declarative clauses in early child L2 French is very similar to what is reported in acquisition studies by French monolinguals

12. This difference calls for more research on the topic in order to reach a more satisfactory understanding of the scope and nature of verb omission in the first stages of child L2 acquisition. Recall that the child L2 English data reported by Lakshmanan (1993/1994) concerned one child only. Moreover, even when verbless utterances are reported, the tendency is to focus on copula omission, as in Haznedar (2001). Missing lexical verbs should be considered as well.

(see Rasetti 2003).¹³ Assuming that these similar properties have a common explanation, it is clear that the underlying cause cannot be maturational since maturation only takes place once. Moreover, functional categories are shown to be present in underlying grammars in both acquisition contexts, which means that early RIs do not stem from the existence of a lexical stage in language acquisition. Finally, the array of facts differ from what is reported in L2 acquisition by adults, despite the observation that finiteness marking on verbs may be optional in that learning context as well. In adult learners, RIs would not result from truncation but from missing (surface) inflection (see, among others, Lardiere 2000; Prévost & White 2000a, b), with functional categories being part of the underlying representation (see below for more detail). In contrast, child learners are deemed to be unable to always project the whole structure at first, which results in the production of RIs and verbless clauses as VPs and small clauses. Once children's computational capacities increase, the underlying structure will systematically involve at least one functional category, which prevents the learners from producing verbless and infinitival root declaratives (for details on computational complexity in L1 acquisition, see, among others, Jakubowicz & Nash 2001).

Interestingly, although RIs and verbless utterances may have a common structural explanation, they are not used to convey the same meaning. Recent research has shown that child L2 RIs tend to receive a modal interpretation (Prévost 2004), presumably due to the irrealis property of the infinitival morphology (see Hoekstra & Hyams 1998). Verbless utterances, on the other hand, are not associated with such an interpretation. The vast majority have a declarative reading, namely they have to do with 'here and now'. Another difference between the two types of utterances is that while RIs only target lexical verbs, in the sense that only lexical verbs are found in RIs – not the copula –, verbless utterances may involve the two types of verbs, although missing copula is more frequent. This suggests that once the copula is overtly expressed, the structure of the utterance in which it appears must contain a functional layer, at least T; it cannot appear overtly in lexical roots.

The findings cannot be explained by an account relying on a breakdown in the access to the relevant lexical form, as proposed by Ionin & Wexler (2002) for

13. For example, in both acquisition contexts there is a high contingency (a) between finiteness and structural position (such that finite verbs have a strong tendency to appear in finite positions, while non-finite forms are severely restricted to non-finite ones) (see also Poeppel & Wexler 1993 for child L1 German), (b) between verb types and finiteness (such that non-eventive predicates almost always occur in finite declaratives) (see also Gavrusseva 2002 for child L2 English), and (c) between modality and finiteness (such that non-modal interpretations are limited to finite declaratives). Furthermore, a simultaneous decline of RIs and null subjects in finite root declaratives have been reported in both L1 and L2 child French.

child L2 English, following Prévost & White (2000a, b). If access problems were to explain morphological variability, then they should affect all linguistic contexts, including *wh*-questions and embedded clauses. This is exactly what was found in L2 acquisition by adult learners, who were shown to use nonfinite verbs in different types of clauses, in contrast to child L2 learners (Prévost & White 2000a). However, verbless clauses are largely restricted to root declarative contexts in the data reviewed here.

Another argument disconfirming the missing surface inflection approach has to do with the fact that almost all subject pronouns (22/23) appearing in the verbless utterances produced by Kenny and Greg, including utterances with missing copula, are non-nominative strong pronouns such as *moi* 'me'. If missing verbs were due to lexical access difficulties, non-nominative elements should not appear in subject position, namely SpecIP, contrary to fact. In contrast, the occurrence of these pronouns as subjects of verbless utterances can be explained by the Truncation hypothesis. According to this approach, the root of a verbless utterance is not a (functional) category associated with nominative Case. Since strong pronouns are assumed to bear default case in French, they can easily occur in the specifier position of the root. This is similar to the findings reported on root declaratives including a verb, whereby strong pronoun subjects tend to appear in RIs, whereas nominative clitics, which require the projection of a functional category, are strongly limited to finite clauses (Prévost 1997; Prévost & White 2000a). This in turn suggests that verbless utterances, like RIs, are nonfinite.

One way in which the Missing surface inflection hypothesis could potentially explain (at least) some cases of copula omission has to do with the development of Number. We know that singular forms generally develop before plural ones in L1 and L2 acquisition, and that the singular often replaces the plural initially (but not the reverse). Such is the case in Kenny and Greg with respect to the copula, as shown in (31).

- (31) a. Trois bébés est là. (Kenny, month 5)
 three babies is there
 b. Les animaux est ici. (Greg, month 9.5)
 the animals is here

On top of such substitutions, it could therefore be the case that singular plural suppletive forms, such as *sont* 'are', are omitted for a while. An examination of the data reveals that copula omission is not related to Number, and in particular to the expression of plural. Of all the cases of copula omission observed during the missing copula period identified in the two children, very few involve a plural subject (either overtly expressed or not): three in Kenny (out of 60 cases of missing copula before month 18 (5%)) and two in Greg (out of 31 (6.4%)). Examples

are given in (32). In other words, omission is not used as a strategy, alongside the recourse to singular forms, to deal with Number marking.

- (32) a. Oui tous la lions (sont) ici. (Kenny, month 8)
 yes all the lions (are) here
 b. L'autre deux jaunes (sont) ici. (Greg, month 9.5)
 the other two yellow (are) here

Focusing more specifically on copula omission, we have seen that it is not clearly related to any particular predicate type (IL or SL). In some cases, omission is even higher with IL predicates than with SL ones. This differs from what has been reported in child L1 English by Becker (2002, 2004), but it patterns with what has been observed in the child L2 English data investigated by Gavrusseva & Meisterheim (2003). The results are also consistent with the truncation approach: if the phenomenon of copula omission is to be taken as the projection of a lexical root, then it should not be affected by the type of predicate involved (SL or IL). If Becker's (2002, 2004) hypothesis were to be confirmed by other studies on L1 acquisition, focusing particularly on other child languages, such as L1 French, then the findings on Kenny and Greg and on Gavrusseva & Meisterheim's learners would suggest a difference between child L1 and L2 acquisition.

As explained in Section 3, this study did not look at auxiliary omission, given the frequent homophony between infinitival forms and past participles in French. Recall that it is often assumed that auxiliaries develop later than the copula, which suggests that auxiliary omission should last longer than copula omission. Now, we saw that both children produced RIs for a while during their acquisition process. For argument's sake, let us assume that these clauses all involve past participles used with a null auxiliary. Given that RIs and verbless utterances were found to disappear at roughly the same time, it would follow that all kinds of omission (lexical verbs, auxiliaries, and the copula) would stop more or less simultaneously. Auxiliary omission would therefore not outlive copula omission in child L2 French, contrary to expectations. Naturally, such speculations would need to be confirmed by actual investigations, preferably on languages distinguishing between past participles and infinitives, such as Spanish and Italian.

Finally, it would be interesting to compare the incidence and nature of verbless utterances in child and adult L2 acquisition. Verbless utterances are frequently reported in early adult L2 learning, as illustrated by the following example from a beginner Swedish-speaking learner of French:

- (33) Taxi dans la bois. Après, pluie pluie pluie.
 taxi into the wood then rain rain rain [=we took a taxi to go into the
 wood, but then it started raining all the time] (Schlyter 2003)

However, the fact that the same kinds of utterances occur in different learning contexts does not guarantee that they should have similar properties. A parallel can be drawn with the root infinitive phenomenon. As said above, it has been shown that although both child and adult L2 learners produce RIs, these clauses have different properties in their respective interlanguage grammars (Prévost & White 2000a). In child interlanguage systems, RIs are truly nonfinite and they involve a lexical root, typically a VP; in adult L2 acquisition, these clauses are finite, with nonfinite morphology acting as a substitute for finite forms. Coming back to verbless utterances, we would need to investigate whether these clauses are confined to root declarative contexts in adult speech or whether they can appear in CP-contexts as well. We should also try to determine whether a parallel exists between the production of RIs and of verbless sentences in adult L2 acquisition. RIs have been found to occur in the speech of adult learners even in advanced stages of acquisition. We may wonder whether it is also the case with verbless utterances, and if not, whether these clauses decline much earlier than RIs.

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The status of subjects in early child L2 English

Mohsen Mobaraki, Anne Vainikka and Martha Young-Scholten
Birjand University / Johns Hopkins University / Newcastle University

Proponents of Full Transfer/Full Access take nominative subject forms in early child L2 English as evidence for initial state functional projections. We discuss early stage longitudinal data from two Farsi-speaking children acquiring English. Our data reveal non-contrastive use of nominative subject forms, indicating initial absence of case marking. The patterns found are similar to those in the L1 English data in terms of the early non-contrastive pronoun use (e.g. Vainikka 1993/1994) and in terms of co-occurrence of null subjects with non-finite verbs. Pronominal contrasts first occur in utterances with the copula, supporting Hawkins' (2001) proposal that it triggers the projection of AgrP under the Structure Building approach taken by Vainikka & Young-Scholten (e.g. 1994).

1. Introduction

At the centre of the decade-old debate on whether functional categories are available at the initial state of second language acquisition (Schwartz & Sprouse 1996; Vainikka & Young-Scholten 1996a) lie the early subjects learners produce. For Haznedar (1997)/Haznedar & Schwartz (1997) longitudinal data from a Turkish boy (Erdem) acquiring English reveals early subjects appropriately marked for nominative case, indicating the existence of a functional projection that entails nominative case marking. Additional evidence for such a projection is Erdem's early non-optionality of subjects. In what follows, we present new longitudinal data from two Farsi-speaking children learning English, Melissa and Bernard. Unlike Erdem they clearly display patterns similar to those found in the data from young children learning English as their first language. Melissa's and Bernard's earliest thematic verbs are non-finite and their early subjects are either full NPs, null, or when pronominal, non-contrastive. There is thus support from new child L2 English data for the initial projection of just a bare VP, similar to what is argued for the L1 acquisition of English in Vainikka (1993/1994) and for L2 acquisition in Vainikka & Young-Scholten (1994; see also 2005, 2007 on Organic Grammar,

which subsumes all earlier work). In the following, we then discuss Melissa's and Bernard's subsequent development, which shows a decline in null subject use with emergence of finite verbs and nominative case marking. Just prior to the point at which the two children mark nominative case in contrast to other cases (particularly genitive), nominative case marking appears in copula constructions. These data give the appearance of rote-learned chunks (see Myles 2004) because subject + copula is often used incorrectly by the children. However, their systematicity prior to evidence for true case-marked subjects in utterances with thematic verbs points to the function of these copular utterances as triggers, along the lines of Hawkins (2001).

We begin our chapter by considering strong continuity approaches to children's early subjects and move on to weak continuity approaches, where we summarize Vainikka's (1993/1994) analysis of early subjects in L1 English to establish how acquisition seems to proceed when the only possible sources of knowledge are Universal Grammar (UG) and primary linguistic data. Then, after presenting Haznedar (1997)/Haznedar & Schwartz's (1997) Full Transfer/Full Access view of Erdem's early subjects, we turn to new L2 data whose analysis we argue instead supports the alternative Organic Grammar position. The heart of the chapter is the examination of these longitudinal data from 'Bernard' and 'Melissa'. We first consider the subject data from their earliest samples. These data reveal pronouns in various forms which are not case marked, in particular the first person singular subject 'my'. The data also show the commonly observed optionality of subjects in utterances with non-finite verbs. With these patterns in mind, we then consider the claim by Haznedar (1997) and Haznedar & Schwartz (1997) – based on very similar longitudinal data – that early child L2 grammars include functional categories. This prompts us to address the question why Haznedar's Turkish-speaking learner, Erdem, seems to follow an alternative pattern. We consider whether the substantive differences between Farsi and Turkish that would be assumed under Schwartz & Sprouse's (1996) Full Transfer/Full Access hypothesis can account for these apparent differences. We conclude that while there are several points where the two languages differ, the native language facts are largely unrelated to the patterns found in all three children's early L2 English development. We argue that Bernard and Melissa as well as Erdem follow several of the slightly different options the L1 English children discussed in Vainikka (1993/1994) choose; see also Powers 1995; Radford 1998; Rispoli 1994).

2. Children's early subjects

Children's early subjects potentially show a great deal about their syntax. What they reveal is considered from two main perspectives, one which assumes that the child begins with a full, universal syntactic tree (strong continuity) and one which assumes that a specific UG-driven grammar emerges (weak continuity).

2.1 Strong continuity approaches

The strong continuity view of children's earliest grammars has long assumed not only that these grammars UG-constrained, but also that a universal syntactic structure exists from the start (e.g. Boser, Lust, Santelmann & Whitman 1992; Hyams 1992; Poeppel & Wexler 1993). Those who adopt this single syntactic tree confront problems when trying to account for the occurrence of L1 acquisition phenomena unattested in adult languages. Under the Truncation Hypothesis (Rizzi 1993/1994), it is argued that children's use of non-finite verbs together with optional subjects (Root Infinitives/RIs) means projection of CP is optional. Where upper layers of the syntactic tree are omitted or truncated, properties associated with functional categories are not relevant. Rizzi's account assumes the extinguishing of truncation with maturation around age three; for others maturation seems loosely related to the disappearance of Root Infinitives. For example, in Wexler, Schütze & Rice (1998), Wexler's (1994) Optional Infinitive (OI) stage becomes an Extended Optional Infinitive stage to accommodate the delayed development of children with Specific Language Impairment. Data from older children (4;9 to 5;5 years old) shows that projection of just a VP (with Tense and Agreement optional) remains an option after age three.

2.2 Do early subjects mark case?

Wexler et al. (1998) point to utterances containing non-finite main verbs (bare forms or *-ing* forms) together with pronominal subjects which are not in nominative form, as in utterances such as 'him run' and 'her watching TV'. Indeed, it has long been observed that unexceptional children learning English produce a variety of pronominal subject forms, where the earliest ones may appear in accusative or genitive form. For example, Huxley (1970) observed subjects in accusative form and, less frequently, in genitive form ('my' only). Brown (1973) also gives examples of such subjects, e.g. 'her' subjects by Sarah and 'me' subjects by Adam, and Hamburger & Crain (1982) give examples where children used 'my' subjects in their early relative clauses. For Radford (1990), early subject forms such as 'me'

are examples of NPs which lack case, thus supporting his claim that case theory is not mature at the early stages of the acquisition of English. Under Radford's analysis, only accusative case is operating at this point. Here the idea is that children use accusative as default case, as suggested by Schütze & Wexler (1996a). This is based on the assumption that children learning English produce no object case marking errors (although this kind of error has been shown for children learning Russian, Babyonyshev 1993, and for German, Schütze 1995). In his analysis of data from 12 children, Rispoli (1994) also cites instances where 'he' and 'they' are used as non-subjects. From the above, we can conclude that even if accusative does not necessarily function as the default case in English, the evidence points to lack of productivity of nominative case marking at the early stages of the first language acquisition of English.

Further relevant evidence regarding an IP-level projection in children's early grammars relates to whether the thematic verbs in their utterances either without subjects or with subjects not in nominative form are finite or non-finite. Children's failure to produce any verbs at all also needs to be considered. In addition, Gruber's (1967) syntactic treatment of case assignment in child L1 English revealed that when the subject in a copula construction was not nominative, the copula itself was invariably omitted. In the new L2 data we will shortly discuss, we consider the two-Farsi-speaking children's utterances with pronominal subjects and null subjects, and utterances with and without copulas. Before turning to second language acquisition, let us consider in more depth how one weak continuity approach accounts for early subjects in child L1 English.

2.3 The Minimal Trees of Organic Grammar

Since the early 1990s, a number of researchers have followed a weak continuity approach, proposing that children learning their first language start the acquisition process with some sort of syntactically reduced structure. (For English, Dutch, German and Swedish see Clahsen 1991; Clahsen & Penke 1992; Clahsen, Eisenbeiss & Vainikka 1994; Guilfoyle & Noonan 1992; Lebeaux 1989; Platzack 1990; Radford 1988, 1995; Rizzi 1993/1994; Vainikka 1993/1994; Wijnen 1994.) Under what is now termed Organic Grammar (Vainikka & Young-Scholten 2005, 2007), Vainikka & Young-Scholten (e.g. 1994, 1996a/b) have argued that both first and second language learners project only a Minimal Tree at the start of acquisition, and that in L2 acquisition, the only instance of L1 transfer is lexical: the bare VP initially projected by the L2 learner resembles that of his/her L1 in terms of its headedness. Acquisition is driven by the input received by the learner, based on full access to UG, but without maturation of functional projections, unlike in

Radford (1990). Whereas for Rizzi syntactic structure is truncated or for Wexler it is optional, under Organic Grammar, functional structure is simply not present in the learner's grammar at the earliest stages of acquisition.

One source of evidence in support of the idea that the learner's initial grammar consists only of Minimal Trees comes from the study of the acquisition of German, where early data from both L1 and L2 learners show a preponderance of non-finite thematic verbs, a lack of verb raising, an absence of copula or auxiliary verbs and an absence of embedded clauses (see Hawkins 2001 for a similar account for L2 English). At the earliest stages in the development of German or English, subjects are optional, but in German there appears to be less systematic confusion by either L1 or L2 learners regarding pronominal forms, at least with respect to subjects.

Along with the well-known general optionality of subjects referred to above, under Organic Grammar, the well-attested use of oblique subjects by children learning English (as in the examples below from Vainikka 1993/1994) is expected at the earliest stages of both the L1 and the L2 acquisition of English.¹

- (1) a. My see that. Adam see that. (Adam 2;3)
- b. My play bulldozer, hmm. (Adam 2;3)
- c. My climb. Climb. (Adam 2;3)
- d. My need her. (Nina 2;0)
- e. My make red table. (Nina 2;0)

Under Organic Grammar, the learner initially projects a bare VP, and when the step-wise acquisition of functional projections occurs one by one, from the bottom up, subjects become both obligatory and morphologically correct. Vainikka discusses longitudinal data from CHILDES from several children learning English: Adam, Eve, Sarah, Naomi and Nina. Regarding these children's pronominal forms and related elements, not only are nominative subjects but also non-nominative/oblique subject pronouns attested in the production of each child. At least in terms of the data collected, these five illustrate what has been observed by a number of researchers: children differ not only with respect to their choice of specific oblique forms (e.g. 'me' vs. 'my'), but also in the extent to which oblique forms are produced at all (see e.g. Powers 1995).

1. We have not examined data from naturalistic adult L2 English learners' early production, but we would be surprised not to find use of incorrect subject pronoun forms. Indeed the third author can point to anecdotal evidence from an adult Mandarin speaker of English who systematically produces them, for example in copula-less Wh-questions such as 'How old him?' (and even resists correction).

Where successful nominative case assignment has been used to argue for the presence of functional syntax in children's early grammars, researchers such as Haegeman (1995), Hyams (1992), Radford (1995) and Rizzi (1994) have pointed to children's use of non-nominative subjects in RIs/OIs. The pronoun data and additional evidence from the five children's non-adult verbal production and non-adult Wh-questions supports an account under which they do not project anything more than a VP at the earliest stages of acquisition. Because the earliest grammar lacks INFL, nominative case assignment is not possible at this point. Paying particular attention to Nina, who mainly uses the oblique subject 'my', Vainikka observes that her subsequent acquisition of nominative case closely parallels her acquisition of inflectional elements and thus is evidence for this child's projection of IP. With Nina's acquisition of nominative case and INFL-related elements, there is no evidence that other functional projections such as CP are posited. In addition, the data from all five children reveal the reappearance of oblique subjects when Wh-questions start to increase in frequency, even though by this point adult-like nominative subjects are invariably used elsewhere by the children.

Before turning to L2 acquisition, we wrap up this section on the earliest stages of L1 acquisition by acknowledging the difficulty of distinguishing between an approach such as Organic Grammar that assumes absence of functional projections and an approach such as Schütze & Wexler's (1996a/b) that assumes their underspecification. When there is no evidence for a functional projection in a child's production, that projection can be construed as absent (as under Organic Grammar), or present but not visible, i.e. underspecified (as under Schütze & Wexler's approach). What will ultimately distinguish between these two analyses is the viability of the theory of acquisition in which each is embedded; we leave this for future work along the lines of what Vainikka & Young-Scholten (2007) pursue.

3. Subjects in early L2 acquisition

Under approaches which assume continued UG operation in second language acquisition, but with native language influence limited to VP transfer (as under Organic Grammar), we predict the same patterns as in L1 acquisition for the L2 acquisition of functional syntax (Vainikka & Young-Scholten 2005, 2007). The opposing Full Transfer/Full Access (Schwartz & Sprouse 1996) predicts evidence for functional projections and of L1 influence from the start. Under FT/FA, the relationship between morphology and syntax in L2 acquisition is more remote than in L1 acquisition. But just as in L1 acquisition where there is intra-learn-

er morphological and syntactic variation, the issue at hand in L2 acquisition is whether this variation is systematic in similar ways. For example, the idea of Root Infinitives is fairly well accepted for L1 acquisition, but the existence of RIs in L2 acquisition is debated. (For general background on the L2 acquisition of English subjects and agreement, see Hilles 1991; Lakshmanan 1994; Park 2004.)

3.1 Null subjects

Based on longitudinal data from two English-speaking children acquiring French, Prévost (1997) notes that the proportion of Root Infinitive clauses with null subjects for the two children under consideration, Kenny and Gregg, is 30% and 53%, respectively. Here the co-occurrence of non-finite forms with null subjects in L2 acquisition parallels L1 acquisition. For child L2 German, Prévost (2003) finds that while null subjects occur with various verb forms, 62% of them occur in infinitival clauses, and only 9% with inflected verbs. An alternative to Prévost for child L2 acquisition is Haznedar (1997)/Haznedar & Schwartz (1997), who argue that in L2 English Root Infinitive forms are only apparent; the infinitivals produced are used as a substitute for finite marking due to a mapping problem between morphology and syntax. This is the Missing (Surface) Inflection Hypothesis (see also Lardiere 1998; and Hawkins 2000).² Data from Haznedar's (1997) longitudinal study of a Turkish boy (Erdem) learning English while residing in the UK are held up as support for the MSIH. Erdem's early production of both null subjects and pronominal subjects in any case but nominative is low, as shown in Table 1 (Samples 1 and 2 are excluded as he produces no subjects at all). It is perhaps unsurprising that Erdem produces few subjects in cases other than nominative when his overall subject production is extremely low at the earliest stages of development, as represented by the first seven samples. When Erdem begins to produce considerably more full NP subjects in Samples 8 and 9 we find two of the three pronominal subjects not in nominative form he produces.

With respect to null subjects, Haznedar notes their lack of connection with non-finite verbs along with their relatively high overall occurrence between Samples 3 and 8 (100% then dropping to 20%). In utterances with only thematic verbs, null subjects occur in Sample 8, (2 out of 2 thematic verb utterances), in Sample 10 (5 out of 8), in Sample 11 (3 out of 6) and in Sample 12 (2 out of 12). Erdem's first context for copulas (which would indicate something beyond a bare VP) is

2. Prévost (2003) argues that child and adult L2 learners differ regarding developmental connections between inflectional morphology and syntax: the latter points to the MSIH, the former to RIs and Truncation. But see Vainikka & Young-Scholten (2007) on the inapplicability of maturation-based Truncation to child L2 acquisition and reanalysis of the L2 adult data.

Table 1. Erdem's early subjects

Sample	Full NP subjects	Null subjects	Pronominal subjects
3	0/2	2/2	0
4	0/2	0/2	I (2)
5	8/10	1/10	you (1)
6	1/3	2/3	0
7	3/3	0/3	0
8	17/26	5/26	I (1), you (3), me (1)
9	33/50	3/50	I (10), you (4), me (1)
10	47/82	11/82	I (33), you (2)
11	54/76	8/76	I (17), you (4), we (1)
12	26/40	14/40	I (8), you (5), s/he (1)
13	30/105	7/105	I (50), you (9), s/he (6), we (10)
14	11/27	2/27	I (15), s/he (1), me (1)

in Sample 5. However, in all five such utterances the copula is missing. In Sample 6 Erdem produces the first copula in such a context, but in the next sample, he omits the copula in all four utterances requiring copulas. From Sample 8 onwards, the percentage of copulas correctly supplied by Erdem reaches above 90%, and by Sample 13, Erdem has met Brown's criteria of 90% over three successive data collection sessions. At the same time, pronominal subjects increase in number and expand in form.

While Erdem's early production of nominative pronominal subjects is very low, evidence from his limited production of subjects in other cases, null subjects that increase rather than decrease in frequency and early copulas indicate for Haznedar/Haznedar & Schwartz the existence of an initial state grammar with functional categories.

An Organic Grammar interpretation of Erdem's data is that he first posits a functional projection some time after Sample 8.³ It should be noted that Haznedar's study prompts White (2003) to confirm that child L2 acquisition differs from L1 acquisition with respect to morpho-syntax. Erdem's early production of pronominal subjects indeed presents a different picture from that of the L1 child whose use of subjects not in nominative case was most systematic, namely, Nina (as discussed above). But, as also noted above, researchers such as Powers (1995) have observed that L1 children differ not only with respect to the specific forms they substitute for nominative forms, but also in the extent to which they do so at all. In the wider context of the acquisition of English, we note that neither Erdem

3. To the extent that additional child L2 acquisition data from Geçkin & Haznedar (this volume) exhibit similar patterns, we would apply the same interpretation as to Erdem's data.

nor Melissa and Bernard (as we shall see) are unusual. Only when the still modest child L2 English database expands will we know the extent to which the same degree of systematic variation obtains both for first and second language learners.

4. Farsi children's acquisition of English

We now turn to longitudinal data from two Farsi-speaking children, Melissa and Bernard, who learned English under conditions closely paralleling those for Erdem (see Haznedar 1997, for details).⁴ Because Farsi and Turkish resemble each other in important ways, a comparison of the three children's development can shed light on the status of subjects and on overall early L2 morpho-syntactic development in English.

4.1 Data collection

Prior to arrival in England on the 26 February 2003, the two siblings 'Bernard' and 'Melissa' had had no exposure to English. Like Haznedar (1997), who sought to provide more information on initial state grammars than had previous longitudinal L2 English studies (e.g. Grondin & White 1996; Lakshmanan 1994), the researcher (the first author) began data collection as soon as possible after the family had settled into their new surroundings and the children had begun school. Prior to moving to England, the language of the home had been established as Farsi, and although the father was trained as an English teacher, both parents continued to speak Farsi exclusively at home once in England. There were no other family members living with them. As did Erdem, both children attended the local school for six hours a day from shortly after their arrival. There was one other Farsi-speaking child at the school, and apart from three or four sessions during their first month with a Farsi-speaking tutor and weekly hour-long sessions the first eleven months with an ESL tutor, no language assistance was provided. At home the children watched television solely in English and eventually began to read in English (Bernard was already an avid reader in Farsi and gradually became one in English).⁵

4. Wagner-Gough (1978) also conducted a longitudinal study to look at the acquisition of English by a Farsi- (and Assyrian-) speaking boy (5;11 at the start of the study) who was learning English naturalistically in the USA.

5. Under the English national curriculum, school children are assigned homework which includes daily home reading. This situation resulted in some parental assistance once Bernard

Starting shortly after their arrival for over 1½ years data were collected from Bernard and Melissa by the first author with the assistance of two native English-speaking university students. The first session took place when the two children had been in England for a month, when Melissa was 7;4 and Bernard was 8;4. Over the 20-month period, data collection on a weekly, fortnightly or (less often) on a monthly basis (when the assistants were away) yielded 41 samples in audio-recorded and later transcribed form. At each session, recordings began after five or ten minutes and varied in length from 90 to 120 minutes.

4.2 Farsi

In order to examine the contribution of the children's knowledge of Farsi to their early English grammars, we take a brief look at Farsi. The examples in (2a) and (2b) show that the Farsi VP and other verbal projections are head final, null subjects are allowed and verbal agreement is marked through suffixation. Given the above discussion of Erdem's L2 acquisition, we include information on Turkish here as well. While unrelated,⁶ in some key respects Turkish, shown in (2c), patterns like Farsi: in both languages verbal projections are head-final, null subjects allowed and agreement with the subject is marked by suffixes on the verb. Turkish and Farsi both have a single nominative pronoun for masculine, feminine and neuter: *o*, and *oo*, respectively, for third person singular. In addition, the first person singular agreement suffixes in both languages end in *-m* as in (2b/c).

- (2) a. *Ali ketab mi-khan-ad* (Farsi)
 Ali book PRES-read-3SG
 'Ali reads a/the book.'
- b. (*mæn*) *ketab mi-nevis-am* (Farsi)
 (I) book PRES-write-1SG
 '(I) write a/the book.'
- c. (*Ben*) *kitab-ı oku-yor-um*. (Turkish)
 (I) book read-PROG-1SG
 '(I) read the book.'

An important difference between the two languages is that Farsi has a copula (3a/b), while in Turkish those utterances which would require a copula in Farsi (or English) are expressed without one in the present, as in (3c–d).

and Melissa began to meet with success in their attempts to tackle such assignments, from around month 12.

6. Farsi is an Indo-European and Turkish is an Altaic language.

- (3) a. (*Mæn*) *khæste hæst-am.* (Farsi)
 (I) tired be-1SG
 ‘I am tired.’
- b. *Moællem khoshhal æst.* (Farsi)
 teacher happy is-3SG
 ‘The teacher is happy.’
- c. (*Ben*) *yorgun-um.* (Turkish)
 (I) tired-1SG
 ‘I am tired.’
- d. *Orhan mutlu.* (Turkish)
 Orhan happy
 ‘Orhan is happy.’

Another difference between Turkish and Farsi is that the latter makes use of the same pronominal forms to mark all cases, with case particles/prepositions either preceding or following these forms, and in different positions. This is shown in (4a), where *mæn* is a direct object, and (4b), where *mæn* shows possession through use of a preposition (‘for’). Possession is also shown by suffixes on the noun, as in example (4c). *Ra* is a case marker, referred to in descriptions of Farsi as an object marker. For possession two possibilities exist: adding *e* to a noun as in *ketab e man* ‘book of me/my/mine’ (my book), where the suffix is used irrespective of gender or animacy. The second possibility is *mal + e*, used when the possessed has already mentioned as in *mal e man ast*, ‘possession of me/my/mine is’ (this is mine) or (4b).

- (4) a. *Oo mæn ra did*
 s/he me OBJ saw
 ‘S/he saw me.’
- b. *In ketab male mæn æst*
 this book for my/mine is
 ‘This book is mine.’
- c. *In medad-æm æst*
 this my pencil is
 ‘This is my pencil.’
- d. *Mæn oo ra did-æm*
 I s/he OBJ saw-I
 ‘I saw him/her.’
- e. *In ketab male oo est*
 this book for s/he is
 ‘This book is his/hers.’

The morpho-syntactic facts illustrated in these examples suggest predictions for Turkish learners of English along similar lines to those in Vainikka & Young-Scholten (1994) for Turkish learners of German: learners' head final lexical projections (here VP) will transfer. Under Organic Grammar, subsequent development will be non-L1 based. The alternative Full Transfer approach (Schwartz & Sprouse 1996) adopted by Haznedar (1997) and Haznedar & Schwartz (1997) assumes availability of the entirety of the learner's L1 grammar at the initial state of L2 acquisition, yielding the following set of specific predictions for the early stages of L2 development in English: (1) both lexical and function projections will be head-final; (2) subject-verb agreement will be unproblematic (we do not pursue this further here); and (3) null subjects will occur with finite verbs. These hypotheses are equally applicable to Farsi and Turkish L2 learners of English, as these languages resemble each other in the three respects to which these predictions refer. Two additional predictions make reference to the differences between Turkish and Farsi: (4) unlike Turkish learners, Farsi learners will not have problems with the copula in English; and (5) the lack of pronominal distinctions described above for Farsi will result in problems for Farsi learners of English. With these five predictions in mind, we now turn to the Farsi L1/English L2 data. After doing so, we reconsider Haznedar's Turkish L1/English L2 data in the discussion section below.

4.3 Transfer of the Farsi VP

Little can be said about Bernard and Melissa's syntax when the first three samples were collected because there are simply no relevant utterances with thematic verbs. Table 2 therefore provides information about the two children's word order from the point at which they produced thematic verbs in utterances together with other words such as direct objects and adverbs (see Vainikka & Young-Scholten 1994 on the criteria used to determine VP headedness at the early stages of L2 acquisition). Three months after the children's arrival in the UK, when they produced thematic verbs they consistently placed all other sentential material before these verbs. The examples in (5) illustrate typical utterances.

- (5) a. My ice-cream like. (Melissa S 4)
- b. We tennis play. (Bernard S 4)
- c. Spot cupboard have. (Melissa S 7)
- d. This chicken on the tractor sitting. (Melissa S 8)
- e. Monday apple eat. (Bernard S 9)

Table 2. Word order in multi-word utterances with thematic verbs

Sample	XV		VX		Total thematic verbs	
	Bernard	Melissa	Bernard	Melissa	Bernard	Melissa
4	12	7	0	1	12	8
5	0	0	0	0	0	0
6	0	2	3	0	3	2
7	2	3	1	0	3	3
8	5	9	3	5	8	14
9	7	12	21	14	28	26
10	3	1	7	4	10	5
11	1	1	2	4	3	5
12	0	1	16	15	16	16
13	0	1	14	12	14	13
14	0	0	41	35	41	35

Next is a period during which the children produce few thematic verbs in data collection sessions, but when they again produce them, in Samples 7–9, the VP has begun to shift from head-final (as in examples 5a–e) to head-initial. After a gap, with minimal thematic verb production, by Sample 12 it is clear that their VP has become head-initial. Thematic verbs then undergo a striking overall increase in Samples 16 and 17 when Bernard produces 23 and 27, and Melissa 17 and 27, respectively. We only consider data through Sample 14 here, when variation in pronominal forms ceases.

These data and their analysis closely parallel what a range of researchers have confirmed since Vainikka & Young-Scholten (1994), that at the earliest stages of L2 acquisition, VP headedness is transferred from the learner's native language. This can be best observed when native and target language VP headedness diverge, as for Romance language and English-speaking learners of German (Vainikka & Young-Scholten 1996b, 2005) and for Japanese learners of English (Yamada-Yamamoto 1993) as well as in Haznedar's (1997) study of Erdem. The current general consensus in UG-driven work is that VP transfers (see Vainikka & Young-Scholten 2005), where existing debate revolves around the extent to which functional syntax transfers.

5. The children's subjects

Before we consider a subset of Bernard's and Melissa's subject forms, we present in Table 3 all the pronominal forms the two children were documented producing during the period under scrutiny. Samples 1 through 3 are again excluded due to absence of any relevant data, in this case pronouns. Under Meisel's (1994)

Table 3. Bernard's and Melissa's early pronouns

	Nominative context		Accusative context		Genitive context	
	Bernard	Melissa	Bernard	Melissa	Bernard	Melissa
4	my (6), she (3), we (1), you (4)	my (5), she (2), we (1), you (4)	0	0	0	her (1)
5	he (2), she (1)	0	0	0	0	your (1)
6	she (22), they (16), you (1)	I (1), my (1) he (2), she (19), they (5), you (4)	0	0	0	0
7	my (3), he (1), she (3), they (16), you (2)	I (2), my (3), you (3), he (1), they (8)	0	0	my (1)	my (1)
8	my (14), he (4), she (6), they (18), we (8)	my (14), you (8), he (4), she (6), they (9)	0	0	my (2), he (4), her (7), your (3)	my (1), her (2), he (3), she (1), you (3), they (1)
9	I (1), my (1), he (9),	I (1), my (10), he (11), they (1)	0	0	my (1), he (1), his (4)	I (1)
10	I (2), my (2), you (3), he (1), she (1)	I (1), my (3), you (4), he (2), she (1)	my (1), she (1), her (1), we (1), they (1), he (1), him (1), your (2)	my (2), you (1)	my (3), her (5), your (1), he (2), his (2), she (4), we (2), you (1), they (1)	my (4), he (1), you (3), we (1), she (1)
11	he (2), she (4), they (2)	he (1), she (3), they (1)	0	0	0	0
12	I (5), you (6), he (8), she (5), we (3), they (7)	I (7), he (4), she (4), we (8), they (11)	her (1)	he (1)	my (1), our (3), he (4), she (1), you (2)	I (2), we (1), she (1), my (2), her (1)
13	my (5), you (9), he (7), she (3), we (5), they (6)	I (4), my (4), you (15), he (8), she (9), we (8), they (8)	0	my (1), me (1)	my (1), your (3), he (1), she (2), we (1), you (1), they (3)	he (2), we (1), she (2), me (1), your (1), they (1)
14	I (19), you (8), he (16), she (3), we (10), they (16)	I (16), you (6), he (17), she (2), we (11), they (15)	0	my (1), me (2)	my (14), your (3), our (1), they (1)	I (2), my (16), her (1), me (1), your (4), they (1), us (1), our (1)

assumption (regarding agreement) that two contrasting forms are necessary to state that a function exists, we conclude that no case distinctions are made by the children in the earliest samples. The table reveals the same sort of systematicity noted, for example, by Vainikka (1993/1994) regarding children's early first language utterances, supporting the line of argumentation that we pursue here.

The table shows that children's production is initially only of nominative pronoun forms, and then of nominative and genitive forms which are over-generalized to both nominative and genitive contexts. There are almost no accusative pronoun forms up to Sample 14; prior to this sample, nearly all utterances that involve accusative contexts contain full NPs. The data indicate case marking emerges. Under an Organic Grammar approach, an L1-based AgrP would not be projected, nor would an English AgrP be projected, until the learner has received sufficient input to do so. To support this claim, let us look at each child in turn. We consider the pronouns in reverse order, as our focus will be on first person singular.

For third person singular and plural, up to Sample 7, there is a single, nominative form. In Samples 8–14, this form is extended to the genitive context:

- (6) She jumper is yellow. (Bernard S 8)
'Her jumper is yellow.'

The children appear to be using a single form as a lexical entry, and while this form is used productively, it does not mark case.

For second person, there is again a single form used up to Sample 7 which is used only in nominative contexts. As with the third person forms, in Samples 8–12, the nominative form is extended to use in genitive contexts. Samples 13 and 14 show the first signs of true case marking, where 'you' is used in nominative contexts and 'your' is used in genitive contexts.

First person plural follows the same pattern, where between Samples 8 and 10, nominative forms are used to mark possession as shown in (7). The first instances of 'our' occur in Sample 12. At this point 'our' and 'we' are used in their correct contexts.

- (7) a. We house is white. (Bernard S 10)
'Our house is white.'
b. We leg is eight (Bernard S 10)
'Our legs are eight.'⁷

7. This was in response to the research assistant's question: *How many legs do we (the four of us) have?* and seems to be a word-for-word translation from the Farsi:

Pa-ha-ye ma hæst ta hæst-and
leg-PL-of us eight ones is-3PL

When looking at pronominal subjects in English, the problematic phonological representation of some pronouns and the early omission of copula/auxiliary 'be' means forms other than 'I' and 'my' can be easily confused by the researcher, as in 'your' vs. 'you are', 'its' vs. 'it's', 'his' vs. 'he's', 'their' vs. 'they're' (see Vainikka 1993/1994). Forms such as 'you' reveal less case marking in the first place. We can thus be more confident in the reliability of what we document regarding the status of subjects by focusing on the first person singular. When it comes to Bernard's and Melissa's data, it turns out that they produced relatively more first person singular pronouns overall than other pronoun forms; any patterns observed can therefore be said to be robust.

Looking at Samples 4 through 13, we observe that in Bernard's and Melissa's first person singular data, there is use of the genitive form 'my' as a default first person pronoun from the point at which they begin to produce pronouns.⁸ In Samples 4 and 6 (there are no contexts for nominative or genitive pronouns in Sample 5), there are 13 obligatory contexts for nominative first person singular pronouns, and 'I' is produced in one and 'my' in the other 12 contexts. In Samples 7 through 10, in out of 56 obligatory contexts for 'I' the children supply 'my' 49 times and 'I' only seven times. The children produce no obligatory contexts for 'I' in Sample 11. In Sample 12, there are 12 contexts in all of which 'I' is correctly supplied. However, in Sample 13, there is again greater use of 'my'. 'I' occurs only in four contexts and 'my' in the remaining nine.

Genitive contexts for 'my' first appear in Sample 7, and there is initial correct suppliance (in S7, 2/2 and in S8, 3/3). Fluctuation exists across the rest of the samples through 13. In Sample 9 'my' and 'I' are each supplied once, while in Sample 10 the children correctly supply genitive 'my' in all of the 7 obligatory contexts. In Samples 12 and 13, the children demonstrate that their case marking is not yet secure: in Sample 12 'my' is supplied in only one out of three contexts, and in Sample 13, in only one out of two contexts. In Sample 13, children's use of pronoun forms shows additional variability when they use 'me' rather than 'I', after their first use of 'me' in the same Sample in a correct accusative context. Thus by Sample 13 for neither 'I' nor 'my' can we conclude that the children have met Brown's criteria of 90% correct obligatory context suppliance over three successive data collection sessions.

The patterns for first person plural and second and third persons differ from those for first person singular, where it is the genitive rather than nominative form that is initially used as default pronoun. In addition, 'my' continues to be

8. The distribution of 'my' in Bernard's and Melissa's data is reminiscent of Radford's (1998) conclusion based on reviewing the existing literature that in L1 acquisition of English 'my' is basically the only genitive form used as a subject.

Table 4. Subjects in utterances with thematic verbs

	Null Subjects		Pronominal Subjects		Full NP Subjects		Total utterances w/verbs	
	Bernard	Melissa	Bernard	Melissa	Bernard	Melissa	Bernard	Melissa
4	3	1	7	5	2	2	12	8
5	0	0	0	0	0	0	0	0
6	1	3	0	0	0	0	1	3
7	3	0	1	2	0	0	4	2
8	0	2	11	11	0	0	11	13
9	7	2	0	8	0	0	7	10
10	1	0	6	3	0	0	7	3
11	1	0	0	0	0	0	1	0
12	1	1	0	0	0	0	1	1
13	7	5	4	1	0	0	11	6
14	1	2	4	2	0	0	5	4

heavily used in nominative contexts alongside 'I', which is rarely used in genitive contexts. Although patterns differ across number and person, our analysis points to absence of true case marking until Sample 14. Just prior to this point, subject pronouns begin to pattern differently in relation to verb type, where we find that their use is more often correct in copula constructions. We address this after first considering all subjects the children produced.

The overview shown in Table 4 of the entire subject data from Bernard and Melissa from the point at which they produced their first thematic verbs in Sample 4 until Sample 14 provides evidence of their projection of an AgrP at Sample 14.

Out of the 108 utterances with thematic verbs the children produced up to this point, subjects were null 38% of the time, 6% were in nominative form and 53% in genitive form. In Sample 10, Bernard's null subject production with variable nominative or genitive pronoun use indicates that he has not projected an AgrP. When at Sample 14, he again produces nominative pronouns, both these and genitive forms are used in their correct contexts and null subjects all but disappear. Melissa follows the same pattern.

Focusing on the children's production of nominative first person singular pronouns in copula contexts, there are no instances of 'I' in this context until Sample 12. In this sample Bernard responds to the researcher's question with what might be a partially analyzed chunk, given his failure to use the correct pronoun ('you') and verb ('do') in his response (see Myles 2004 on rote chunk use and its function, in early child L2 French).

- (8) Researcher: Do I like dogs?
I am not like dogs. (Bernard S 12)

In Sample 13 the children use 'I', but while Bernard produces a near target-like utterance, Melissa fails to. In her utterance, 'I' marks possession. Up to this point, both children produced the genitive form 'my' in all other copula contexts requiring 'I'.

- (9) a. I am a not a student. (Bernard S 13)
 b. I friends not here. (Melissa S 13)

The evidence discussed thus far points to the projection of AgrP around Sample 14.

6. The copula and a pre-AgrP stage

The copula data suggest some sort of precursor to AgrP. Here we observe pronominal subjects not in the nominative case occurring in copular constructions, but only when the copula itself is missing.⁹ This pattern is indicative in two ways. First, similar to what was observed by Gruber (1967), in Bernard's and Melissa's data there is a correspondence between subject type and copula omission, as shown in Table 5. As was the case with thematic verbs, there were also no relevant contexts requiring a copula until Sample 4. We also exclude null subjects, as there is too little information to draw any conclusions when both subject and verb are absent.

What is immediately apparent is that the copula is frequently absent when full NP subjects are produced. With respect to pronominal subjects, up to Sample 14, out of Bernard's 134 and Melissa's 60 copula constructions in which the copula is missing, only four (3%; all Bernard's) have nominative pronominal subjects. Five of Bernard's and four of Melissa's copula contexts in which there are pronominal subjects not in nominative case have missing copulas, as in the examples in (10).

9. Comparable L2 English data with a genitive subject plus a missing copula prompted Lakshmanan (1994) to propose that the genitive form was acting as a copula. Given the overall patterns in Bernard's and Melissa's data, we do not pursue such an analysis. Lakshmanan's analysis is, however, not incompatible with the idea that AgrP is not yet projected. Here we would not rule out the sort of variation hers and our data indicate in children's early grammars prior to AgrP projection.

Table 5. Utterances without copula with regard to subject type

	Pronominal subjects		Full NP subjects	
	Bernard	Melissa	Bernard	Melissa
4	0	0	1	0
5	0	0	2	0
6	3	0	4	3
7	2	1	19	10
8	2	1	12	6
9	0	1	14	3
10	0	0	4	2
11	0	0	10	6
12	0	0	14	4
13	2	1	19	7
14	0	0	11	7

- (10) a. My boy. (Bernard S 8)
 'I am a boy.'
 b. My girl yes. (Melissa S 8)
 'I am a girl, yes.'
 c. My here on the chair. (Melissa S 9)
 'I am here on the chair.'
 d. My not a girl. (Bernard S 13)
 'I am not a girl.'

In the entire corpus, there is not one instance of an utterance with pronominal subject other than in nominative case when the copula is supplied. Tables 6 and 7 show the breakdown of copula suppliance by person, illustrating that the pattern described above holds across the board.

Production of 'is' exceeds production of 'are' in the children's data. Both far exceed production of 'am', which is not represented in tabular form due to very low counts: the children produced no examples at all before Sample 7, then only five between Samples 7 and 13, and finally six in Sample 14. All occur with nominative subject pronoun 'I'.

The nominative case + copula data point to the children's positing of an early functional projection where case indeed begins to be marked. However, note that this cannot yet be AgrP. Based on our above analysis and on the present data where copulas are systematically absent with full NP subjects until Sample 10 for 'is' and Sample 12 for 'are', we propose that the copula acts as a trigger for AgrP, along the lines of what Hawkins (2001) suggests for L2 English (see also Vainikka & Young-Scholten 1998 on triggers in L2 German). In fact, the utterances that contain copulas give the appearance of involving rote-learned chunks. Copulas

Table 6. Copula *is* and subject type

	Null subjects		Nominative subjects		Genitive subjects		Full NP subjects		Total <i>is</i>	
	B	M	B	M	B	M	B	M	B	M
3	0	0	2	0	0	0	0	1	2	1
4	0	0	0	0	0	0	0	0	0	0
5	0	0	2	0	0	0	0	0	2	0
6	0	0	0	0	0	0	0	1	0	1
7	0	0	17	17	0	0	0	0	17	17
8	5	0	2	8	0	0	0	4	7	12
9	1	0	13	3	0	0	1	3	15	6
10	7	3	1	6	0	0	22	9	30	18
11	0	0	2	2	0	0	3	0	5	2
12	0	0	9	9	0	0	14	14	23	23
13	0	0	2	11	0	0	21	24	23	35
14	0	2	4	2	0	0	7	13	11	17

Table 7. Copula *are* and subject type

	Null subjects		Nominative subjects		Genitive subjects		Full NP subjects		Total <i>are</i>	
	B	M	B	M	B	M	B	M	B	M
3	0	0	1	0	0	0	0	0	1	0
4	0	0	2	0	0	0	0	0	2	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	16	7	0	0	0	0	16	7
7	0	0	16	10	0	0	0	0	16	10
8	0	0	22	13	0	0	0	0	22	13
9	0	0	0	1	0	0	0	0	0	1
10	0	0	0	0	0	0	0	0	0	0
11	0	0	1	3	0	0	0	0	1	3
12	0	0	4	15	0	0	0	5	4	20
13	0	0	2	2	0	0	0	0	2	2
14	0	0	14	6	0	0	1	3	15	9

may be partially analyzed since they are not always used correctly, as in examples (8) and (9a) above and in four additional examples in (11).

- (11) a. Is this a notebook?
No, is this a book. (Bernard S 10)
- b. Whose bicycle is this?
My bicycle is this. (Melissa S 10)

- c. Is it a skirt?
Is it a skirt. (Melissa S 10)
- d. Do I like ice-cream?
Yes, you are like ice-cream. (Bernard S12)

In the (11a–c), the children are repeating in their answers parts of the researcher's questions, in this case 'is this' and 'is it'. These three examples indicate children's use of chunks that are simply repeated, and not analyzed. However (11d) suggests that the copula is at least partly analyzed. Although Bernard seems to use 'you are' as a chunk, his non-target response (where he could have easily used the thematic verb 'like') to a question with a functional element (i.e. 'do') not yet fully acquired reveals he has some sensitivity to the copula as an INFL-related element. Bernard's two examples from Sample 12 in (8) and in (11d) also reveal some confusion regarding pronouns.

The proposal that the copula triggers a functional projection is consistent with the observation that learners respond to something in the input (evidence for which is found in their production). They do not yet fully analyze it to the extent that the researcher can claim that the copula or case marking have actually been acquired.

Is there any evidence of other functional categories in Bernard's and Melissa's early data? In his claim that Root Infinitives are the result of truncation, Rizzi (1993/1994) indicates that the child can start derivation below CP. Roeper & Rohrbacher (1994) argue against truncation on the basis of the null subjects found in Adam's CHILDES data, as in 'Where go?' (Adam 2;3). Non-subject Wh-questions such as Bernard's and Melissa's shown in (12) are disallowed because null subjects occur when the subject is the specifier of a root and the specifier of the root in Wh-questions is filled with the Wh-phrase.

- (12) a. What see on the table? (Bernard S 13)
- b. Where going? (Melissa S 14)
- c. What colour like? (Bernard S 13)
- d. What time go to the school? (Melissa S 14)

To calculate the percentage of null subjects involved, the number of Wh-questions with null subjects versus those with pronominal subjects was considered. Subject Wh-questions and Wh-questions with lexical subjects are not included in the counts since the former does not require movement to C, and the latter does not show case assignment. The total numbers of Wh-questions with null subjects is compared with the number of declarative null subject utterances within the same period. In Samples 13 and 14, eight out of the 19 (43%) non-subject Wh-questions without lexical subjects produced by Bernard contained null subjects

and for Melissa five out of 13 had null subjects (38%). During the same period, the rate of null subjects with declarative sentences for both was negligible. For Bernard this was two out of 112 (2%) and for Melissa 0 out of 89. This points to the children's non-projection of CP at this point, further supporting an Organic Grammar approach for child L2 English. We leave more detailed analysis of the children's higher functional projections to future work.

7. Discussion

What are we to make of child L2 data (the present data) that resemble child L1 data and child L2 data (Haznedar's data) that appear not to? Let us consider the five hypotheses put forward above. The Full Transfer-based hypotheses predicted that Bernard and Melissa and Erdem would differ only in two respects: problems with copula for Erdem and problems with case marking for Bernard and Melissa. FT also predicts that learners will transfer the entirety of their syntax (both lexical and functional projections). However, we find evidence for transfer of VP in all three children's data. Any of Bernard's and Melissa's utterances that can be analyzed as representing functional projections are not head final (see Haznedar 1997 for transfer of the functional category NegP). While the null subject data are less clear for Erdem, the relevant data from Bernard and Melissa reveal the co-occurrence of null subjects with non-finite verbs, and their disappearance at the same time as case contrasts are evident, based on the two children's pronoun use. Contrary to Farsi-based predictions, Bernard and Melissa often omitted the copula. Importantly, early copula use is highly systematic. There is omission in utterances with Full NPs and pronominal subjects not in nominative form, and suppliance in utterances with nominative subjects.

We see that Bernard and Melissa indeed have more early problems with case marking than does Erdem, and this could well be attributed to their L1 case morphology, as per our Full Transfer-based prediction. Given Farsi's lack of the range of pronominal forms for different cases that English has, what we may be observing is the strengthening of an existing, L1-based tendency to initially misanalyse pronoun forms as non-case-marked. Use of another *-m* form *æm* 'my' as in *medadæm* 'my pencil', along with the phonological resemblance of 'my' to Farsi first person singular *mæn* and first person plural *ma*, may have further strengthened this tendency. Researchers such as Zobl (1980) have long proposed that the learner's L1 can subtly reinforce a developmental pattern where the L2 learner experiences relatively more difficulty restructuring an interlanguage grammar under such circumstances. Lack of a pronominal distinction in Farsi might produce such an effect, resulting in the two children's relatively slower development

of the English pronominal system when compared with Erdem. Without further data from Farsi learners of English, we can, of course, only speculate. Indeed, the variation displayed by all three children does not fall outside the bounds of variation displayed by children learning English as their first language. In resolving these difficulties Bernard and Melissa nonetheless follow a route similar to children learning English as their first language; they first treat pronominal forms as lexical entries and then begin to make case distinctions. That null subjects decline in parallel with the rise of case marking points to emergence rather than specification of an already existing AgrP. There is little evidence, from either the two Farsi-speaking children or the Turkish speaking child, of the head-final functional projections that would be expected under Full Transfer. Nor do we find in either set of data null subjects in tandem with finite verbs when there is clear evidence for AgrP. This is precisely the opposite of what would be expected if subject features transferred from the learners' first languages, both of which allow empty subjects in finite clauses.

We conclude that, apart from their early transfer of VP, all three children are similar to children learning English as their first language in terms of the morpho-syntactic variation observed across L1 children. With respect to non-target pronominal subjects, it might seem surprising that the first singular person *-m*-final suffix in both Farsi and Turkish did not prompt all three learners to use 'my' (or 'me') as early subjects. But again, the population of L1 English children displays the same sort of variation (Powers 1995); not all children produce oblique subjects. The data from Bernard and Melissa are somewhat similar to Nina's (L1 English) data discussed in Vainikka (1993/1994), where for her 'my' was clearly the standard first person singular subject form before she projected an AgrP. Given that L1 English children vary in their early production of pronoun forms, we are safe in concluding that any differences between Bernard and Melissa and Erdem represent the same sort of variation found across children learning English as their first language.

8. Conclusion

Under Organic Grammar, we do not expect Farsi- and Turkish-speaking children to display different patterns with respect to their English morpho-syntactic development. The data from Bernard and Melissa discussed here reveal early lexical transfer, of the head-final VP, similar to what Haznedar found. For Bernard and Melissa as well as for Erdem, the copula and nominative case marking in utterances with thematic verbs emerge in quick succession after several months of exposure to English, indicating projection of AgrP at that point. The systematic but

relatively less straightforward use of 'my' vs. 'I' as subject pronouns by Bernard and Melissa (both with thematic verbs and in copula constructions where the copula itself is missing) and possibly slower overall development lead us to speculate that the facts of Farsi case morphology might indeed conspire to prompt these two L2 children to do what many L1 English children already do. On the other hand, this may be unrelated to Farsi, given that L1 English children also limit their use of genitive forms to 'my' (Radford, 1998). Without considerably more early stage data from children from a range of L1 backgrounds in similar naturalistic contexts, it is not possible to draw firm conclusions about whether children learning English as their second language indeed differ from children learning English as their first language with respect to subject pronouns.

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The morphology/syntax interface in child L2 acquisition

Evidence from verbal morphology

Vasfiye Geçkin and Belma Haznedar
Boğaziçi University

Recent work in both adult and child L2 acquisition has focused on the question of whether morphological variability suggests syntactic impairment, or the lack of overt inflection could be attributable to problems associated with surface morphology (e.g. Lardiere 1998a, b; Haznedar & Schwartz 1997; Prévost & White 2000). This paper examines longitudinal data from three Turkish-speaking child L2 learners of English with special reference to inflected and uninflected verbs, copula *be* forms, null subjects and case on pronominal subjects. Results show that despite high rates of uninflected verb forms, the children almost never use agreement morphemes for inappropriate tense, person or number. The learners also show higher proficiency in the use of *be* forms than in the use of main verb inflection.

1. Introduction

One major objective of child second language acquisition is to investigate to what extent it is similar to first language (L1) acquisition. On the assumption that L1 acquisition is guided by principles of Universal Grammar (UG), it is often thought that second language (L2) acquisition by children has the same underlying nature, since they appear to be more successful regarding the ultimate acquisition of an L2 (Bley-Vroman 1990; Johnson & Newport 1989). To this end, child L2 acquisition has been argued to be of particular interest, as it allows us to test the intersection of the critical period and L2 acquisition (Lakshmanan 1995; Schwartz 2003). It should be noted, however, that the question of UG accessibility in L2 acquisition has been widely discussed in adult L2 acquisition. There is relatively little research regarding the nature of grammars developed by child learners (e.g. Grondin & White 1996; Lakshmanan 1993/1994; Haznedar 2001). This is what we would like

to address in the present study. Our focus is mainly on the nature of morphological variability, which has received much attention in recent literature. In optional infinitive forms, the main verb is either a present participle or an infinitive, while a finite form is required in the adult grammar (as in *John eating fish*, *John eat fish*, instead of *John is eating fish*, *John eats fish*).

Two major perspectives are identified on how morphology is variable/optional in L1 acquisition. For some L1 researchers, there is a direct relationship between overt morphology and syntax and the absence of overt morphology indicates the absence of associated syntactic categories (e.g. Clahsen, Penke & Parodi 1993/1994; Clahsen, Eisenbeiss & Vainikka 1994; Radford 1990; Vainikka 1993/1994). For others, variability in the suppliance of overt morphology is attributed to the underspecification of abstract categories or features in early child grammars (e.g. Wexler 1994).

Current work on adult and child L2 acquisition has also focused on the question of whether or not the variable/optional use of morphology suggests that functional categories are impaired in L2 grammars. To this end, one can distinguish two views of morphological deficit in L2 acquisition research: (i) The Failed Functional Features (FFFH) hypothesis (e.g. Hawkins & Chan 1997) (ii) and the Full Transfer/Full Access hypothesis (FTFA) (Schwartz & Sprouse 1996). The FFFH follows the predictions of the Minimal Trees Hypothesis claiming that L2 learners have access to the lexical categories of their L1s, however, depending on the input they receive they may set the functional categories gradually. The FFFH model, where the focus is on the interface between syntax and morphology, attributes the difficulty in the acquisition of functional categories/features to a permanent deficit. This permanent deficiency in morphology rests on the idea that optional properties in languages are subject to a critical period. In the acquisition of certain languages, if certain morphophonological forms are not tapped until the critical age, those features are not selected later by the L2 learner (Hawkins & Liszka 2003:41).

According to failed features approaches, inflectional errors are largely due to a syntactic deficit in the underlying competence of L2 learners, and therefore, the absence of target-like inflectional suffixes suggests the absence of the associated functional features or categories (e.g. Beck 1998; Eubank 1993/1994, 1996; Franceschina 2001; Hawkins & Chan 1997; Vainikka & Young-Scholten 1994, 1996a, b, 1998). What this suggests is that there is a direct link between the specification of morphology and the development of L2 syntax.

Such claims in favor of impaired L2 grammars contrast with proposals that interlanguage grammars are not defective. In recent adult and child L2 studies, a number of researchers postulate the Missing Surface Inflection hypothesis (MSIH), according to which the lack of (or the variable use of) morphological

forms in interlanguage grammars reflects a problem with the realization of surface morphology, rather than an impairment in the domain of functional projections or feature strength (Haznedar & Schwartz 1997; Haznedar 2001; Lardiere 1998a, b, 2000; Prévost & White 2000). That means, all the syntactic features are available to the child L2 learner, however, variability in utterances has been associated with a surface mismatch of syntactic and phonological features of the functional projections.

In this study, we present further evidence in favor of the MSIH related to the development of verbal morphology in child L2 acquisition of English. Our contribution focuses on the morphology-syntax interface through the analysis of longitudinal data from three Turkish-speaking child L2 learners of English. We examine the distribution of copula *be*, subject-verb agreement (3sg-s), irregular and regular tense marking, overt subjects, and nominative subject pronouns in obligatory contexts. We argue that the lack of functional elements does not represent syntactic impairment in the early L2 grammar of children.

We first review the literature on L2 acquisition of morphosyntax, elaborating mainly on recent failed features approaches. Next, we describe our longitudinal data, results and discussion in terms of the two hypotheses outlined previously.

2. Approaches to morphological variability

According to Vainikka & Young-Scholten (V&Y-S), missing morphological forms suggest missing functional projections (V&Y-S 1994, 1996a, b, 1998), and the acquisition of morphological paradigms triggers the projection of functional categories. In more explicit terms, overt production of lexical elements or inflections associated with functional categories is necessary in order to attribute to the learner the existence of that category in his/her grammar. For V&Y-S, the clause structure is first projected only to VP. The subsequent acquisition of functional projections are input-driven, resulting in a sequence of development in which, first, an early underspecified functional projection FP is acquired, and then, a fully specified IP or AgrP. The AgrP stage is later followed by a CP stage. This developmental sequence is given in (1).

- (1) VP > FP > AgrP > CP

Hawkins' (2001) Modulated Structure Building account also holds that the grammar is progressively built up from VP to CP, with functional projections acquired later than lexical ones. On similar grounds, Meisel (1997) suggests that L2 learners make no finite/non-finite distinctions in L2 acquisition, while L2 grammars

suffer from a global impairment in the domain of abstract features. Beck (1998) and Eubank et al. (1997) argue in favor of a local impairment, according to which functional categories are available in L2 grammars, but their feature strength is impaired. The Failed Functional Features hypothesis (Hawkins & Chan 1997; Franceschina 2001) holds that parameterized L2 functional features may fail in Post-Critical Period of L2 acquisition, leading to surface morphology errors. In more specific terms, L1 values of functional features are available throughout the life of the adult L2 learner, while the parametric values which are different from L1 cannot be acquired after the Critical Period is over. To this end, morphophonological deficiencies are related to deeper problems in abstract-features mapping, and there is an impairment in the morphosyntax of the interlanguages of the learners (Beck 1997; Hawkins & Chan 1997; Hawkins & Lizska 2003; Tsimpli 2003; Hawkins & Hattori 2006).

From a somewhat similar perspective, Hawkins & Lizska (2003) argue that if parameterized syntactic features do not exist in a speaker's L1, they will not be accessible in later L2 acquisition. In a study examining optionality in past tense marking, Hawkins and Lizska (2003) gathered spontaneous data from advanced L2 speakers of English with different L1 backgrounds: German, Chinese and Japanese. In their data from two Chinese speakers, subjects are more likely to omit *t/d* in past tense contexts (37% omission) than in monomorphemic words ending in clusters (18% omission). Overall, it was found that the past tense marking of the Chinese group was significantly different from that of the other two groups whose L1s grammaticalize tense like English.

They claim that this difference is due to the past syntactic feature missing from Tense in Chinese. For the high accuracy of the irregular past forms over the regular past morphology, the Chinese speakers of English are argued to learn these forms as independent lexical items. As has been noted by Goad, White & Steele (2003), however, it is not clear why past tense morphology is used in the first place, if learners have no [+/- past] feature. In sum, Failed Features hypotheses argue for transfer of L1 functional features with local or global impairment; potential stages of structure building from lexical to higher functional categories; and a co-dependence of morphology and syntax development, with errors indicating a deficit in L2 syntactic competence. Depending on the syntactic differences between the first languages of the L2 learners, the claim is that lack of overt morphosyntactic forms is a clear indication of a morphology-syntax interface when the L2 is acquired after the Critical Age Period.

Myles (2005) conducts a longitudinal study on 60 learners of French who are recorded at specific time intervals over their first two years of learning French with the main focus of the study being examining the early stages of the emergence of morpho-syntactic structure of L2 learners of French in a classroom set-

ting. The subjects are asked to retell a story. Based on the qualitative data, she claims that L2 learners of French go through a modulated structure building process. The learners use subject pronouns that is, they reflect an IP projection and go beyond the Minimal Trees stage producing functional projections as well as lexical projections.

The opponent camp of researchers puts forward the idea that what is missing in the surface morphophonological form cannot be taken as an indication of an impairment in the underlying grammar of L2 learners (Grondin & White 1996; Haznedar & Schwartz 1997; Haznedar 2001; Lardiere 1998a, b; Prévost & White 2000; Ionin & Wexler 2002; White 2003; Goad, Steele & White 2003).

Recent studies in L2 acquisition focus on data from end-state L2 learners (Lardiere 1998a, b; 2000; White 2003). Lardiere (1998a,b) investigates the L2 English data of an adult Chinese speaker, *Patty*, who is a fossilized end-state learner of English and whose data represent low suppliance rates of verbal inflectional morphology (34%), yet a high percentage of suppliance of the nominative case assignment (100%) and robust evidence for CP. For Lardiere, the different rates in the suppliance of IP and CP can be taken as evidence for fossilization, since *Patty* may never reach the optimum level of suppliance of IP, even though she has the full CP structure.

White (2003) examines the fossilized end-state L2 English grammar of an adult native speaker of Turkish, *Serap*, whose data are collected at two time intervals within 18 months. The verbal and nominal inflections are studied. The high suppliance of nominative subjects with more than 93% of the obligatory contexts, despite some rate of omission of tense and agreement morphology, nominative subjects are used correctly and at a high rate, averaging around 80%. As for the nominal domain, the suppliance of plural morphology is 87%, the definite article 72%, and the indefinite article 60% where the most number of omissions are observed. White also reports that obtaining similar percentages at the time both of interviews were conducted despite the time lag between the two, suggests that *Serap* has a fossilized end-state grammar, and the omission rates for both the nominal and the verbal domain are due to the differences between the prosodic structures of the L1 and the L2 of the subject.

Prévost & White (2000) examine the longitudinal spontaneous production data gathered from four adult speakers learning L2 French and L2 German in naturalistic environments. The main focus of their study is whether or not the impairment in the interlanguage of the L2 learners is global. Their precise predictions are as follows: (i) finite verbs will be found only in finite contexts, whereas non-finite verbs can truly be non-finite or act as a default form, (ii) finite forms should obligatorily precede negation in L2 French and German, (iii) where finite forms are used, agreement will be appropriate. These predictions are tested in

root and non-root sentences within the matrix declaratives, embedded clauses and interrogatives. No variation in the placement of the verbs and adverbs with respect to negation is observed, hence it is concluded that features associated with the relevant functional projections are available to the learners from the very beginning. Since both groups of learners use non-finite forms in place of the finites, their finite forms are restricted to only finite (raised) contexts, fulfilling the prediction made. When the verbal agreement is examined, it is seen that the accurate use of inflectional marking is around 95%, in addition to the almost 98% of accuracy in distinct suppletive forms, suggesting that agreement is in place. Non-finite (bare) forms are just finite defaults, rather than evidence for incorrect agreement (p. 123), which is further supported by the correct use of subject clitics in L2 French. What this suggests is that adult learners can differentiate between the +/- finite forms.

In order to provide an account for the variability in morphosyntactic behaviour of finite verbs, Prévost & White (2000) resort to Lardiere's (2000) explanation of a mapping problem between the surface forms and the abstract features. Lardiere's perspective is based on the Distributed Morphology where the features of a lexical item should be checked by the host syntactic node, and if there is a mismatch, the form with the most features gets to occupy the node (Halle & Marantz 1993). According to Prévost and White, non-agreeing and non-finite forms are observed because feature specifications cannot be matched with lexical items. Thus, the underspecified non-finite forms can occur in finite contexts, yet finite forms are specified, so they are not expected to be used in non-finite contexts.

Haznedar (2001) investigates IP-related elements, namely, copula *be*, auxiliary *be*, 3sg *-s* and regular and irregular past tense forms, the development of modal verbs and the distribution of overt and non-nominative subjects, on the basis of the data obtained from *Erdem*, a Turkish child whose first exposure to English was at the age of 4;3. Data were collected over a period of 18 months. She reports that Erdem's development of the copula *be*, auxiliary *be* and the overt subjects precedes the development of modals and verbal inflection. It should be noted that by the time Erdem supplies overt subjects consistently, he does not provide any 3sg *-s* inflections until sample 15. Thus, her findings are compatible with Lardiere (1998a, b) presenting a distinction between feature assignment and post syntactic realisation of these features.

Herschensohn (2001) studies the L2 French interlanguage of two high school students, *Emma* and *Chloe*, at an intermediate level over a period of six months on the basis of data from a series of interviews. Herschensohn (2001) specifically examines the relationship between the explicit morphology and functional categories, mainly focusing on verb inflections. The overall rate of suppliance is high for both subjects (more than 89%) when compared to Lardiere's (1998a) subject,

Patty, who is only able to provide 34% of tense inflection in obligatory contexts. There are also many utterances that represent the full syntactic tree of functional projections, suggesting that TP, AGRP and CP are present in the learner's inter-language.

Ionin & Wexler (2002) examine spontaneous production data and a grammaticality judgment task from 20 Russian L1 learners of English, ranging in age from 3;9 to 13;10. Ionin & Wexler (2002) predict that L2 learners will produce non-finite forms in place of finite forms, although the full syntactic structure tree and its relevant feature checking mechanisms are present. They also hypothesize that L2 learners will be more successful in providing tense and agreement on suppletive forms rather than affixal ones. As for the morpheme omission rates, Ionin & Wexler (2002) show that L2 learners represent the highest level of omission for 3sg *-s* (78%) and the lowest for copula *be* (16%). These findings suggest that the acquisition of suppletive forms emerge before the affixal morphology, despite the fact that Russian has a rich affixal paradigm of verb inflection but lacks an overt suppletive *be* form, which eliminates the option of transfer. If the high omission rate of 3sg *-s* is not due to phonological constraints, then, one would expect higher production of *-s* with irregular verbs, which has never occurred. Plural *-s* is also studied to find out whether high omission rate of 3sg *-s* has something to do with the reduction of verb final morphemes; however, it was found that the omission rate for plural *-s* is only 11%. With respect to both adverbs and negation, the L2 learners know the different placement of the thematic verbs and auxiliaries. An important finding highlighted in the Ionin and Wexler study concerns the development of thematic vs. non-thematic verb-raising in English. The results reveal that the subjects perform better on non-thematic verbs, such as copula *be*, when compared with their thematic counterparts.

In sum, from the perspective of MSIH, absence of functional elements does not entail their absence in the underlying syntax; rather their absence is due to mapping problems of surface elements to their abstract features. However, when the target forms are used, they are almost always used correctly (e.g. Haznedar & Schwartz 1997; Prévost & White 2000; Lardiere 1998a, b, 2000).

In order to find out whether or not child L2 learners follow a pattern similar to L1A or adult L2A, we examined the development of L2 morphosyntax in three Turkish-speaking children learning English in an international school in Istanbul, Turkey.

In the following section, we first provide background information about the subjects of the study, *Nil*, *Ayda* and *Elif*, as well as data collection procedures. In Section 3, data on the development of copula *be*, subject-verb agreement (3sg *-s*), irregular and regular tense marking, overt subjects, nominative subject pronouns

are analysed and discussed. In Section 4, the findings are discussed in terms of recent hypotheses on the morphology-syntax interface.

3. Methodology

3.1 Participants

The subjects of this study are 3 Turkish-speaking girls, *Nil*, *Ayda* and *Elif*, who were approximately 4;5 years old at the onset of the study and had no reported speech, hearing or language disorders. All the subjects were attending the reception class at an international school in Istanbul, Turkey, where they were exposed to a minimum of 6 hours of English per day in a class with 12 other children of different nationalities, and were similar in terms of their exposure to English and family backgrounds.¹ Their first exposure to English was around the age of 3;5. They are all from university graduate upper middle-class families. Since the parents of the subjects are Turkish, the language spoken at home was Turkish. At the time of the study, the children had a full command of Turkish, producing complex grammatical constructions, such as causatives, passives and relative clauses. Before, during and after the study, no Turkish data were collected; only the Turkish conversations of the subjects among their Turkish peers were noted.

3.2 Data collection

Data were collected regularly over a period of 7 months. 3–4 sessions of 1–2 hours of data collection per month during playing time were held with the subjects individually. All the sessions were audio-taped and accompanied by the notes of the investigator at the time of the recording. Data consisted of spontaneous production resulting from daily conversations about their friends, family and school, picture elicitation tasks via reading story and picture books, silent video viewing and lego building activities. Semi structured elicitation tasks were designed in a way to elicit more utterances of verbal and nominal morphology. The recordings were done in a separate room, outside the class, on a one to one basis with each child at a time. In addition to individual recordings, the children were also observed and recorded in class while interacting with playmates. All the tasks were organized according to suggestions discussed in Crain & Thornton (1998).

1. For detailed information, the reader is referred to Geçkin (2006).

3.3 Data transcription and coding

Special attention was paid to transcribing the data soon after they were collected, which is likely to eliminate any problems associated with contextual matters. Following CHILDES conventions (MacWhinney & Snow 1990), we developed our own codes for morpho-syntax based on the CHAT coding system. In this study, we coded the transcripts for the use of the following IP-related elements in obligatory contexts: copula *be*, subject-verb agreement (3sg *-s*), irregular and regular tense marking, overt subjects and nominative subject pronouns.

4. Data analysis and results

This section first presents data on the acquisition of copula *be* and overt subjects, and then moves onto the development of inflectional morphology.

4.1 The acquisition of copula *be*

The development of copula *be* is presented in Figure 1, which shows suppliance in the speech of all three children.

As can be seen in Figure 1, copula *be* is consistently present in the speech of *Ayda*, *Elif* and *Nil* from early on. Its relatively lower suppliance in the first three samples is related to the limited contexts where the subjects did not need to use copula *be*. It should be noted that the suppliance of copula *be* is usually above 90% in *Elif* and *Nil*, which can be viewed as the copula *be* being acquired and used

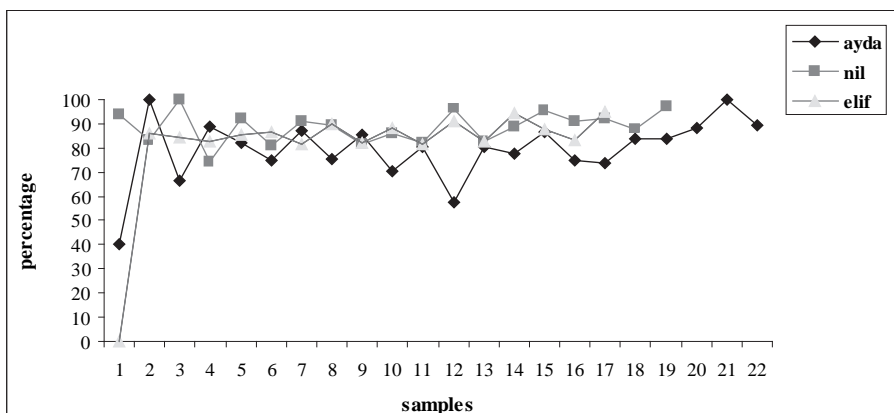


Figure 1. The development of the copula *be*

Table 1. Copula *-be* utterances

	Copula <i>-be</i>	Missing <i>-be</i>	Total	Copula <i>-be</i> %	Missing <i>-be</i> %
Nil	997	24	1021	97.65%	2.35%
Ayda	912	76	988	92.31%	7.69%
Elif	829	26	855	96.96%	3.04%

productively. *Ayda*'s development is somewhat slower in comparative terms. This difference can be attributed to individual differences observed among L2 learners.

Overall, our findings show that copula *be* is acquired rather early, which suggests that an INFL-related category should be available to the three children. As can be seen from the examples below, all three subjects use copula *be* correctly and productively in both the affirmative and negative as well as *wh*- questions in both present and past contexts.

- (2) a. Which one **was** the sister? (Nil, S16 May 31'05)
 b. The dog **was** in the mud. (Ayda, S11 Mar 22'05)
 c. Garfield's friends **are** happy. (Elif, S7 Mar 15'05)

Table 1 compares the suppliance and omission rates of the three children.

As can be seen, all three children productively make use of copula *be* in appropriate contexts, the missing rate ranging from 2.35% to 7.69%. (See Appendices A1, A2 and A3 for individual children's suppliance rate.)

Although early work in the acquisition of the copula indicates that the copula *be* is acquired later (Brown 1973; Hyams 1986) in the acquisition of child L2 English, it has been found in a series of studies that copula *be* is acquired earlier (e.g. Lakshmanan 1993/1994; Haznedar 2001; Ionin & Wexler 2002). In her earlier work on child L2 acquisition of English by a Turkish-speaking child, *Erdem*, Haznedar (2001), for instance, reports that Erdem's suppliance of copula *be* is 96.43% (2296/2381) in obligatory contexts. When his suppliance of copula *be* is compared with the subjects of the present study, it can be seen that all four Turkish child L2 learners of English had similar percentages of suppliance of the copula *be*, with a percentage of more than 92%. To this end, the high instances of copula *be* among all the three subjects and Erdem are compatible with the findings in the literature.

4.2 Overt subjects and Nominative case marking

The distribution of subjects in all contexts, including copula *be*, auxiliary *be*, 3sg-s and regular and irregular past contexts are examined in the data of all three subjects. In the analysis of overt versus null subjects, imperatives and coordinated

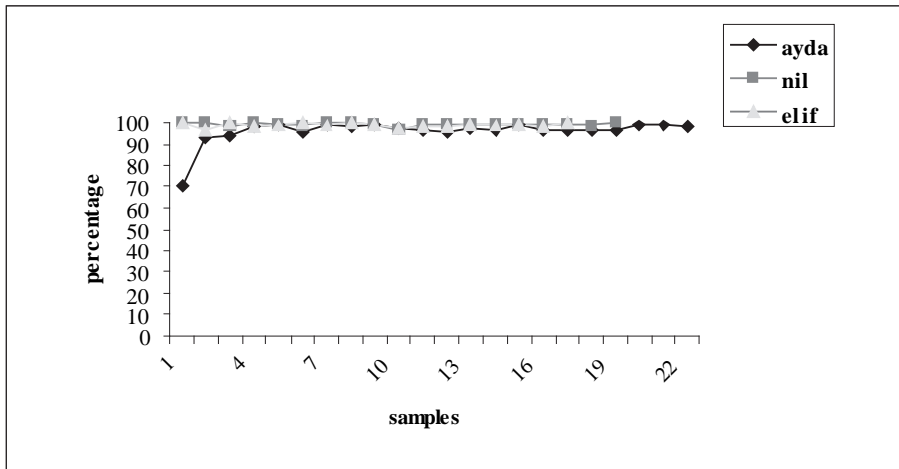


Figure 2. The development of overt subjects

constructions are excluded from the counts, as they are possible forms in the adult grammar. Figure 2 presents the development of subjects in the corpus.

Figure 2 shows that overt subjects are present consistently, right from the beginning of the data collection, although the native language of the children, Turkish, is a pro-drop language. As can be seen in Table 2, in both *Nil*'s and *Elif*'s data, the number and the percentage of the null subjects are relatively low (0.55% 1.15% respectively), when compared to *Ayda*'s sample (2.76%).

We find that while *Nil* correctly supplies overt subjects with a percentage of 99.45% (3648/3668), *Elif*'s suppliance rate is also rather high, 98.85% (2670/2699). The lowest percentage is found in *Ayda*'s data, where overt subjects are provided 97.10% (5568/5726) of the time, which is still rather high, considering the acquisition criterion in the literature. (see Appendices B1, B2 and B3 for individual children's suppliance rate.)

Some examples are given in (3).

Table 2. Overt vs. Null subjects

	Overt subjects (Pronominal+Lexical)	Null subjects	Non-nominative subjects (<i>my, her, him, me</i>)
Nil	3648 (99.40%)	22 (0.60%)	–
Ayda	5568 (97.10%)	158 (2.76%)	7 (0.14%)
Elif	2670 (98.85%)	31 (1.15%)	–
Total	11.886 (98.19%)	211 (1.74%)	7 (0.07%)

- (3) a. When it is summer, we're gonna swim. (Nil, S19 Jun 22'05)
 b. **The mother** didn't see him. (Ayda, S5 Jan 25'05)
 c. When I close my eyes # **my eyes** are like this. (Elif, S13 May 24'05)

With regard to nominative case marking, it should be noted that non-pronominal subjects occur only in the speech of one child, *Ayda*. Of the 5568 contexts with overt subjects, we find only 7 non-pronominal subjects, constituting only (0.14%) of the utterances. The exhaustive list of these errors is given in (4).

- (4) Context: The investigator arrives at the school, and she starts talking with Ayda about her daily work.
 Investigator: Did you see Elif?
 Ayda: Elif had to take a photograph for everybody's and the teachers.
 a. **Me** draw my picture for him. (S 13'05)
 b. And **me** got pictures for. (S 13'05)
 c. What's **her** calling? (S 17'05)
 d. **Me** first and then you read. (S 20'05)
 e. **Her** just have one arm. (S 15'05)
 f. **Her** quickly go. (S 14'05)
 g. **Her** shut the door. (S 14'05)

Vainikka (1993/1994) claims that the presence of accusative and genitive subjects is an indication of syntactic impairment in early grammars. As has been noted by many researchers, pronoun case errors are widespread in English child language (e.g. Brown 1973; Rispoli 1994, 1998, 1999; Powers 1995; Schütze 1999; Vainikka 1993/1994). Rispoli notes two types of subject pronoun case errors in child English: (i) the overextension of the objective form for the nominative form (as in *him can't see -him for he* (from Nina 2;1: Vainikka 1993/1994:295), and (ii) the overextension of the genitive form for the nominative (as in *my play bulldozer, hmm?* (from Adam 2;3: Vainikka 1993/1994:268).² In our data, however, we find an extremely limited number of non-nominative subjects, only 7 instances out of

2. Like many researchers who have studied English pronoun case errors, Rispoli (1998) observes that the error rate for the feminine pronoun is higher than that of the masculine pronoun, that is, *her* for *she* occurs at a higher rate than *him* for *he*. The analysis of data from 12 children in the Rispoli study shows that the average rate of *him* for *he* overextension is approximately 5%, whereas the average overextension rate of *her* for *she* is approximately 47%. The difference in error rate is attributed to learning the word specific paradigms for these pronouns. For Rispoli (1994, 1998, 1999), the feminine pronoun has a higher error rate because *her* fills two cells of the 3Psg feminine (fem) paradigm (i.e. *she, her, her*). In contrast, the masculine (masc) pronoun has separate forms for each cell (i.e. *he, him, his*). Rispoli argues for the influence of a retrieval factor, termed the double-cell effect, on the *her* for *she* pronoun case error (see Schütze 1999 for opposing views for this proposal).

5568 obligatory contexts in one child, suggesting that our results are entirely different from those reported in child L1 English.

The next section presents data on inflectional morphology, with particular reference to agreement and tense markers in child L2 English.

4.3 Agreement morphology (3sg-s)

As we have discussed in Section 4, copula *be* is acquired rather early by the three children in this study. This, however, contrasts with main verb tense and agreement inflection. In this section, the form of the verb in obligatory contexts is examined regarding the use of 3sg -s. Following Phillips (1995), we assume that missing auxiliaries may not equate with missing main verb inflection, and therefore, we excluded auxiliaries from the counts. As can be seen in (5), all three children produce both inflected and uninflected forms interchangeably.

- (5) a. Investigator: This is Little Red Riding Hood. What does the princess do before she goes to the party?
 Nil: She **goes** to her house and # she **goes** sleep and # she **say** good night. (S5 Feb 1'05)
- b. Ayda: The kitty **look** out in the window.
 Investigator: Why does the kitty look out of the window?
- c. Ayda: Because the kitty **wants** to listen # and the dog **want** to play with him. (S6 Feb 14'05)
- d. Investigator: What does he do?
 Elif: He **works** so hard.
- e. Investigator: What does he do?
 Elif: He just **work** on the walls. (S15 Jun 7'05)

The examples in (5) show that 3sg -s is both supplied and omitted even in the same utterance by the same child.

Figure 3 presents the development of 3sg -s in *Ayda*, *Elif* and *Nil*'s L2 English.

As can be seen in Figure 3, although the obligatory context for 3sg -s occurs even in the first samples, it is not productively supplied by the learners. We find that the frequency of 3sg -s does not seem to increase rapidly until the end of the data collection. Regarding the development of 3sg -s in *Nil*'s corpus, until Sample 10, the number and percentage of the inflected 3sg -s verbs are less than the uninflected verbs. It is after Sample 11 that the inflected 3sg -s verbs exceed the uninflected ones. In *Ayda*'s development, there are few obligatory contexts for verb 3sg -s in the first four samples. Her gradual development can be observed especially after Sample 6. While the suppliance of 3sg -s is 15.89% (41/258) in

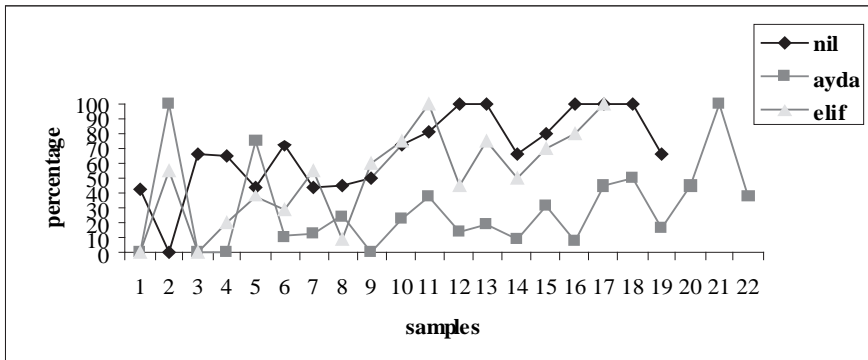


Figure 3. The development of 3sg -s

Samples 6–16, it rises to 35.29% (18/51) in Samples 17–22. Finally, in *Elif's* corpus, we find a similar gradual pattern. In Sample 3 there are four obligatory contexts for 3sg -s inflection, but none of them are inflected. Starting with Sample 4, there is a gradual increase in the suppliance of the agreement marker. In Sample 5, the percentage of the 3sg -s is 42.86% (6/14). However, in sample 8, the percentage drops to 9.52%, since only 2 utterances are inflected out of 21 obligatory contexts. Between Samples 9 (60% – 3/2) and 11 (100% – 4/4), due to the limited number of the obligatory contexts, these rates should be handled carefully. Starting with Sample 14, the suppliance of 3 sg -s increases in more contexts.

It should be noted that despite many occurrences of omission errors, when they were present, they were almost always used correctly by all three subjects. Table 3 shows the number and the percentage of agreement errors in the corpus.

We find very few instances of incorrect agreement errors in the data. (6) presents the three agreement errors in *Elif's* corpus.

- (6) a. They **tells** a story (S14 June 1'05)
- b. I **wants** to swim in the water (S15 June 7'05)
- c. Their shells **makes** home (S15)

Table 3. The Acquisition of 3sg -s

	Samples	Correct use	Incorrect use
Nil	1–19	150/153 (98.04%)	3/153 (1.96%)
Ayda	1–22	61/63 (96.82%)	2/63 (3.17%)
Elif	1–17	79/82 (96.34%)	3/82 (3.65%)

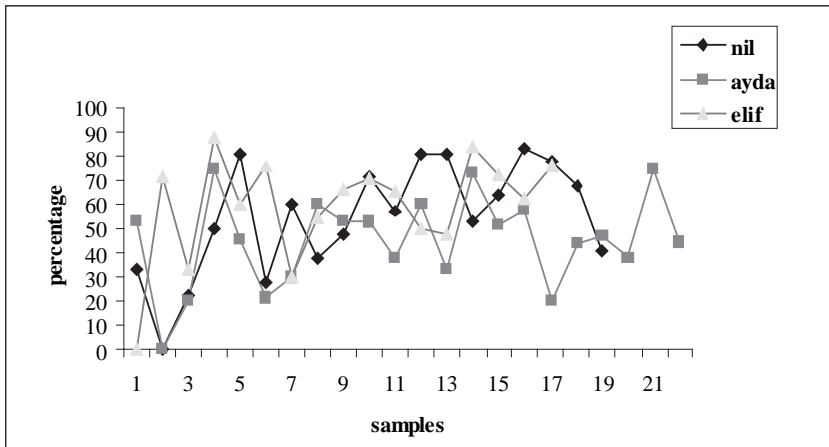


Figure 4. The acquisition of irregular past

4.4 Past tense morphology

In this section, we examine the use of regular and irregular past tense forms. We first present data on the distribution of irregular past tense forms.

4.4.1 Irregular past forms

Figure 4 presents the acquisition of irregular past forms in the data.

As shown in the line graphs of the three children, similar to the development of the 3sg *-s*, there is a slow but gradual development in the acquisition of the past tense irregular forms. Starting with Sample 5, the instances of irregular past tense forms in *Nil*'s corpus show fluctuations. In Sample 8 (Mar 29), for instance, the inflected forms constitute only 37.50% (9/24). In Sample 11 (Apr 29), the inflected forms go up to 57.38% (35/61). The percentage of inflected irregular past forms is 53.33% (16/30) with a slight decline in obligatory contexts in Sample 14 (May 20). In Sample 17, the instances of the irregular past tense forms are the highest by 78.26% (54/69).

Ayda's development also shows a similar pattern. In Sample 5 (Jan 27, '05) the instances of the production of the irregular past tense form is observed by 45.59% (31/68). In Sample 8, there is an increase in the production of the irregular verb forms with a percentage of 60% (24/40). However, in Sample 11 the correct utterances of irregular verb forms decrease to 37.50% (9/24). In Sample 14 (June '05), the instances of the irregular past tense forms are the highest with 77.92% (35/48), manifesting a gradual development in the following samples. In *Elif*'s development, on the other hand, starting with the second sample (Jan 05), it is seen that there is a high percentage of the irregular past tense forms by 71.43% (20/28). In

Sample 7, the inflected forms of the irregular past decrease to 29.63% (8/27). In Sample 12 the percentage of the inflected and uninflected forms are equalized at 50% (6/12). In Sample 14 (June 01), the irregular past tense forms are the highest with 83.75% (67/80). The examples in (7) present some occurrences of inflected and uninflected irregular past tense forms in the three children.

- (7) a. Nil: I **did** the elephant.
 Nil: And Harish **did** a pig #and Ayda **did** a dog # and Esra **did** a flamingo # and Benedita **do** the octopus.
 (S14 May 20, '05)
- b. Investigator: Maybe she figured out that this stone doesn't work.
 Ayda: Maybe this stone would never work # and **threw** it the man # and a nice animal come. (S 19 May 31, '05)
- c. Elif: I **did** it # I **finished** already # I **finished** # And Jack was a human.
 Investigator: Who was Jack?
 Elif: The mouse # and a fairy **came** # and the fairy **make** Jack a human. (S 17 Jun 24'05)

4.4.2 Regular past morphology

Although the instances of overt regular past tense marking are observed from the very first sample, when compared to the development of 3sg *-s* and irregular past tense morphology, the distribution of regular *-ed* is rather sporadic. Figure 5 shows that *Ayda*, *Elif* and *Nil* follow a gradual development in producing regular past *-ed*. All the children manifest fluctuations in their data. *Nil* and *Elif* seem to be following a similar path in their development of the regular past *-ed*; however,

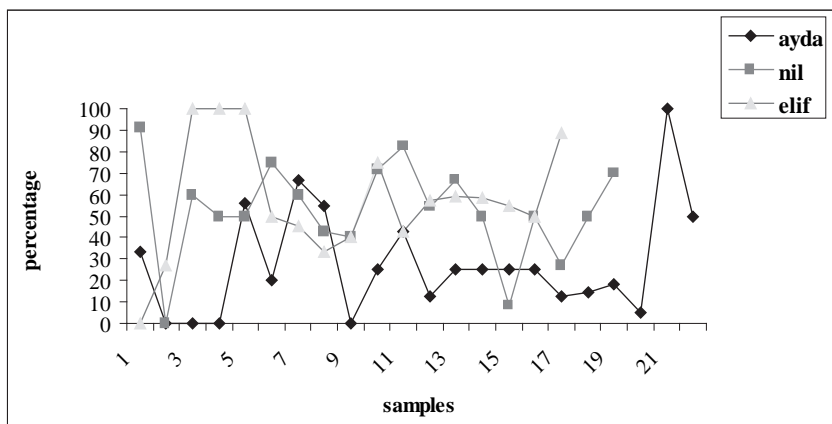


Figure 5. The development of the regular past

Ayda's development can be viewed as more protracted when compared to those of *Nil* and *Elif*.

In *Nil's* data, the past regular *-ed* was used with a percentage of 50% (S4: 3/6 and S5: 2/4) in Samples 4 and 5. In Sample 9, the past *-ed* inflection was observed with a percentage of 40% (2/5). In Sample 12 regular past *-ed* forms are inflected with a percentage of 54.17% (13/24). In Sample 13 (May 10) the percentage and the number of overt past tense marking reaches to 66.67% (14/21). In the last sample, Sample 19, the past *-ed* forms were inflected with a percentage of 70% (7/10). The distribution of regular past tense morphology in *Ayda's* L2 English appears to be less productive in comparison to *Nil's*, as we find few instances of utterances inflected with regular past tense morphology. In the first sample (Dec '05), *Ayda* produces the regular form of the verb with a percentage of 33.33% (1/3). In samples 2, 3, 4, no obligatory contexts for regular past tense morphology are found. Starting with Sample 5, a number of fluctuations in the production are observed. In Sample 5 (Jan 27), *Ayda* produces the regular form of the verb with a percentage of 56% (14/25). In Samples 13, 14, 15 and 16 the regular past *-ed* is inflected 25-30% of the time (2/8, 3/12, 8/24 and 3/12) respectively. By sample 22, we see that 50% (2/4) of the verbs are inflected by past *-ed* tense marking.

Consider the following examples:

- (8) a. Nil: So Ms. Polly **closed** the eyes # and he **opened** # It was tidy up time # and they **tidy** all of them. (S13, May 10'05)
 b. Ayda: Her dad **killed** him # and **want** to grab her. (S16, May 3'05)
 c. Elif: He **runned** to catch the mouses # and **want** to eat them # then the mouses **climb** up. (S14, Jun '05)

4.4.3 Overgeneralized Past forms

Another important observation that needs to be discussed in this study concerns the use of overgeneralised past regular inflection forms in child L2 English. As is known, past tense overgeneralization is among the most cited type of grammatical errors in child English (e.g. Brown 1973; Kuczaj 1977).³ Regular verbs are formed by attaching *-ed* to the suffix, whereas the formation of irregular verb forms requires substitution of different forms (*break-broke, see-saw*) or no change (*hurt-hurt, cut-cut*). Similar to previous studies, both in L1 and L2 acquisition of English, we also find instances of overgeneralization errors in the child L2 data analyzed in this study.

3. One should note, however, that overgeneralization errors are found to be rare in child English. Marcus et al. (1992) show that overgeneralization of *-ed* occurred with only a small percentage of children's irregular verbs (2.5%).

In *Nil*'s corpus, the percentage of the overgeneralized past forms constitutes 8.96% (68/759) in obligatory past contexts. *Ayda* exhibits a percentage of 1.08% (9/836) of overgeneralized past forms. *Elif* produces overgeneralized past forms with a percentage of 5.94% (38/640). While the rate of overgeneralized past forms appears to be higher than that of others in *Nil*'s data, we cannot make any conclusive judgements in regard to when these forms stabilize in her L2 English, as further data are needed.

4.4.4 Summary on verbal morphology

Table 4 presents the number and percentage of inflected vs. uninflected verbal morphology in the data.

The average inflection rate of the 3sg *-s* agreement marker is 66.67%, 20.13% and 47.13% for *Nil*, *Ayda* and *Elif*, respectively. In contrast, the average suppliance of copula *be* is 89.52%, 81.1% and 85.9% for *Nil*, *Ayda* and *Elif*, respectively.

In *Ayda*'s and *Elif*'s interlanguage, the development of the irregular past forms seems to be more productively used than the 3sg *-s* forms. However, in *Nil*'s corpus, the development of the 3sg *-s* seems to come before the regular past *-ed* and the irregular past forms. It is interesting to note that *Ayda*'s development in all affixal forms is slower than *Nil*'s or *Elif*'s development. With respect to past *-ed* marking and the irregular forms, *Nil* and *Elif* manifest similar inflection rates. *Nil* uses the irregular past forms with a percentage of 63.84%, similar to *Elif*, who uses these forms 66.74% of the time. Likewise, the regular past *-ed* is inflected with 56.98% in *Nil*'s corpus and with 56% in *Elif*'s corpus. In Haznedar (2001), *Erdem* inflects 3sg *-s* and regular past *-ed* by 43% and uses the irregular past forms by 51.44% in obligatory contexts. His development of affixal forms seems to be similar to that of the three children in this study. Overall, what we find in this study is that L2 acquisition of affixal morphology improves more gradually, taking a longer time than the suppletive forms, such as the copula *be*.

Table 4. Suppliance and omission of affixal morphology

	3 sg-s		Irregular past		Regular past	
	Inflected	Uninflected	Inflected	Uninflected	Inflected	Uninflected
Nil	66.67%	33.33%	63.84%	36.16%	56.98%	43.02%
Ayda	20.13%	79.87%	48.25%	51.75%	28.32%	71.68%
Elif	47.13%	52.87%	66.74%	33.26%	56%	44%

5. Discussion and conclusion

In this study, we examine the issue of morphological variability in early child L2 English. In considering differences between L1 and L2 acquisition, we look at mastery of English verb morphology that has been regarded as the key to the construction of the clause in morphosyntactic development.

Following the Modulated Structure Building Model, Hawkins (2001) differentiates copula *be* from other irregular forms (i.e. 3rd sing-*s*, regular and irregular past forms) and thus claims that according to the order of acquisition it is no big surprise that copula *be* is acquired earlier than other bound morphemes emphasizing that in the acquisition process copula *be* moves from VP to I. This process is compatible with the FFFH. We challenge the perspective that the absence of lexical forms associated with functional categories in surface representations is regarded as syntactic impairment. We argue that in the absence of 3sg -*s*, for example, IP is not necessarily missing from the learners' interlanguage grammars (e.g. Vainikka & Young-Scholten 1994), as this perspective fails to account for over 90% correct use of overt subjects and the consistent suppliance of pronominal subjects, along with the early production of INFL-related elements, such as copula *be*, all of which falling under the functional category IP.

We explain the data presented in this study in terms of problems in mapping between the morphological and syntactic components of the grammar. This approach accounts for the fact that there is a divergence between our children's lack of overt morphology and other properties which are indicative of INFL. First, the consistent suppliance of overt subjects, virtually most of which are nominative, provides robust evidence for the projection of INFL and suggests that there is no impairment in the morphology-syntax interface. As discussed in Section 4.2, *Ayda*, *Elif* and *Nil* show 100% correct incidence of nominative case, suggesting that they have the relevant mechanisms in place for nominative case assignment (i.e., via Spec-head agreement within IP). In addition, while marking for tense and agreement is low on lexical verbs, production is accurate and high (93%) in the case of other elements, such as copula *be*. Given that a major function of the copula is to carry tense and agreement features, this high level of suppliance of overt forms suggests that INFL, together with its associated features, is indeed present in these child L2 learners' interlanguage grammars.

When the acquisition of verbal inflection is compared with that of subjects, it does not seem to be the case that the regular use of inflection appears to be playing a role in the disappearance of null subjects. Even in the first samples, the percentage of null subjects is rather low, almost non-existent. The frequent use of inflected forms, however, gradually increases, while uninflected forms still persist until the last sample. To this end, our analysis shows dissociation between the two

phenomena. It does not seem to be the case that a developmental relation exists between the regular use of verb inflection and the disappearance of null subjects. This finding is reminiscent of the earlier findings on child L2 acquisition of English (Haznedar 2001; Hilles 1991; Lakshmanan 1991). Lakshmanan (1991) and partly Hilles (1991) also argue that a relation between the development of verbal morphology and the use of null subjects is not attested. In more recent work, Haznedar (2001) also shows that overt subjects are correctly supplied long before the consistent production of past tense morphology. Similarly, in an investigation of the relationship between null subjects and finiteness, Ionin & Wexler (2002) also found a very low percentage (1.8%) of omitted subjects.

A related issue at this point concerns the acquisition of affixal versus suppletive morphology. We have found robust evidence for a difference between the acquisition of affixal paradigms and suppletive paradigms, such that the latter is acquired much earlier. While suppletive elements such as copula *be* are used consistently and productively, all three children omit affixal elements of 3sg *-s* and past tense morphology for a long time. As has been noted by Lardiere (1999), this finding has implications for providing an explanation for grammatical development in L2 acquisition. In their early work, Vainikka & Young-Scholten (1996a) propose that:

Children acquire the affixes associated with a particular functional head before the free morphemes associated with the same head, while the reverse holds for L2 acquisition. Assuming that functional heads act as triggers for projecting new structure, we propose that affixes are salient triggers for children, while full words are salient triggers for adults. (1996a: 34)

Given our findings in this study, however, regular affixes do not seem to constitute more salient triggers of the grammatical representation of finiteness among the three children than do the suppletive morphemes. These young L2 learners in our study do not provide evidence for Vainikka & Young-Scholten's view that children perceive, store and use bound morphemes as triggers to acquisition, as they favor missing inflection over wrong inflection. In Table 3, we have shown that when agreement morphology is supplied, it is used appropriately, with agreement errors ranging around 1.96%–3.65% in the speech of the three subjects. Overall, despite the fact that the subjects in this study have problems with suppliance of inflectional morphology, the problem is basically missing inflection, rather than faulty inflection. We know that learners fail to inflect, but they do not freely substitute one type of inflection for another, which suggests that morphological variability is not in fact random, which is something one might have expected if the problem had to do with the total breakdown of the syntactic system.

On the contrary, one cannot overlook the fact that copula forms, overt nominative subjects are used consistently at a point in which affixal verbal morphology, i.e., 3sg *-s* and past tense, does not appear to be productive. Moreover, as discussed in Sections 4.3 and 4.4, while these three child L2 learners frequently omit verbal inflection in production, they make very few tense/agreement errors, suggesting that features and feature-checking mechanisms underlying finiteness are fully in place. The high and accurate use of copula *be* forms in the data points towards the presence of a fully specified Tense node. Under a theory of syntactic impairment, on the other hand, we would expect omission of all inflectional morpheme types.

In her analysis of data from an end-state L2 learner of English, *Patty*, Lardiere (1999) also highlights the primacy of auxiliary/copular suppletive agreement versus regular affixation. Examining *Patty*'s agreement marking in non-past obligatory contexts, Lardiere found that correct suppliance of suppletive agreement paradigm of auxiliary/copular *be* for all persons ranged from about 83–94%, in comparison to 4.56%–4.76% correct suppliance of inflection on lexical main verbs.

On similar grounds, Ionin & Wexler (2002) also found a small number of omissions of *be* forms as opposed to main verb inflection on 3sg *-s* and tense marking in past contexts. These results are attributed to the raising character of suppletive elements in English. On the assumption that it is only auxiliaries *be* and *have* and modal verbs that raise before Spell-Out, English main verbs do not move until LF, as the relevant features are assumed to be weak. To this end, the raising character of suppletive forms facilitates the acquisition of finite forms. As noted by Lardiere (1999), unlike suppletive forms, all the imperatives, infinitives and participles that are abundant in the input lack overt morphology. Therefore, it will in fact be more difficult for the learner to find out that there is a paradigm for person/number agreement by attending to affixes on main verbs. Similarly, adopting Guasti & Rizzi's (2002) theoretical framework, Ionin & Wexler (2002) argue that low production of affixal agreement on thematic verbs is due to a generalization that ties morphological agreement to verb-raising. In line with previous work (e.g. Guasti & Rizzi 2002; Ionin & Wexler 2002), we argue that learning affixal morphology can be attributed to the movement of the thematic verb to check its features for tense and agreement; thus, the learner should learn the language-specific morphological rules along with the input. Once the learner masters the English-specific rule, then no default forms will be observed in finite contexts. Overall, then, L2 learners initially acquire morphological agreement only on the raised *be* forms and frequently omit affixal inflection.

Previous research on adult L2 acquisition has also shown that the earliest signs of finiteness are found in sentences with non-thematic verbs, and that sentences containing thematic verbs become finite only later. Parodi (2000) observed, for

example, that L2-learners of German initially produce pre-verbal negation with thematic verbs, while the negator appears in post-verbal negation with non-thematic verbs from the start. Becker (2005) suggested that it is typically non-modal auxiliaries that lead to the acquisition of post-verbal negation with all verbs: the 'empty' lexical status of *'haben'*, and the transparent morphological make-up of this auxiliary leads to the acquisition of verbal morphology and verb raising, which in turn results in post-verbal negation.

These findings obviously present a challenge to theoretical proposals which assume that syntactic development is dependent on the acquisition of regular verbal paradigms. As we have seen, while affixal morphology is largely gradual and not consistent in early samples, the associated syntactic correlates, such as the presence of overt subjects and case checking, are all completely accurate, and hence, suggest no underlying impairment to functional categories or features. To this end, the absence of verbal morphology indicates nothing more than the absence of surface realization of inflectional morphology, which has been termed as missing surface inflection in previous work (e.g. Haznedar 2001; Lardiere 1998a, b 2000; Prévost & White 2000). This study has provided further evidence regarding the discrepancy in L2 acquisition with respect to syntax and morphology, suggesting a problem in mapping from abstract categories to their surface morphological realizations.

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Appendix A-1. Number and percentage of copula *be* (NİL)

Recording date	<i>be</i>	missing <i>be</i>	faulty <i>be</i>	total	% <i>be</i>	% miss <i>be</i>	% faulty <i>be</i>
S1 6 Jan'05	16	1	0	17	94.12	5.88	0.0
S2 14 Jan'05	20	2	2	24	83.33	8.33	8.33
S3 18 Jan'05	8	0	0	8	100.0	0.0	0.0
S4 14 Feb'05	26	2	7	35	74.29	5.71	20.0
S5 18 Feb'05	24	0	2	26	92.31	0.0	7.69
S6 25 Feb'05	26	1	5	22	81.25	3.12	15.63
S7 15 Mar'05	30	1	2	33	90.91	3.03	6.06
S8 29 Mar'05	43	0	5	48	89.58	0.0	10.42
S9 6 Apr'05	18	1	3	12	81.82	4.55	13.64
S10 12 Apr'05	31	2	3	36	86.11	5.56	8.33
S11 29 Apr'05	50	1	10	61	81.97	1.64	16.39
S12 3 May'05	77	0	3	80	96.25	0.0	3.75
S13 10 May'05	61	6	7	74	82.43	8.11	9.46
S14 20 May'05	73	2	7	82	89.02	2.44	8.54
S15 24May'05	114	0	5	119	95.80	0.0	4.20
S16 31 May'05	100	1	9	110	90.91	0.91	8.18
S17 7 Jun'05	116	3	7	126	92.06	2.38	5.56
S18 16 Jun'05	43	1	5	49	87.76	2.04	10.20
S19 22 Jun'05	38	0	1	39	97.44	0.0	2.56
Total	914	24	83	1021	89.52	2.35	8.13

Appendix A-2. Number and percentage of copula *be* (AYDA)

Recording date	<i>be</i>	missing <i>be</i>	faulty <i>be</i>	other <i>be</i>	total	% <i>be</i>	% miss <i>be</i>	% faulty <i>be</i>	% other <i>be</i>
S1 2 Dec'04	2	2	1	0	5	40.0	40.0	40.0	0.0
S2 9 Dec'04	1	0	0	0	1	100.0	0.0	0.0	0.0
S3 6 Jan'05	2	0	1	0	3	66.7	0.0	33.7	0.0
S4 26 Jan'05	8	0	1	0	9	88.9	0.0	1.11	0.0
S5 27 Jan'05	28	0	6	0	34	82.4	0.0	17.6	0.0
S6 14 Feb'05	12	1	3	0	16	75.0	6.3	18.8	0.0
S7 18 Feb'05	62	4	3	2	71	87.3	5.6	4.2	2.8
S8 25 Feb'05	34	4	7	0	45	75.6	8.9	15.6	0.0
S9 8 Mar'05	30	1	4	0	35	85.7	2.9	11.4	0.0
S10 15 Mar'05	26	4	4	3	37	70.3	10.8	10.8	8.1
S11 22 Mar'05	37	4	4	1	46	80.4	8.7	8.7	2.2
S12 29 Mar'05	23	13	1	3	40	57.5	32.5	2.5	7.5
S13 6 Apr'05	33	1	7	0	41	80.5	2.4	17.1	0.0
S14 12 Apr'05	35	5	3	2	45	77.8	11.1	6.7	4.4
S15 29 Apr'05	77	6	6	0	89	86.5	6.7	6.7	0.0
S16 3 May'05	66	5	13	4	88	75.0	5.7	14.8	4.5
S17 17 May'05	34	5	5	2	46	73.9	10.9	10.9	4.3
S18 24 May'05	79	8	6	1	94	84.0	8.5	6.4	1.1
S19 31 May'05	66	4	5	4	79	83.5	5.1	6.3	5.1
S20 7 Jun'05	104	9	2	2	118	89.9	7.7	1.7	1.7
S21 16 Jun'05	9	0	0	0	9	100.0	0.0	0.0	0.0
S22 22 Jun'05	34	0	4	0	38	89.5	0.0	10.5	0.0
Total	802	76	86	24	988	81.1	7.7	8.7	2.5

Appendix A-3. Number and percentage of copula *be* (ELIF)

Recording date	<i>be</i>	missing <i>be</i>	faulty <i>be</i>	other <i>be</i>	total	% <i>be</i>	% miss <i>be</i>	% faulty <i>be</i>	% other <i>be</i>
S1 9 Dec'04	0	0	0	0	0	0.0	0.0	0.0	0.0
S2 6 Jan'05	31	1	3	0	36	86.1	2.8	8.3	2.8
S3 26 Jan'05	11	2	0	1	13	84.6	15.4	0.0	0.0
S4 14 Feb'05	34	1	6	0	41	82.9	2.4	14.6	0.0
S5 8 Mar'05	23	0	4	0	27	85.2	0.0	14.8	0.0
S6 25 Feb'05	51	2	5	0	59	86.4	3.4	8.5	1.7
S7 15 Mar'05	31	2	5	1	38	81.6	5.3	13.2	0.0
S8 12 Apr'05	52	2	2	0	57	91.2	3.5	3.5	1.8
S9 29 Apr'05	37	0	5	1	42	88.1	0.0	11.9	0.0
S10 3 May'05	38	0	4	0	42	92.5	0.0	9.5	0.0
S11 10 May'05	22	2	2	0	26	84.6	7.7	7.7	0.0
S12 17 May'05	69	1	4	0	74	93.2	1.4	5.4	0.0
S13 24 May'05	99	5	13	0	117	84.6	4.3	11.1	0.0
S14 1 Jun'05	101	3	1	2	107	94.4	2.8	0.9	1.9
S15 7 Jun'05	84	3	9	0	96	87.5	3.1	3.4	0.0
S16 14 May'05	49	2	7	1	59	83.1	3.4	11.9	1.7
S17 24 Jun'05	20	0	1	0	21	95.2	0.0	4.8	0.0
Total	752	26	71	6	855	85.9	3.0	8.1	0.7

Appendix B-1. Number and percentage of overt vs. null subjects (NIL)

Recording date	null	overt	total	% null	% overt
S1 6 Jan'05	0	78	78	0.0	100.0
S2 14 Jan'05	0	71	71	0	100.0
S3 18 Jan'05	1	56	57	1.75	98.25
S4 14 Feb'05	0	86	86	0.0	100.0
S5 18 Feb'05	1	146	147	0.68	99.32
S6 25 Feb'05	2	164	166	1.20	98.80
S7 15 Mar'05	0	189	189	0.0	100.0
S8 29 Mar'05	0	240	240	0.0	100.0
S9 6 Apr'05	1	138	139	0.72	99.28
S10 12 Apr'05	2	126	128	1.56	98.44
S11 29 Apr'05	1	233	234	0.43	99.57
S12 3 May'05	1	190	191	0.52	99.48
S13 10 May'05	1	224	225	0.44	99.56
S14 20 May'05	1	281	282	0.35	99.65
S15 24May'05	2	330	332	0.60	99.40
S16 31 May'05	3	348	351	0.85	99.15
S17 7 Jun'05	2	417	419	0.48	99.52
S18 16 Jun'05	2	171	173	1.16	98.84
S19 22 Jun'05	0	160	160	0.0	100.0
Total	20	3648	3668	0.55	99.45

Appendix B-2. Number and percentage of overt vs. null subjects (AYDA)

Recording date	null	overt	total	%null	%overt
S1 2 Dec'04	12	29	41	29.27	70.73
S2 9 Dec'04	1	13	14	7.14	92.86
S3 6 Jan'05	1	17	18	5.56	94.44
S4 26 Jan'05	1	59	60	1.67	98.33
S5 27 Jan'05	4	312	316	1.27	98.73
S6 14 Feb'05	6	126	132	4.55	96.45
S7 18 Feb'05	6	426	432	1.39	98.61
S8 25 Feb'05	6	272	278	2.16	17.84
S9 8 Mar'05	1	235	236	0.42	99.58
S10 15 Mar'05	6	231	237	2.53	97.47
S11 22 Mar'05	10	282	292	3.42	96.58
S12 29 Mar'05	10	225	235	4.26	95.74
S13 6 Apr'05	5	197	202	2.48	97.52
S14 12 Apr'05	12	339	351	3.42	96.58
S15 29 Apr'05	7	517	524	1.34	99.66
S16 3 May'05	14	328	342	4.09	95.91
S17 17 May'05	9	287	296	3.04	96.96
S18 24 May'05	20	534	554	3.61	96.39
S19 31 May'05	15	383	398	3.74	96.23
S20 7 Jun'05	8	498	506	1.58	98.42
S21 16 Jun'05	1	75	76	1.32	98.68
S22 22 Jun'05	3	183	186	1.61	98.39
Total	158	5568	5726	2.76	97.24

Appendix B-3. Number and percentage of overt vs. null subjects (ELIF)

Recording date	null	overt	total	% null	% overt
S1 9 Dec'04	0	4	4	0.0	100.0
S2 6 Jan'05	3	92	95	3.2	96.8
S3 26 Jan'05	0	53	53	0.0	100.0
S4 14 Feb'05	2	115	117	1.7	98.3
S5 8 Mar'05	1	96	97	1.0	99.0
S6 25 Feb'05	0	211	211	0.0	100.0
S7 15 Mar'05	2	154	156	1.3	98.7
S8 12 Apr'05	0	160	160	0.0	100.0
S9 29 Apr'05	1	169	170	0.6	99.4
S10 3 May'05	3	130	133	2.3	97.7
S11 10 May'05	2	92	94	2.1	97.9
S12 17 May'05	3	171	174	1.7	98.3
S13 24 May'05	3	315	318	0.9	99.1
S14 1 Jun'05	3	294	297	1.0	99.0
S15 7 Jun'05	2	295	297	1.3	98.7
S16 14 May'05	4	207	211	1.9	98.1
S17 24 Jun'05	0	114	144	0.0	100.0
Total	29	2670	2699	1.1	98.9

PART IV

**Comparisons of child L1, child L2
and adult L2**

Testing the Domain-by-Age Model

Inflection and placement of Dutch verbs

Elma Blom
University of Amsterdam

Generalizing over various observations on the language development of children acquiring a second language (child L2 acquisition), Schwartz (2003:47) concludes that “in the domain of inflectional morphology, child L2 acquisition is more like child L1 acquisition, and in the domain of syntax, child L2 acquisition is more like adult L2 acquisition”. One implication of this generalization is that inflection is influenced by age of onset, whereas knowledge of syntax is not. In this contribution, results from a series of production experiments on child and adult L2 Dutch are discussed showing that children and adults have different profiles in both linguistic domains, contrary to Schwartz (2003).

1. Introduction

Since Johnson & Newport’s (1989, 1991) landmark studies, there has been an ongoing debate about the question of whether or not there is a fundamental difference between language acquisition during childhood and language acquisition at later ages. The question underlying this debate is whether there exists a critical or sensitive period for language acquisition with an offset and endpoint that are directly related to the biological maturation of the (human) brain (Penfield & Roberts 1957; Lenneberg 1967; Chomsky 1975). Among the many different interpretations of the Critical Period Hypothesis (Birdsong 1999; Hyltenstam & Abrahamsson 2003), there is the idea that there are multiple critical periods, affecting different parts of the language learning ability (Eubank & Gregg 1999; Long 1990; Schachter 1996; Scovel 1988; Seliger 1978).

In this contribution, my aim is to look more closely at one particular interpretation of the idea that age of onset does not affect all parts of the language system equally, that is, the Domain-by-Age Model, as proposed by Schwartz (2003). In an attempt to characterize child L2 acquisition – a key population in the discussion on the Critical Period Hypothesis – and disentangle effects of L1 transfer

and age of onset, Schwartz (2003:47) observes that “in the domain of inflectional morphology, child L2 acquisition is more like child L1 acquisition, and in the domain of syntax, child L2 acquisition is more like adult L2 acquisition.” This generalization implies a two-way dissociation between syntax proper and inflectional morphology: L1 transfer is limited to syntax and does not influence inflection, and the acquisition of inflectional morphology is affected by age of onset whereas the acquisition of syntax is not.

By comparing properties of finite verb inflection and verb placement in child L2 Dutch to child L1 and adult L2 Dutch, I will evaluate the Domain-by-Age Model empirically. In Section 2, I will provide motivation for why available data are not conclusive and why the model needs empirical testing. The following six sections describe different aspects of the experimental study that I conducted. Section 3 describes the properties of Dutch verb placement and verbal inflection. Section 4 is about the subjects that participated in this study, followed by a methodology Section 5. Section 6 summarizes the specific predictions. Results for verb placement and verb inflection will be described and interpreted in Sections 7 and 8. Section 9 provides the conclusion and a short discussion.

2. Empirical support for the Domain-by-Age Model

In order to assess the Domain-by-Age Model, one could consider two types of data: data on ultimate attainment and data on developmental sequences (Schwartz 1992, 2003). Here, I concentrate on properties of developmental stages, and more specifically on types of errors made by learners that differ in age of onset (see for a similar approach also Clahsen & Rothweiler 1993; Clahsen, Marcus, Barthke & Wiese 1996; Meisel this volume).¹ For syntax, the Domain-by-Age Model is based on scrambling and verb placement data. Dutch scrambling data suggest that child L1, child L2 and adult L2 – both with English as their L1 – learners have a parallel development, with the only difference that both L2 populations initially go through a stage of L1 transfer (Unsworth 2003, 2005). Verb placement data confirm that child L2 learners of English – with L1 Turkish – show an L1 transfer stage (Haznedar 1997, 2001), which sets them apart from child L1 learners. These observations from the domain of syntax are captured by the equation *child L1* ≠ *child L2* = *adult L2*. Findings on Dutch adjectival inflection, reported in Weerman, Bisschop & Punt (2006) do not follow this pattern, however, showing

1. A number of studies on the ultimate attainment of L2 learners strengthen the observation that there is variability within the domain of morphosyntax that is related to age of onset (DeKeyser 2000; Johnson & Newport 1989, 1991; McDonald 2000).

Table 1. Overview of properties of child L2 (-adult L2) studies discussed in Schwartz (2003)

Study	Method	L1	L2	Linguistic variable
HAZ	Naturalistic data; longitudinal	Turkish	English	Verb placement
UNS	Experimental comprehension and production data; cross-sectional	English	Dutch	Scrambling
WBP	Experimental production data	Variable	Dutch	Adjectival inflection

that child L1 and child L2 learners of Dutch make similar types of errors. These errors differ from the ones that adults make. Observations from the domain of inflectional morphology are more appropriately covered by the equation *child L1 = child L2 ≠ adult L2*.

On a very general level, the observations are well-described by Schwartz' (2003) generalization. On closer inspection, it turns out that the above-described studies differ in nearly all relevant aspects, however: methodology, L1/L2 of the participants and linguistic variables (see Table 1, which raises serious doubts about their comparability).

Unsworth (2003, 2005) tested participants in the middle of their learning process. On the basis of proficiency scores, participants were assumed to be in a certain developmental stage: results of the less proficient learners reflect relatively early developmental stages, whereas results of the more proficient learners reflect later developmental stages. Weerman, Bisschop & Punt (2006) did not control for L1. Adult L2 learners in their study have been tested in the middle of their learning process (no independent proficiency measures were taken), while child L2 learners were tested in the final stage.

One could thus quite easily argue against Schwartz' (2003) generalization by concluding that the data on which the generalization is based are simply incomparable. In this contribution, the Domain-by-Age Model will therefore be experimentally tested with a "minimal pair", i.e. two closely related linguistic variables, one of which belongs to the domain of syntax (verb placement), the other to the domain of inflectional morphology (verb inflection). Both variables are tested within participants. Samples are drawn from the child and adult L2 populations with similar L1 backgrounds. Level of proficiency has been estimated post-hoc on the basis of proficiency scores. An attempt will be made to control for L2 proficiency by means of matching child and adult groups.

3. Linguistic variables

3.1 Verb placement

Examples (1) and (2) illustrate various crucial properties of Dutch verb placement. First of all, in declarative main clauses, the finite verb is placed in second position, whereas the non-finite verb is placed sentence-finally:

- (1) *Jan wil een taart bakken*
 John want-FIN a pie bake-INF
 'John wants to bake a pie.'
- (2) *Jan bakt een taart*
 John bake-FIN a pie
 'John is baking a pie.'

The asymmetry in placement between the finite verb and the non-finite verb has been one of the arguments for analyzing Dutch as a head-final language with V2 in main clauses (Koster 1975; Den Besten 1983; Koenenman 2000). Basically, the idea is that the verb starts out in a head-final VP, and if the verb is finite, it moves from final to second sentence-position (V2) in order to check finiteness features. The non-finite verb remains in final position. The implication of the V2 rule is subject-verb inversion if a constituent other than the subject precedes the finite verb. For instance, if the direct object is topicalised, as in (3), or if an adverb modifies the sentence, as in (4):

- (3) *Een taart bakt Jan*
 A pie bake-FIN John
 'John bakes a pie.'
- (4) *Morgen bakt Jan een taart*
 Tomorrow bake-FIN John a pie
 'John bakes a pie tomorrow.'

A trace of V2 can be found in structures containing particle verbs, such as *opbellen* 'call'. A comparison of (5) and (6) shows that the particle remains sentence-finally, while the finite verb moves:

- (5) *Jan gaat Marie opbellen*
 John go-FIN Mary PART-call-INF
 'John is going to call Mary.'

- (6) *Jan belt Marie op*
 John call-FIN Mary PART
 'John is calling Mary.'

In Dutch, V2 is restricted to main clauses. Hence, in embedded clauses the finite verb remains in sentence-final position, as exemplified in (7):

- (7) *Ik zie dat Jan een taart bakt*
 I see that John a pie bake-FIN
 'I see that John is baking a pie.'

In the traditional analysis, V2 in Dutch implies movement to the Complementizer position (Comp). Since Comp is filled in (7) with *dat*, movement of the finite verb is blocked in embedded clauses (Koster 1975; Den Besten 1983).

3.2 Verb inflection

Dutch is a language with relatively poor verbal inflection. The present tense indicative paradigm contains three contrasting forms \emptyset , *-t* and *-en*, as illustrated below in Table 2.

2SG contexts with subject-verb inversion are exceptional because in this context the finite verb 'loses' its final *-t*:

- (8) *Vandaag loop jij naar huis*
 Today walk you to home
 'Are you walking home today?'

Dutch has a distinct infinitival verb form marked by the suffix *-en*. The infinitive is homophonous with finite plural forms, but is not subject to the V2 rule and stays without exception in final base-position.

Table 2. Present tense indicative paradigm of /lopen/ ('to walk')

Person/number	Verb form
1 SG	Loop
2 SG	Loopt
3 SG	Loopt
1 PL	Lopen
2 PL	Lopen
3 PL	Lopen

3.3 Monolingual Dutch acquisition (child L1)

What are the properties of verb placement and verb inflection in the speech of monolingual Dutch children? In the initial stages, Dutch monolinguals tend to omit the finite verb in declarative sentences, delimiting verb use to infinitives (the resulting structure is known as “root infinitive” or “optional infinitive”) or participles (data are from Jordens 1990; Blom 2003):²

- | | |
|------------------------------|----------------|
| (9) <i>ikke zelf doen</i> | Jasmijn 2;0.20 |
| I myself do-INF | |
| (10) <i>Peter bal pakken</i> | Peter 1;10.3 |
| Peter ball get-INF | |
| (11) <i>Peter emmer daan</i> | Peter 1;10.3 |
| Peter basket done-PTC | |

From onset on, thus immediately when the first finite verbs appear, there is a strong contingency between verb form and placement in early child Dutch: non-finite verb forms are nearly always placed sentence-finally, whereas morphologically finite forms are either placed in first or second sentence position (De Haan 1987; Jordens 1990; see Poeppel & Wexler 1993 for similar observations about early child German).³

Experimental data collected by Zuckerman (2001) indicate, furthermore, that Dutch monolinguals of age 3 correctly differentiate between verb placement in main and embedded clauses.

Apart from non-finite clauses, Dutch monolingual development is characterized by a second type of sentence that is allowed in various non-standard varieties of Dutch; finite sentences containing a semantically empty, or “dummy”, auxiliary (Hollebrandse & Roeper 1996; Van Kampen 1997; Zuckerman 2001; Blom 2003).⁴

2. The number as well as the proportion of finite verbs grows over time and there is a fairly long period of time in which Dutch monolinguals use both non-finite and finite structures. Since initially there is no overlap between the lexemes used in finite and non-finite form, the phase of true optionality of finiteness is only brief (De Haan 1987; Jordens 1990; Van Kampen 1997; Blom & Wijnen, in prep.).

3. The verb-first structures can be analyzed as topic drop structures. Since Dutch is a topic drop language, verb-first caused by topic drop conforms to the properties of the target grammar (De Haan & Tuijnman 1988; Van Kampen 1997; Thrift 2003).

4. Dummy auxiliaries do not contribute to the semantics of the sentence, other than that they denote finiteness. *Do*-insertion is not allowed in standard Dutch. *Gaan* ‘go’ is an auxiliary in

- (12) *Koe gaat rijden* Matthijs 2:04.24
 Cow goes drive
 ‘Cow is driving.’
- (13) *hij doe huilen* Jasmijn 2;5.3
 he do cry
 ‘he is crying.’

Although the analyses differ in their emphasis, studies agree on that children use dummy auxiliaries as a strategy to avoid verb movement.⁵

Longitudinal analyses show that an increasing proportion of finite sentences goes hand in hand with a declining proportion of root infinitives. Finite sentences with discontinuous predicates (also containing dummy auxiliaries) are acquired and children learn to use finite lexical verbs. Error-analyses and developmental patterns of subject use, which is related to the acquisition of inflection, indicate that rules for finite inflection become productive between ages two and three, presumably somewhere during the second half of this year (> 2;5) (De Haan 1996; Blom & Polišenská 2005; Blom & Wijnen in prep.). Experimental results, including tests with nonsense verbs, reported by Polišenská (2005) show that Dutch three-year-olds (mean age 3;6, age range 3;5–3;11, n = 5) perform at ceiling. If monolingual children make errors, these comprise overuse of verb stem in contexts that require an overt inflectional suffix (example (14a)) or overuse of the inflectional ending *-t* (example (14b)) In finite contexts (i.e. V2 position) as in example (14c–d), no incorrect use of the suffix *-en* has been reported for monolingual Dutch (De Haan 1996; Blom & Polišenská 2005).

- (14) a. *Audrey slaap-∅ nog een tijdje* Josse 2;07.20
 Audrey sleep still for awhile
- b. *ik valt niet om* Josse 3;00
 I fall not PART
- c. *Audrey slapen nog een tijdje* unattested
 Audrey sleep still for awhile
- d. *ik vallen niet om* unattested
 I fall not PART

standard Dutch, but there it denotes a future meaning (Haeseryn, Romijn, Geerts, De Rooij & Van den Toorn 1997).

5. Given that in embedded clauses verb movement is blocked by the complementizer, it is expected that in child language embedded clauses contain fewer dummy auxiliaries than main clauses. Zuckerman (2001) indeed found support for this asymmetry.

Table 3. Overview of characteristics of verb placement and verb inflection in L1 Dutch

Linguistic variable	Characteristic in L1 Dutch
Verb placement	Hardly any mistakes Omission of finite verb (root infinitives) Lexical finiteness marking (dummy auxiliaries)
Verb inflection	Few mistakes If mistake: overuse of bare stem or suffix <i>-t</i>, no overuse of suffix <i>-en</i> in finite position Omission of finite verb (root infinitives) Lexical finiteness marking (dummy auxiliaries)

Note that dummy auxiliaries can also be applied to avoid use of inflection rules: dummies are in general high-frequency verbs that are likely candidates for lexically-stored word-specific paradigms (Pinker 1984, 1986). Direct retrieval of these lexical finiteness markers may, again, be less costly and proceed more quickly than inflecting a verb (Blom 2003).

Table 3 provides an overview of the properties of verb placement and finite verbal inflection in the development of monolingual Dutch children.

The present study focuses on the *grammatical* marking of finiteness and errors thereof. Omission of finiteness (root infinitives) and lexical marking of finiteness (dummy auxiliaries), which can all be analyzed as strategies to avoid the grammatical marking of finiteness, will play a marginal role.

The Domain-by-Age Model makes a comparison between child L1, child L2 and adult L2 acquisition. The model states that syntax is influenced by L1 transfer, and not by age of first substantial exposure. Inflectional morphology is by contrast influenced by age of first exposure, and not by L1 transfer. The very general predictions that follow are summarized in (15) and (16):

(15) *child L1* ≠ *child L2* = *adult L2* *in the domain of syntax*

(16) *child L1* = *child L2* ≠ *adult L2* *in the domain of inflectional morphology.*

Based on findings from monolingual development, we can thus derive a number of specific predictions for child and adult L2 Dutch: (i) child and adult L2 learners both make errors in Dutch verb placement rules due to L1 transfer, (ii) child L2 learners make few mistakes in verb inflection and if they make mistakes these comprise overuse of the bare stem or of the suffix *-t*, but they will not overuse the suffix *-en* in finite position, whereas (iii) adult L2 learners make more and/or different types of errors in Dutch verb inflection (such as *-en* in finite position).

4. Participants

4.1 L1 background

L2 learners are selected from the two largest immigrant populations in The Netherlands: Turks and Moroccans. Crucially, the L1 of both the Turks and the Moroccans differs from Dutch with respect to verb placement. Recall that Dutch can be analyzed as a head-final language with strong inflectional features (V2). Although Turkish has a relatively free word order, the canonical order is head-final (with the verb following its complement). Turkish does not have V2, and hence no subject-verb inversion. The Moroccan learners of Dutch have either Moroccan Arabic or Tarifit as their L1. With respect to verb placement, we can generalize over these two languages since both are head-initial – the verb precedes its complement – and do not have V2.⁶ Although there is no V2 in Moroccan Arabic and Tarifit, VSX (Verb-Subject-Other material) structures are allowed (but marked). Inaccuracy due to L1 transfer is thus expected to surface in the Turkish learners' declarative main clauses, with and without subject-verb inversion, but not in subordinate clauses, since these are SXV (Subject-Other material-Verb) in Dutch. In Moroccan learners, inaccuracy caused by L1 transfer is expected to occur in embedded sentences and declarative main clauses with subject-verb inversion, but not in declarative main clauses without inversion, since these are SVX (Subject-Verb-Other material) in Dutch.

Turkish, Moroccan-Arabic and Tarifit are pro-drop languages with rich inflectional paradigms, encoding three persons in the singular as well as the plural part of the paradigm. All inflectional phi-features that are relevant for the acquisition of the Dutch inflectional system are thus part of the L1 systems in this study. If functional features are indeed subject to critical period effects, as has been proposed in recent work, but adult L2 learners do transfer functional features of the L1 to the L2 grammar, the expectation would be that both the Turkish and the Moroccan learners are able to learn the finite inflectional features in Dutch (Smith & Tsimpli 1995; Hawkins & Franceschina 2004; Hawkins 2005).

6. I am very grateful to Abder El-Assaiti for providing me with information about Tarifit. Any mistakes in the properties attributed to Tarifit in this contribution are entirely caused by my own misinterpretations.

4.2 Age of onset

I define an L2 child as a child whose initial substantial exposure to the non-native language is between ages four and seven (based on Schwartz 2004; Unsworth 2005).⁷ Selected child L2 learners were born in the Netherlands where they have been raised by parents who did not communicate in Dutch with them. The children had thus hardly any knowledge of Dutch when they started to attend primary school at the age of four.⁸ From the age of four onwards, substantial exposure to Dutch started. Included children were furthermore reported to be developing normally. Selected adults immigrated to the Netherlands well after puberty (> 20), and did not have any contact with Dutch before immigration. In general, the Turkish and Moroccan participants in this study have a low socio-economic status.

4.3 Exposure

With respect to amount and type of exposure to Dutch, the children form a more homogeneous group than the adults. Selected children are systematically exposed to Dutch at school, where they have spent 28 hours a week/40 weeks a year for a period between 0.5 (youngest children in sample) and 4 years (oldest children in sample) in a Dutch-speaking environment. Apart from mere exposure, the children received instruction on Dutch grammar and vocabulary at school. To their siblings, they speak either the native language, Dutch or both languages. In general, oldest children or children with no siblings have thus had less exposure to Dutch than children who have elder siblings. In the child sample, there may also be individual variation as regards exposure to Dutch spoken on television. The adults are tutored learners of Dutch recruited via the Regionaal Opleidings Centrum, ROC (regional center for education). Most of them have attended Dutch classes 12 hours a week/4 days a week for a period between 1 and 3 years.⁹ Participants were tested while they were still attending classes. In addition to exposure to Dutch in class, some adult learners have been exposed to Dutch at work. Oth-

7. There are good reasons for the lower and upper boundary. With respect to the lower boundary, it is well established that children at the age of four have, across languages, good knowledge of the morphosyntax (see Guasti 2003 for an overview). For a child starting at the age of four the non-native language is thus her second language. With respect to the upper boundary, there are various ultimate attainment studies showing that children who commence before the age of eight reach nativelike attainment in morphosyntax (DeKeyser 2000; Johnson & Newport 1989, 1991).

8. Information based on teachers' reports (Blumenthal & Julien 1999).

9. Some adult participants followed a less intensive program.

ers have had contact with Dutch through family, friends, neighbors, television or newspapers. Apart from the time spent in classroom, the adults' exposure to Dutch shows a high degree of variability.

4.4 Proficiency

To ensure that children and adults with similar L2 proficiencies are being compared, we measured L2 proficiency (see for an indepth discussion on this: Unsworth 2005, Unsworth, this volume). The proficiency score is based on the results of a sentence-repetition task that is part of the Taaltoets Alle Kinderen (Verhoeven & Vermeer 2002), that is, a standardized measure for Dutch proficiency in Turkish and Moroccan children ("TAK"). In this test, each sentence that has to be repeated contains a certain word order property of Dutch and a function word, as illustrated below. In (17), the word order property is underlined, the function word is bold-faced:

- (17) *Gisteren is mijn moeder met de fiets naar de markt gegaan*
 Yesterday is-FIN my mother with the bike to the market gone-PTC

Only if both word order and function word in a sentence were repeated correctly, two points were assigned for that particular sentence. If only one of the two was repeated correctly, one point was assigned and if both were repeated incorrectly no point was assigned. The test contained 20 items, resulting in a maximum score of 40. In the following section, the proficiency factor will be discussed more in-depth.

4.5 Overview of participants

Table 4 summarizes participant information: age of arrival in years, age of onset of systematic exposure to Dutch in years, age at time of testing in years and months, length of period of instructed learning in Dutch in years, range of TAK scores and the number of participants (#).¹⁰

On the basis of the TAK scores, participants are divided into two proficiency levels. Level 1 are the less proficient learners (0–19), whereas level 2 are the more

10. The Turks and Moroccans come from ethnic minority groups in the Netherlands, with generally low socio-economic status. Both adult participants from low educational level and from high(er) educational levels (based on ROC criteria) are included. All groups contain male and female participants.

Table 4. Information on the participants

Group	Age of arrival	Age of onset	Age at testing	Instructions	TAK	#
Turkish children	0	4	4;8–8;0	1–4 yrs	4–34	23
Moroccan children	0	4	4;2–8;4	0.2–4 yrs	7–35	37
Turkish adults	> 20	> 20	22–58	1–3 yrs	0–29	16
Moroccan adults	> 20	> 20	21–44	1–3 yrs	0–40	20

Table 5. Proficiency levels

Group	Level 1				Level 2			
	#	Mean age	Mean score	St. dev	#	Mean age	Mean score	St. dev
Turkish children	7	6.0	13.3	5.7	16	6.9	24.7	4.4
Moroccan children	17	6.0	14.8	3.6	16	7.3	28.1	4.4
Turkish adults	13	30.7	11.0	7.5	2	28.5	28.5	0.7
Moroccan adults	9	31.7	6.2	8.2	11	28.1	26.4	5.8

Table 6. Matched child and adult groups based on proficiency levels

Group	Level 1				Level 2			
	#	Mean age	Mean score	St. dev	#	Mean age	Mean score	St. dev
Turkish children	6	6.1	14.8	4.4	11	7.4	26.2	4.1
Moroccan children	17	6.0	14.8	3.6	13	7.2	26.7	3.7
Turkish adults	10	26.9	14.2	4.8	2	28.5	28.5	0.7
Moroccan adults	4	31	15.5	2.9	11	28.1	26.0	5.7

proficient learners (20–40).¹¹ Table 5 gives the numbers of participants from each L2 group in levels 1 and 2 (#), the mean age of the participants of the level (irrelevant for the adults¹²), mean TAK score and standard deviation of TAK scores. Four Moroccan children and one Turkish adult did not complete the TAK; these are excluded from Table 5.

Table 5 reveals asymmetries between the groups: the adult level 1 groups have a lower mean score than the children, and the Moroccan adults have a lower mean than the Turkish adults. More precise matching of child and adult groups can thus

11. This division is made on the basis of the mean and median of the TAK scores (respectively 18.99 and 19).

12. For the children this is relevant since older age implies a longer period of systematic exposure. It is hence expected that the mean age in level 2 is higher in the child groups than the mean age in level 1 groups.

be achieved by leaving out participants whose scores are too low for comparison with the children, resulting in the groups as given in Table 6.

Matching leads to small(er) groups. Since it is not my aim to make developmental claims about verb placement/inflection (and hence compare levels 1 and 2 within an L1 group), the result sections will concentrate on the more substantial groups, that is, Turkish child and adult level 1 groups and the Moroccan child and adults level 2 groups.

5. Method

The main test consisted of a picture description and a situation description task. In the picture description task, participants completed a sentence, which had been started by the experimenter, on the basis of a contrast between two adjacent pictures. The sentences below exemplify the experimenter's beginning (underlined) and the way in which the sentence should be completed, according to the target grammar of Dutch. (18) illustrates the declarative main clause condition without subject-verb inversion (SVX), (19) illustrates the embedded clause condition (SXV) and (20) illustrates the declarative main clause condition with subject-verb inversion (XVS):

- (18) De man drinkt uit een glas [PICTURE 1]
 The man drink-FIN from a glass
en de vrouw drinkt uit een beker [PICTURE 2]
 and the woman drink-FIN from a mug
 'The man is drinking from a glass and the woman is drinking from a mug.'
- (19) Dit is de man die uit het glas drinkt [PICTURE 1]
 this is the man who from a glass drink-FIN
en dat is de vrouw die uit een beker drinkt [PICTURE 2]
 and that is the woman who from a mug drink-FIN
 'This is the man who is drinking from a glass and that is the woman who is drinking from a mug.'
- (20) Hier drink jij [PICTURE 1]
 Here drink-FIN you
en daar drinkt hij [PICTURE 2]
 and there drink-FIN he
 'Here you are drinking and there he is drinking.'

The following actions were depicted: brushing (teeth vs. shoe), drinking (glass vs. mug), drawing (sun vs. tree). One additional action (reading a book vs. reading

a paper) has been used for warm-up items. In the XVS condition the characters always represented the experimenter (*you*) and someone else who was clearly distinguishable from the experimenter (a man or a child because the experimenter was a female adult).¹³ The verb placement test provided data on 3SG inflection in declarative main clauses with and without subject-verb inversion, and on 3PL subjects. Note that the representation of 3PL subjects also allows for a singular interpretation: the plural representation includes the singular representation. To overcome this problem, the experimenter used a “trigger” i.e. the pluralized subject. Additionally, subjects are depicted that are often pluralized such as *kinderen* ‘children’ or *ouders* ‘adults’. Items testing knowledge of adjectival inflection and definite determiners functioned as fillers. The items were presented in pseudo-randomized order.

A second task provided data on 1SG, 2SG and 1PL contexts. This test had the form of a game in which the experimenter as well as the subject had to pick up a card, which was turned upside down, from a strictly ordered pile. The cards depicted actions and after turning the card, both experimenter and participant acted out the action shown on “their” card. The participants’ task was to describe the situation created by the acting out of the actions. Two situations were possible. In the 1PL condition, both experimenter and subject picked up a similar card, that is, a card depicting the same action. As they performed the same action, it was most natural for the participant to use the first person plural pronoun (*wij* ‘we’) to describe the situation. In the 1SG/2SG conditions, the experimenter and subject picked up different cards and, hence, acted out different actions. In this case, use of the first person singular pronoun (*ik* ‘I’) and use of the second person singular pronoun (*jij* ‘you’) was appropriate.¹⁴ Attributes (a brush, a mug, paper and pencil, a booklet) were used to motivate the acting out of the actions depicted by the cards; this was especially helpful for testing the younger child participants. The actions in the second test were the same as those in the first test.¹⁵

13. Images of the experimenter were included on purpose in order to elicit data on verbal inflection, more specifically 2SG in inversion contexts. The 3SG subjects in inversion contexts served as controls to test if participants make a difference at all in inversion contexts.

14. Unfortunately, we did not succeed in developing a test condition to elicit 2PL.

15. In the placement and inflection tasks we included two nonsense actions. Participants learned the nonsense verbs depicting the nonsense actions (*pieren* and *spollen*) during a training phase, in which the verbs were acted out and introduced to participants in past tense form (*pierde*, *spolde*), as past participals (*gepierd*, *gespold*) and as nominalized forms (*de pierder*, *de spoller*). The nonsense items were included as controls for lexical storage of seemingly inflected forms in case participants performed at ceiling. It turned out that these items were only relevant for the monolingual child groups, who also participated in the same test procedure (Polišenská 2005).

6. Predictions

The Domain-by-Age Model predicts that child and adult L2 learners make errors in Dutch verb placement rules due to L1 transfer. For the Turkish learners, we expect overuse of the SVX order and therefore errors in the SVX and XVS conditions and no errors in the SXV condition. For the Moroccan learners, we expect overuse of the SVX order and thus errors in the SXV and XVS conditions and no errors in the SVX condition. With respect to verbal inflection, it is expected that age of onset plays a role. Assuming that children who start around age four are still within the critical period, our expectation is that the child L2 learners make relatively few mistakes in verb inflection (like child L1 learners). If they make mistakes these comprise overuse of the bare stem or of the suffix *-t*, but not overuse of the suffix *-en* in finite position. The adult L2 learners make more and/or different types of errors in Dutch verb inflection, and overuse of *-en* in finite position could be a possible error for the adults.

7. Verb placement

7.1 Data-analysis

Apart from lexical verbs, participants (especially children) used dummy-auxiliaries. Both response types were included. Responses in the SVX and SXV conditions that did not include an X (e.g. object, particle, negation or adverb) disambiguating between sentence-second and sentence-final placement of the verb, were excluded from the analysis, as well as responses in the XVS condition in which the sentence subject was omitted. Recall that monolingual Dutch children go through a phase in which they omit the finite verb in declarative main clauses. In these sentences – root infinitives – the infinitival verb is placed sentence-finally, in accordance with the target grammar. Therefore, root infinitives do not count as incorrect responses. Since L2 learners may use root infinitives, just like monolingual Dutch children, the number of responses in the SVX condition that meet the criteria for being a root infinitive (verb-final structures with a V ending on *-en*) is subtracted from the number of incorrect responses. This correction has been applied to both the child and adult results. Appendix A summarizes the model for data-analysis.

Table 7. Accuracy of verb placement (SVX, SXV and XVS) ~ Turkish groups

Group	Not corrected	Root infinitive correction
Turkish children	88% (565/641)	89% (565/636)
Turkish adults	58% (275/475)	62% (275/445)

Table 8. Accuracy of verb placement (SVX, SXV and XVS) ~ Moroccan groups

Group	Not corrected	Root infinitive correction
Moroccan children	83% (712/859)	86% (712/831)
Moroccan adults	50% (309/615)	51% (309/609)

7.2 Results

Table 7 gives the collapsed accuracy rates of all test conditions. The overall results show that the child groups are more accurate than the adult groups. In all groups, subtraction of root infinitives leads to slightly higher accuracy rates (implying that none of the groups shows extensive use of root infinitives).

Comparisons based on the matched groups shows that the difference between accuracy rates of child and adult learners cannot be explained by the fact that the child groups contain more level 2 participants. The Turkish children and adults, both level 1, give correct responses in respectively 78% (135/168) and 65% (188/291) of the cases; after matching the difference is still statistically significant ($\chi^2 = 12.68$ ($df = 1$), $p \leq 0.001$). The same holds for Moroccan level 2 children and adults: respectively 83% (353/415) and 62% (107/284) correct responses ($\chi^2 = 44.94$ ($df = 1$), $p \leq 0.001$).¹⁶

Tables 9 and 10 give the results for each test condition and provide insight into the types of errors made (responses in the SXV condition are corrected for use of root infinitives)

A comparison between children and adults shows a difference between the SVX condition on the one hand and the SXV and XVS conditions on the other hand. The results of the SVX condition show high accuracy rates for all groups (ranging between 86%–94% correct responses). The adult learners experience clearly more difficulties in the SXV condition than the children; the Turkish adults outperform the Moroccan adults (58% versus 26% correct responses) in this condition. The XVS condition – declarative main clauses with subject-verb inversion – is very problematic for adult learners, with less than 20% correct responses, showing

16. Incorrect responses were corrected for use of root infinitives.

Table 9. Accuracy of verb placement for each test condition ~ Turkish groups

Group	SVX	SXV	XVS
Turkish children	93% (267/287)	86% (152/177)	85% (146/172)
Turkish adults	90% (191/213)	58% (61/106)	18% (23/126)

Table 10. Accuracy of verb placement for each test condition ~ Moroccan groups

Group	SVX	SXV	XVS
Moroccan children	94% (382/406)	85% (225/264)	73% (194/265)
Moroccan adults	86% (249/291)	26% (42/162)	11% (18/162)

again a very clear difference with the child groups. Crucially, the results from proficiency-matched groups (given in Appendix B) do not change this outcome.

A comparison of conditions within groups shows that the Turkish children perform in the SVX condition better than in the SXV and XVS conditions; between these two conditions there is no difference in accuracy ($\chi^2 = 0.07$ ($df = 1$), $p \leq 1$). The Moroccan children show different accuracy rates in all conditions: SVX is more accurate than SXV ($\chi^2 = 14.75$ ($df = 1$), $p \leq 0.001$) and SXV is more accurate than XVS ($\chi^2 = 11.60$ ($df = 1$), $p \leq 0.001$). Both adult groups also show a decreasing accuracy rate in respectively the SVX, SXV and XVS conditions.

7.3 Discussion

With more than 80% correct responses, the child L2 learners are accurate, even though they do not perform at ceiling. The children are more accurate than the adults, a difference which remains after matching on the basis of proficiency level. Analyses of the results per condition show that both children and adults do not perform equally accurately in the declarative main clause condition without subject-verb inversion (SVX), the embedded clause condition (SXV) and the declarative main clause condition with subject-verb inversion (XVS). Differences between the three test conditions are definitely more evident in the adult groups than in the child groups, however. Also, the variation within the adult group is larger than in the child group (standard deviations respectively 0.20 and 0.13). The individual data show that in a sample of 36 adult participants only one (Turkish) adult masters Dutch verb placement, having 100% correct in all conditions (12 out of 12 correct in all three conditions); two others are quite likely to have acquired the rules (one having accuracy rates of 100% (19/19), 100% (5/5) and 67% (4/6) in the SVX, SXV and XVS condition, the other showing in these three

conditions accuracy rates of 89% (17/19), 68% (4/6) and 75% (3/4)). The individual data of the child groups show a reverse picture: only four children from a sample of 60 end up with less than 70% correct responses; the vast majority has between 80–90% correct responses (averaging over conditions). Thus, whereas for the children high accuracy in all conditions is normal, it is exceptional for the adult learners.

Nearly all children tested have acquired Dutch verb placement rules. Nevertheless, they do not perform equally accurate in all three conditions: performance in the SXV and XVS conditions lags behind performance in the SVX condition. Although all participants received clear instructions, it may have happened that in some cases they did not complete the sentence started by the experimenter but started a new (main) clause instead. Crucially this leads to incorrect responses only in the SXV and XVS conditions and, hence, may have caused the somewhat lower accuracy rates in precisely these conditions in the child data.¹⁷ Additionally, the relative pronoun in the SXV condition – *die* ‘who’ in example (19) – may have been interpreted by some participants as a resumptive pronoun. In this case, an SVX order is correct. Unfortunately, to my knowledge, there is no way to determine which responses are unequivocally incorrect and ‘incorrect’ due to these two test-effects but since there is no reason to assume that the test-effects influence one particular age- or L1-group more than the other, observed differences between groups can still be interpreted.

The Turkish adults are more accurate than the Moroccans in the SXV condition. A likely explanation is that the Turks are advantaged in the SXV condition in comparison to the Moroccans: head-final Turkish shares surface properties with the order in Dutch embedded clauses. This interpretation immediately raises a second question: Why is a similar effect absent in the SVX condition? As pointed out, it is expected that the Moroccans are advantaged in the SVX condition. The results do not show this, however. A comparison of responses per condition shows that adults, *irrespective of L1 or test condition*, tend to use the non-inverted main clause order (SVX). This observation resembles earlier findings for L2 German, which led Meisel, Clahsen & Pienemann (1981) to the proposal that adult L2 learners of German apply a linear SVX template (see also: Clahsen & Muysken 1986 for similar findings, and duPlessis, Solin, Travis & White 1987 for a reply). Adult L2 learners of Dutch seem to do the same. In the case of Moroccan learners, the SVX template is indistinguishable from specific L1 transfer effects. In the case of Turkish learners, the two effects are distinguishable, however, and the Turkish

17. It is expected that this test effect also influenced the adult results. Since all groups received the same instructions and warm-up items, there is no reason to assume any differences between groups.

group result (58% correct responses) may mask results of individuals who use an SVX template and individuals who correctly use the SXV order. Analyses of individual results confirms this hypothesis (standard deviation = 0.43): in the SXV condition, there are five participants who gave exclusively incorrect responses and five who gave only correct responses (Appendix C).¹⁸

In contrast to the adults, there is no difference between the Turkish and Moroccan children, which suggests that the L2 children do not show effects of transfer. One could argue that the L2 children are *past* the L1 transfer stage, however. In this respect, it may be telling to take a close look at the results of the youngest children in our sample, that is, the children with the shortest period of exposure. Such an analysis does not reveal any effects of transfer either: the Moroccan 4-year olds ($n = 4$, age-range 4;2–4;9) score in all conditions between 80%–90% correct and the youngest Turkish child (4;8) scores 100% correct in all conditions. Taking Haznedar's (1997) work as a reference point for L1 transfer of verb placement, these early data do not exclude the existence of even earlier transfer effects. Haznedar found only transfer of the Turkish head-final structure during the first three months of systematic exposure to English. Therefore, verb placement in child and adult L2 Dutch may both be influenced by L1 transfer, but effects of L1 transfer are less persistent in child L2 Dutch than in adult L2 Dutch. These results may indicate a parallelism between L1 and L2 children: like the L1 children, who seem to master verb placement rules from the earliest observable stage in syntactic development, L2 children acquire verb placement rules of the second language quickly.

By way of summary, I conclude that the L2 children have by and large acquired Dutch verb placement, whereas the vast majority of L2 adults have not. This is reflected in lower accuracy for the adult groups, more specifically the contrast between the SVX condition, on the one hand, and the SXV and XVS conditions, on the other hand. An analysis of the types of errors shows that the adults massively overuse of the SVX order (unrelated to L1 and hence a prototypical adult L2 error), whereas this type of error is not a characteristic of child L2 Dutch. Furthermore, the L2 children show no influence of L1 transfer in Dutch verb placement, whereas the adult L2 learners do show effects of L1 syntax. Taken together, quantitative (accuracy) as well as qualitative data (types of errors) show that the child L2 data in the domain of syntax are similar to the child L1 data, and dissimilar from the adult L2 data.

18. In general lower accuracy in SXV and XVS conditions is observed in all groups because of test effect.

8. Verb inflection

8.1 Data-analysis

(Dummy) auxiliaries were excluded, because these are high-frequency verbs that are likely to be stored in memory. Correct and incorrect responses were counted for each condition (1SG, 2SG, 3SG, 1PL and 3PL), and are limited to the non-inversion main clause conditions (SVX). There are three reasons for this limitation. Firstly, only in the non-inversion main clause condition all Dutch paradigmatic contrasts were tested (that is, bare verb, *-t* ending and *-en* ending). Second, the embedded clause condition is problematic because in this condition placement of the verb does not disambiguate between *-en* errors in finite position and root infinitive, as it does in the main clause conditions. Thirdly, the adults' performance in the main clause condition with inversion (XVS) was so poorly that there are hardly any analyzable responses in this condition. In the XVS condition, only responses with correct verb placement are included, so that placement is constant and the only variables are related to contrasts in the inflectional paradigm. The model for data-analysis is summarized in Appendix A.

8.2 Results

Collapsed results from all participants suggest a clear difference between the accuracy rates of child and adult L2 learners. Counts of correct and incorrect responses show that both child groups score 89% correct (276/309 and 399/448 for Turkish and Moroccan children, respectively) whereas the Turkish and Moroccan adult groups are more than 20% below the children with respectively 61% (165/269) and 67% (306/457) correct (Appendix D).¹⁹

Accuracy rates of the proficiency-matched child and adult groups approximate each other more, as shown in Tables 11 and 12.

Tables 11 and 12 show that there is only a 10% difference in correct responses: the Turkish children and adults show accuracy rates of respectively 63 and 52% correct, and for Moroccan children and adults this is respectively 88 and 78%. Something similar holds for the incorrect responses. Notice that the difference in

19. Recall that we included nonsense verbs to control for lexical storage in case of ceiling effects. This turned out to be only relevant for monolingual Dutch child groups that participated in the same test procedure, because none of the L2 groups reached ceiling. Note that the relatively high test result in the child L2 group is not the result of lexical storage: on the nonsense trials, accuracy of the Turkish children is 87% (142/218) and accuracy of the Moroccan children is 86% (224/250).

Table 11. Accuracy of verb inflection in all conditions ~ Turkish level 1 groups

Group	Correct	Incorrect	RI	RI/FIN?
Turkish children	63% (47/75)	19% (14/75)	4% (3/75)	15% (11/75)
Turkish adults	52% (116/221)	29% (65/221)	7% (16/221)	11% (24/221)

Table 12. Accuracy of verb inflection in all conditions ~ Moroccan level 2 groups

Group	Correct	Incorrect	RI	RI/FIN?
Moroccan children	88% (177/201)	6% (12/201)	0% (0/201)	6% (12/201)
Moroccan adults	78% (174/224)	13% (30/224)	5% (12/224)	4% (8/224)

Table 13. Accuracy of verb inflection in 2SG and 3SG conditions

Group	Accuracy 2SG condition	Accuracy 3SG condition
Turkish children	85% (29/34)	89% (101/113)
Moroccan children	90% (46/51)	89% (157/176)
Turkish adults	37% (16/43)	38% (32/85)
Moroccan adults	60% (44/73)	46% (72/158)

accuracy between these two groups of L2 learners is precisely what is expected, given their difference in Dutch proficiency (level 1 versus level 2). Statistical analyses performed on the correct and incorrect responses in Tables 11 and 12 show that there is no significant difference between Turkish children and adults ($\chi^2 = 5.08$ ($df = 3$), $p \leq 0.20$). The difference between Moroccan children and adults is significant though ($\chi^2 = 19.35$ ($df = 3$), $p \leq 0.001$).

Detailed analyses inform us about the types of errors made by children and adults and reveal in which conditions errors occur and which suffixes are incorrectly used. In this section I will focus on three observations (Appendix E lists all relevant data). First, adults have an obvious difficulty with the two conditions that require the suffix *-t*: adult performance in 2SG and 3SG conditions lags behind performance in conditions requiring the bare stem (1SG) or the suffix *-en* (1PL, 3PL). The child groups do not show this problem and perform alike in 2SG/3SG and 1SG/1PL/3PL conditions (Table 13).

Secondly, the child L2 learners hardly ever use the suffix *-en* incorrectly whereas this type of error does occur in adult L2 Dutch (Table 14).

Thirdly, there is a tendency in all groups to perform better in 1PL than in 3PL context, even though the same suffix (*-en*) has to be used in both conditions; in two groups this difference is statistically significant (Turkish children $\chi^2 = 4.29$ ($df = 1$), $p \leq 0.05$; Moroccan adults: $\chi^2 = 6.46$ ($df = 1$), $p \leq 0.025$), in the two other

Table 14. Incorrect use of the suffix *-en* in singular conditions

Group	<i>-en</i> 1SG condition	<i>-en</i> 2SG condition	<i>-en</i> 3SG condition
Turkish children	0% (0/40)	0% (0/34)	0% (0/113)
Moroccan children	2% (1/59)	2% (1/51)	2% (4/176)
Turkish adults	12% (6/48)	21% (9/43)	22% (19/85)
Moroccan adults	14% (10/74)	18% (13/73)	26% (41/158)

groups it is not significant (Moroccan children: $\chi^2 = 2.08$ ($df = 1$), $p \leq 0.20$; Turkish adults: $\chi^2 = 0.26$ ($df = 1$), $p \leq 1$).

8.3 Discussion

At first sight, the child L2 learners do not show the high accuracy of 97% correct observed in Dutch three-year olds. Given length of exposure, it would, however, be more appropriate to compare the three-year olds in Polišenská's (2005) study to the L2 children of proficiency level 2 because lengths of exposure to Dutch of these two groups approximate each other (mean length of exposure to Dutch Turkish child L2/level 2 = 3;4; mean length of exposure to Dutch Moroccan child L2/level 2 = 3;2). Mean accuracy of Turkish children level 2 is 96% (211/219) correct; for the Moroccan children level 2 94% (306/457) correct.²⁰ Thus, if length of exposure is taken into account, it turns out that the L2 children acquire finite verb inflection at the same rate as monolingual children. Moreover, if the child L2 learners, irrespective of proficiency level, make errors, they make the same errors as monolingual children and use either the bare verb or the verb ending on *-t* incorrectly, with a preference for the bare verb.

Adults seem to make different errors. Unlike the children who overgeneralize the *-t* suffix, adults have difficulty with the contexts that require a *-t* ending. The influence of L1 phonology would be an obvious way to account for the apparent difficulty of the ending *-t* for adults, but the observation that adult L2 participants with two (phonologically) very different L1's both have problems with *-t* contexts in combination with the observation that the *-t* is unproblematic for children strongly suggests that the problem is related to age of onset rather than to properties of the L1.

Secondly, adults seem to use the *-en* ending incorrectly in finite contexts. In Dutch, the verb ending on *-en* is a finite verb form (present tense plural) as well as the infinitival verb form. One could view this adult error thus as overuse of

20. The child L2 level 1 groups have a lower mean age (Turkish 6.1 and Moroccan 6.0), and do not have a monolingual comparison-group.

infinitival verb forms, and draw a parallel with the child L1 root infinitive stage. The sentence in (21) illustrates the adult L2 error – the response is from one of our Turkish participants learning Dutch – whereas (22) shows a child L1 root infinitive (Peter 2;01.27, taken from Blom 2003):

(21) *De man tekenen zon*
the man draw sun

(22) *Peter bal pakken*
Peter ball get

To what extent can we generalize over these child and adult *-en* errors? In the L1 literature, it has been argued that the vast majority of the child root infinitive structures are both morphologically and syntactically non-finite sentences that lack Tense and/or Agreement features (a.o. Wexler 1994; Pierce 1992; Rizzi 1994; Hoekstra & Hyams 1996). Support for this view is abundant; particularly verb placement provides a strong argument in favor of the claim that the child errors in (22) are non-finite. If Dutch and German children use *-en* incorrectly, they nearly always place the verb in final, that is, non-finite, position (Poeppel & Wexler 1993; Jordens 1990; see for a similar kind of analysis on child L1 French: Pierce 1992). With respect to the adult *-en* errors, it has been argued that these occur in finite sentences that do contain Tense and Agreement features (but see: Meisel 1991, 1997). More specifically, the claim is that adults, in contrast to children, underspecify *-en* for finiteness. This would make this suffix compatible with syntactically finite as well as non-finite positions and, hence, explains why adults allow insertion of *-en* in finite position (Prévost & White 2000; Prévost 2003).

Insertion of underspecified forms can be interpreted as a default strategy that has parallels to patterns observed in (L2) children. In fact, the Missing Surface Inflection Hypothesis proposes that (L2) children underspecify the *bare* verb form and, hence, insert the bare verb in contexts that require a verb that is inflected for finiteness (Haznedar & Schwartz 1997; Haznedar 2001; Ionin & Wexler 2002; Prévost 2003). Blom (2007) makes a similar proposal for monolingual Dutch children; (23) is an example from an incorrect bare verb in monolingual child Dutch:

(23) *Audrey slaap nog een tijdje* Josse 2;07.20
Audrey sleep- \emptyset still for awhile

It may thus be that L2 adults and L2 children generate the same syntactic structure, make use of a similar default mechanism, but differ in the choice of the verb form they underspecify or assign a default status (Prévost & White 2000).

Does the hypothesis that the child and adult L2 errors stem from a mismatch between syntax and morphology, that is, from insertion of underspecified verb

forms in full finite structures? For the children in our sample, whose sophisticated knowledge of Dutch verb placement rules confirms that they have full command of syntax, this analysis is feasible. If the children make errors they tend to omit inflection, suggesting that in their system the bare verb form is the least specified suffix in the finite paradigm, as predicted by the Missing Surface Inflection Hypothesis (see Appendix E) (I will come back to the, unexpectedly, frequent incorrect use of *-t* in 3PL conditions at the end of this section). It seems therefore likely that the L2 children in our sample insert the bare verb in a position that is fully specified for finiteness features. The adult *-en* overgeneralizations are more difficult to reconcile with this type of explanation, because the adults in our sample – unlike those discussed in the work by Prévost & White (2000) or Lardiere (1998, 2000) – show quite poor command of syntax and do not perform very well on the verb placement task. For them, placement of a verb in second position does not necessarily imply that this verb is placed in a position that is specified for Tense and Agreement (Meisel 1991, 1997).

An analysis of the individual adult data reveals an interesting pattern, though. Although the majority of the adults do not know the verb placement rules, there are three individuals who do seem to be aware of the Dutch verb placement rules (their accuracy on the verb placement task ranges between 67% and 100% correct, and they show in all three verb placement conditions relatively high accuracy). These three individuals are relatively accurate with respect to subject-verb agreement as well, and score between 67% and 89% correct. Moreover, none of these three participants overuses *-en* in finite position. What do these results indicate? First of all, accuracy in the domain of verb placement and verb inflection seem to correlate: adults that have relatively good knowledge of the Dutch verb placement rules, also have rather good knowledge of subject-verb agreement. Second, verbal inflection and verb placement do not only correlate in terms of quantity, but knowledge of verb placement also influences the types of inflection errors: adult learners that do know that Dutch is an head-final language with V2 do not overuse the suffix *-en* in finite position, whereas the adults that analyze Dutch as an SVX type of language do make this type of error.

Given that the adults that use *-en* incorrectly in finite position with singular subjects most often assume that Dutch has an SVX type of grammar, it cannot be distinguished whether or not *-en* is inserted in finite or non-finite position: overt syntax does not disambiguate between the two. At this point there are therefore three different analyses compatible with the adult L2 errors: *-en* may be a non-finite suffix inserted in non-finite position, it may be a suffix underspecified for finiteness and inserted in non-finite position or it may be an underspecified suffix inserted in finite position. The option that *-en* is specified for finiteness and inserted in finite position is excluded by the Subset Principle, requiring that the

features in syntax are a proper subset of or equal to the features of the inserted morpheme (Halle 1997).

A final observation that deserves more discussion is that learners in all groups, irrespective of age and L1, tend to make more errors in 3PL conditions than in 1PL conditions, even though both conditions require the same inflectional form (*-en*). Given that the errors in the 3PL condition are predominantly incorrect uses of (3SG) *-t*, it is probable that participants focused on only one of the two agents on the pictures they had to describe and hence, correctly, used 3SG instead of 3PL inflection. This methodological problem affects the 3PL condition because only in this case the plural representation includes the singular (3SG) representation.

9. General discussion and conclusion

The Domain-by-Age Model classifies child L2 acquisition of grammar by comparing it to child L1 acquisition on the one hand and adult L2 acquisition on the other hand (Schwartz 2003). It predicts that in the domain of inflectional morphology, child L2 acquisition is more like child L1 acquisition, and in the domain of syntax, child L2 acquisition is more like adult L2 acquisition. According to this model, inflectional morphology is influenced by age of onset whereas syntax is not. Syntax on the other hand is influenced by L1 transfer, while inflection is not.

In the study presented here, the child L2 learners showed quick mastery of Dutch verb placement rules. Even the children with the shortest period of exposure (less than half a year) to Dutch did not show any effects of L1 transfer, indicating that L1 transfer influences child L2 learners only marginally. The adults extensively overused the SV(X) order in contexts that either require an XV order (embedded clauses) or a VS order (main clauses with subject-verb inversion). For the Moroccans, this error could be analyzed as an effect of transfer of L1 syntax. The Turkish adults made this error as well, however. Because for the Turkish adults overuse of the SV(X) order cannot be an effect of L1 transfer, I concluded that SVX overuse is also a prototypical error made by late language learners of Dutch. The observation that this type of error neither characterized child L1 nor child L2 learners strengthens the conclusion that verb placement, and, hence syntax, is affected by age of onset, contrary to the predictions of the Domain-by-Age Model. In the domain of inflection, child L2 learners showed high accuracy and used the bare verb stem as a default form (which supports the Missing Surface Inflection Hypothesis) whereas overuse of *-en* in finite position hardly ever occurred. In all these features the L2 children closely resembled Dutch monolinguals. Results of proficiency-matched adults show also relatively high accuracy in the domain of inflection (though still below child levels). Unlike the children, the adult learners

did overuse the suffix *-en* in finite position, however. A more detailed look at the results suggested that the adults' use of *-en* as a "finite" default correlated with their misanalysis of Dutch as an SVX type of language: the few adult learners that did not overuse the SVX order, did not overuse *-en* in finite position either.

Thus, my results do not support the Domain-by-Age Model. Specifically, the claim that age of onset only affects inflection and not syntax is difficult to reconcile with my results because in the domain of syntax the child L2 learners showed more resemblance to monolingual children than to L2 adults. The difference between children and adults could not be explained by transfer of syntactic properties of the L1, which indicates that syntax *is* influenced by age of onset.

These findings do not imply that age of onset affects syntactic and inflectional properties of the target language equally. It may very well be that there are differences between syntax and morphology in that age of onset affects one domain more than the other. A theory that would explain such relative differences does not make a distinction in terms of linguistic domains, but rather in terms of properties that occur more in one linguistic domain than in the other. Suppose, for instance, that age of onset interacts with transparency of constructions and word forms in the sense that opaque rules are more likely to be affected by age of onset than transparent rules. If, in a certain language, the domain of inflection contains relatively more opaque rules than the domain of syntax, the prediction would be that age effects are, for this language, more likely to be found in the domain of inflection than in the domain of syntax. Such a theory would make interesting cross-linguistic predictions. For instance, the grammatical gender systems of languages can be very different: there are transparent systems in which properties of root nouns reveal their gender class (some of the Romance and Slavic languages illustrate such systems) and there exist opaque systems in which the gender of root does not have semantic or phonological correlates (Dutch is a clear example). The cross-linguistic prediction would then be that the influence of age of onset on the acquisition of grammatical gender is more significant in a language like Dutch than in a language like Spanish.

Another way to get a grip on the interaction between the factors age of onset and linguistic domains would be by focusing on causal relations between domains, as has been proposed by Blom, Polišenská & Weerman (2006/2007). Blom, Polišenská & Weerman argue that age of onset primarily affects syntax, but that the adult problems in the domain of syntax have repercussions in the domain of inflection. Young children represent the other side of the coin: their excellent abilities to syntactically analyze the target language help them to acquire inflectional paradigms. This can be illustrated with Dutch verb placement and verb inflection. In order to learn the Dutch paradigm, especially to distinguish between finite and non-finite *-en*, a learner must be able to make the syntactic distinction

and, hence, know that Dutch is an SOV language with V2 in main clauses. Adults that do not have access to this knowledge are expected to underspecify the suffix *-en* for finiteness, and, hence, allow this suffix in syntactically finite as well as non-finite positions. An interesting prediction of this view would be that syntactically advanced adult learners that do know the Dutch verb placement rules also perform well in the domain of inflection and do not overuse *-en* in finite position. Although the findings discussed in this contribution corroborate this view, the question is whether or not the correlation between knowledge of verb placement and *-en* overuse also holds for a larger sample of adult learners.

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Comparing child L2 development with adult L2 development

How to measure L2 proficiency

Sharon Unsworth

Utrecht University

Most studies investigating the role of age in L2 acquisition compare L2 children and adults in terms of ultimate attainment (e.g. Johnson & Newport 1989). This paper addresses some of the methodological and conceptual issues which arise when, following Schwartz (1992), such a comparison is made in terms of development. The paper considers three variables carefully controlled for in any such comparison: L1 transfer, age at time of testing and L2 proficiency. A new proficiency measure, the Age-Sensitive Composite Proficiency Score (ASCOPS), is presented. Unlike previous measures, ASCOPS can be used with both L2 children and adults, and it takes into account the intrinsic differences between these two groups relating to their age at time of testing.

1. Introduction

Most researchers would agree that there are age effects in non-native (L2) acquisition: whereas L2 children usually become nativelike, L2 adults, on the whole, fall short. The significance – theoretical or otherwise – which one attaches to this observation will of course depend on one's general approach. It has been argued that child L2 acquisition has the potential to inform both native (L1) and adult L2 acquisition (Lakshmanan 1995; Schwartz 1992, 2003, 2004). For example, Schwartz (1992) proposes that a comparison of child L2 development with adult L2 development can inform the debate on the role of domain-specific principles (UG) in adult L2 acquisition. The purpose of this paper is not to evaluate the various accounts put forward in this domain, nor to determine the extent to which the aforementioned observation holds. Instead, the focus here is methodological in nature. This paper focuses on such a child L2 ~ adult L2 comparison. Rather than specifically investigating whether there is evidence for or against Schwartz's (1992) hypothesis,

the goal of the present paper is to explore some of the methodological and conceptual challenges which child L2 ~ adult L2 comparisons involve.

L2 children and adults may differ with respect to a number of variables, including age, the L1, and L2 proficiency. Controlling for L2 proficiency presents a number of problems. For example, when the L2 children are still children at the time of testing, the age differences between the two learner groups will impose certain constraints on the types of methods which can be employed. The first part of this paper consists of a critical evaluation of some of these methods, as well as a discussion of some of the factors involved in selecting an appropriate proficiency measure. The second part presents a newly developed proficiency measure, the Age-Sensitive Composite Proficiency Score (ASCOPS). Based on semi-spontaneous speech data, this measure combines complexity and accuracy scores in the domains of morphosyntax and the lexicon while taking into account some of the inherent differences between children and adults.

The paper is organised as follows. The rationale for comparing L2 children and adults is outlined in more detail in §2. Sections 3 through 5 consider certain variables which need to be controlled for in any child L2 ~ adult L2 comparison, namely L1 transfer, age at time of testing and L2 proficiency. Section 5 reviews some of the available proficiency measures in detail and evaluates their suitability for cross-age comparisons. A selection of these measures are combined in § 6 to form the Age-Sensitive Composite Proficiency Score. Finally, an example of a child L2 ~ adult L2 study using this score is presented in §7.

2. Why compare child L2 with adult L2?

One of the perennial debates in L2 acquisition research concerns the question of whether non-native acquirers (L2ers) make use of the same language acquisition mechanism(s) as L1 children, and more specifically, whether adult L2ers develop the same kind of linguistic knowledge that native speakers have at their disposal. Many of the studies addressing this issue compare L2 adults with L2 children to determine whether there is evidence for a critical period in L2 acquisition. In its most theory-neutral form, the critical period hypothesis, originally proposed for L1 acquisition by Penfield & Roberts (1959) and Lenneberg (1967), states that 'there is a limited developmental period during which it is possible to acquire a language, be it L1 or L2, to normal, nativelike levels' (Birdsong 1999: 1). As this definition suggests, most of the comparisons of L2 children and L2 adults focus on whether these two groups reach the same level of ultimate attainment, or whether, as a result of biological (e.g. Pulvermüller & Schumann 1994) and/or cognitive (Felix 1985; Newport 1990) and/or sociological (Krashen 1982; Schumann 1975)

factors, the acquisition of an L2 as an adult is fundamentally different (Bley-Vroman 1989) from the acquisition of an L2 as a child.

Probably the most cited study investigating the critical period hypothesis in L2 acquisition is Johnson and Newport (1989). This study tested L2 child and adult learners with either Chinese or Korean as L1 on a number of morphosyntactic properties of English. The authors observe a significant negative correlation between age of first exposure and task score for L2ers who were first exposed to English before age 16, whereas amongst post-pubertal L2ers, no such relationship was found. This, they claim, is evidence for a critical period in L2 acquisition. Although Johnson & Newport's investigation has since been criticised (Bialystok & Hakuta 1994; Bialystok 1997; Kellerman 1995) and in replications and reanalyses their claims have been both confirmed (e.g. DeKeyser 2000; Johnson & Newport 1991) and disconfirmed (e.g. Bialystok & Miller 1999; Birdsong & Molis 2001), most researchers would still concur that, either on the basis of this and/or comparable studies, L2 children have a long-term advantage over L2 adults.

The experimental set-up of Johnson & Newport (1989) is typical of a critical period study (see Hylenstam and Abrahamsson 2003 for a recent overview): a group of L2ers, whose age of first exposure ranges from child to adult, are tested on a series of TL properties to determine whether they fall within native-speaker range. Subsequently, correlation co-efficients are calculated to ascertain whether there is a(n inverse) relationship between age of first exposure and ultimate attainment. In such studies, the L2 children are almost always adults at time of testing.

Another approach to age effects in L2 acquisition, frequently adopted in earlier work (see e.g. Clahsen 1986; Clahsen 1988; Dulay & Burt 1974; Ervin-Tripp 1978; Meisel, Clahsen & Pienemann 1981) but somewhat neglected more recently, is to examine the development sequences which learners take rather than the level of ultimate attainment which they reach. As Schwartz (to appear: 2) notes, typical critical period studies, such as those mentioned above, are 'in principle disinterested' in development. It is, however, only by examining developmental data that we can understand the processes underlying child L2 acquisition. After all, when examining child L2 *development*, the L2 children are children at time of testing.

Following a proposal put forward in earlier work (Schwartz 1992), Schwartz (to appear) argues that it is a comparison between child L2 and adult L2 *development* – rather than ultimate attainment – which will allow us to determine whether these two types of acquisition are of the same epistemological type. More specifically, she claims that by comparing developmental sequence data from these two groups, it is possible to decide between a UG-based approach to adult L2 acquisition and a general problem-solving approach. Her argument works as follows: assuming that child L2 acquisition is driven by UG (based on evidence from studies such as the Johnson and Newport study that, in terms of ultimate

attainment, young L2ers are generally more successful than adult L2ers), then comparing developmental sequences of child L2ers with those of adult L2ers, while holding the L1 constant, will provide evidence for or against UG involvement in L2 acquisition.¹ If L2 children and L2 adults pass through the same developmental sequences, then this would constitute evidence for UG involvement in (adult) L2 acquisition, whereas if the L2 child and L2 adult developmental sequences pattern differently, this would provide evidence against UG constraining (adult) L2 acquisition.²

The purpose of this paper is not to present data for or against this approach (see e.g. Gilkerson 2005); rather, it will explore some of the methodological and conceptual issues involved in making a comparison between child L2 development and adult L2 development. As noted above, focussing on child L2 *development* requires testing L2 children when they are children. This introduces an important difference between L2 children and adults, which, as this paper will demonstrate, has far-reaching consequences for the nature of the comparison between the two groups. These two groups of learners may also differ from each other with respect to a number of other variables, including L1 knowledge and L2 proficiency level. Any study seeking to determine whether L2 children and adults behave similarly or differently in their acquisition of a given TL property – based on Schwartz's rationale or otherwise – must ensure that, if a valid comparison is to be guaranteed, these variables are carefully controlled for. The remainder of the paper considers each of these variables in turn, focussing on how to control for comparability in terms of L2 proficiency in particular.

3. L1 transfer

There is accumulating evidence that, as in adult L2 acquisition, the start of the child L2 acquisition process is characterised by L1 transfer. One of the clearest examples of this comes from Haznedar's (1997) study of a Turkish-speaking child acquiring English. During approximately the first two-and-a-half months of data collection, Haznedar observes that the child's verbal utterances are predominantly

1. A secondary assumption is that the general problem-solving principles in question are only relevant to adults (because (L1/L2) children make use of UG).

2. It might be objected that similar developmental sequences could also be the result of both groups using problem-solving or general learning mechanisms. If this were the case, we would expect the more cognitively mature adult L2ers to be more successful than the less cognitively mature child L2ers (Schwartz 1992:8, fn.6). As mentioned above, the L2 data indicate otherwise, however.

XV, that is, head-final, as in the L1, Turkish, whereas after this point, the targetlike VX order prevails. Further evidence of L1 transfer in child L2 acquisition can be found in, for example, Haberzettl (1999) and Whong-Barr & Schwartz (2002).

In a comparison of L2 children and L2 adults, it is relatively simple to control for L1 transfer, namely by holding the L1 constant across the two groups, as proposed by Schwartz (1992). In this way, the effect of the L1 is neutralised as it should be the same for both groups. Of course, given that transfer is most evident at the initial stages of development, it is also important that the L2 children and adults are also at a comparable stage in their L2 development or proficiency. How to achieve this is dealt with in §5.

4. Age at time of testing

The age of an L2er can be calculated either for the point of first exposure to the TL and/or for the time at which data collection takes place. Child L2ers differ from adult L2ers by definition with respect to age at first exposure. When investigating L2 development, as is the case here, the two groups will also necessarily differ in terms of age at time of testing. This will have important consequences for the types of tasks which may be employed.

One early study which compared L2 children and adults developmentally is Snow & Hoefnagel-Höhle's (1982) investigation of the L2 acquisition of Dutch by English-speaking children and adults. They employed a variety of production and comprehension tasks to subjects who ranged from age 3 to adult at time of testing on three different occasions. The much-cited conclusion of this study is that the older L2ers had the advantage over the younger L2ers. In their battery of tests, however, Snow & Hoefnagel-Höhle included tasks which arguably favoured the older subjects. For example, in a sentence repetition task and a sentence translation task, subjects were asked to either imitate or translate sentences of increasing length (2 to 10 words in the repetition task) and grammatical complexity, which were read aloud to them. It is quite possible that the older subjects' superior performance on this task resulted from their relative cognitive maturity (e.g. greater working memory capacity) rather than their higher L2 proficiency.

The problems with Snow & Hoefnagel-Höhle's (1982) study highlight an important methodological point which should be taken into consideration for any study testing child and adult L2ers when the child L2ers are children at the time of testing: the chosen experimental methods should not be too cognitively challenging for the younger subjects, nor, on the other hand, should they be too easy for the older subjects. This means that in many cases, they should not involve reading or writing, because, assuming the children/adults are learning to read and write in

the TL, children will often not be as advanced as adults. In addition to differences in cognitive capacities, such as working memory, the child and adult groups may also differ in the amount of metalinguistic knowledge they have at their disposal (Bialystok 1993). Older subjects, if they have had language instruction and perhaps even if they have not, will have metalinguistic knowledge which they could potentially employ in certain data collection procedures.

Striking a balance between L2 children and adults in these terms, trying to ensure that one group is not favoured over the other, is a challenge. Two possible ways in which this challenge could be countered are as follows. The first option would be to tailor a particular task to the different (cognitive) abilities of each age group, i.e. use different versions of the task with the different age groups. Although this would address the problem, using different tasks with the different age groups (at least without careful piloting and validation) could make results difficult to interpret as it introduces another variable to the comparison. Disparate outcomes for the different age groups could potentially be due to the differences in the task as well as any differences in the subjects' interlanguage grammars. Another option would be to ensure that the TL property which is being tested is sufficiently sophisticated to ensure that metalinguistic knowledge cannot be applied. If this is the case, using an 'easy task' with L2 adults will be less problematic.

These issues are explored in more detail with respect to proficiency tasks in the following section.

5. L2 proficiency

L2 children and adults may also differ in terms of their L2 proficiency. Before considering how the two groups can be compared in terms of proficiency in §5.2, this construct is first defined in §5.1. Subsequent sections deal with various ways of measuring proficiency (§5.3) and more specifically, with ways of measuring morphosyntactic complexity (§5.4), lexical complexity (§5.5) and morphosyntactic and lexical accuracy (§5.6).

5.1 Defining proficiency

Before considering how best to measure proficiency in L2 children and adults, it is necessary to define this construct. In L2 acquisition research, the term 'language proficiency' is employed in numerous ways. As well as being used as a global indicator of an L2er's abilities in the TL, it is also used to refer to specific aspects of linguistic competence, such as phonological, syntactic, morphological, lexical

and/or discourse skills. In general, language proficiency is divided up into knowledge and some aspect of use (control / communicative competence) and it often involves one or more of the following dichotomies: productive vs. receptive, written vs. oral, communicative vs. grammatical, etc. Defining proficiency – one of the goals of a whole field of applied linguistics (see e.g. papers in De Jong & Verhoeven 1992) – is well beyond the scope of this paper. Nevertheless, in order to be able to proceed, a concrete definition of this construct is required. Intuitively, proficiency might be defined as ‘a person’s overall competence and ability to perform in L2’ (Thomas 1994: 330, fn. 1). Such intuitive definitions, however, remain somewhat tautological (Verhoeven & Vermeer 1989: 26). For present purposes, the construct of L2 proficiency is operationalised as ‘the ability to produce and comprehend lexically, morphologically and syntactically complex and accurate utterances in the TL’^{3, 4}

5.2 Comparing proficiency level in L2 children and L2 adults

Proficiency is more difficult a variable to control for than, for example, L1 transfer. It is, however, essential that measures are taken to ensure that any comparisons between L2 children and L2 adults are based on learners who are at approximately the same proficiency level. As Thomas (1994) notes, proficiency measures are necessary when a researcher wishes to compare different groups of L2ers in their acquisition of a given phenomenon. In order to be able to say anything meaningful about the differences or similarities between these two groups, it is imperative that the ‘right’ children are compared with the ‘right’ adults. Imagine that a group of L2 children were compared with a group of L2 adults and that with respect to the TL property in question, the adults were observed to commit a certain error which the children did not. On the basis of this observation it might be claimed that adult L2 acquisition is (fundamentally) different from child L2 acquisition. This is for example the basic line of argumentation followed by Weerman, Bisschop & Punt (2003) and Blom & Polišínská (2006) in their studies on the acquisition of Dutch adjectival and verbal inflection, respectively. Without ensuring that the L2 children and adults have approximately the same proficiency level, however, such

3. Phonology is not included as part of proficiency here. This is not unusual. For example, cloze tests, which are regularly used to assess (adult) L2 proficiency do not assess phonology.

4. This definition focuses on knowledge, that is, linguistic competence, rather than use/control (although when testing knowledge some aspect of use/control will inevitably be involved) and hence it excludes pragmatic skills, many of which would be classified as properties of language use.

a claim remains premature. It is possible that the lack of errors on the part of the L2 children may be because, in the sample in question, the L2 children are more proficient than the L2 adults; they may have made this error in an earlier developmental stage, but this will remain undetected unless data from L2 children at a lower level of proficiency are examined. Likewise, the claim that in a particular sample, L2 children are targetlike and L2 adults are not can only be maintained if the two groups are taken from a comparable (high) proficiency level.⁵

Comparing L2 children and L2 adults in terms of proficiency places certain restrictions on the type of measure which can be used. Firstly, because the task should not involve reading/writing, a traditional cloze test, often used as a proficiency measure for adult L2ers, is immediately ruled out. Secondly, the task should not be too 'test-like', in the sense that it should not resemble the type of language tests commonly administered in L2 classrooms. This is to avoid the application of metalinguistic/explicit knowledge, that is, conscious knowledge of language, often in the form of grammatical rules, which is viewed as distinct from the implicit knowledge considered to be central to L2 proficiency as defined here.⁶ Given that metalinguistic/explicit knowledge develops with age (Bialystok 1993;

5. Length of exposure could also be used as a basis for equivalence between L2 children and L2 adults. Given the potential differences in rate of acquisition between children and adults (Asher & Price 1967; Snow & Hoefnagel-Höhle 1982), as well as between individual L2ers in general, this variable would be unsuitable for this purpose, however. An anonymous reviewer argues that using proficiency as the basis of L2 child ~ L2 adult comparisons masks important differences in acquisitional speed which *would* be captured were the two groups compared using length of exposure. Determining the relative rates of acquisition for L2 children and adults is not the goal of the present study, however. In fact, as Hyltenstam & Abrahamsson (2003: 547) point out, the informative value of acquisitional speed with respect to age effects in L2 acquisition, and more specifically, with respect to the existence of a critical period, is unclear. Any comparison of L2 children and adults matched for length of exposure would undoubtedly involve comparing L2ers at different proficiency levels and this could lead to the kinds of problems outlined in the main text. A comparison of L2 children and adults matched on proficiency may well include learners with varying lengths of exposure, but if rate of acquisition is not the focus of enquiry, this is essentially irrelevant. Having said that, the set-up proposed in this paper can be used to capture potential rate differences if desired: one could simply determine the length of exposure for the children compared to the adults at the same proficiency level.

6. An extended definition of explicit knowledge is provided by Ellis (2004:244): "Explicit L2 knowledge is the declarative and often anomalous knowledge of the phonological, lexical, grammatical, pragmatic, and sociocritical features of an L2 together with the metalanguage for labelling knowledge. It is held consciously and is learnable and verbalisable. It is typically accessed through controlled processing when L2 learners experience some kind of linguistic difficulty in the use of the L2. Learners vary in the breadth and depth of their L2 explicit knowledge."

following Karmiloff-Smith 1986), this is more likely to be an issue with the older child L2ers and adult L2ers. Furthermore, as noted by Appel (1984: 139), older children and adults are also likely to have more developed test-taking abilities. Hence, the use of such a test could introduce an unwanted variable (or variables), which would at least partly co-vary with age.⁷

5.3 Types of proficiency measure

In a survey of 157 articles taken from four L2 acquisition journals,⁸ Thomas (1994) observes that L2 proficiency is generally measured in four different ways: (i) impressionistic judgement, (ii) institutional status, (iii) standardised test and (iv) in-house assessment instrument. This section considers to what extent each of these is a valid measure of proficiency and whether they are suitable for use with both L2 children and adults.

Impressionistic judgement, which involves 'asserting that a learner has a given level of control over [the] L2, on the basis of the experimenter's unsupported evaluation, or the evaluation of some other (often unspecified) person' (Thomas 1994), has the clear disadvantage of lacking generalisability: one person's 'advanced' is not another's. As Thomas (1994: 317) points out, institutional status, for example, first-year students vs. final-year students, suffers from a similar weakness: standards are determined in different ways in different institutions, and hence final-year students at one university might not be the same as final-year students at another university. Furthermore, when the pool of subjects includes both adults and children, there is often no such common denominator with which they could be compared.

Standardised tests are available for many different languages. For Dutch, the TL in focus here, these include the TAK test (*Taaltoets Alle Kinderen* 'Language test for all children' Verhoeven & Vermeer 2001), the ISK tests (*Internationale Schakel-Klassen* 'International transition classes' from CITO (Dutch testing agency)) and the NIVOR test (*Niveauvorderingentoetsen* 'Level Assessment tests', also from CITO). While each of these tests has the advantage of being standardised, they are each designed for different age groups: the TAK is designed for children,

7. This is not to say of course that metalinguistic knowledge is not used in more naturalistic tasks (for example, by 'monitoring' or applying rules online, etc.) or that this does not vary across speakers, but more naturalistic tasks at least do not *encourage* the use of such knowledge.

8. The journals were: *Applied Linguistics*, *Language Learning*, *Second Language Research* and *Studies in Second Language Acquisition*. All volumes from 1988 until 1992 were surveyed.

the ISK for adolescents and the NIVOR for adults. This is problematic given the purpose of a proficiency measure here is to find a way of comparing these groups. Likewise, in English, many standardised tests are available, but these are often for one particular age group (e.g. TOEFL is for adults only). One exception to this is the *CYCLE* (*Curtiss-Yamada Comprehensive Language Evaluation*) test (Curtiss & Yamada 1985). This test, designed for a wide range of ages and cognitive abilities, was used to compare Spanish-speaking L2 children and adults in a recent study by Gilkerson (2005) on the acquisition of particle verbs in English. When such tests are available for the TL in question, they may be preferable to the non-standardised measure discussed below. However, as noted above, they are not available for all languages.

Two points mediating against the use of standardised tests are, however, that they often focus very clearly on the application of rules and they are usually rather time-consuming to administer. Focussing on rules, for example on how to form noun plurals or inflect verbs, should be avoided in the present context as this could encourage the use of metalinguistic knowledge, especially on the part of the adults – see discussion above. Employed in the context of a child L2 ~ adult L2 comparison, proficiency measures are carried out in addition to the experimental tasks designed to tap knowledge of the TL property under investigation. This means that several tasks need to be carried out in what is often the already limited period of time available with the L2er. For this practical reason, the proficiency task should not be too time-consuming to administer. Standardised tests are often rather lengthy.

The final proficiency measure in Thomas' list is the in-house assessment instrument, which includes tests developed privately by researchers (or teachers). Thomas (1994) writes that this type of measure has the advantage of ensuring that all subjects are tested in a uniform fashion; this means that any resulting proficiency scores are internally consistent within the sample and 'subgroups may be compared with respect to proficiency on some rational basis' (Thomas 1994: 322). Given that such sub-group comparisons are the locus of interest here, an in-house assessment instrument seems to be a suitable option for child L2 ~ adult L2 comparisons. What exactly such an assessment instrument should measure will be addressed in the following sections. Prior to this, however, the details of the task itself are given.

Following Larsen-Freeman (1983) and Whong-Barr & Schwartz (2002), the data used for this measure were collected using a picture description task. Subjects were presented with sets of between four and eight pictures which depicted a series of events and their task was to describe/tell a story about what they saw. Importantly, all the actions depicted in the pictures were considered general enough so as not to (dis)favour either the child subjects or the adult subjects.

They included, for example, planting flowers and watering them, digging a hole in the beach, and having an accident on a bicycle. During the task, which lasted approximately 10 minutes, subjects were encouraged to speak as much as possible, and when necessary, the experimenter(s) provided prompts and asked questions designed to elicit more data, such as '*And what happened next?*'. The data were transcribed in CHAT format using the CLAN programme available via CHILDES (MacWhinney 2000) by one of the experimenters who was present at the time of recording (either the present author or a native-speaker student assistant) and they were checked by either the other experimenter or another native-speaker student assistant.⁹

The definition of proficiency stated above requires that it encompass measures of morphosyntactic and lexical complexity and accuracy. Each of these aspects is dealt with in turn.¹⁰

5.4 How to measure morphosyntactic complexity

Following Ortega (2003:492), (morpho-)syntactic complexity is defined as 'the range of forms that surface in language production and the degree of sophistication of such forms'. By far the most common measure of morphosyntactic complexity, in research on L1 acquisition at least, is mean length of utterance (MLU).¹¹ In the context of child L2 ~ adult L2 comparisons, the use of MLU raises some interesting and important issues, primarily concerning whether this measure can be extended beyond its typical use with young L1 children. In this section, I present data which show that because MLU still develops in older children and is highly variable in (native-speaker) adults, it cannot be used as a basis of comparison between L2 children and L2 adults. I will argue that instead, verbal density, the average number of finite and non-finite verbs per utterance, is a more suitable measure.

5.4.1 MLU

In L1 acquisition, MLU (Brown 1973; Nice 1925) is the generally accepted means of assessing a child's stage of (morphosyntactic) development. It is also regularly used to match impaired (e.g. SLI) and typically developing L1 and/or L2 children

9. The score developed here is based on production data only, but the assumption is that this task taps the L2ers' underlying linguistic competence.

10. What follows is an abbreviated version of Unsworth (2005: Chapter 4).

11. See also Appel (1984) and Verhoeven & Vermeer (1989) for comparative discussion of a variety of measures of morphosyntactic complexity in child L2 Dutch.

(see e.g. Bol 2003 for relevant discussion). Its widespread use may, however, be put down to the ease with which it can be calculated and the lack of a suitable alternative as much as to its validity as a measure of linguistic proficiency. As the frequent discussions witnessed in the literature demonstrate, both its validity and reliability have been questioned. While some have claimed, for example, that MLU is unreliable beyond the two-word stage (Klee & Fitzgerald 1985; Scarborough, Rescorla, Tager-Flusberg, Fowler & Sudhalter 1991), others have shown that this is not the case (Blake, Quartaro & Onorati 1993; Rondal, Ghiotto, Bredart & Bachelet 1987; Shriner 1967). Assuming, for the moment at least, that MLU is a valid measure of grammatical development in L1 children, let us consider whether it would be appropriate to use MLU as a means of comparing the proficiency of L2 children with that of L2 adults. As noted in §4, comparing L2 children (who are children at time of testing) and L2 adults means that age will vary across the groups; furthermore, L2 children are usually considerably older than the children for which MLU is generally used. Thus, in order to assess whether MLU is a suitable measure of morphosyntactic complexity for present purposes, it is necessary to determine whether its validity extends to (i) L2 acquisition, and (ii) older children. We start with the former.

As a result of their knowledge of another language, L2ers are usually capable of producing multi-word/morpheme sentences almost immediately after initial contact with the TL (Adamson 1988; Larsen-Freeman & Strom 1977:124). This means that their initial MLU is comparatively high and hence there is less room for the L2er to develop in this respect. In other words, in terms of MLU, L2ers are likely to 'skip a stage' (or several) in comparison with L1 children. Consequently, MLU is often measured in words (MLUw) rather than morphemes. The following discussion includes studies measuring MLU both ways.

The few available studies on MLU in L2 acquisition give mixed results with respect to the use of this measure as an indicator of grammatical complexity. On the one hand, it has been shown that MLU is a valid measure in L2 acquisition because it develops linearly with increasing proficiency level and it correlates with standardised tests (Larsen-Freeman & Strom 1977; Verhoeven & Vermeer 1989). On the other hand, however, it has been claimed that such results may stem from circular argumentation where MLU is (subconsciously) included in how the different proficiency levels are determined (Dewaele 2000).

Establishing whether MLU develops in older L1 children will allow us to determine whether – assuming for the moment that MLU is suitable for use in L2 acquisition – it can be used to compare L2 children and adults. The logic is as follows. Given that adults are older than children, it is to be expected that these two groups will probably differ in terms of their MLU. As we shall see below, this difference, in and of itself, need not be a problem. What would be problematic,

however, in the sense that it would seriously complicate the child L2 ~ adult L2 comparison, is if age were found to correlate significantly with MLU *throughout* childhood, that is, beyond the age of 5, the age until which it has been established that such an age ~ MLU correlation exists (cf. Klee & Fitzgerald 1985; Miller & Chapman 1981; Rondal et al. 1987; but see Conant 1987; Johnston 2001). The reason is as follows: whereas for L2 adults, MLU would solely be a measure of language development, for L2 children, it could also be a function of age itself, and this would introduce an unwanted additional variable to the child L2 ~ adult L2 comparison. Implicit in this argument is the assumption that the L2 children's MLU in their L2 will not progress beyond the value of their MLU in their L1 (which, I believe, is relatively uncontroversial, at least when exposure to the L1 is maintained).

The following example serves to illustrate the argument. Imagine we have two L2 children, Tom and Ann. Both are native speakers of English. Tom was first exposed to the TL, Dutch, at age 4 and Ann at age 7. They are tested 3 years later, that is, when Tom is 7 years old and Ann is 10. Assuming that all other variables are held constant, imagine that Ann's Dutch MLU is observed to be higher than Tom's. If MLU is still developing in L1 children between the ages of 5 and 10 years, for example, it would be unfair to conclude that Ann's L2 grammar was more complex than Tom's, because this might be due to her relative cognitive maturity. In this context, cognitive maturity should be understood as maturational constraints on information processing capabilities and other cognitive processes relating to and including memory (e.g. Gavens & Barrouillet 2004; see Schneider 2002 for overview), which in turn constrain the production of lengthy and complex utterances (Berman 2007). In this sense, then, the reason for Tom's lower MLU in his L2 Dutch might not be because he is less proficient than Ann; rather, it might result from him being 3 years younger than she is and from his L1 MLU being lower, which, in turn, would mean that his L2 MLU would be lower.

In a large-scale longitudinal study on various aspects of linguistic development in English-speaking children and adolescents aged 6 through 17, Loban (1976) observes a clear increase in MLU_w with age (see also Hunt 1970). Age effects beyond 5 years are also observed by Minifie, Darley & Sherman (1963) and Shriner & Sherman (1967). Shriner (1967) and Chabon, Kent-Udolf & Egolf (1982), on the other hand, fail to find such effects. Shriner (1967) relates this to an increase in variability in MLU scores after age 5. The issue of variability is discussed in more detail below.

The mixed nature of these results make it difficult to draw any firm conclusions regarding the nature of MLU in older L1 children and its potential implications for use with L2 children. In order to investigate this question further (semi-spontaneous) data using the picture description task described at the end of the

Table 1. L1 Dutch children and adults: MLUw

Age group	N	Mean	Range	SD
7-year-olds	10	5.88	4.88–6.74	0.67
9-year-olds	10	6.41	5.49–7.39	0.60
11-year-olds	10	6.60	6.19–7.39	0.36
Adults	10	7.50	5.86–10.02	1.32

preceding section were analysed from L1 Dutch children aged 7, 9 and 11, and from L1 Dutch adults.¹² To calculate MLUw, T-unit was used instead of (the rather vague notion of) utterance. A T-unit is defined as ‘one main clause plus whatever subordinate clause and nonclausal expressions are attached to or embedded within it’ (Hunt 1970: 14). The results are presented in Table 1.

A significant difference is found between the three child groups (Kruskal-Wallis: $\chi^2 = 6.068$, $df = 2$, $p < .05$), which suggests that MLUw does develop significantly between the ages of 7 and 11.¹³ The implication of this finding is that, on the logic laid out above, and assuming that L1 children acquiring other languages will pattern similarly to L1 Dutch-speaking children, using MLU as a measure of morphosyntactic complexity would introduce an additional variable into the child L2 ~ adult L2 comparison: for L2 adults, it would measure language development, whereas for L2 children it would measure language development and it would also be a function of age.

The data from the adults in Table 1 indicate that there is considerable variability in MLUw amongst native speakers. Most (80%) of the adults had MLUw values above 6.5, indicating a reasonable amount of consistency across speakers. Nevertheless, the large range of 5 words indicates that even when native-speaker adults perform the same task, their MLUw may vary considerably. This finding has two implications. Firstly, it suggests that MLUw as a measure of grammatical complexity for native-speaker adults may not be very reliable. Secondly, as a consequence, pinpointing a value at which an L2er’s MLUw value can be considered native-like, or highly proficient, would be rather difficult. If native speakers vary from 5 to 10 in terms of their MLUw, it is not clear whether, for example, an L2er with a MLUw of 8 should be considered more targetlike/proficient than an L2ers with a MLUw of 6.

To summarise: Although there is previous research showing that MLU is a relatively reliable indicator of grammatical complexity in early child L1 acquisi-

12. These children and adults functioned as controls for the study discussed in §7.

13. It is not possible to carry out an ANOVA with these data because they do not conform to the assumptions of equal variances (Levene’s statistic = 5.136, $p = .006$).

tion and to a certain extent in L2 acquisition as well, this measure remains, on the whole, rather unreliable. The analysis of new L1 data from older children suggests that MLUw may develop well into the first decade of life. This is a potentially interesting finding in and of itself, although further research (for example with more subjects and for different languages) is needed to confirm it. In the present context, however, where L2 children are compared with L2 adults, this result, coupled with the observation that even on the same task, MLUw in adult native speakers is highly variable, means that MLUw must be regarded as an unsuitable measure of grammatical complexity.

5.4.2 *Verbal density*

An alternative measure of morphosyntactic complexity is verbal density, defined as the average number of finite and non-finite verbs per T-unit (see above for definition).¹⁴ This measure was adopted by Chaudron & Parker (1990), following Pica & Long (1986), in an analysis of free and elicited production data in Japanese-English adult L2 subjects. There are several reasons to believe that it is a valid means of measuring grammatical complexity, at least in a rudimentary fashion. First of all and most importantly, it captures complexity in a central aspect of grammatical development, that is, the use of different verb forms, such as non-finite dependent clauses (1a), relative clause modification (1b), modals, auxiliaries and complex tense forms (1c and d), and durative constructions (1e).

- (1) a. She decides to go for a swim
- b. The girl who is wearing a green pullover fell down
- c. She shouldn't have done that
- d. After the girl had eaten, she went out to play
- e. The boy sits reading a book

Verbal density differs from MLUw because it does not just measure length but arguably also depth, that is, the utterances illustrated in (1) demonstrate grammatical complexity at the clause level and this is different from simply stringing words together. This is particularly important for L2ers who, as noted above, will as a result of their L1 be able to produce multi-word utterances from early on.

Verbal density scores were calculated for both children and adults. All verbs were counted in this calculation, including copula *zijn* 'to be' and the auxiliaries

14. Other alternatives include rate of subordination (Hunt 1970; Verhoeven & Vermeer 1989) and rate of verbal utterances (Belletti & Hamann 2000; Valian 1991); these are unsuitable measures of proficiency, however, because they do not sufficiently differentiate proficiency levels (see Unsworth 2005: 183–184 for relevant discussion).

Table 2. L1 child and adult: Verbal density

Age group	N	Mean	Range	SD
7-year-olds	10	1.29	1.07–1.48	0.13
9-year-olds	10	1.41	1.24–1.65	0.12
11-year-olds	10	1.40	1.23–1.51	0.08
Adults	10	1.58	1.32–1.97	0.22

hebben ‘to have’ and *zijn* ‘to be’, *gaan* ‘to go’ and modals.¹⁵ The score was calculated by dividing the total number of finite and non-finite verbs by the number of T-units. Importantly, unlike MLUw, verbal density was not found to develop significantly as a function of age in the child L1 Dutch data. The results are presented in Table 2.

The three child L1 groups do not significantly differ from each other (Kruskal-Wallis: $\chi^2 = 4.846$, $df = 2$, $p > .05$). This means that, unlike MLU, verbal density appears not to develop significantly with age in L1 children such that it would become a confounding factor when used with L2 children. The L1 children do differ from the L1 adults as a group, however (Mann-Whitney: $Z = -2.936$, $p = .003$).¹⁶ How to deal with this difference when using verbal density as an indicator of L2 proficiency is dealt with in §6.¹⁷

Thus far, only measures of morphosyntactic complexity have been considered; the definition of proficiency adopted here also includes lexical complexity and morphosyntactic and lexical accuracy. We now turn to how these aspects of proficiency should be measured.

15. It could be objected that including auxiliaries would unfairly favour subjects who produce periphrastic tenses over subjects who use synthetic tenses only. This objection does not hold, however. Firstly, the use of a variety of tenses is an indication of grammatical sophistication, which is what verbal density is designed to measure. Secondly, excluding auxiliaries would mean that learners who used the more complex structures, such as (1d), which indicate grammatical complexity rather than simply choice of tense, would not be credited for this.

16. The non-parametric Mann-Whitney test is used for data which do not conform to the prerequisites for a t-test (Levene’s statistic = 7.154, $p = .011$).

17. One caveat concerning the native-speaker adult data is in order. The standard deviations given in Table 2 indicate that, as was observed for MLUw, the variation in the adult data is almost twice as much as in the child groups. This is less than ideal, but it is my opinion that the advantages of this measure over the alternatives outweigh this potential disadvantage.

5.5 How to measure lexical complexity

5.5.1 *Type/Token Ratio*

Lexical complexity, which is understood as synonymous with lexical diversity or richness, is traditionally measured using the 'Type/Token Ratio' (TTR). TTR is calculated by dividing the number of types (V) in a sample by the number of tokens (N) and the higher the TTR, the more diverse a lexicon a learner is claimed to have. For example, a TTR of .5 (e.g. 10 types in a sample of 20 tokens) is assumed to reflect a more diverse lexicon than a TTR of .25 (e.g. 5 types/20 tokens). This score is assumed to provide an index of lexical development independent of sample size, and consequently, it is widely used in both L1 and L2 acquisition studies.

The TTR has, however, been shown to be inadequate in several ways. Richards (1987) demonstrates that TTR *is* affected by sample size. TTR is artificially deflated as a result of an increase in tokens in a sample. Imagine that one learner produces five different types in a sample of 20 tokens and another learner produces the same five types, but her sample consists of 30 tokens. The TTR for the second learner (.167) would actually suggest that this learner's lexicon is less diverse than that of the first learner (.25), but this is not the case: they both produce the same five types. When the increase in sample size results from linguistic development within the same learner, for example when determiners are acquired, this slight dip in TTR would incorrectly suggest a lack of development (or even backsliding) whereas in reality, the learner will have made considerable steps in his or her linguistic abilities, even though the TTR does not reflect this (van Hout & Vermeer 1988).

5.5.2 *Guiraud's index*

Broeder, Extra & van Hout (1993) argue that the measure known as Guiraud's index (Guiraud 1960), or the 'Indice de Richesse', is a more successful measure of lexical richness, because unlike TTR, it increases over time (see also Vermeer 1986). Guiraud's index is calculated by dividing the number of types by the square root of the number of tokens (V/\sqrt{N}). By taking the square root of the number of tokens, the problem of a negative correlation with increasing sample size (as with TTR) is obviated.

Similar to our discussion of MLUw and verbal density, in order to assess the suitability of Guiraud's index as an indicator of lexical complexity when comparing L2 children and adults, it is necessary to determine the extent to which native-speaker children and adults differ with respect to this variable (especially given that vocabulary size is known to vary across speakers). To this end, Guiraud's index

Table 3. L1 children and adults: Lexical complexity

Age group	N	Mean	Range	SD
7-year-olds	10	6.04	5.01–7.44	0.72
9-year-olds	10	6.27	4.97–7.30	0.59
11-year-olds	10	5.80	5.25–6.14	0.74
Adults	10	7.07	6.07–8.22	0.74

was calculated for the same L1 Dutch children and adults. The results are presented in Table 3.

A one-way ANOVA indicates that there is a significant difference between groups ($F = 8.161$, $p < .001$). Post-hoc Bonferroni tests show that the child groups do not differ from each other but that they each differ from the adults (7-year-olds vs. adults, $p < .01$; 9-year-olds vs. adults, $p < .05$; 11-year-olds vs. adults, $p < .001$). Thus, as with verbal density, lexical complexity appears not to develop significantly with age in L1 children such that it would become a confounding factor when used with L2 children.¹⁸ How the difference between the children and adults is dealt with is postponed until §6. First, we consider how to measure accuracy.

5.6 How to measure morphosyntactic and lexical accuracy

An assessment of L2 proficiency made on the basis of complexity alone would be insufficient because complexity closely interacts with accuracy (Lalleman 1986). L2ers who produce complex yet inaccurate utterances should not be considered more proficient than L2ers who produce less complex but more accurate utterances. To take the interaction between these two factors into account, a measure of proficiency should incorporate a measure of accuracy as well as a measure of complexity.

Accuracy is generally measured using rate of errorfree utterances (e.g. Larsen-Freeman & Strom 1977; Larsen-Freeman 1978), that is, the number of errorfree utterances (or in this case, T-units) divided by the total number of utterances. The rationale behind this calculation is simple: the more developed/advanced L2ers

18. Note that the claim regarding the lack of difference between these three child L1 groups is only intended to hold for this particular task: in this context, where learners have to describe the same sets of pictures, these three groups produce a similar range of lexical items, one which is significantly more restricted than the range of items produced by adults on the same task. I wish to make no claims regarding L1 vocabulary development in general.

are, the less likely they are to commit errors.¹⁹ All errors are not equal, however, and in adopting this measure, the researcher is faced with certain choices regarding what should (not) be counted as an error, including how to deal with repeated errors and with pervasive errors which do not differentiate learners at different proficiency levels.

When subjects make repeated errors, for example, consistently using a particular word incorrectly or systematically using a non-targetlike verb form, we might consider only counting the first instance of such an error as an error so as not to 'overpunish' them, as this would potentially artificially deflate their rate of errorfree utterances as a result of one persistent error. However, the variability which is often pervasive in L2 grammars means that subjects will sometimes produce a certain error and at other times they will not. Consequently, if an error were initially counted as such, the subject in question would not be 'rewarded' when s/he does produce a targetlike form, but if the error were ignored, the L2er would be attributed with more knowledge than s/he has. Hence, repeated errors should be counted separately.

Certain errors may be so pervasive that they fail to differentiate learners at different proficiency levels. In this case, incorporating them into a measure of accuracy would be pointless. Consequently, such errors should be ignored. The nature of such errors may vary according to TL. In the L2 Dutch data reported on below, for example, grammatical gender errors fell into this category, and hence, they were excluded from the accuracy count.

6. Introducing the Age-Sensitive Composite Proficiency Score (ASCOPS)

The review of the available literature, coupled with the analysis of L1 child/adult data, suggest that morphosyntactic and lexical complexity and accuracy, the core elements of proficiency as defined here, are best measured by verbal density, Guiraud's index and rate of errorfree utterances. This section presents a newly developed composite proficiency measure which combines these three elements into one score such that the inherent differences between children and adults are taken into account. An overview of how this was achieved is given in Figure 1.

Recall that the L1 children and adults who completed this task differed in terms of verbal density and lexical diversity. Assuming that this difference results from differences in cognitive maturity (as outlined in §5.4.1), this has serious

19. See e.g. Larsen-Freeman & Stom (1977) for arguments against alternative measures such as the proportion or number of errors.

Type of measure	Linguistic domain	Measure	Resulting sub-score	Final score
Complexity	Morpho-syntax	<i>Verbal density:</i> number of finite and non-finite verbs divided by total number of T-units	Scores converted into standardised (z) scores for L2 child and L2 adult groups separately	Sub-scores are combined into a single score using principal components analysis. Each subject has a single standard normal (z) score as final proficiency score
	Lexicon	<i>Guiraud's index:</i> V/\sqrt{N} (where V=type and N=token)		
Accuracy	Morpho-syntax	<i>Rate of error free utterances:</i> number of errorfree utterances divided by total number of T-units	%	
	Lexicon			

Figure 1. Overview of proficiency measure

implications for how this measure is implemented as part of a child L2~adult L2 comparison.²⁰ As noted above with respect to MLU, it would be unreasonable to expect that an L2 child exceed the verbal density or lexical diversity score achieved by an L1 child of the same age. Furthermore, if we assume that the findings for L1 Dutch children and adults can be extended to other languages – English is the L1 of (all) the L2ers in this case – it would also be unreasonable to expect an L2 child's interlanguage verbal density or lexical diversity score to exceed that of her L1. Thus, it is highly likely that L2 children will intrinsically differ from L2 adults in terms of these measures.

A distinction between L2 children, on the one hand, and L2 adults, on the other, is usually made on the basis of their age at first exposure. However, in the present context, given the constraints which relative cognitive maturity may place on potential verbal density and lexical complexity scores, the difference between the two groups must be determined in terms of age at time of testing. The age at time of testing for the data presented here thus ranges from 7;3 to 14;11 (mean = 10;9; SD = 2;2) for the L2 children and from 22;2 to 50;0 (mean = 36;2; SD = 8;0) for the L2 adults. The length of exposure ranges from 0;2 to 10;4 (mean = 4;1;

20. An anonymous reviewer notes that adults also vary in terms of their working memory capacities and that working memory has furthermore been shown to correlate with L2 proficiency (e.g. Harrington & Sawyer 1992). This observation may indeed account for the variability attested in both the MLU and verbal density data amongst the native adults (cf. fn. 17). However, the point at issue here is that the L2 adults' cognitive capacities, including working memory, are not capped as a consequence of their maturational state in the same way as those of L2 children.

SD = 2;11) for the L2 children and from 0;4 to 25;0 (mean = 7;3; SD = 6;5) for the L2 adults. All learners were resident in The Netherlands at time of testing.

Data were collected using a picture description task (see §5.3 for details). The following types of utterance were excluded from analysis: one-word utterances consisting of a proper name or of *ja* 'yes' or *nee* 'no'; incomplete utterances; utterances containing unidentifiable material; formulaic utterances such as *weet ik niet* 'I don't know'; utterances where more than half the words were in English. Verbal density and lexical complexity scores were calculated using the procedures outlined in §5.4.2 and §5.5.2, respectively. The rate of errorfree utterances was calculated by dividing the total number of errorfree utterances by the total number of utterances produced by a given subject. To be categorised as errorfree, an utterance had not to contain a number of morphological, syntactic and lexical errors. Morphological errors included non-target subject-verb agreement, non-target form of the verb stem or of a noun. Syntactic errors were: non-target word order such as failure to use verb second in matrix clauses and non-final finite verbs in subordinate clauses; failure to split up particle and verb in particle verbs; missing functional elements such as determiners, complementisers and copula/auxiliary verbs. Lexical errors included the use of non-target prepositions, subordinating conjunctions, collocations and a target word used with a non-target meaning. For examples of each type, the reader is referred to Unsworth (2005:203–206). Cohen's Kappa statistic was calculated for a random sample of 10% of the transcripts and was found to be 0.829 ($p < .001$ (approx.)), indicating that there was almost perfect agreement between different coders for errorfree utterances.²¹

All three sub-scores for the L2 children and adults and for the L1 children and adults (discussed in previous sections) are presented in Table 4.

Let us first consider the results for verbal density and lexical diversity. Just eyeballing the data, both L2 groups pattern similarly with respect to their L1 age-equivalents: the mean for the L2 children is lower than the L1 children but the highest score is comparable, and a similar pattern obtains for the L2 adults when compared with the L1 adults. This suggests that, as expected, the adults (are able to) obtain higher scores. Both the adult L2 and the child L2 data have a normal distribution (Shapiro-Wilk: $p > .05$ for both groups on both scores). Thus, it is not the case that the child L2 data are negatively skewed and the adult L2 data positively skewed such that this could explain the difference between the two groups in terms of highest scores. Note also that the maximum scores achieved by the L2 children is virtually identical to the L1 children (1.68 and 1.50, respectively, for

21. Cohen's Kappa statistic measures the extent to which two (or more) coders' judgements agree while taking into account the likelihood that any agreement would be due to chance (see Landis & Koch 1977).

Table 4. L1/L2 children and adults: Verbal density and lexical diversity

Group	N	Verbal density			Lexical diversity			Rate of errorfree utterances (%)		
		Mean	Range	SD	Mean	Range	SD	Mean	Range	SD
L1 children	30	1.37	1.07– 1.65	0.12	6.04	4.97– 7.44	0.58	99.6	98.8– 100	0.25
L2 children	47	1.30	0.74– 1.68	0.21	5.34	3.58– 7.54	1.08	54.8	12.5– 96.5	22.2
L1 adults	10	1.58	1.32– 1.97	0.22	7.07	6.07– 8.22	0.74	100	–	0
L2 adults	18	1.38	0.91– 1.88	0.28	6.89	3.96– 8.94	1.55	65.6	40.0– 95.3	17.0

verbal density, and 7.54 and 7.44, respectively, for lexical diversity). As noted in the preceding sections, there is a significant difference between the L1 children and adults for both verbal density ($Z = -2.936$, $p = .003$) and lexical diversity ($Z = -3.498$, $p = .000$). It is assumed that this difference relates to the age differences between these two groups, either in terms of ‘internal cognitive and social developments’ (Berman 2007: 359) or length of exposure to the language.²² If this is the case, similar differences are expected between the L2 children and adults. For the L2 children and adults, there is a significant difference between groups for lexical diversity ($Z = -3.650$, $p = .000$) but not for verbal density ($Z = -.916$, $p = .360$). The lack of a significant difference between the two L2 groups with respect to verbal density is unexpected. It appears, however, that this may be the result of the L2 adults’ comparatively poorer performance on verbal density than on lexical diversity: there is no difference between the L2 and L1 adults on lexical diversity ($Z = .048$, $p = .962$), whereas the difference between the two groups on verbal density is approaching significance ($Z = -1.822$, $p = .068$). It is therefore not possible to rule out that, like the L1 groups, the L2 children’s scores on verbal density are significantly lower than those of the L2 adults. For this reason, the verbal density data will be treated similarly to the lexical diversity data in calculating the final proficiency score.

As noted above, the differences between the L1/L2 children, on the one hand, and L1/L2 adults, on the other, may result from differences in their cognitive maturity (e.g. working memory or information processing capacities) or from differences in their length of exposure to the language. When L2 children are tested when they are children, their possible maximum length of exposure is by definition shorter than the possible maximum length of exposure for L2 adults. In

22. I thank an anonymous reviewer for pointing this out.

the data presented here, the average length of exposure is 49.1 months for the L2 children (SD: 35.3) and 86.9 months for the L2 adults (SD: 77.3). For the methodological point at hand, it does not matter which of these two factors is the cause of the observed differences. What is crucial is that both these factors systematically distinguish the two groups.²³

What the intrinsic differences between children and adults in terms of potential verbal density and lexical diversity scores mean is that L2 adults who score higher on these measures should not automatically be regarded as more proficient than L2 children whose scores are slightly lower. Such a disparity might stem from the inherent differences either in cognitive maturity or length of exposure between the child and adult subjects rather than from a contrast in their interlanguage grammars. In order to ensure that this age-related factor does not adversely influence the L2 subjects' proficiency scores, the verbal density and lexical diversity scores for this variable are converted into standardised (z-)scores for the child and adult groups separately, before they are combined into the final proficiency score (see Unsworth 2005: 189 for more details). Before considering how this is achieved, let us briefly turn to the scores for the rate of errorfree utterances.

The rate of errorfree utterances presented in Table 4 is at ceiling for both the L1 adults and children. The rate of errorfree utterances for the L2 adults is on average higher than for the L2 children, but the difference between the two groups is not significant ($t = -1.861$, $p = .067$). The difference is approaching significance, however. This observation could be interpreted in a similar fashion to the data for the other two scores, that is, the children's scores are lower than the adults' as a result of their relative cognitive immaturity. This, however, is unlikely, given that in contrast to the other two scores, the upper end of the range of scores for accuracy is comparable across the L2 child and L2 adult groups: there are learners in both groups who have a rate of errorfree utterances of around 96%. If the L2 children's scores were constrained by their age relative to the adults, this should not be the case.

We now turn to how the three sub-scores are amalgamated into one final proficiency score. The two sets of z-scores for lexical diversity and verbal density are combined with the accuracy scores using a principal components (or factor) analysis. Principal components analysis is a means of reducing the number of variables in a data set, and of detecting structure between these variables (StatSoft 2004). This is achieved by modelling the data on a three-dimensional scatterplot

23. A regression analysis for lexical diversity indicates that both age at time of testing and length of exposure contribute roughly equally to the observed scores ($r^2 = .460$, ANOVA $F = 26.418$, $p = .000$; standardised coefficients = .338 for age at time of testing and .437 for length of exposure).

to obtain one or more new variables (or components) which account for as much variance amongst the original variables as possible. It is assumed that the original variables correlate, that is, that they measure the same construct. In our case, it is assumed that they all measure some aspect of L2 proficiency. This is the case. For the proficiency scores given in Table 4, there is a significant moderate correlation between verbal density and lexical diversity ($r = .587, p < .001$), between verbal density and rate of errorfree utterances ($r = .412, p < .001$) and between lexical diversity and rate of errorfree utterances ($r = .667, p < .001$).

Note that the original variables are not identical; if they were, two would be redundant. Principal components analysis is a means of extracting the commonalities between several, correlated variables in such a way that as much variance as possible amongst these variables is accounted for by the resulting components or factors. In the proficiency data used here, only one component was extracted and this accounts for approximately 70% of the variance in the data.²⁴ The factor loadings for the three original variables are as follows: verbal density = .779, lexical diversity = .912 and rate of errorfree utterances = .828. The higher the factor loading, the more that original variable contributes to the extracted component. Importantly, when the same proficiency score was calculated for a different group of subjects (see §7), highly similar factor loadings were observed (.781 for verbal density, .905 for lexical diversity and .829 for rate of error free utterances). This suggests that the ASCOPS works consistently across different subjects. On the assumption that the sub-scores are valid measures of L2 proficiency, the resulting proficiency scores can be considered to provide an approximate yet relatively robust indication of the subjects' L2 proficiency.²⁵

The values for this extracted component are saved as standardised variables and these scores (having a standard normal distribution) are used as the proficiency score for each person. On the basis of these scores, it is possible to divide subjects into different proficiency level groups and subsequently, the L2 children and adults can be compared with each other within each of these levels, that is, the 'right' children can now be compared with the 'right' adults. Before examining ASCOPS in action, the advantages and disadvantages of the score are discussed.

24. Two more components were extracted, but these had eigenvalues of less than 1.00. This means that they explain less variance than the original variables. In other words, everything common to the original variables is contained within the first component. (See StatSoft 2004 for more details about eigenvalues.)

25. Ideally, this would be confirmed by comparing the ASCOPS scores with those obtained using one of the standardised tests listed in §5.3.

6.1 Disadvantages of ASCOPS

The first, practical disadvantage of ASCOPS when compared to proficiency measures such as standardised tests is that the transcription and analysis of the semi-spontaneous data which are needed to calculate the score are very time-consuming.²⁶ Second, there is as yet no independent evidence that verbal density measures linguistic proficiency. Note in this regard, however, that such a lack of construct validity is a problem with most measures of morphosyntactic complexity, particularly in L2 acquisition research: no-one (to my knowledge) has systematically investigated whether and how such measures of morphosyntactic complexity relate to developmental sequences. This means that any such measure faces this criticism and as such, it cannot be used as an argument against one over the other (Ortega 2000). One final disadvantage is that cross-study comparisons based on this measure should be made with caution. This is because the measure is based upon standardised scores which relate to a particular group of subjects tested at one particular time.

6.2 Advantages of ASCOPS

The most important advantage of ASCOPS is that it takes into account the intrinsic differences between children and adults (either in terms of cognitive maturity or length of exposure) and the consequences this has on linguistic development. This is essential if L2 children and adults are to be compared on the basis of their linguistic capabilities alone (to the extent that this is possible). Also, in contrast to other studies using rate of errorfree utterances (e.g. Larsen-Freeman 1983), the types of non-targetlike forms which are counted as errors, as well as how this measure of proficiency is combined with others, is stated very explicitly (see Unsworth 2005: Chapter 4). As a consequence, other researchers will be able to make informed judgements about the extent to which two or more proficiency measures are comparable and furthermore, if desired, exact replication will also be possible. In an attempt to increase the validity and reliability of this measure, independent motivation is provided (where possible) for the decisions to include or exclude particular elements from the final score. Another important advantage is that – unlike standardised tests – this measure can in principle be used for any language.

26. Once the data have been transcribed, however, they can provide a useful source of data for further purposes.

There are also numerous advantages to the type of task used to collect data. Firstly, it is based on spoken language only and is therefore suitable for use with younger subjects. Secondly, it involves an activity, namely describing pictures/telling a story, which most (if not all) subjects are familiar with. Thirdly, it requires the subject to focus on content rather than on form, which also serves to help the subject relax. Fourthly, it can be worked into the test procedure quite easily and it can also be used as a sort of distracter to split up parts of the experimental procedure. Furthermore, it is not very time-consuming to carry out (10–15 minutes at most).

7. ASCOPS in action

The ASCOPS was implemented as part of a study on the acquisition of direct object scrambling in Dutch by English-speaking children and adults (Unsworth 2005). This section briefly summarises the results of this study to illustrate how ASCOPS can be used as the basis for a comparison between L2 children and adults.

Scrambling in Dutch involves moving the direct object NP from its base position, directly adjacent to the verb as in (2a), to an adjoined position to the left of other sentential constituents, such as adverbials or negation, as in (2b).

- (2) a. Jan heeft niet [de boom] geplant
 John has not the tree planted
- b. Jan heeft [de boom]_i niet t_i geplant
 John has the tree not planted
'John didn't plant the tree yesterday.'

Whether or not objects scramble depends on various semantic and discourse/pragmatic factors (de Hoop 1992; Neeleman & Reinhart 1998; Van Geenhoven 1998). To test whether the L2ers, whose L1, English, does not have scrambling, had acquired this property of Dutch, an elicited production task was designed (following Schaeffer 2000). In this task, subjects were presented with contexts in which scrambling was required (viz. specific indefinite objects and definite objects in sentences containing negation).

In addition to this experimental task, the L2 children and L2 adults completed the picture description task described above and on the basis of the proficiency scores derived from the data collected using this task, they were divided into three different proficiency levels, low, mid and high. The details are given in Table 5.²⁷ Importantly, to ensure the independence of the two tasks, all utterances

27. There were 25 L2 children. Their age at first exposure to Dutch was between 4;0 and 7;1 (mean = 5;6; SD = 1;0), their age at the time of testing ranged from 5;3 to 17;4 (mean = 9;3;

Table 5. Overview of proficiency groups (for production experiment)

	L2 children				L2 adults				Mann-Whitney tests comparing child/adult groups
	n	mean	range	SD	n	mean	range	SD	
Low ¹²	12	-1.06	-2.06 to -0.60	47	9	-0.92	-1.60 to -0.51	34	Z = -.444, p = .657
Mid	6	0.10	-0.34 to 0.44	34	6	0.08	-0.33 to 0.46	28	Z = -.160, p = .873
High	7	1.35	0.57 to 2.12	55	8	0.94	0.63 to 1.25	23	Z = -1.390, p = .165

including (non-)scrambled objects were excluded from the data used to calculate the proficiency score.

As the results in the final column of Table 5 indicate, there is no significant difference between the child and adult groups at any of the three levels. Furthermore, the relative distribution of the three proficiency levels within the L2 child group does not differ significantly from that of the L2 adult group (Chi-squared: $\chi^2 = .413$, $df = 2$, $p = .814$). We can thus with some certainty claim that the 'right' children will be compared with the 'right' adults.

When we compare the scrambling behaviour of the L2 children with that of the L2 adults for each of the different proficiency levels, the following pattern emerges: the low proficiency children and adults consistently fail to scramble (in contexts where they should), whereas the mid and high proficiency children and adults (more or less) consistently scramble. There were no significant differences between the L2 child and L2 adult groups in any of the proficiency levels in any of the conditions. These data suggest that the L2 children and L2 adults pass through the same developmental sequence. In addition to serving as a basis to compare the L2 children and L2 adults, the proficiency data are thus also used to infer developmental sequence data from cross-sectional data (Thomas 1994). Recall the rationale for the child L2 ~ adult L2 comparison put forward by Schwartz (1992): assuming that child L2 acquisition is driven by UG, comparing developmental sequences of L2 children with those of L2 adults, while holding the L1 constant, will provide evidence for or against UG involvement in adult L2 acquisition. The L2 children and adults were observed to pass through the same developmental sequence and hence, they are consistent with the claim that UG is involved in adult L2 acquisition (see Unsworth 2004; 2005 for more details).

SD = 2;4) and their length of exposure from 0;2 to 13;0 (mean = 3;8; SD = 2;6). There were 23 L2 adults. Their age of first exposure to Dutch was between 8;0 and 32;0 (mean = 19;3; SD = 8;8), their age at the time of testing between 10 and 50 years (mean = 23;10; SD = 11;0), and their length of exposure from 3 months to 27 years (mean = 4;4; SD = 6;0).

8. Conclusion

Careful comparisons of child L2 development with adult L2 development can inform our understanding of these two types of acquisition. Carrying out such a child L2 ~ adult L2 comparison brings with it a number of methodological and conceptual problems, however. In order to evaluate the differences and similarities between these two learner groups in their acquisition of a particular TL property, it is necessary to control for as many other variables as possible. L1 transfer is easily controlled for by comparing children and adults from the same language background: if there is transfer, it should be the same for both groups. Investigating child L2 development requires testing L2 children when they are children. Thus, in terms of age at time of testing, L2 children and adults will automatically differ from each other. This has significant consequences for the type of tasks, experimental or otherwise, which can be used.

In order to ensure that the 'right' children are compared with the 'right' adults, L2 proficiency should be carefully controlled for. Low proficiency children should thus be compared with low proficiency adults, high proficiency children with high proficiency adults, and so on. Proficiency, as it is understood here, involves morphosyntactic and lexical complexity and accuracy. MLU was argued to be an inadequate measure of morphosyntactic complexity and instead, verbal density, is used for this purpose. This is combined into one single score with Guiraud's index ($V\sqrt{N}$) as a measure of lexical complexity and the rate of errorfree utterances as a measure of lexical and morphosyntactic accuracy in such a way that the intrinsic differences between children and adults are taken into account. This score, the Age-Sensitive Composite Proficiency Score (ASCOPS), constitutes a first attempt at developing a proficiency measure suitable for both L2 children and L2 adults which is not specific to any particular language. Future research using this method with other languages and systematically comparing it to other measures will determine the extent to which ASCOPS constitutes a valid and reliable indicator of proficiency in L2 children and adults.

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PART V

Typical vs. atypical child L2 acquisition

Tense as a clinical marker in English L2 acquisition with language delay/impairment

Johanne Paradis
University of Alberta

This study examines the use of tense- and non-tense-marking morphology over time by a group of English L2 children with typical language development and two English L2 children with language delay/impairment. The aim was to ascertain whether the Extended Optional Infinitive (EOI) account characterized the acquisition patterns displayed by the affected children, suggesting that tense functions as a clinical marker in impaired L2 as well as L1 English. Results showed that the two children with language delay/impairment displayed a hybrid pattern between typical child L2 English and L1-based EOI characteristics. The difference in age of English acquisition onset between L1 and L2 is put forward as a potential explanation for the dissimilar patterns between L1 and L2 impaired acquisition.

1. Introduction

Research comparing children acquiring French and Swedish as a second language (L2) to their monolingual age peers with specific language impairment (SLI) has shown that there are striking similarities between these two populations of learners (Grüter 2005; Håkansson 2001; Paradis & Crago 2000, 2004; Paradis 2004). Such similarities have both theoretical and practical consequences. On the theoretical side, explanatory accounts conceived to circumscribe the key characteristics of the impaired population should not equally well describe the language of an unaffected population. On the practical side, effective differential diagnosis of children with language impairment in a multilingual context could be compromised. The goal of this chapter was to further our understanding of the similarities and differences between typically-developing and impaired populations by examining the English development of child L2 learners, a group with typical language development (TLD), and two learners with language delay/impairment. This examination was designed specifically to test the predictions of the Extended

Optional Infinitive (EOI) account of SLI in the context of L2 impaired and unimpaired acquisition.

Rice & Wexler (1996) proposed that the use of tense-marking morphology, e.g. *she walked* or *they are walking*, is a clinical marker of SLI in English. For example, five-year-old children with SLI variably produce tense-marking morphology, and at the same time accurately produce non-tense marking (e.g. nominal) morphology, while their unaffected age-matched peers show stable and highly accurate production of both kinds of grammatical morphemes (Rice & Wexler 1996; Rice, Wexler & Cleave 1995). Furthermore, children with SLI exhibit general delays in their acquisition of morphosyntax and the lexicon, but they exhibit specific delays in their acquisition of tense-marking morphemes, meaning tense acquisition is more prolonged than would be expected based on their general morphosyntactic delay, and follows a different growth curve than measures of lexical development (Rice 2003). In addition, Rice and colleagues have found that when children with SLI do not produce the target tense morphemes, their errors are overwhelmingly those of omission rather than form choice errors. They have also found that affected children's difficulties with tense are generalized across all individual morphemes that mark tense in English, and children's accuracy abilities among tense morphemes are correlated, with the growth curves of these morphemes being largely the same (Rice & Wexler 1996; Rice & Wexler 2001; Rice, Wexler & Cleave 1995; Rice, Wexler & Hershberger 1998). Rice and colleagues have labeled these characteristics of tense acquisition in English-speaking children with SLI as an EOI stage because they represent a highly protracted extension of the Optional Infinitive (OI) stage that is evident in younger English-speaking children with TLD (Rice & Wexler 1996; Rice, Wexler & Cleave 1995).

Wexler (1998, 2003) offers a theoretical account in a minimalist framework (e.g., Chomsky 1995) of the (E)OI stage by proposing the presence of the (Extended) Unique Checking Constraint ((E)UCC) in children's grammars. The UCC is considered to be a developmental principle of Universal Grammar (UG) that constrains checking operations in the computation, and in so doing, causes surface structures to variably appear without morphological reflexes of tense. The UCC competes with a non-developmental UG principle requiring matrix clauses to be finite, and thus, reflexes of tense are realized in surface structures in the cases where the UCC did not "win out". Wexler (2003) proposed that the influence of the UCC fades away as UG matures in the preschool years in children with TLD. But, the EUCC persists longer in those with SLI, hence rendering protracted omission of tense-marking morphology in affected children's speech a clinical marker, i.e., separating them from their unaffected age peers. Not only does the influence of the EUCC fade slowly in children with SLI, but it might also never completely disappear. While the ability to use tense markers grows over time in children with

SLI, by age 8;0 this ability seems to plateau close to the lower bound of performance of children with TLD of the same age (Rice 2003; Rice et al. 1998).

On an (E)OI account, school-age children learning English as a L2 with TLD would not be expected to show special difficulties with tense-marking morphemes since they would possess a mature UG with the UCC no longer operative. In contrast, school-age children with SLI learning English as a L2 would be expected to show special difficulties with tense because the EUCC would still be operative to some extent in their grammars. Accordingly, the central question addressed in this chapter is whether tense acts as a clinical marker in English L2 acquisition with SLI as it does in English first language (L1) acquisition with SLI.

The potential effectiveness of tense as a clinical marker for distinguishing the impaired population among English L2 children may be limited because errors with tense-marking morphology have been documented in several studies of English L2 interlanguage, even in children who have had several months or years of exposure to the language (Dulay & Burt 1973, 1974; Gavrusseva & Lardiere 1996; Haznedar 2001; Ionin & Wexler 2002; Lakshmanan 1994; Paradis 2005). Therefore, in order to understand whether tense is indeed a clinical marker in L2 English as it is in L1 English, we need to examine *comparative* differences between L2 children with TLD and L2 children with SLI, on the grounds that L2 children with SLI would be expected to have problems with tense as a function of being L2 learners as well as by having SLI. In other words, while L2 children with TLD and with SLI would be expected to make errors with tense morphemes, L2 children with SLI could be expected to make more. We also need to examine L2 children's interlanguage over time, since we would predict that L2 children with TLD would eventually perform like unaffected native-speaker peers with tense-marking, i.e., highly accurate; whereas, L2 children with SLI would be expected to eventually perform like their native-speaker peers with SLI, and furthermore, should display slower acquisition of tense morphology than their L2 peers with TLD.

While general difficulties in the acquisition of tense morphemes are common to both L2 learners with TLD and L1 learners with SLI, key differences have also been found between these learner populations regarding this target structure. First, Paradis (2005) noted that the gap between tense and non-tense morpheme accuracy was narrower for L2 with TLD than has been reported for L1 with SLI, suggesting that difficulties with grammatical morphology are more diffuse in L2 than in impaired L1 acquisition, and thus, tense-marking morphology is not as selectively affected. Paradis (2005) also noted that while omission errors with grammatical morphemes were more frequent than form choice/commission errors in the speech of L2 children with TLD, commission errors were proportionally more frequent than what has been reported for L1 children with SLI. Finally, Haznedar (2001), Ionin & Wexler (2002), Lakshmanan (1994), Paradis, Rice,

Crago & Richman (2004), and Zobl & Liceras (1994) have found that L2 learners with TLD acquire BE morphemes (*am, is, are, was, were*) much faster than affixal morphemes for tense, so much so that learners could reach near mastery levels with BE, while supplying affixal tense morphemes less than 50% in required contexts. The work of Rice and colleagues reveals that children with SLI are somewhat more advanced in their acquisition of BE compared to the affixal morphemes (Rice et al. 1995; Rice et al. 1998). For example, Rice et al. (1995) found that for five-year-old children with SLI, accuracy with BE was about 10–20% higher than for third person singular [-s] or for past tense [-ed]. However, precocious BE acquisition is much more striking in child L2 acquisition with TLD than child L1 acquisition with SLI (Paradis et al. 2004). Therefore, special attention to each of these patterns would be necessary for detecting differences between L2 with TLD and L2 with SLI regarding tense acquisition. L2 children with SLI might show the L2 with TLD pattern, the L1 with SLI pattern, or a hybrid pattern.

In this chapter, data from English L2 children were used to investigate whether the acquisition of tense-marking morphology might serve to distinguish English L2 children affected with language delay/impairment from their unaffected peers. The patterns and rates of these children's acquisition of tense and non-tense marking grammatical morphology was examined over time, and compared between them as well as with normative data from English monolingual native speakers.

2. The study

2.1 Participants

Nine Chinese (Cantonese and Mandarin) L1 children with TLD, and two Cantonese L1 children, KVNL and WLLS, known to have language delay/impairment in their L1s participated in this longitudinal study. Keeping the L1 constant for both affected and unaffected children eliminates the possibility that any differences found between the children could be attributable to L1 transfer. All children were from immigrant families acquiring English as a L2 in Edmonton, Canada, and had a mean age of 5;4 at the outset of data collection, and 7;1 at the final round. The mean amount of exposure to English was 11 months at the first round of data collection, 24 months at the second round, and 36 months at the third round. Children's exposure to English was considered to have begun at their entry into full-time preschool or school programmes, confirmed by parental report. The children with TLD were recruited through agencies that assist new arrival families in the Edmonton area.

Both KVNL and WLLS were referred to my lab by registered Speech-Language Pathologists, and were receiving intervention at the time the study began. WLLS continued to receive therapy throughout the length of the study. KVNL was assessed after a year in an ABC Head Start programme as having English abilities much lower than age-expected norms. With the assistance of an interpreter, the Speech-Language Pathologist determined that his Cantonese language development appeared to also exhibit mild-to-moderate delay. In addition, KVNL showed some articulation delays with certain segments, but importantly for this study, he could produce word final obstruents. WLLS was assessed as having moderate receptive language delay and severe expressive language delay in both of his languages, and was recommended for an early education programme at a school with a focus on special-needs children. WLLS has an older brother who is similarly affected and also attends this school. Even L2 children with TLD could score very low on a test standardized for native-speakers early on in their English L2 development; therefore, for children to be considered affected with language delay or impairment in this study, there had to be documentation of difficulties in their L1 acquisition (Eng & O'Connor 2000; Gutiérrez-Clellen & Kreiter 2003; Juárez 1983), and both KVNL and WLLS met this inclusion criterion.

Note that KVNL was assessed as having mild-to-moderate difficulties, while WLLS was assessed as having moderate-to-severe difficulties. Rice (2007) discusses the possible distinction between language delay and (specific) language impairment as clinical groups. Both groups exhibit significant delays in the onset and unfolding of acquisition milestones, but children who are simply language delayed may eventually “catch up” to their unaffected peers, while children with language impairment show more pronounced specific delays within their general delay, for example, very protracted acquisition of tense morphemes, and may never completely catch up to unaffected peers. As will be shown, this difference between KVNL and WLLS in their degree of affectedness was apparent in their acquisition patterns with grammatical morphemes in English. It is likely that KVNL is mainly language delayed while WLLS is specifically-language impaired. For this reason the children are referred to as affected with “language delay/impairment” throughout this chapter.

The information in Table 1 shows how the two affected children compare to the group of children with TLD. Table 1 contains the means and standard deviations (SD) from the TLD group at each round for age in months, months of exposure to English (MOE), non-verbal IQ, and mean length of utterance in morphemes (MLU). Table 1 also contains the individual information for these variables from KVNL and WLLS. For age, MOE, and non-verbal IQ, KVNL and WLLS's numbers are within 1.0 SD of the TLD mean. On the other hand, KVNL's and WLLS's MLUs are greater than 1.0 SD below the TLD MLU mean at round 1

Table 1. Children's ages, exposure to English, non-verbal IQs, and mean length of utterances

	Round 1			Round 2			Round 3			
	Age	MOE	NVIQ	MLU	Age	MOE	MLU	Age	MOE	MLU
L2-TLD	66(11)	10(5)	116(13)	3.61(.73)	78(9)	23(5)	4.48(1.1)	90(9)	35(5)	4.4(.95)
KVNL	57	14	104	2.85	70	26	1.76	82	38	3.52
WLLS	58	11	115	2.59	71	24	2.97	83	36	3.68

Note. Age = age in months; MOE = months of exposure to English; NVIQ = non-verbal IQ standard score; MLU = mean length of utterance in morphemes. L2-TLD information is expressed in means and standard deviations.

and round 2, and are close to 1.0 SD below the mean at round 3. (KVNL's very low MLU at round 2 is most likely due to his lack of volubility during the recording session). Therefore, as expected, the affected children show delay in their overall morphosyntactic development compared to their peers with TLD, even though the children are comparable in other respects.

2.2 Procedures

Data for this study consisted of coded spontaneous speech transcripts and elicitation probes from a standardized instrument, the Test of Early Grammatical Impairment (TEGI: Rice & Wexler 2001). Spontaneous speech samples were gathered through an informal interview and free play session between the child and a student research assistant, and transcribed using the CHAT conventions from CHILDES (MacWhinney 2000; www.childes.psy.cmu.edu). The children's MLUs were calculated from 100 consecutive utterances in their spontaneous speech transcripts, and these transcripts were also coded for use in obligatory context of the following tense-marking morphemes: (1) third person singular [-s], *he walks*, (3S-s); (2) regular past tense [-ed], *she walked*, (PAST-ed) and irregular past tense, *dig-dug*, (PAST-IR); (3) the auxiliary and copula *be*, *he is walking*, *she is happy*, (BE), and (4) the verb *do* as an auxiliary, *does he walk to school?* (DO). Transcripts were also coded for use in obligatory context of the following non-tense marking morphemes: (1) Definite and indefinite articles *the/a*; (2) locative prepositions *in/on*; (3) the nominal plural [-s], *one cat-two cats*, and (4) the progressive verbal suffix [-ing], *he is walking*. Tense and non-tense composite scores were calculated as an average of children's mean percent correct use in context for each individual morpheme. Ten percent of the spontaneous speech transcripts were re-done by a different student assistant, compared with the originals, and reliability scores were calculated for words agreed upon in the transcription and codes agreed

upon in the coding tiers. Reliability scores ranged from 91% to 96% for words in transcriptions and 87% to 95% for coding.

Three probes from the TEGI designed to elicit 3S-s, PAST (-ed and -IR), and BE/DO were administered. For the 3S-s probe, children were shown pictures of professionals engaged in work activities and given prompts like, *Here is a teacher. Tell me what a teacher does*, with the expected response being something like *A teacher teaches* or *A teacher writes on the board*. For the PAST probe, children were shown pictures of children engaged in activities, followed by a picture showing the activity being completed, and given prompts like, *Here the boy is raking. Now he is done. Tell me what he did*. The expected response would be *He raked*. Elicitation of BE and DO was accomplished through a play scenario involving a puppet, stuffed animals, and other items. Children were told that only the puppet could talk to the stuffed animals, so if the child wanted to know something about the animals, she would have to ask the puppet. The child was encouraged by the experimenter to ask the puppet about one or more of the animals, e.g., *I wonder if the bears are thirsty after their nap. You ask the puppet*, or to make statements about the animals, e.g., *Oh, now the bears are tired. What about the kitty?*. Thus, this play scenario was designed to elicit third person singular and plural statements and questions such as, *Are the bears thirsty?*, *The kitty is tired*, or *Do the bears like apples?*. Percent correct scores were calculated for each morpheme individually out of the number of scorable responses given by the child during each probe. Scorable responses consisted of those where an attempt was made at the target morphological structure, or a bare verb stem was used. An elicited grammar composite score was also calculated as an average percent correct score across all the target morphemes.

Finally, non-verbal IQ standard scores presented in Table 1 were from the Columbia Mental Maturity Scale (Burgemeister, Hollander Blum & Lorge 1972), administered at round 1. Information about children's months of exposure to English was obtained through parental interviews.

2.3 Analyses and specific research questions

The comparative analyses took two forms and were aimed at determining if the two affected children displayed EOI patterns in their acquisition of tense morphemes and/or showed distinct characteristics from the L2 children with TLD. The first set of comparisons was between the L2 children, with and without language delay/impairment, and the monolingual norming sample means and SDs from the TEGI. The TEGI norming sample consisted of 393 children with TLD, and 444 children with SLI. The purpose of these comparisons was to address this

question: (1) Are the affected L2 children more likely to score as monolinguals with SLI than the L2 children with TLD, and does this change over time?

The second set of comparisons was conducted between the L2 children with TLD and the L2 children with language delay/impairment. In this case, individual scores from KVNL and WLLS were compared to the means and SDs from the TLD group for various measures. The purpose of these comparisons was to address the following questions:

1. Does accuracy with tense-marking morphemes over time distinguish KVNL and WLLS from their L2 peers with TLD?
2. Do KVNL and WLLS perform worse with tense than with non-tense-marking morphemes? Do they show a larger gap between their abilities with tense and non-tense morphemes than L2 children with TLD?
3. Do KVNL and WLLS show precocious acquisition of BE versus affixal inflections, as would be expected for L2 acquisition with TLD, or do they show closer development of BE and affixal tense morphemes, like L1 acquisition with SLI?
4. Do KVNL and WLLS show relatively greater proportions of omission versus commission errors with BE morphemes than L2 children with TLD?

For both sets of comparisons, estimation of the affected children's performance *vis à vis* monolinguals with SLI or L2 children with TLD was gauged by distance in SD units of their scores from group means. For the comparisons with monolinguals, the L2 children with TLD's group means were also analysed in terms of SD units from the mean of their monolingual peers. The rationale for conducting analyses in this fashion was that a commonly-used diagnostic criterion for determining if children have SLI is whether they perform lower than 1.0 SD from a comparison group of children on various language outcomes. Put differently, it was not expected for the L2 children with language delay/impairment to display qualitatively different patterns from the comparison groups, but instead to display quantitatively different patterns, which is the case for L1 children with SLI when compared with L1 children with TLD. SD units provide a systematic measurement for determining the extent of quantitative differences.

3. Results

3.1 Acquisition of tense compared with monolingual norms

The children's elicited grammar composite (EGC) scores from the TEGI (expressed as proportions) were compared to those of the monolingual norming sample from

Table 2. Children's elicited grammar composite scores compared to the scores from the TEGI norming sample

	Round 1			Round 2			Round 3		
	EGC	TEGITLD	TEGISLI	EGC	TEGITLD	TEGISLI	EGC	TEGITLD	TEGISLI
L2-TLD	.29	.89-.94 (.11-.08)	.41-.55 (.23-.25)	.63	.92-.94 (.08-.08)	.47-.55 (.24-.25)	.82	.94 (.08)	.55 (.25)
KVNL	.24	.89	.41	.19	.92	.47	.85	.94	.55
WLLS	.33	.89	.41	.21	.92	.47	.53	.94	.55

Note. TEGI scores from Rice & Wexler (2001:65).

the TEGI. Means for the TEGI TLD and SLI groups are given in the manual according to six-month age intervals (Rice & Wexler 2001). In Table 2, the mean EGC for the L2-TLD group, and the means from the TEGI norming samples covering the appropriate age range are given. Individual scores for the two affected L2 children are given as well. The data in Table 2 reveal that at round 1, both the L2-TLD mean and the individual scores from KVNL and WLLS were similar to each other and closer to the mean score for their monolingual age peers with SLI than with TLD. The L2 children with TLD's mean score was -6.3 SDs from the mean for their monolingual age peers with TLD, but within 1.0 SD of the mean for monolinguals with SLI. Both KVNL's and WLLS's scores were within 1.0 SD of the mean for monolinguals with SLI. At round 2, the L2 children with TLD were performing better than their monolingual age peers with SLI, although much lower than their monolingual age-peers with TLD, the L2 mean being -3.8 SDs from the monolingual mean. In contrast, at round 2, KVNL and WLLS were performing slightly worse than monolinguals with SLI; KVNL's score was -1.2 SDs and WLLS's score was -1.1 SDs from the mean of affected monolinguals. At round 3, the mean score of the L2 children with TLD was starting to approach their unaffected monolingual age peers with TLD, at 1.5 SDs lower. The affected L2 children were different from each other at round 3; KVNL had a score higher than the mean of the monolinguals with SLI, and 1.1 SDs below the mean of the monolinguals with TLD, while WLLS's score was close to the mean of the monolinguals with SLI.

This comparison with monolingual native-speakers shows that acquisition of tense-marking morphology is gradual in both L2 acquisition with TLD and L2 acquisition with language delay/impairment. It is not the case that the L2 children with TLD leapt to native-speaker performance within a few months of exposure. However, gradual development for all L2 children notwithstanding, the two affected children performed more closely to the monolinguals with SLI at round 2 than did the L2 children with TLD. Furthermore, the L2 child with SLI, WLLS, performed like a monolingual child with SLI at round 3 as well.

3.2 Acquisition of tense versus non-tense morphemes

The children's EGC from the TEGI, tense composite (TC) and non-tense composite (NTC) scores from their spontaneous speech samples are given in Figures 1, 2 and 3 respectively. The scores for the L2-TLD group are expressed as means with SD bars, while individual scores are given for KVNL and WLLS.

Let us examine the data in Figure 1 first, from the TEGI. At round 1, both KVNL and WLLS had scores within 1.0 SD of the TLD group. So, at 11 months of exposure to English, the children with language delay/impairment and with TLD were not separated from each other by EGC scores, which we also noted in the analyses above. In contrast, at round 2, where children had close to two years' exposure to English, some separation was apparent. KVNL's EGC score was -1.6 SDs from the TLD mean, and WLLS's was -1.5 SDs from the TLD mean. In addition, only one child in the L2-TLD group had a score close to that of KVNL and WLLS. At round 3, as also noted above, the affected children differed from each other in their EGC scores. WLLS's score was -1.3 SDs below the TLD mean, but KVNL's was within 1.0 SD at that round. A somewhat different pattern can be observed in Figure 2 for the tense morphemes from spontaneous speech, in that both KVNL and WLLS scored below 1.0 SD from the TLD mean at round 1 (KVNL = -2.4 SDs; WLLS = -1.5 SDs), but only WLLS scored below at round 2, -1.3 SDs. At round 3, both scored within 1.0 SD of the TLD group. At round 1 for TC, 2 of the TLD children scored as low as WLLS, but none as low as KVNL.

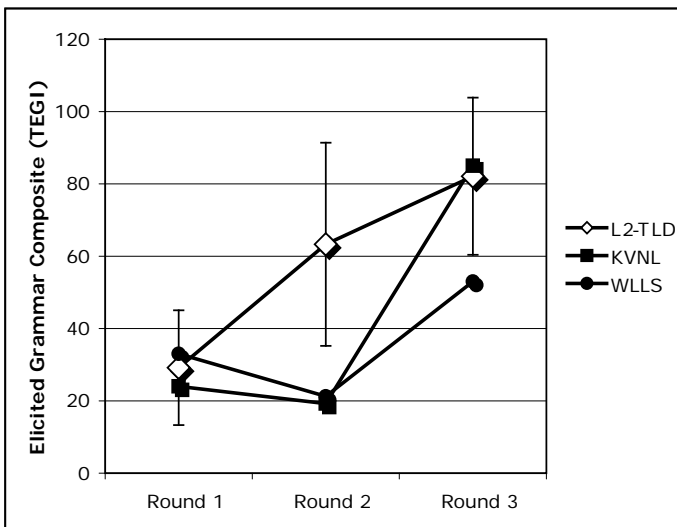


Figure 1. Children's elicited grammar composite scores from the TEGI across rounds

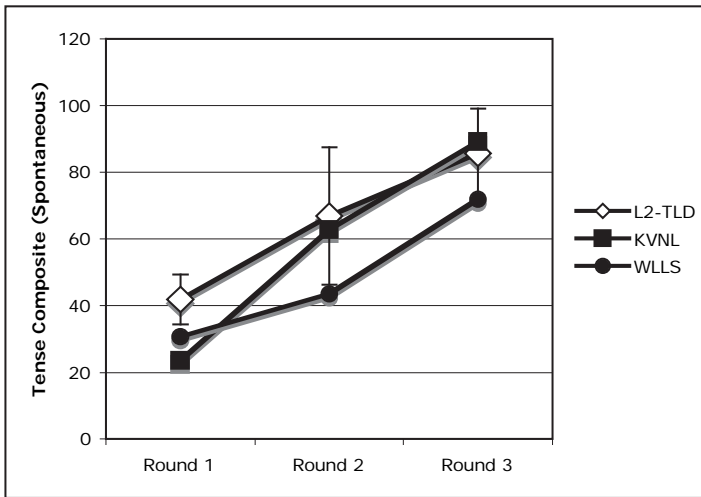


Figure 2. Children's tense composite scores from spontaneous speech across rounds

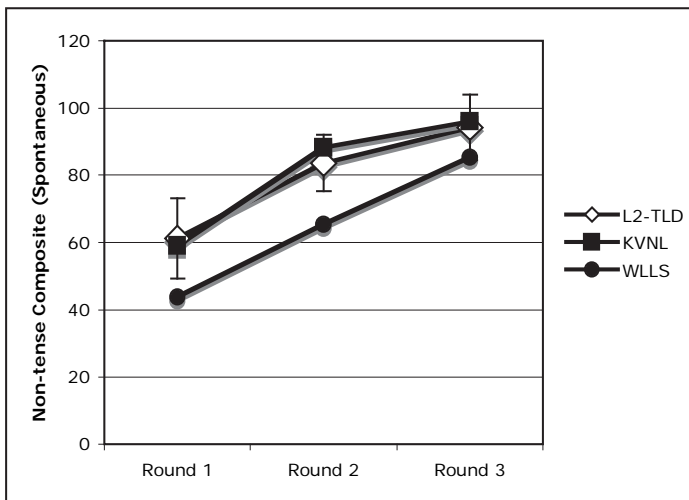


Figure 3. Children's non-tense composite scores from spontaneous speech across rounds

Turning to the NTC scores in Figure 3, KVNL performed like the TLD group at every round, but WLLS scored below 1.0 SD at rounds 1 and 2 (round 1 = -1.5 SDs, and round 2 = -2.2 SDs). No child from the TLD group had a score as low as WLLS's for rounds 1 and 2. The gap, or differential, between the TC and NTC scores was similar for the TLD group and for KVNL and WLLS at each round. The gap between the EGC and NTC scores was also similar at round 1

for the TLD group and the affected children, but this changed at rounds 2 and 3. KVNL displayed a more pronounced differential between his EGC and NTC scores than the TLD group at round 2, .65 versus .20 respectively. WLLS displayed a more pronounced differential between his EGC and NTC score than the TLD group at rounds 2 and 3 (round 2 = .41 versus .20; round 3 = .30 versus .05).

In summary, KVNL was slower to acquire tense morphemes than the TLD group at rounds 1 and 2, taking EGC and TC together, but appeared to catch up by round 3 for both EGC and TC. KVNL was more accurate with non-tense than tense morphemes at rounds 1 and 2, but only slightly more so at round 3, parallel to the TLD group; however, at round 2 his gap between tense and non-tense was larger than that of the TLD group. Thus, KVNL displayed the EOI characteristics of specific delay with tense morphemes to some extent early on, but these characteristics disappeared by round 3. WLLS was slower to acquire tense morphemes than the TLD group at rounds 1 and 2, taking EGC and TC together, and did not catch up in the final round for the EGC. WLLS was also more accurate with non-tense than tense morphemes at all rounds, like the TLD children, but his gap between tense and non-tense was larger than for TLD at rounds 2 and 3. Therefore, WLLS displayed the EOI characteristics of specific delay with tense morphemes, and more consistently than KVNL. These differences between KVNL and WLLS could be expected based on their differences in degree of affectedness.

3.3 Acquisition of individual tense morphemes

In order to ascertain whether the L2 children showed precocious acquisition of BE, children's percent correct scores for BE (COP and AUX combined) versus the affixal tense morphemes, 3S-s and PAST-ed, were plotted at each round from the TEGI probes in Figures 4 to 6.¹ The L2-TLD group means and SDs are given, along with individual scores from KVNL and WLLS. Where there is no score given for one of the affected children, this was because he had no scorable responses on the TEGI probe for that morpheme.

At round 1 in Figure 4, it can be seen that all the children show a gap in acquisition rate between affixal and BE morphemes. In order to compare the performance of the L2 children with monolingual peers, the scores from the TEGI

1. The patterns from the spontaneous speech were highly similar to those from the TEGI for this analysis, but only the TEGI scores were chosen to be presented here to reduce the overall number of Figures, and because they can be compared to monolingual norms. Scores for regular verbs only in the past tense were chosen for this analysis because irregular verbs do not involve straightforward affixal inflection comparable to 3S-s, and also, are not as distinct from the suppletive BE forms as regular past tense verbs.

norming sample were consulted for 3S-s and BE (Rice & Wexler 2001:65; PAST-ed was not used because the norms are for irregular and regular past tense combined). For the monolinguals with TLD in the age range of the L2 children at round 1, mean proportion scores for 3S-s were .91-.97, and for BE they were .90-.93. For monolinguals with SLI, mean scores were .39 to .47 for 3S-s, and .57-.60 for BE. Clearly, all the L2 children displayed a wider separation between their performance with 3S-s and BE than their monolingual age peers, both with and without SLI. Even if we consider the norms for the youngest group of monolinguals from the TEGI, 3;0-3;5, we find that for children with TLD, the mean for 3S-s was .71 and for BE it was .72. For the monolinguals with SLI, the means for 3S-s and BE were .29 and .23 respectively. Thus, the separation pattern in L2 is not simply parallel to an earlier stage in L1 acquisition.

Turning to round 2 (Figure 5), the separation between accuracy with affixes and with BE remained pronounced for KVNL and WLLS, but not for the L2 children with TLD. KVNL's and WLLS's scores with 3S-s and PAST-ed were greater than 1.0 SD below the mean for L2 children with TLD. By round 3 (Figure 6), the children with TLD had similar and high levels of accuracy for both the affixal morphemes and BE, and so did KVNL. WLLS still maintained the separation pattern.

Concerning errors with BE forms, the number of errors children made in contexts in spontaneous speech for BE-AUX and BE-COP were combined, and

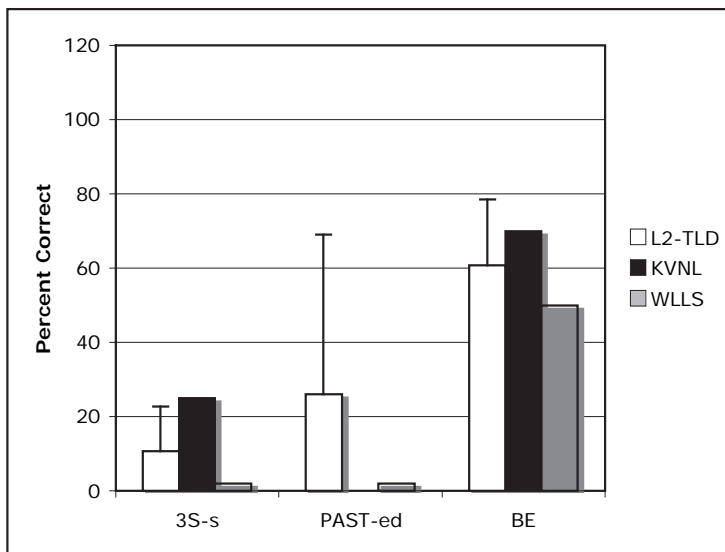


Figure 4. Children's scores for individual tense morphemes from the TEGI at round 1

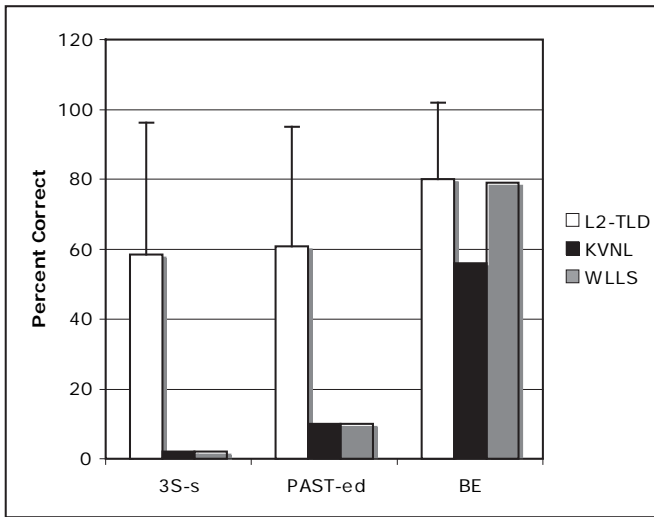


Figure 5. Children's scores for individual tense morphemes from the TEGI at round 2

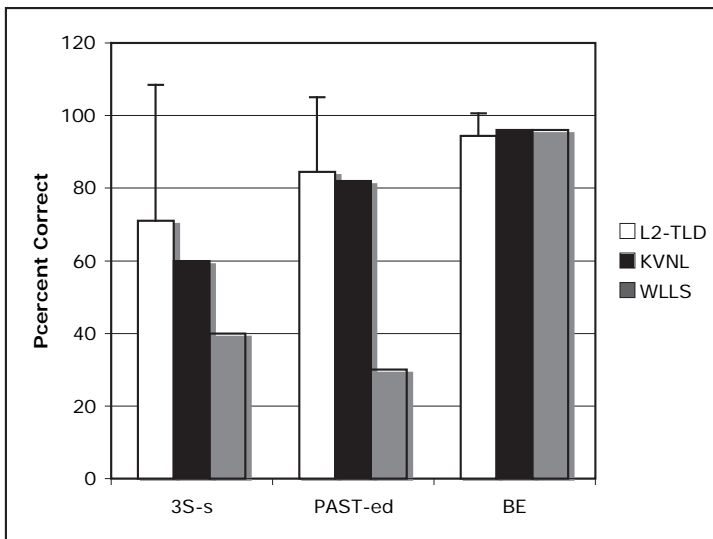


Figure 6. Children's scores for individual tense morphemes from the TEGI at round 3

then proportions of omission and commission errors were calculated. Commission errors included the following: (1) substitution of the wrong person/number form, *they's just plain crackers* or *my mom and dad was saying happy birthday to me*; (2) double-marking of an auxiliary, *they are is flying up*, and (3) substitution of DO for BE, *no, I don't grown up*, or *what does it doing?*. For the L2 children

with TLD, errors were totaled across children. Only rounds 1 and 2 were examined because the children were highly accurate with BE forms by round 3 (over 80%), and individual frequencies for errors were often below 4, and therefore, calculations of proportions might be unreliable. At round 1, the L2 children with TLD had .65 (107/164) omission errors and .35 (57/164) commission errors. In contrast, KVNL and WLLS had .93 (13/14) and .89 (17/19) omission errors and .07 (1/14) and .11 (2/19) commission errors respectively. At round 2, the children with TLD had .53 (75/142) omission errors and .47 (67/142) commission errors. KVNL had .50 omission errors (3/6) and .50 (3/6) commission errors, and WLLS had .75 (12/16) omission errors and .25 (4/16) commission errors. Thus, at round 1, KVNL and WLLS exhibited distinct error-type distributions from the children with TLD, and at round 2, WLLS also exhibited this distinct distribution. For KVNL at round 2, the even split in his distribution may be an artifact of low frequency of errors (6 in total).

To summarize, all the L2 children demonstrated a separation pattern between affixal tense morphemes and BE, but the two L2 children with language delay/impairment lagged behind the L2 children with TLD in that they manifested the separation pattern longer. The precocious acquisition of BE is not a phenomenon in L1 acquisition, with or without SLI, and as we elaborate on below, it poses some challenges to an EUCC-based explanation of the EOI stage. In contrast, KVNL and WLLS patterned more like L1 children with SLI in terms of their preponderance of omission errors with BE.

4. Tense as a clinical marker in child L2 English

The main question underlying this study was whether the acquisition of tense morphology constitutes a clinical marker in English L2 acquisition as it does in English L1 acquisition. In other words, it was asked whether acquisition patterns and rates with tense marking morphemes displayed by L2 children with SLI would go beyond the vulnerabilities expected in L2 acquisition in general, and show evidence of selective deficits in this domain. The concept of tense as a clinical marker was operationalized through examining EOI acquisition patterns. The presence of continuity in tense acquisition patterns between English L1 and L2 learners with SLI would provide further support for the EOI account, as well as have potential applied relevance for assessment of SLI in L2 learners.

The data showed partial support for the contention that tense functions as a clinical marker in L2 English. First, the two L2 children with language delay/impairment lagged behind L2 children with TLD in approaching monolingual norms in tense marking, and WLLS scored more consistently like monolinguals

with SLI across time than did the L2 children with TLD. Second, KVNL and WLLS had scores below the normal limits for tense morphology, as determined by the L2 children with TLD, at round 2 in particular. Third, both KVNL and WLLS showed larger differentials in accuracy between tense and non-tense morphemes than the TLD group at round 2, and for WLLS, round 3. Fourth, KVNL and WLLS had negligible or few commission errors with BE. These findings are consistent with the EOI patterns reported for monolinguals. Note also that WLLS, who is more severely affected than KVNL, exhibited more pronounced EOI characteristics. On the other hand, errors with both tense and non-tense grammatical morphology and the precocious acquisition of BE were common to all the L2 children, and are not consistent with the acquisition patterns of the EOI stage in monolingual children. Let us explore some possible explanations for why diffuse problems with grammatical morphology and precocious acquisition of BE could be expected in impaired L2 but not in impaired L1 acquisition.

An important difference between L1 with SLI and L2 with SLI is age of acquisition onset, which results in differences in amount of target language exposure. Five-year-old L1 children with SLI would have had at least three more years' exposure to English than the affected L2 children in this study had at the outset. Therefore, L1 children with SLI would have had enough exposure to become accurate with non-tense morphology, even taking into consideration their general language delay. It is not surprising, then, that the L2 children in this study would not have displayed stable and ceiling abilities with non-tense morphemes at rounds 1 and 2. Note that all the L2 children do show stable and highly accurate abilities with non-tense morphemes by round 3. Therefore, it might be expected that the gap in abilities between tense and non-tense marking morphology in English L2 five year olds with SLI would be narrower than the gap reported in studies of English L1 five year olds with SLI.

Differences in age at acquisition onset between L1 with SLI and L2 with SLI not only result in differences in target language exposure, but also result in differences in linguistic maturity when acquisition begins. This point is relevant in consideration of the EUCC, the constraint proposed to underlie the EOI stage. Recall that the influence of the EUCC is supposed to fade gradually such that L1 children with SLI reach close to the lower bound of performance of their unaffected age peers by age 8;0 (Rice et al. 1998). Children affected with SLI who begin learning another language at school age, begin learning this language with an operative but fading EUCC, and so, might experience weaker constraints on their abilities to produce tense morphemes at the beginning of their acquisition period than affected monolinguals experience at the beginning of their L1 acquisition period. If this supposition is on the right track, it could explain why these affected L2 children display precocious acquisition of BE, like their L2 peers with TLD and

unlike their L1 peers with SLI. Ionin & Wexler (2002) put forward the proposal that earlier acquisition of BE versus affixal tense morphemes in L2 English with TLD might be due to the greater computational complexity associated with checking operations for affixal tense morphemes in English (see also Zobl & Licerias 1994). For example, in a minimalist framework, BE forms undergo overt movement to the Tense projection in the computation, while English verb forms with tense affixes do not, and clauses with affixal morphological expression of tense are viewed as having long-distance agreement between the verb and Tense, which is less economical and more marked crosslinguistically (Ionin & Wexler 2002). For L1 children with SLI, the strong internal limits placed on their early grammars by the EUCC could have mitigated the effects of computational complexity in their expression of tense morphemes, or sensitivity to computational complexity has not yet matured. Because affected L2 children begin the English acquisition process older and with a comparatively weakened EUCC, they might be more sensitive to computational complexity. Thus, it is possible that an interaction of the (fading) EUCC and emerging sensitivity to computational complexity at this stage results in BE forms being virtually the only expression of tense in affected children's English interlanguage early on.

If we assume that children with SLI who begin learning a language in the school years begin that process with weakened constraints on tense production, we can also explain another finding in these data concerning rate of tense acquisition. A striking finding from this study is how quickly WLLS caught up to his seven-year-old monolingual peers with SLI, after just three years of exposure to English. The ability for French-English simultaneous bilingual seven-year-olds with SLI to perform similarly to their monolingual peers with SLI in accuracy with grammatical morphology has been documented in Paradis, Crago, Genesee & Rice (2003) and Paradis, Crago & Genesee (2005/2006). The L2 and bilingual findings together offer evidence against claims that the primary and sole deficit in SLI is a domain-general limitation in cognitive processing, slowing down affected children's abilities to uptake, store and access linguistic as well as non-linguistic information (e.g., Miller, Kail, Leonard & Tomblin 2001). It would be expected on this perspective that dual language learning would overload these children's already limited processing capacity, and in turn, severely decelerate their ability to intake linguistic information in their two languages, making catching up unlikely, or at best, a very long process. In contrast, the EOI account assumes that a domain-specific constraint on linguistic representation, like the EUCC, is responsible for difficulties with tense acquisition. Such an internal constraint would be operative regardless of processing load due to dual language input, and so it should be possible for a bilingual with SLI to catch up to monolinguals with SLI (cf. Paradis et al. 2005/2006).

5. Conclusion

In conclusion, these two L2 children with language delay/impairment appeared to display characteristics of both L1 learners with SLI and L2 learners with TLD. It is possible that differences between L1 and L2 English impaired acquisition lie in differential age of acquisition onset. Assuming this perspective permits an explanation of the patterns that are not consistent with the reported EOI patterns in monolinguals, while still preserving the essential concept that a selective deficit on tense is a component of impaired acquisition in all child learners of English.

Let us now consider these findings in light of their relevance for differential diagnosis of impairment in bilingual populations. First, the delay in acquisition of tense morphemes appeared to distinguish these affected L2 children from their L2 peers with TLD only after the initial stage of acquisition has passed, and not in terms of a contrast with non-variable or ceiling performance with non-tense marking morphology. Furthermore, the acquisition of affixal tense markers constituted a more substantial domain of difference between L2 with language delay/impairment and L2 with TLD than the acquisition of BE morphemes. Thus, affixal tense-marking morphology holds more promise than tense morphology composite scores as a target structure in the development of assessment tools to be used with L2 learners. In sum, the timing of assessment with respect to an L2 child's chronological age and amount of exposure to English, and choosing which verbal forms to examine, are important factors to consider in a clinical setting.

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