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Abdulaziz Hassan Zaid Najmi
AUTEUR DE LA THÈSE / AUTHOR OF THESIS

Ph.D. (Linguistics)
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Departement of Linguistics
FACULTÉ, ÉCOLE, DÉPARTEMENT / FACULTY, SCHOOL, DEPARTMENT

Clause Structure in the Development of Child L2 English of L1 Arabic
TITRE DE LA THÈSE / TITLE OF THESIS

Juana Muños Liceras
DIRECTEUR (DIRECTRICE) DE LA THÈSE / THESIS SUPERVISOR

CO-DIRECTEUR (CO-DIRECTRICE) DE LA THÈSE / THESIS CO-SUPERVISOR

EXAMINATEURS (EXAMINATRICES) DE LA THÈSE / THESIS EXAMINERS

Usha Lakshmanan (S Illinois U. Carbondale)

Éric Mathieu

Laura Sabourin

Andrés Salanova

Gary W. Slater
Le Doyen de la Faculté des études supérieures et postdoctorales / Dean of the Faculty of Graduate and Postdoctoral Studies

Clause Structure in the Development of Child L2 English of L1 Arabic

Abdulaziz H. Najmi

Thesis submitted to the
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Department of Linguistics
Faculty of Arts
University of Ottawa

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To my Father Who Inspired me Deeply and

Whom I Miss Very Much

Abstract

Using new longitudinal data, this thesis investigates the acquisition of clause structure from the earliest stages of language production of a child native speaker of Arabic learner of English. Specific attention is paid to the acquisition of the TP and CP systems and their related syntactic features.

The first major objective of this work is to investigate the initial and subsequent emerging grammars of this child. Another objective is to investigate the status of child L2 acquisition with regard to child L1 and adult L2 acquisition. The idea is to test whether child L2 resembles child L1/adult L2 in the domain of syntax and/or morphology. A third objective is to determine the extent to which L1 intervenes with the L2 acquisition, and to ascertain the nature of the intervention.

In this work I mainly study the TP and CP systems with their related features. This involves a variety of morphosyntactic constructions related to those features. I assume, following Hawkins (2005) and Lardiere (2008), among others, that language acquisition involves feature activation/assembly. A feature-based account of functional categories assumes that the language faculty provides a set of features and a computational tool that assembles these features into lexical items and expressions (Hawkins, 2005). In this system, formal features play a more important role as they determine agreement, case relations, and movement processes. Therefore, recent developments in minimalist syntax have shifted the acquisitionist's focus from the acquisition of functional categories to the availability and organization of formal features.

The data of this study suggest that the functional projections TP and CP are activated early on. Formal features associated with the TP and CP systems are present from the earliest data available from this child. Moreover, this thesis confirms previous findings (e.g., Haznedar 2001) that even very young L2 children are subject to the influence of the native language. Finally, this study shows that although child L2 resembles child L1 and adult L2 in certain morphosyntactic aspects, the differences among these three groups are much more salient than the similarities.

THESIS ADVISOR:	JUANA LICERAS (UNIVERSITY OF OTTAWA)
EXTERNAL EXAMINER:	USHA LAKSHMANAN (SOUTHERN ILLINOIS UNIVERSITY)
INTERNAL EXAMINERS:	ÉRIC MATHIEU (UNIVERSITY OF OTTAWA)
	ANDRÉS SALANOVA (UNIVERSITY OF OTTAWA)
	LAURA SABOURIN (UNIVERSITY OF OTTAWA)

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List of Abbreviations

ACC	Accusative Case
AGR	Agreement
ASP	Aspect
CP	Complementizer Phrase
CPH	Critical Period Hypothesis
DP	Determiner Phrase
EF	Edge Feature
EPP	Extended Projection Principle
FDH	Fundamental Difference Hypothesis
GJ	Grammaticality Judgment task
INFL	Inflection
L1	First Language
L2	Second Language
L1A	First Language Acquisition
L2A	Second Language Acquisition
LAD	Language Acquisition Device
MLU	Mean Length of Utterances
MSIH	Missing Surface Inflection Hypothesis
NEGP	Negation Phrase
NOM	Nominative Case
NS	Native Speaker
OI	Optional Infinitive
PF	Phonetic Form
PIC	Phase Impenetrability Condition
RI	Root Infinitive
RP	Resumptive Pronoun
TP	Tense Phrase
UG	Universal Grammar
VP	Verb Phrase

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also go to Mayyas, the hero of this thesis. Without her data this work would not have seen the light. Last, and most importantly, I would like to express my appreciation to my wife Hana, for her devotion, patience and understanding.

Chapter 1
Introduction

1.0 Introduction

Linguistic theory has influenced research in second language acquisition since the early days of the field[1]. While a number of theories exist, one that has gained a large number of adherents in the field of first language acquisition (L1A) as well as in second language acquisition (L2A) is the so-called Universal Grammar (UG). As in L1A, many L2 studies have investigated the role of UG in second language to determine whether adult L2 learners are constrained by the same innate linguistic knowledge as child L1.

Although much work within the UG framework has investigated the acquisition of English (as well as other languages) by adult L2 learners, quite a few studies have recently examined the acquisition of English by child L2 learners (Haznedar 1997, 2001; Lakshmanan 1994a, b; Lakshmanan and Selinker 1994; Gavruseva and Lardiere 1996; Ionin 2008; Haznedar and Gavruseva 2008; among others). However, no study to date has investigated the acquisition of English by a child native speaker of Arabic. This thesis aims to contribute to the area of child L2A by examining the development of clause structure in L2 English of L1 Arabic learner. For this purpose, I present new production data from a longitudinal corpus from an Arabic-speaking child learner of English.

Using a feature-based approach, I argue that feature acquisition/assembly is operative from the earliest stages of acquisition. The subject of the present work, Mayyas, is able to carry out a number of syntactic operations related to both the TP and the CP systems from the earliest data available. Therefore, based on the analysis of the data, I argue against structural building approaches to L2A. I also argue in favour of a unified clause structure for both child and adult learners. I suggest that clause structure in both grammars is a full CP and the difference should be accounted for under the presence/absence of formal features related to the relevant functional heads.

[1] To be more precise, the real interest in a linguistic model did not appear until researchers like Adjemian, Flynn, Liceras and White started to adopt Chomsky's linguistic framework to analyze the interlanguage phenomenon in the late 1970s.

1.1 An Overview

A recurrent interest in the study of L2A has been the nature of the initial state in child L2 grammar. The debate, as in both child L1 and adult L2, is over what is present in the initial state of acquisition. One of the central issues in the debate is whether functional categories/features are present in the initial state and subsequent emerging grammars. I assume here, following Hawkins (2005) and Lardiere (2008, 2009) among others, that language acquisition involves feature activation/assembly. A feature-based account of functional categories assumes that the language faculty provides a set of features and a computational tool that assembles these features into lexical items and expressions (Hawkins 2005). On this theory, it is possible for children to come up with feature matrices that are not target-like (Hegarty 2005). In other words, children, and adults for that matter, may not be able to project the complete set of features associated with the target functional projections. A typical example of such a case is when a child projects the [WH_{EPP}] feature without [T_{EPP}], resulting in a wh-question without T-to-C movement (see tree diagrams 1-2 below for illustration).

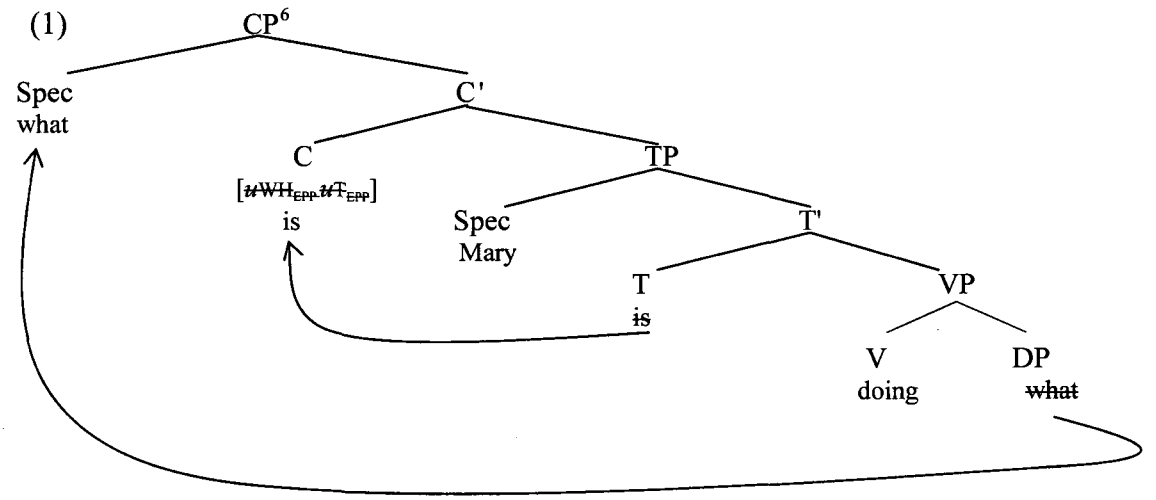
Moreover, in a feature-based theory, functional categories are not primitives; they are mere vessels that host features and feature matrices. In this system, formal features play a more important role as they determine agreement, case relations, and movement processes[2]. Therefore, recent developments in the minimalist syntax have shifted the acquisitionists' focus from the acquisition of functional categories to the availability and organization of formal features[3]. According to Chomsky (2000: 100), "Acquiring a language involves at least selection of the features [F], construction of lexical items Lex, and refinement of C_{HL} in one of the possible ways -- parameter setting".

In this regard, language acquisition researchers have proposed different structural skeletons for clause structure for both L1 and L2 grammars. While some researchers argue that clause structure in early child/adult language development represents a full CP, others assume that it is only a VP or TP at most (Eubank 1994a; Hyams 1994; Radford 1990;

[2] A feature-based theory of functional categories also differs from other theories in that it looks directly into the features themselves and their acquisition rather than on the abstract functional projections *per se*.

[3] Emphasizing the role of formal features in language acquisition, Travis (2008: 23) states that features are "at the heart of recent Chomskyan syntactic theory and within this theory at the heart of language variation. Therefore, any study of language acquisition done within this framework is now a study of the acquisition of features".

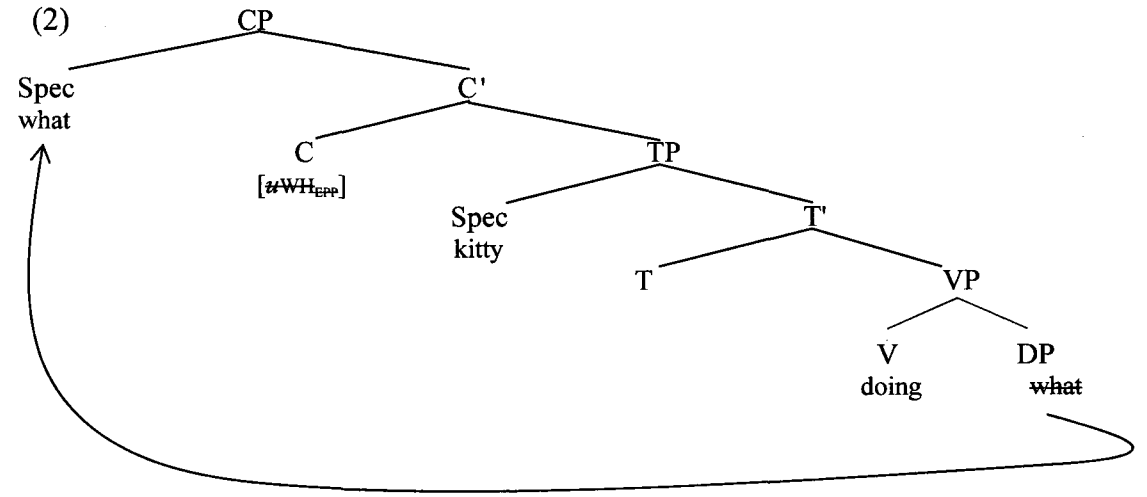
Rizzi 1994a). This discrepancy stems from the debate over what types of clauses children/adults produce at different stages of language development. However, for the sake of "Structural Uniformity"[4] I suggest that clauses in both grammars have the same structural skeleton; that is, they may possibly have the same set of lexical/functional projections. The difference then lies in which functional head is filled with the relevant features and which ones lack those features[5]. Under this analysis, a wh-question, for example, is a CP irrespective of its structure. An adult-like question like "What is Mary doing?" and a typical two-year old question like "What kitty doing?" should have the representations as in (1) and (2) respectively.



[4] The term is due to Grimshaw (1994).

[5] This is referred to in the literature as the Underspecification Hypothesis, which was originally proposed to account for the optional infinitive stage in early child grammar. In the present study I extend the analysis to include the underspecification of any formal feature related either to the TP or CP (and possibly DP) systems (see p. 9 for more details).

[6] In this structure it is assumed (Chomsky 2000: 108) that the wh-phrase first originates in the direct object position of the clause and then cyclically moves to the edge of the *v*P phase before it finally lands in Spec-C.



In structure (1), the head C is complete with respect to its features, namely *u*T and *u*Wh. The *u*T feature enters into Agree relation with the head T and the EPP feature ensures that the auxiliary *is* moves to the head C. The *u*Wh feature also enters into Agree relation with the wh-word *where* and the EPP feature triggers the raising of the wh-word to the Spec-C. In structure (2), on the other hand, the head C lacks the *u*T feature, which would require the process of Agree and movement with the head T. It should be pointed out, however, that while English C does not have any phonologically overt realization in wh-questions, other languages like Standard Arabic and French, for example, do have such a realization. In Standard Arabic, a wh-question like "who bought the book" contains an overt complementizer in the head C, as can be seen in the following examples:

(3) a. Men alathi ishtraa al-kitaab-a?
who that-3SM bought-3SM the-book-ACC
"Who bought the book"

b. Men alati ishtrat al-kitaab-a?[7]
who that-3SF bought-3SF the-book-ACC
"Who bought the book"

c. Men alathin ishtarau al-kitaab-a?
who that-3PM bought-3PM the-book-ACC
"Who bought the book"

[7] Note that the complementizers "*alathi*", "*alati*" and "*alathin*" fully agree with the subject of the clause.

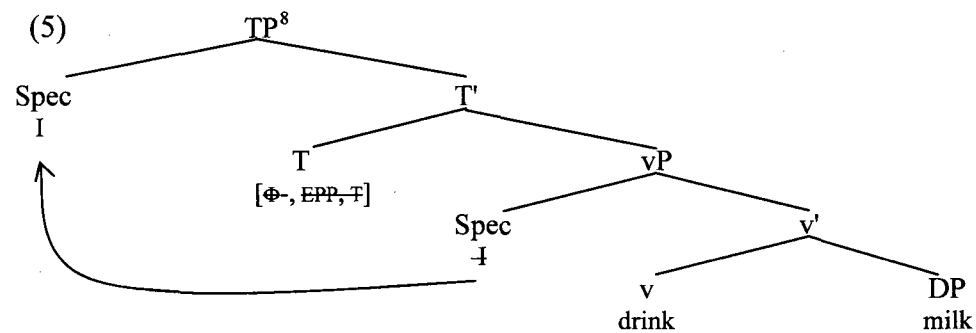
Likewise, Quebec French allows the co-occurrence of a complementizer alongside with the wh element, as the examples in (4) illustrate.

(4) a. Qui que [tu as vu t]?
'Who QUE you have seen?'

b. Qui qui [t est venu]?
'Who QUI has come?' (From Rizzi and Shlonsky 2007: 131)

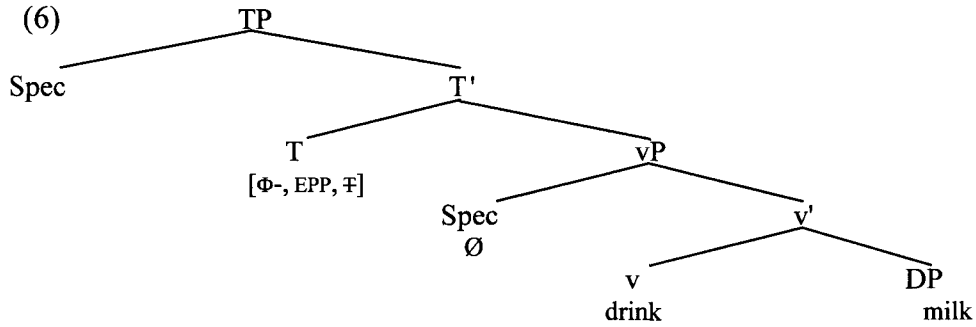
Another example of clause structure in both grammars comes from declarative sentences. An adult-like utterance like "I drink milk" and a typical two-year-old counterpart like "drink milk" should both be full TPs regardless of their structures. In the adult sentence, the head T is complete with respect to its features, namely ϕ-features and the EPP feature. The ϕ-features enter into Agree relation with the Spec-*v* and the EPP feature ensures that the subject *I* moves to the Spec-T. In the child's utterance, on the other hand, the head T lacks the EPP feature, which would require the presence and movement of the subject to the front. This is exemplified in (5) and (6) respectively.

(5)



[8] This structure is simplified by not showing the CP projection which is supposed to be the root of all types of clauses. One recent piece of evidence in support of this claim, as noted by Richards (2007), comes from an argument by Chomsky (2007, 2008) that finite T inherits its features from C which makes T unable to probe until C is introduced into the derivation. In other words, the presence of the TP projection is contingent on the CP projection, at least in finite clauses.

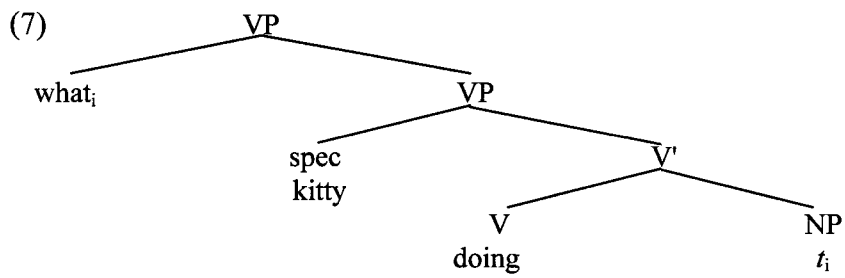
(6)



Therefore, these examples show that a single feature may project by itself, as in the child's utterances, or in combination with other features, as exemplified by the adult counterpart. Thus, the difference between the child type of utterances and the adult counterpart lies in the presence versus absence of the relevant formal feature(s) which make up a given functional category in the target language. In other words, the difference should be accounted for under missing features rather than missing projections as in the older model.

Moreover, the child utterance "What kitty doing?" is better accounted for by structure (2) rather than structure (7) below. In the older model, however, such questions are assumed to be a result of a rather less motivated adjunction (cf. Radford 1996), as exemplified in (7)[9].

(7)



In structure (7) it is reasonable to assume that the child knows that the wh-word is the complement of the verb, and its canonical position is postverbal. It will follow then that such a structure involves movement of the wh-word to the front. Radford (1996), for example, suggests that the wh-word moves to a VP-adjunction position. He assumes that the verb *doing* carries an interrogative feature to signal the interrogative nature of the clause. The problem with such analysis, however, is that the interrogative feature of the

[9] Recall that in the adult structure *what* moves to Spec-C, as shown in (1).

verb is not conceptually motivated. There is no reason to assume that a verb inside the VP constituent carries an interrogative feature which identifies the clause type. The other problem, with such an analysis, is the following: What motivates the wh-word to move in the first place? The wh-word, in such examples, is not triggered to move, let alone move to an adjunction position as in (7). A feature-based account, by contrast, can handle the abovementioned problems in a more natural way. The *u*Wh feature on C indicates that the relevant structure is an interrogative clause and the EPP feature indicates that the wh-word should move to Spec-C. Moreover, the absence of the *u*T feature justifies the lack of T-to-C movement in such constructions. Therefore, it is not reasonable to assume that a whole functional layer (i.e., CP) is absent simply because it lacks one specific feature. What is important here is that the introduction of a feature-based system into the syntactic theory makes it easier to accommodate some data under a full-fledged CP projection in a more natural way, which otherwise was more difficult in the older models.

Another advantage of the feature-based model is that it overcomes the problem of the hierarchy of projection proposed for L1/L2 acquisition. Some researchers (e.g., Vainikka and Young-Scholten 1996) have argued that language acquisition proceeds in a bottom-up fashion: VP is acquired before TP, and TP before CP. Gavruseva and Lardiere (1996), by contrast, argue, based on their study, that it is possible for learners to acquire the CP layer long before the TP layer. In a feature-based model, however, a problem of this sort does not exist. In such a model, it is possible for a child to acquire a feature related to the CP projection before another feature related to the TP projection, as both projections appear simultaneously.

An important issue that will be dealt with in this thesis is that of L1 influence. The issue of L1 influence during second language acquisition has long been a crucial topic in L2A research. While it is generally accepted that L1 influence plays a crucial role in adult L2A (Schwartz 2004), the idea is subject to much more controversy in child L2A. Hulk and Cornips (2006), for instance, state that little is known about the possible influence of L1 in child L2A, as there are very few studies in this area. In fact, research has shown that there is insignificant L1 transfer in child L2A (McLaughlin 1978; Zdorenko and Paradis 2008). Dulay and Burt (1974), for instance, state that first language interference accounts for less than 5% of the errors in their children's studies. Blom and Polišenská (2005) compare the

acquisition of Dutch by child L1, child L2 and adult L2 and report no L1 influence in child L2A (see also Blom 2008 for similar findings). On the contrary, however, Haznedar (1997) investigated the development of L2 English by a 4-year-old native speaker of Turkish and confirms that her subject transfers L1 word order into L2 English. In the first 9 samples of Erdem, a great percentage of his speech was characterized by L1 word order, namely OV structure. Consequently, Haznedar argues that the OV structure in Erdem's speech is a direct transfer from his L1. Likewise, Unsworth (2005), in studying the acquisition of scrambling in the L2 learners of Dutch, reports that both adult and child L2 learners transfer the word order properties of English into their L2 grammar[10]. Therefore, it is reasonable to argue that L2 children who are 4, or even younger, are subject to L1 influence given the fact that they have already acquired another language. In this thesis, I present new evidence in support of L1 influence in specific structures that has not been reported in child L2A research. We will see that Mayyas uses resumptive strategy in both wh-questions and in relative clauses, which seems to be derived from her L1 Arabic.

Another important topic discussed in this work is the issue of Optional/Root Infinitives (Wexler 1994; Rizzi 1994b) in L2A. It is widely observed in the literature that L2 learners produce a mix of inflected and uninflected verbal morphology in their L2A. A question that has interested L2 researchers is whether this optionality in tense and agreement morphology reflects the absence of the relevant functional categories/features in L2A. Some researchers argue that the failure of the L2 learners to produce consistent inflectional morphemes entails a syntactic deficit in L2 grammar (Hawkins and Chan 1997; Hawkins 2001; Franceschina 2001; among others). Others argue that the missing inflection in L2 grammar does not represent a failure in the L2 grammar; it is rather a problem of realizing surface morphology (Haznedar 2001, 2003; Lardiere 1998a; 1998b; Prévost and White 2000a, 2000b). In this thesis, I present an argument in support of the Missing Surface Inflection Hypothesis according to which the missing inflection in L2 grammar

[10] Recent work on child bilingual acquisition (simultaneous bilingual) has also shown that cross-linguistic influence may occur under certain conditions. Müller and Hulk (2001) argue that there is cross-linguistic influence in bilingual children which cannot be accounted for under language dominance or children's inability to separate the two languages. They show that bilingual children acquiring French and German behave differently with regard to object deletion in French when compared with French monolinguals. The idea is that cross-linguistic influence from German input causes the delay of the acquisition of the relevant structure in French. Döpke (2000) similarly argues that Australian children learning English and German simultaneously transfer the VO order of English to German (see also Yip and Matthews 2000 for transfer due to language dominance).

does not represent an underlying deficit in the interlanguage grammar. I will show that despite the continuous missing inflections, the child learner in this study appears to be sensitive to the syntactic properties associated with those inflections.

A related issue discussed in the present work is the relationship between Optional Infinitives (OI) and the Underspecification Hypothesis. The Underspecification Hypothesis was originally proposed to account for the OI stage in early child grammar. Wexler (1994), in particular, has proposed that in the OI stage tense is underspecified[11]. Hoekstra and Hyams (1995), on the other hand, proposed that instead of tense, number is underspecified. According to Hoekstra and Hyams, the underspecification of number leads to the absence of tense. However, a more recent account by Gavruseva (2003, 2004) suggests that the OI stage is related to the underspecification of verbal aspect. The idea of Gavruseva's proposal is that infinitive-like verb forms result from the underspecification of syntactic aspectual heads. According to Gavruseva, the aspectual properties of the verbs such as telicity and punctuality determine which verbs will be finite and which ones will be non-finite. However, we will see in chapter 4 that our data do not seem to support Gavruseva's proposal in this respect.

The optionality of verbal inflections leads us to the important issue of variability in L2A in general. By variable we mean the coexistence within an individual grammar of two or more variants of a particular grammatical property where the native speakers of the target variety use only one. We will see in the following chapters that although Mayyas's L2 grammar seems to be guided and constrained by the principles of UG, syntactic variability is evident throughout the development. The question to ask at this point is why does syntactic variability occur? Although there are several accounts for this issue, a complete and satisfactory account has not been reached (Sorace 2000). An important factor that may contribute to the issue of variability in both child and adult L2 learners is that of transfer. Since both groups of learners already have another language (i.e., L1) in place, it may interfere with the acquisition of the target language which may result in syntactic variability. Age of acquisition is also another important factor in the acquisition of a second or even the first language. It has long been recognized (e.g., Krashen *et al.* 1979) that "younger-is-better in the long run". In fact, most L2A research has confirmed that young

[11] See also Rizzi (1994b) for an alternative account for the OI stage.

L2 learners are more successful in the acquisition of L2 morphosyntax than adult learners (Johnson and Newport 1989, 1991; among others). This study, as we will see in the following chapters, also confirms this observation. Moreover, the quantity and quality of the input and the nature of the surround setting (institutional versus naturalistic) are also considered important factors that might affect the acquisition process.

For the analysis below, the results of this work will be discussed in light of comparable and available data from child L2, child L1 and adult L2 acquisition. In this regard, child L2 acquisition can be informative with respect to both child L1 and adult L2 as recently discussed in Meisel (2008) and Schwartz (2004). Meisel (2008), for example, argues that child L2 resembles adult L2 in the domain of morphology. Schwartz (2004), by contrast, claims that it is in the domain of morphology that child L2 is like child L1 and both are distinct from adult L2. Therefore, the importance of child L2A lies in the crucial similarities and differences it shares with regard to the other two groups of learners. On the one hand, child L2 resembles child L1 in the age factor, but on the other, resembles adult L2 as both groups already have knowledge of another language, namely an L1.

Finally, an obvious relevant contribution of this thesis lies in the fact that it is the first longitudinal case study of the speech of a child native speaker of Arabic acquiring English as a second language. As it is well known, most child L2 studies have investigated English and/or French either as L1 or L2. Therefore, in order to fully understand the issues concerning the source of knowledge available to L2 children, more source and target languages need to be investigated, which the present study is trying to achieve. Moreover, this contribution is also important as it is conducted under the most recent theoretical framework, namely, the Feature-based Theory of syntax which has more theoretical advantages over the previous models as we saw in this chapter. Finally, I believe this thesis is equally important as it should have implications for addressing both the so-called logical and developmental problems of child L2, child L1, and adult L2 acquisition.

1.2 Outline of the Thesis

This thesis is organized as follows: Chapter two presents a general overview of the theoretical framework. The theoretical perspective for the present study is commonly referred to as the Feature-based theory of Functional Categories. Here I mostly concentrate

on formal features and their distribution on functional heads as they form the main focus of the present study. In this work, I mainly study the TP and CP systems with their related features. This would, of course, involve a variety of morphosyntactic constructions related to those features. In this chapter, relevant theories of language development proposed for L1 and L2 acquisition will be discussed in brief. This will include a variety of issues ranging from UG access to L1 influence. I will then review the literature on the acquisition of functional categories and its feature composition in child L1, adult L2 and child L2, respectively. This chapter will be concerned specifically with the different views and hypotheses regarding the availability of functional projections in all three groups of learners. The last section of the present chapter discusses child L2A in an institutional setting.

Chapter three, named Methodology, presents the subject of the study, Mayyas, and some relevant information about her initial exposure to English. This chapter also presents the method used for data transcription. The CHAT format (MacWhinney 2000) is employed here for coding and transcribing the data. Standard transcription symbols used in CLAN are used here to refer to syntactic transcriptions. The final section of this chapter will be discussing Mayyas's L1 Arabic in order to show that her L1 was complete with respect to functional system before she started acquiring English as L2.

Chapter four focuses on Mayyas's TP projection and its related features. As discussed in some detail in chapter 2, the TP projection is assumed to host a number of formal features including ϕ-features, Tns feature and EPP feature. This chapter first discusses Mayyas's case valuation as it interacts with feature Agree system. Null/overt subjects in Mayyas's interlanguage are considered next. This will be discussed in relation to both child L1 and adult L2A. Finally, this chapter discusses the issue of tense and agreement morphology in Mayyas's L2 grammar. As in child L1A, Mayyas seems to use both finite and infinite verb forms throughout the data. These issues will be discussed in relation to a number of current proposals including the truncation hypothesis, the optional infinitive hypothesis and the aspect underspecification hypothesis.

Chapter five focuses on Mayyas's CP projection and its related syntactic features. I first describe Mayyas's data, focusing on the development of yes/no questions, wh-

questions, embedded questions and finally relative clauses. The findings will be discussed with regard to the acquisition theories discussed in relation to both L1A and L2A.

Chapter six will be devoted to a discussion of the results, as well as a conclusion of the thesis. This chapter discusses the availability of formal features in child L2A, the effects of the L1 and it also discusses some problematic structures in Mayyas's data. Lastly, this chapter ends with a comparison between child L2 and child L1 on the one hand, and between child L2 and adult L2 on the other hand. The comparison will touch upon several issues related to Mayyas's syntax and morphology from a developmental perspective. This chapter concludes with a short summary of the thesis.

Chapter 2

Linguistic Theory and Language Acquisition

2.0 Introduction

Language acquisition is one of the most interesting aspects of child development. It has long attracted the attention of researchers and theorists in various disciplines. This is true within the area of psycholinguistics and its related fields. Children start to utter their first words around the age of 12 months, and then very rapidly acquire the most sophisticated structures of their native language at a relatively young age (Guasti 2002). At roughly the age of three, most children are able to form questions and negations and can understand long and complex sentences without difficulty (Lightbown and Spada 2006; O'Grady 2005).

In general, children do not learn the grammar of their native language and they rarely receive correction concerning their syntax[12] (Chomsky 1986; Lust 2006). The few corrections that occur are only related to either dialects or social behaviour. Although children receive little or no syntactic instruction, they know that sentence (1a) is grammatical while (1b) is not.

(1) a. Is the man who is here happy?
b. *Is the man who here is happy?

Children do not *know* the fact that the auxiliary that has to move is the one in the matrix clause, though they do not make such mistakes as (1b). Another example is the placement of adverbs. In French, for instance, adverbs may intervene between verbs and objects but English adverbs may not.

(2) a. Jean **perdu** complètement la tête.
*John lost completely his mind.

[12] Although children receive little negative evidence (Brown and Hanlon 1970), they generally tend to ignore corrections when they occur. The oft-cited example where a child was heard saying "Nobody don't like me", his mother tried to correct him almost eight times, but he kept on repeating the same ungrammatical utterance (McNeill 1966).

b. *Jean complètement **perdu** la tête.
John completely lost his mind.

Native French children do not *know* the process of adverb placement, though they do not commit mistakes like (2b). Indeed, children come to know numerous facts about their grammars without paying attention to them. This in fact raises the question of how it is possible that children are able to acquire such a rich and complex linguistic system in a short period of time and without explicit instruction and on the basis of limited exposure to linguistic data. This question addresses the so-called logical problem of language acquisition (Baker and McCarthy 1981; Chomsky 1986; Hornstein and Lightfoot 1981).

A plausible explanation for the relative ease with which children achieve a mastery of such a complex linguistic system is that children are born with an innate language faculty, called the "Language Acquisition Device" (LAD), or "Universal Grammar" (UG) (Chomsky 1981). Chomsky believes that it is impossible for children to acquire such a complex system without the help of the innate linguistic faculty of the mind. According to him, UG is the answer to the "logical problem"— the gap between the insufficient input a child receives and the competence he attains in his L1[13]. When children are exposed to a sample of the input data, they are ready to formulate the grammar of that given language since they are programmed to do so because the innate knowledge determines *a priori* the general structure of that grammar[14]. Therefore, according to a UG approach, language acquisition depends in most part on the innate linguistic knowledge which children bring to the language acquisition task. This probably justifies the great amount of knowledge children have about their L1 and probably L2.

The following section presents an overview of the UG theory from a minimalist perspective. It mostly concentrates on formal features and their distribution on functional heads as they form the main focus of the present study. Basically, as we have said above, the focus will be on the TP and CP systems with their related features. This would, of course, involve a variety of morphosyntactic constructions related to those features.

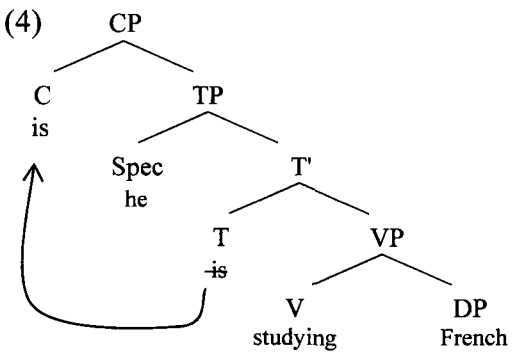
[13] This is also called Plato's problem.
[14] In Chomsky's own words, "S_0 (= LAD) maps primary linguistic data (PLD) to L" (Chomsky, 2001a: 1).

2.1 Theoretical Background

The theory of Generative Grammar has gone through several changes over the last five decades. The latest development has been known as the Minimalist Program (Chomsky 1995. 2000, 2001a, 2001b, 2007, 2008; Webelhuth 1995). This developed out of the Principles and Parameters theory of the 1980s. One of the central issues in the Principles and Parameters framework has been the role of functional categories and their relation to cross-linguistic variation. It is by now widely accepted among linguists that parametric variation is closely associated with functional categories (Borer, 1984; Chomsky, 1991; Ouhalla, 1991). In other words, functional categories seem to be responsible for all kinds of syntactic derivations. One of the main indicators of the presence of functional projections is the movement of certain elements to the available functional position. An example of the latter is the movement of the auxiliary verb to the head of CP, known as T-to-C movement. In English, a yes/no question is formed by raising the auxiliary verb to the functional head C, as can be seen in example (3) and its representation in (4).

(3) a. He is studying French.
Is he studying French?

(4)

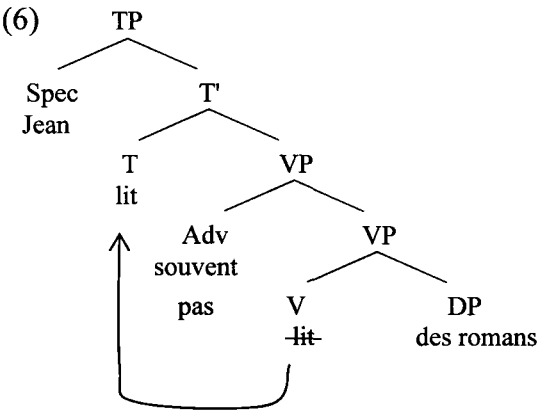


This kind of movement shows that the auxiliary verb has moved from its position under T (a functional head) to the empty position in the head of CP (another functional head). Another example of the presence of functional categories is through movement of the verb to the head of TP, known as V-to-T movement (see Pollock 1989). Unlike English, French verbs move across adverbs and negation in declarative sentences, as can be seen in examples (5a,b) and the their representation in (6).

(5) a. Jean **lit** souvent des romans.
Jean reads often novels
"Jean often **reads** novels"

b. Jean ne **lit** pas de romans.
Jean neg reads not novels
"Jean does not **read** novels"

(6)



In the Minimalist Program (Chomsky, 2000, 2001a, 2001b; 2007; 2008), lexical as well as functional categories are assumed to have features. Under this theory, lexical categories are assumed to host interpretable features that need to check other uninterpretable features on functional categories to derive the phrase structure through *Merge*, *Agree* and *Move*.[15] Chomsky (1995) distinguishes between interpretable and uninterpretable features: ϕ-features are interpretable on nouns/pronouns since they have semantic value, but uninterpretable on verbs, as they have no meaning there. Being void of semantic value, uninterpretable features must be erased during the derivation. This can be done through the Agree relation with constituents that have the same features. As Chomsky (2001a: 3) says "we therefore have a relation Agree holding between α and β, where α has interpretable inflectional features and β has uninterpretable ones, which delete under Agree". Therefore, an Agree relation between a finite verb with uninterpretable features (*probe*) and a noun with interpretable features (*goal*) will cause the uninterpretable features of the verb to be erased. If, for any reason, the uninterpretable features cannot be erased, the

[15] See Brucart *et al.* (2009) for a short and lucid introduction to the notions of Agree and Merge in recent minimalist account.

derivation crashes[16].

Another consequence of the Agree relation between a probe and a goal is Case assignment. In this model, case is assigned a value through Agree relation between a ϕ-complete probe and a goal[17]. Chomsky (2000, 2001a) differentiates between a ϕ-complete T and a ϕ-incomplete T. The former carries a complete ϕ-set, which includes person and number. The latter, by contrast, carries only a person feature and consequently is considered ϕ-incomplete. Chomsky (2001a: 8) argues that Case is a mere reflex of agreement; "a ϕ-complete T values and deletes the ϕ-features of T. With a defective probe, agreement is not manifested and Case of the matched goal is not assigned a value". Therefore, a *probe* with uninterpretable features (typically ϕ-features) searches for a *goal* with matching interpretable features, consequently the *probe* Agrees with the *goal*, and as a side effect of the Agreement operation a Case is assigned to the *goal*. Now consider the following step-by-step derivation of the following English sentence within Probe-Goal Agree system (feature valuation is indicated by shading):

[16] According to Boeckx (2008: 47), "uninterpretable features are the engine of the derivation; their elimination prior to reaching the interfaces is what drives the computation".

[17] Pesetsky and Torrego (2001, 2004) propose an alternative account for case assignment within a minimalist approach. They argue that both nominative and accusative case are instances of an uninterpretable tense feature on T and *v* respectively. This means that CASE is really a reflex of tense on the subject.

(7) Mary ate the cake.

(8)

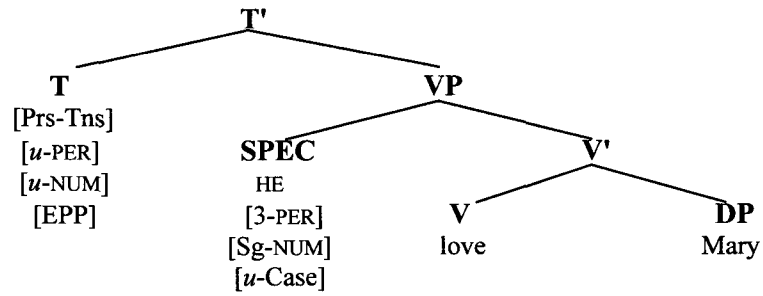
(a)			[*v** Num [] Per []	[ate	the cake]] Num [sg] Per [3] Case []
(b)			[*v** Num [**sg**] Per [**3**]	[ate	the cake]] Num [sg] Per [3] Case [**ACC**]
(c)		[Mary Num [sg] Per [3] Case []	[*v** Num [sg] Per [3]	[ate	the cake]] Num [sg] Per [3] Case [**ACC**]
(d)	[T Num [] Per [] [EPP]	[Mary Num [sg] Per [3] Case []	[*v** Num [sg] Per [3]	[ate	the cake]] Num [sg] Per [3] Case [**ACC**]
(e)	[T Num [**sg**] Per [**3**] [EPP]	[Mary Num [sg] Per [3] Case [**NOM**]	[*v** Num [sg] Per [3]	[ate	the cake]] Num [sg] Per [3] Case [**ACC**]
(f)	[Mary$_i$ Num [sg] Per [3] Case [NOM]	[T Num [**sg**] Per [**3**] [**EPP**✓]	[t_i	[*v** Num [**sg**] Per [**3**]	[ate	the cake]] Num [sg] Per [3] Case [**ACC**]

What is relevant here for language acquisition is that L1/L2 learners should realize, at least at the abstract level, that only a ϕ-complete probe can assign a value to the unvalued case feature of the goal. If, for any reason, T, and *v* for that matter, surfaces incomplete with respect to its features, the case of the *goal* will not be assigned a value and as a result the derivation crashes.

In addition, in this model, the functional head T, for instance, is assumed to host a number of formal features including an EPP feature, a Tns feature, and ϕ-features. Consider the following sentence (9) and its representation in (10).

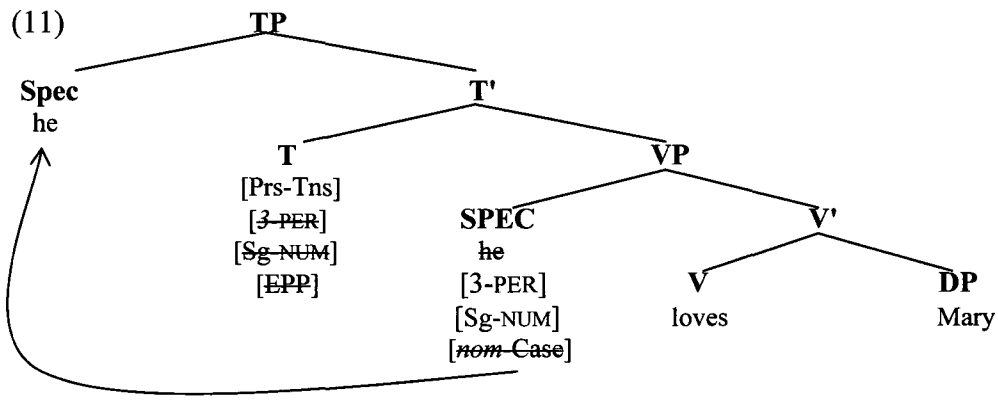
(9) He loves Mary.

(10)



In this configuration, the unvalued ϕ-features of T should enter into Agree relation with a c-commanded *goal* that has matching valued ϕ-features. Therefore, T *probe* searches and locates the *goal he* in Spec-*v* as the only active goal with an unvalued case feature. As a result, the *goal* values and deletes the ϕ-features of the T *probe*, and conversely T *probe* (by virtue of being ϕ-complete) values the case feature of the *goal* as nominative and deletes it[18]. Finally, the EPP feature of the *probe* triggers the raising of the *goal* to the Spec-T. The corresponding structure is represented in (11) below (simplified by showing only features on relevant constituents).

(11)



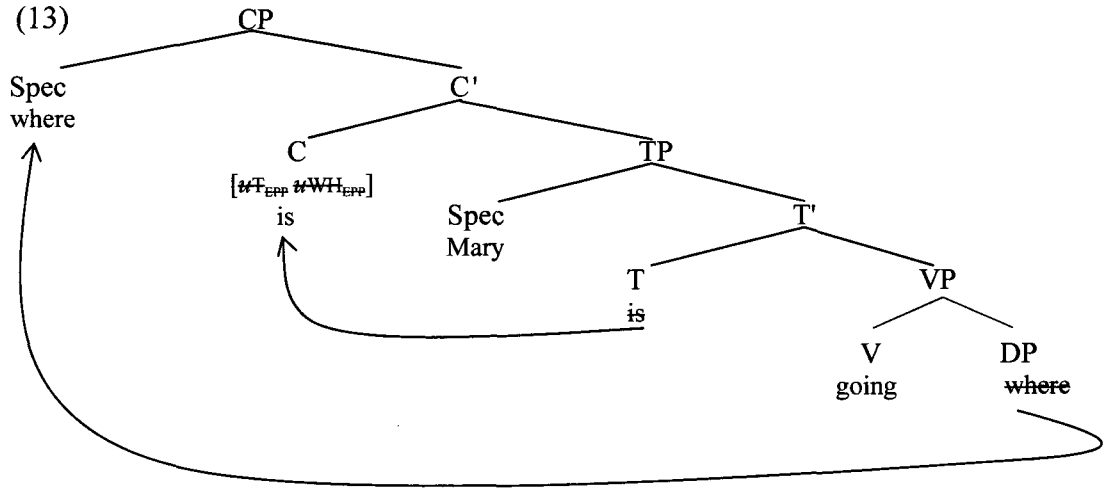
Likewise, the CP constituent is also assumed to host a number of formal features which also invoke certain syntactic derivations. In wh-questions, for instance, the head C is

[18] Recall that any mismatching features or undeleted uninterpretable features will cause the derivation to crash at the interface level(s).

assumed to carry a [wh][19] feature and a [T] feature both associated with [EPP][20]. These features are assumed to derive wh-questions through the operation Agree. Consider the following question (12) with its representation in (13):

(12) Where is Mary going?

(13)



In structure (13), the uninterpretable Tns feature on C invokes the activation process with the head T which contains the auxiliary *is*. Under Agree relation, the interpretable tense feature on T values the uninterpretable Tns feature on C as [present] and being ϕ-complete, deletes it. The EPP feature associated with *u*T triggers the raising of the auxiliary to C. Likewise, the interpretable wh-feature on *where* values and deletes the *u*wh-feature on C. Finally, the EPP feature associated with *u*wh triggers the raising of *where* to the Spec-C. Similarly, in yes/no questions C is assumed to host the same formal features as in wh-questions. The only difference is that in yes/no, the *u*wh feature is valued and deleted through a *null* wh-operator as suggested in Grimshaw (1997).

Thus, according a feature-based approach, L1/L2 learners must acquire the system of formal features, their checking order, and determine their distribution and interaction on relevant functional heads (Hegarty, 2005).

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[19] In recent work, Chomsky (2007, 2008) proposes that an edge feature (EF) on C is what triggers the movement of the wh-expression to Spec-C. This does not, however, affect the analysis adopted here, as the EF has exactly the same function as *u*Wh feature.

[20] According to Pesetsky and Torrego (2001: 4), the EPP feature is "a property of a *feature* of a head — not a property of the head itself". In other words, the "EPP feature is a subfeature of a feature".

2.2 First Language Acquisition Research

2.2.1 The Initial State in L1 Acquisition

First language acquisition research has focused on how much knowledge is available to children at different stages of language development. In this respect, early child language is characterized by the absence of various elements that are required by the adult grammar. It is clear that the 'missing' elements consist of functional categories, D (determiner), I (inflection) and C (complementizer) rather than lexical categories N (noun), V (verb) and A (adjective). Elements that are often absent include:

(14) a. Agreement markers such as third person *–s*
Mummy like milk.

b. Articles such as *the* and *a*
Mummy push baby.

c. CP elements such as complementizer *that*
want [lady open it] (Radford, 1990: 121)

Various proposals have been discussed in the literature with regard to the absence of these elements. In general, there are two proposals put forth in regard to the availability of grammatical knowledge in early child development. These centre around the debate between maturation and continuity. This controversy is also echoed in L2A research, as we will see in section 3.

2.2.2 Continuity or Maturation

Advocates of the maturational hypothesis assume that the principles of grammar mature (Borer and Wexler 1987; Felix 1984; Radford 1990; Tsimpli 1991). That is, some properties of grammar are biologically programmed to emerge later in language development. Proponents of the continuity hypothesis, on the other hand, assume that the universal principles are available to the child from the outset and that all child grammars fall within the patterns of adult grammar (Déprez and Pierce 1994; Lust 1994, 1999; Poeppel and Wexler 1993)[21].

[21] There are also other analyses of missing categories which also take a continuity approach but adopt a processing account. Bloom (1990), for instance, in accounting for null subjects in early child grammar,

Among early maturational proponents were Borer and Wexler (1987) who argued that certain linguistic properties mature, similar to other human biological systems.

> "The claim that certain linguistic properties mature is consistent with what is known about many innate biological systems – that they mature. Thus the analogy to the development of biological systems is even stronger under the maturational hypothesis. It is well-known that many aspects of the brain mature after birth. On the assumption that linguistic properties are situated in the brain, it is quite plausible that linguistic properties mature" (p. 124).

Based on child English and Hebrew data, Borer and Wexler attributed early overuse of transitive causation constructions with unergative verbs as evidence for the early lack of unergative structures. They also noted that the early child inability to form verbal passives (15a), but not adjectival passives (15b), provides more evidence in support of a maturational account of early child grammar.

(15) a. John was kissed.
b. The door was closed.

The importance of this distinction is that verbal passives are later to develop than adjectival passives in children's early grammar, which provides further evidence in support of a maturational account for early language development.

Radford (1990) is one of the leading advocates of a maturational view of language development. In general, he supports the idea that language acquisition develops through a process of maturation. Based on data mainly from English, Radford argues that child L1 goes through an initial lexical stage where functional projections are entirely absent. He assumes that functional projections only emerge at a later stage in development. Radford often refers to children's early clauses as Small Clause, similar to adult small clause which is formed with a bare verb form and a noun phrase.

In contrast to maturationalists, proponents of the continuity hypothesis assume that children have access to the same syntactic structures as adults. However, advocates of this camp divide into two sides that differ regarding the extent to which the adult syntactic system is directly available to children. The strong version, also known as the Full

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proposes that children normally know more than what they say. He argues that null subjects are due to performance factors. According to him, longer utterances are more difficult for processing. However, in response to this claim, Hyams (1987) argues that children at the same relevant stage produce long utterances and that null subjects are missing in both simple as well as in more complex utterances (see also Hyams and Wexler 1993 for similar observations).

Competence Hypothesis (Poeppel and Wexler 1993; Weissenborn 1992), assumes that all functional and lexical categories are present in the child's early grammar. The weak version, also known as the Lexical Learning Hypothesis, assumes that the universal principles are available to the child from the outset, yet those principles need to interact with the input to come up with the relevant structures (Clahsen, Eisenbeiss, and Vainikka 1994).

In general, these two models of language development have been widely linked to the availability of functional categories/features in child L1 grammar, and for this reason the next section will discuss this issue in more detail.

2.2.3 Functional Categories in Child L1 Acquisition

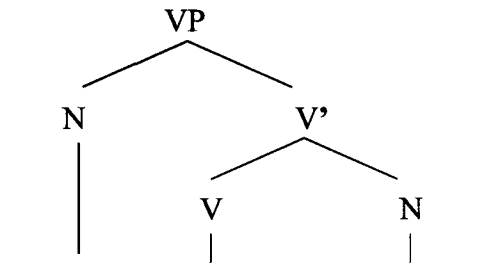
The acquisition of functional categories has been the main focus of acquisition research for the last two decades. For some researchers, lexical as well as functional categories are initially present in the child language systems from the earliest stages of acquisition (Lust, 1994; Poeppel and Wexler, 1993; Wexler, 1998). For others, however, the initial state of L1 grammar lacks functional categories altogether (Guilfoyle and Noonan 1992; Platzack 1990; Radford 1990, 1995; Vainikka 1994). Radford (1990), for instance, argues that child L1 goes through an initial lexical stage where functional projections are entirely absent. He assumes that functional categories only emerge at a later stage of development. Under his approach, sentences are VPs rather than full IPs or CPs as is the case in the adult grammar[22]. Radford claims that the lack of modals and the obvious lack of agreement inflections support the lexical nature of child early grammar. Consider the following examples from Radford (1995):

(16) a. Mommy doing dinner.
b. Machine make noise.
c. Wayne doing bubble.
d. What kitty doing?

[22] Grimshaw (1994) also argues in favour of a Structural Minimality position of clause structure in language development. She states that "clauses that lack overt signs of a functional projection might not include the projection in their representation" (p. 75).

Radford analyzes these utterances as bare VPs which are projections of an infinitive lexical head constituent. These utterances, according to Radford, have the following structural representation:

(17)



Mummy	doing	dinner
Machine	make	noise
Wayne	doing	bubble
What	kitty	doing

Radford (1990) provides some evidence in support of his argument that early child clauses are mere VPs which lack IP and CP projections. He argues that the lack of auxiliaries and infinitival *to* point to the absence of the IP system, as illustrated in the following examples:

(18) a. want [have money]
b. want [open door]
c. no dog stay in the room
d. no lamb have it

Evidence in support of the fact that child initial clauses lack the CP projection comes from two sources. First, child early embedded clauses lack complementizers as shown in (19) below.

(19) a. want [Baby talking][23]
b. want [Mummy come]
c. want [lady open it] (Radford, 1990: 121)

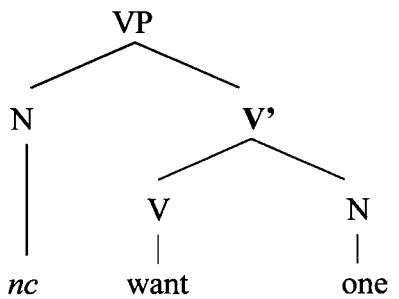
The second evidence comes from the fact that child initial clauses do not contain inverted auxiliaries as illustrated in (20) below:

[23] Although the adult counterpart of these utterances need not be introduced by complementizers, as noted by Radford, complementizers never occur at this stage in English child development (Radford 1990: 121).

(20) a. Chair go?
b. Kitty go?
c. Jane go home? (Radford, 1995: 3)

Moreover, Radford argues that the VP analysis also provides a straightforward account for a number of syntactic characteristics of child initial clauses. Following Rizzi (1994a), Radford suggests that early null subjects are null constants[24] which occupy the Spec-V. A sentence like "*want one*" will have the following structure:

(21)



In figure (21), the null subject occupies the root specifier position which can be discourse-oriented as it has no c-commanding identifier. This kind of structure, according to Radford, supports the small clause hypothesis. A second phenomenon that Radford discusses is that of Case. He observes that children's early subjects surface with objective case, as shown in examples (22) below[25]:

(22) a. me got bean
b. me want it
c. him swimming

Radford argues that these subjects receive a default case (objective) since they occupy a non-inherently case-marked position.

However, the maturational hypothesis runs into several problems. First, it cannot account for the gradual (rather than abrupt) appearance of functional categories in early

[24] According to Rizzi (1994a), a Null Constant (originally proposed by Lasnik and Stowell 1991) is a type of null subject that is exempted from the binding requirements, as it occupies a root specifier position where it cannot have a c-commanding identifier.
[25] See also Rispoli (1994) and Vainikka (1994) for more discussion on Case errors in early child English.

child grammar. Variable early presence of tense marking on English verbs and auxiliaries in different contexts poses a challenge to a maturational view. Second, it cannot account for individual differences in the acquisition of inflectional morphology as in the case of Eve and Sarah (21 months difference).

Along the same line of reasoning, Vainikka (1994) argues that children start out with just a VP, followed by an IP stage, then a CP stage. Unlike Radford's maturational view of acquisition, Vainikka 1994) assumes a weak continuity model of functional projections which develop according to the interaction of an innate X'-Skelton and the language input. Vainikka presents evidence from English to support her argument. She proposes four stages of phrase structure development. The initial stage was described by Vainikka as the VP stage. The children in this stage produced subjects mainly in the genitive case. Consider the examples in (23) from Vainikka (1994).

(23) a. my make a house.
b. my hold it.
c. no my play puppet.

Vainikka argues that the lack of productive nominative case assignment supports the claim that only a base VP exists at this stage. She proposes that the genitive is structurally assigned in the Spec-V position. The Spec-I position where nominative case is assigned is not yet available at this stage.

In the second stage, nominative subjects are very productive. This, along with the appearance of the INFL elements such as modals and auxiliaries, suggests the existence of an IP system at this stage. The CP projection is not yet available, as Vainikka argues.

Vainikka describes the next stage as a Pre-CP stage. In this stage, the appearance of the CP is not fully developed. Nominative pronouns occur with some CP elements such as *because*, but non-nominative pronouns occur with other CP elements like *wh*-phrases. For the latter case, Vainikka argues that nominative case is not possible as the Spec-I position is already filled by the CP element, thereby blocking nominative assignment from taking place.

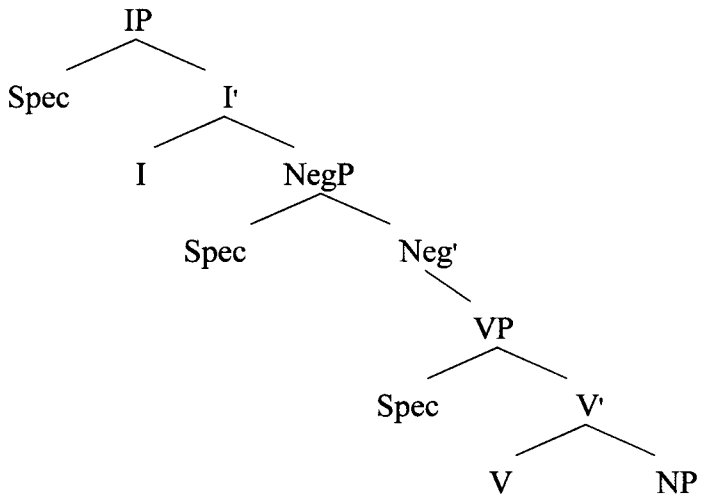
At the final stage, both nominative subjects as well as all CP elements are observed, suggesting that a full CP projection is developed. At this stage, subjects freely move to Spec-I to receive nominative case because there is a CP level which receives all CP

elements that are used to occupy the IP position in the previous stage.

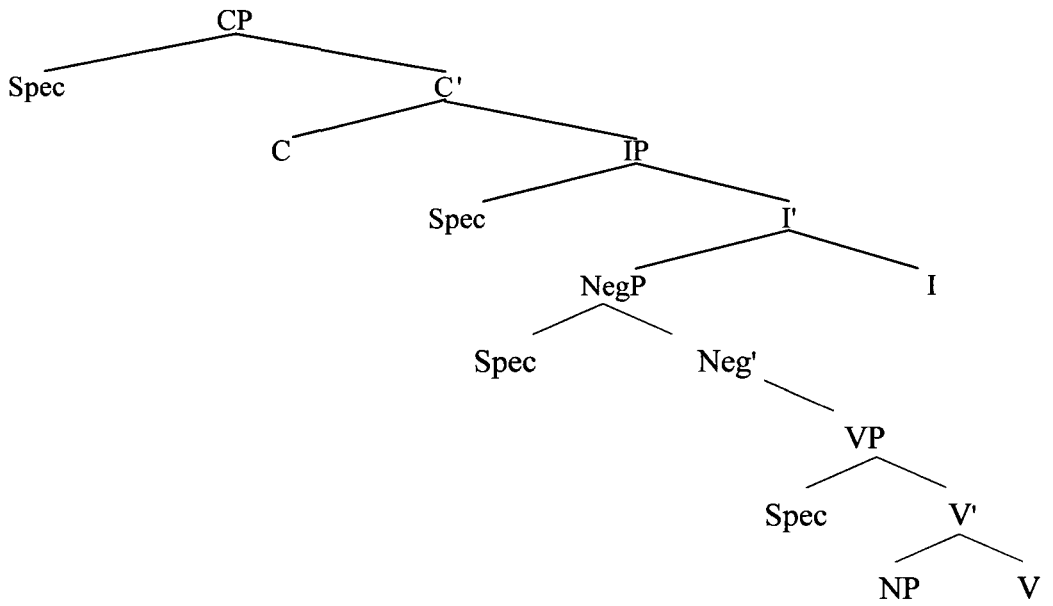
The other side of the debate takes us to the strong continuity model of language acquisition. Proponents of this model suggest that functional categories are present at an early stage of child grammar (Déprez and Pierce, 1994; Lust, 1994; Wexler, 1998). Déprez and Pierce (1994), for instance, argue that child grammar manifests functional categories from the earliest stage of acquisition. They state that verb movement in child grammar is governed by the same principles as in the adult grammar. They draw examples from various languages to confirm verb movement to INFL which entail the existence of the IP projection in the early stage of child grammar.

One of the main indicators of verb movement is the position of the verb with respect to negation. Déprez and Pierce propose the following structures for English/French (24) and German (25).

(24) English/French D-structure



(25) German D-structure



Although negation appears under NegP in both English and French, it is only in French that the verbs move to I, leaving negators behind. In German, negation also appears under NegP, but due to the head-final position of I, movement of the verb to I results in preverbal negation.

The English data show an early setting of the verb movement parameter, with auxiliary verbs but not main verbs raised to I. Verb movement is visible through the position of the verb vis-à-vis negation. Therefore, negators appear before the main verbs, whereas they appear post-verbally with auxiliary verbs. Consider the examples in (26):

(26) a. no my play puppet. play my toys
b. no Mommy doing. David turn
c. no dog stay in the room. don't dog stay in the room

Examples (26a) and (26b) show that main verbs are not raised to I, while (26c) shows that the auxiliary verb is raised higher than the negator.

In French, finiteness determines the position of the negator with regard to the verb, as the examples in (27) show.

(27) <- finite> <+finite>

a. pas la poupée dormir
not the doll sleep

b. pas chercher les voitures
not look the cars

c. elle a pas la bouche
she has not the mouth

d. est pas mort
is not dead

Examples (27c) and (27d) show that finite verbs are raised past the negator. Examples (27a) and (27b), on the other hand, show that non-finite verbs do not move across the negator, suggesting the existence of functional projections since, without the presence of I, there would be no place for the verb to move to.

Déprez and Pierce further support their argument that verb movement to I is established early on in L1 acquisition with data from German. The German data show that verb raising to I is possible, as can be seen in examples (28).

(28) a. nein auch hause gehn
no also house go

b. neine sach
no said

c. nei will hebe hebe
no want hold

While adult German manifests V-to-C movement, allowing verb-second phenomenon, child acquisition data do not show a consistent occurrence of this type of movement. This suggests that verb movement to C appears to be acquired later, a problem that seems to question Déprez and Pierce's analysis. Radford (1995: 5), for instance, argues that preverbal negation can be accommodated under the VP-analysis. He assumes that these "negatives are generated as VP-adjuncts". Further support for Radford's analysis comes from a study by Mohamed and Ouhalla (1995) who argue that early child Arabic fails to consistently raise obligatory verbs to a functional head higher than negation, which suggests that negative elements may occupy a VP-adjunct position as Radford proposes. On similar ground, Clahsen *et al.* (1996) argue that raised finite verbs do not move to an IP projection as suggested by Déprez and Pierce, but rather to a non-functional projection

called F(inite)-P. The later projection is a unique landing site for raised finite verbs as suggested by Clahsen *et al.*

Using a feature-based approach, Platzack (2008) argues that children have complete knowledge of formal features like adults but that deviation "is one of performance rather than one of competence" (p. 1). Platzack discusses data from child L1, children with SLI, adult L2 learners and Broca's Aphasia; however, for the sake of discussion in this section, I will only consider the data from child L1A.

Following Chomsky (2000, 2001a, 2001b) and Pesetsky and Torrego (2001), Platzack argues that the functional heads CP and TP host a number of formal features which are responsible for assembling the derivation through the operation *Merge*, *Agree* and *Move*.

According to Platzack, Swedish is a Germanic language that has a relatively simple inflectional system and a limited word order. Some prominent features of Swedish are: obligatory subjects (29a), verb second (29b), and obligatory wh-fronting (29c).

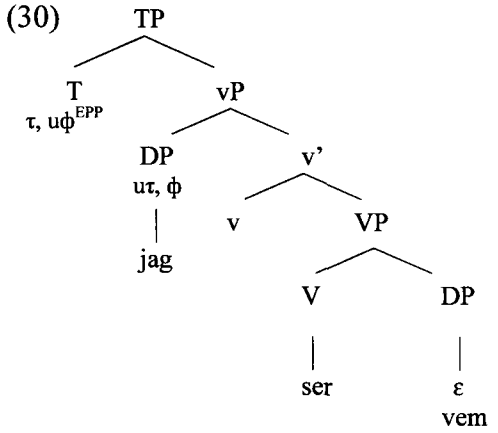
(29) a. Nu ser *(jag) honom
now see I him
Now I see him.

b. *Nu jag ser honom.
now I see him

c. Vem ser jag? *Jag ser vem?
who see I I see who
Who do I see?

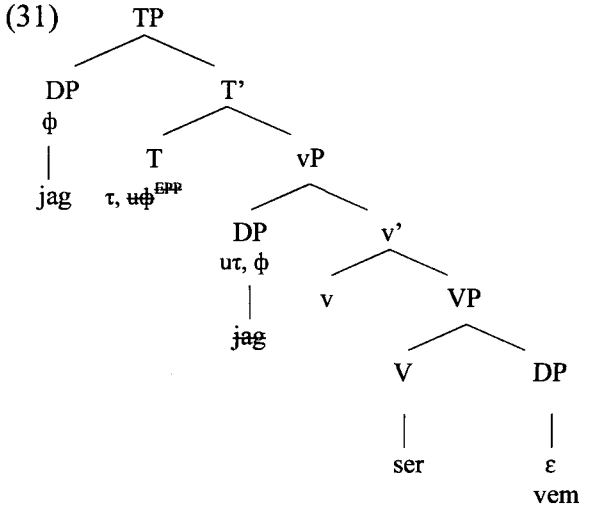
Platzack assumes that T has τ feature and uninterpretable ϕ-features, while the DP subject has uninterpretable tense feature and interpretable ϕ-features. The wh-word has an edge-feature ε, as shown in (30).

(30)



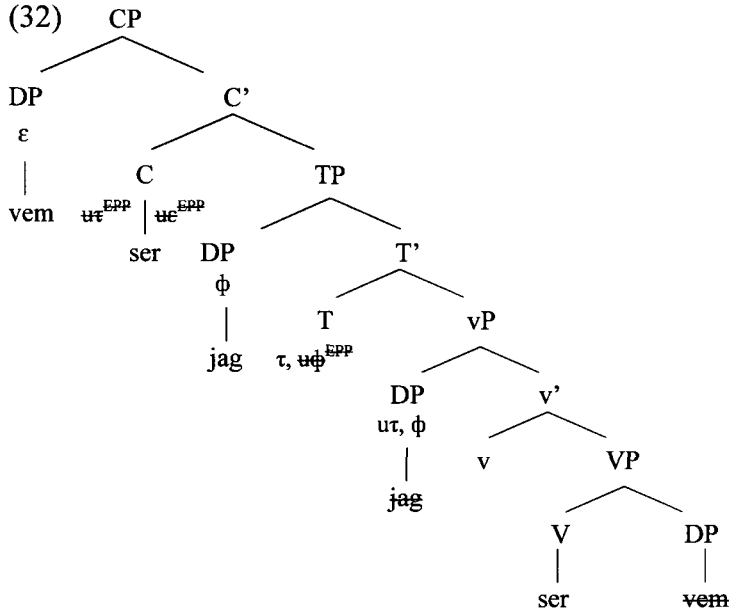
In this configuration, an Agree relation between the probe T and the subject DP *jag* results in deleting the uninterpretable features of T and the DP subject. The probe T also has an EPP feature which triggers the movement of the subject to Spec-T. The verb-second and wh-fronting seem to be triggered by some other features related to the C-domain. In the case of the verb-second, there is an uninterpretable tense feature on C accompanied by an EPP feature. Thus, when C is merged with TP, C probes TP and deletes the uτ in C. The EPP feature is deleted by raising the finite verb to C.

(31)



Finally, the wh-movement to Spec-C is triggered by an interpretable edge-feature uε accompanied by an EPP feature in C.

(32)



Platzack suggests that structure (32) represents what Swedish speakers know about the functional projections CP and TP and their related features.

The subject whose data is discussed in Platzack's paper comes from a child native speaker of Swedish named Sara. Platzack first discusses data from Sara from a recording at age 1;11 (MLU 1,87) to determine her grammatical knowledge at this stage. He argues that Sara does not have any problem with word order pertaining to the lower phase vP. Moreover, with respect to the higher functional phase (TP-CP), Platzack also argues that Sara seems to have knowledge equal to that of adult Swedish. Sara seems to produce the correct word order found in verb-second construction, as shown in (33).

(33) a. nu får pappa denna
now get daddy this

b. da va pappa
there was daddy

Platzack claims that by looking at tree (32) Sara would not be able to produce such word order unless she knows the correct distribution of the EPP features associated with C and T[26]. In order to get the finite verb in second position, Sara needs to know that the uτ in C is

[26] Platzack rejects any possibility that Sara has arrived to such word order by mere chance.

accompanied by EPP. She also needs to know that the adverb *nu* must have been triggered by an EPP associated with uε. Finally, to get the subject into Spec-T, Sara needs to know that the uninterpretable ϕ-features are also accompanied by EPP.

Although Sara produces target-like utterances like those in (29), she also produces non-target ones, as shown in (34).

(34) a. Ø är min
is mine

b. Ø har pappa det
has daddy it

Platzack argues that utterances like (34) appear to be missing the EPP feature associated with uε, which would require a wh-word or a topicalized phrase to be in sentence-initial position. Moreover, Sara seems to produce utterances where the EPP feature associated with uτ is also missing. The lack of EPP in the latter case would result in non-tensed verbs which Sara appears to produce as shown in (35).

(35) docka tita där
doll sit-INF there

Finally, Sara also appears to produce utterances without overt subjects. This would suggest that she failed to project the EPP feature associated with uϕ in T that forces overt subjects, as shown in (36).

(36) där ha två
there shall stand

According to Platzack, in utterances like (36) the CP layer is activated, as the adverb seems to be in Spec-C and the auxiliary in C. The missing subject then seems to be due to Sara's failure to "pronounce the structure in accordance with the information given by the EPP associated uϕ in T" (p. 64).

Platzack concludes that Sara seems to have an I-language like adults, but her performance is not always target-like. In other words, Sara "does not automatically pronounce the relations that should be pronounced according to the distribution of EPP in Swedish grammar" (p. 64).

This section has examined the availability of grammatical knowledge in early child grammar. This is discussed with regard to the maturational and continuity hypotheses. It was shown that these two camps have different views on early language development. Maturationalists claim that children do not have full knowledge of grammar like adults, as their cognitive system has yet to mature. Continuity theorists, on the other hand, claim that children at all stages of acquisition have as full a knowledge of fundamental syntactic components as adults but these may not be readily discernable.

2.3 Adult Second Language Acquisition Research

2.3.1 The Initial State in Adult L2 Acquisition

A question that has also interested L2 researchers is the nature of the initial state of adult L2 grammar. That is, what is present in the initial state of L2 grammatical representation?[27] The two variables influencing this question are the nature of the native language in L2A (transfer), and the availability of universal grammar (UG access). We will look first (in a broad way) at the two opposing views on UG access (UG access Hypothesis and Fundamental Difference Hypothesis), and then turn to the issue of transfer in L2A in the following subsection.

2.3.2 Fundamental Difference Hypothesis

The Fundamental Difference Hypothesis (FDH) was first proposed by Bley-Vroman (1989). The idea of the FDH is that L2 learners do not have access to UG at all. Proponents of this position (Bley-Vroman 1989; Clahsen and Muysken 1986; Schachter 1989) claim that UG is no longer available to adult L2 learners. In addition, they state that there is an obvious fundamental difference between L1 and L2 acquisition. They further claim that the language faculty which is involved in L1 acquisition disappears as the child grows, leaving L2 learners with only general problem solving mechanisms while dealing with the acquisition of a foreign language.

[27] This mirrors the continuity/maturational hypotheses proposed for L1A as discussed in the previous sections.

2.3.3 Access to UG Hypothesis

A basic assumption that is generally uncontroversial among psycholinguists is that L1 is constrained by the principles of UG. However, the question of whether L2A is constrained by the same principles as L1 is a controversy that has been the focus of much research during the past twenty years in the field of generative L2A. As in L1A, the UG access in L2A has focused on the availability of grammatical knowledge during the development of the interlanguage. The debate also focused on the availability of functional categories/features in the process of L2A. In general, there are two opposing views centring on the presence/absence of functional categories in adult L2A[28]. These two views will be discussed with regard to the availability of functional categories/features in the following section.

2.3.4 Functional Categories in Adult L2 Acquisition

In general, there have been two opposing views on the nature of functional categories in L2A research. These views centre on the presence or absence of functional categories in the L2 initial grammatical representation. For some researchers (e.g., Vainikka and Young-Scholten 1994; 1996), the L2 initial state lacks all types of functional categories and only lexical categories project at this stage of acquisition. Functional categories are gradually added to the learners' grammar once triggered by positive evidence in the input.

Vainikka and Young-Scholten claim that L2A is similar to L1A. In their view, both types of learners seem to follow a gradual development of phrase structure in their grammar. Like L1A, L2A starts out with just a VP, after which an IP is acquired, followed by a CP. Vainikka and Young-Scholten use data from Korean and Turkish adults acquiring German as an L2 to illustrate their position. They divided the subjects into three developmental stages, the first being the VP stage. They observe that the early utterances consist of a VP and that the headedness of the VP reflects that of the native language. At

[28] In accounting for the pro-drop parameter in L2A, Tsimpli and Roussou (1991) proposed a position where principles are set but parameters are not fixed by adult L2 learners. They claim that beyond a certain age, L2 learners will not be able to reset parameters associated with functional categories whose values differ between the L1 and the L2. This is probably due to a critical period beyond which L2 learners will no longer have access to parametric options offered by Universal Grammar. Tsimpli and Roussou further argue that when L2 learners are successful in acquiring certain syntactic properties which are different from that of the L1, it is the result of misanalyzing the input.

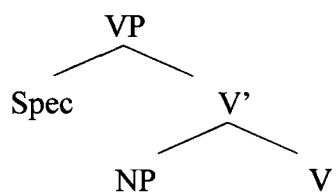
the first stage, Korean and Turkish learners do not seem to show any evidence of verb raising in their utterances. Consider the following examples:

(37) a. Oya Zigarette trinken.
Oya cigarette drink-INF
'Oya smokes cigarette(s)'
(Oya raucht Zigaretten)

b. Ja alles hier kaufen.
yes everything here buy-INF
'Yes (I) buy everything here'
(Ja ich kaufe alles hier)

The majority of utterances at this stage are verb final, which Vainikka and Young-Scholten interpret as a direct transfer from the learners' native language. The following tree shows the phrase structure at this stage:

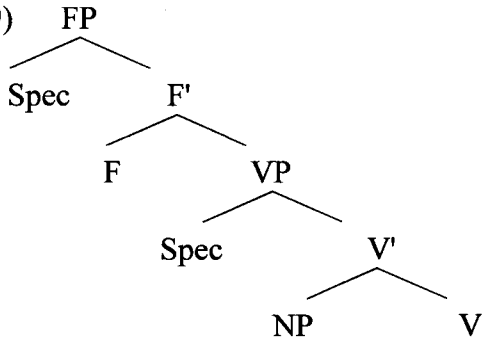
(38)



This initial phrase structure shows a lack of functional projections (such as IP or CP) where a verb can be raised to. The next stage is described by Vainikka and Young-Scholten as the FP stage. Learners at this stage acquire a functional projection that lacks features of inflection. This view is based on the apparent optionality of verb raising and the fact that learners have not acquired the full paradigm[29]. Verbs can be raised to the head of the FP, but a specified Agr feature is not present since agreement has not been acquired. The tree representing the learners' grammar at this stage is given below:

[29] The optionality of verb raising here is justified by Vainikka and Young-Scholten as being a result of two competing grammars; one with verb raising (FP) and one without (VP).

(39)

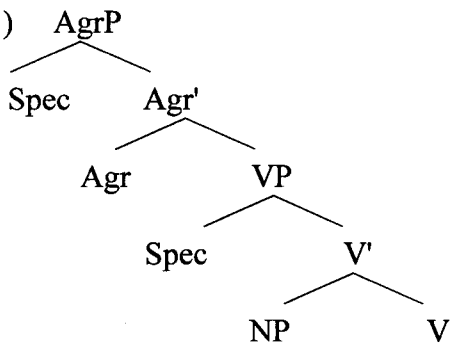


In the third and final stage, the Agr stage, an Agr projection is present. Learners at this stage exhibit frequent verb raising which occurs about 76% of the time. Modals and auxiliaries are also frequent and agreement is mastered at a rate of 90% of the time. Some typical examples of this stage appear in (40), while (41) represent the tree at this final stage.

(40) a. Ich kaufe dich Eis.
I buy-1SG you-DAT ice-cream
'I (will) buy you (some) ice-cream'
(Ich kaufe dir ein Eis)

b. Der kleine geht Kindergarten.
the small.one go-3SG kindergarten
'The young one goes (to) kindergarten'
(Der kleine geht zum Kindergarten)

(41)



Vainikka and Young-Scholten point out that triggers for parameter setting in adult acquisition differ from those in child L1A. Contrary to Clahsen (1991) who argues that children's acquisition of functional categories depends on the acquisition of verbal agreement, Vainikka and Young-Scholten claim that free morphemes like modals and

auxiliaries trigger the acquisition of functional elements in adult acquisition. They assume that free morphemes are easier for L2 learners to recognize since they are typically longer than bound morphemes.

Using a feature-based approach and adopting Tsimpli's (2003) Interpretability Hypothesis, Hawkins *et al.* (2008) claim that uninterpretable features not selected during L1A will not be accessible to L2 learners while acquiring a second language. This suggests that only L1 features activated during L1A will be available to adult L2 learners. To test this hypothesis, Hawkins *et al.* sought to examine whether highly proficient L2 learners of English are able to distinguish meaning contrasts associated with a raising *be* and a non-raising thematic verb, as illustrated by the following examples.

(42) a. Kim is reading (event-in-progress/existential interpretation)
b. Kim reads a novel every week (habitual/generic interpretation)

Following Déchaine and Manfredi (2000), Hawkins *et al.* argue that verb raising is a narrow syntax (rather than a PF) operation which has semantic import on the interpretation of clauses. They analyze what they call null tense in four language types represented by English, Italian, Fongbe and Igbo (the last two languages lack overt inflectional morphology). Null tense in English and Italian is represented by the present simple form, and by bare form in Fongbe and Igbo. The interpretations of the null tense in these languages are illustrated in the following examples:

	Syntactic expression	*Interpretation*
(43) a. Italian	Mangia il pane Eat-3sg the bread	(i) She is eating the bread (imperfective) (ii) She eats the bread (habitual)
b. English	She eat-s the bread 3sg eat-3sg the bread	(i) --- (ii) She eats the bread (habitual)
c. Fongbe	E du wO O 3sg eat bread the	(i) She ate the bread (past) (ii) She has eaten the bread (present perfect)
d. Igbo	O ri-ri akpu ahun 3sg eat bread the	(i) She ate the bread (past)

Déchaine and Manfredi argue that the different interpretations of these sentences are due to two "parameters of variation": (i) whether T can be interpreted on the basis of the aspectual properties of the VP complement as in Fongbe/Igbo, which gives perfective interpretation. Or T has its own interpretation independent of the aspectual properties of VP as in English and Italian. (ii) whether there is thematic v-to-T raising which is the case for Italian/Igbo but not for English/Fongbe. Déchaine and Manfredi further argue that while Fongbe/Igbo have only an uninterpretable [V] feature in T, English and Italian have both uninterpretable [V] and [AGR] features with the latter blocking the possible interpretation of T on the basis of the aspectual properties of the VP which yield a habitual interpretation. Moreover, v-to-T raising seems to invoke existential reading in Italian (see 43a), but closes off the present perfect reading in Igbo (see 43d).

Hawkins *et al.* state that the cases of interest in their study are illustrated in the following examples:

(44) a. Bob can't contact Julie at the moment. Apparently *she's running on the beach*/#Apparently *she runs on the beach.*

b. To stay fit, *she runs 6 miles every week/#she is running 6 miles every week.*

In these sentences the *be+V-ing* is incompatible with a habitual reading, and simple form V-s is incompatible with an event-in-progress reading, as indicated by the # symbol. To account for such cases, Hawkins *et al.*, following Adger (2003), assume that the relation between T and v is one of agreement, involving interpretable features [present], [past], and [Prog(ressive)], and an uninterpretable feature [*u*Infl:] associated with v. In this case the interpretable features value and delete the uninterpretable feature of v through the operation Agree as shown in (45):

(45) a. T[past] ... v[*u*Infl:] → T[past] ... v[*u*Infl: past]

b. [Prog] ... v[*u*Infl:] → [Prog] ... v[*u*Infl: Prog]

In addition, Hawkins *et al.* assume that in thematic verb raising languages like French, the [*u*F:] is strong, as represented by an asterisk [*u*F:*]. This strong feature insures that valuing takes place locally. Now the syntactic properties of (45) along with the valuing

mechanism seem to link the semantic interpretation, given the proposal by Déchaine and Manfredi. The Agree system between interpretable and uninterpretable features will serve the function of [AGR] feature of Déchaine and Manfredi by blocking the possible interpretation of T on the basis of the aspectual properties of the VP. In other words, Tense is only interpreted on the basis of T. Moreover, given the fact that English thematic verbs do not raise to T, the possible interpretations of simple past/present have only habitual/generic but not event-in-progress/existential interpretations. Finally, the Prog-to-T raising gives the existential but not habitual interpretation, as is the case with verb raising languages like French.

Now according to Hawkins *et al.*, L2 learners of English need to acquire the appropriate interpretations of the simple past, present, and the progressive. In other words, they need to know that v has an uninterpretable feature that needs to be valued and deleted by T. The latter property will allow L2 learners to recognize the habitual/generic interpretation of the simple past/present verbs of English. The other thing that L2 learners need to know is that Progressive has a strong feature which requires raising, resulting in event-in-progress/existential interpretation.

The L2 learners of this study consist of proficient speakers of Chinese, Japanese, and thematic verb raising languages (Arabic, French, German, and Spanish). Chinese verbs lack tense and agreement morphology altogether. A bare finite verb like "gu" (go) can refer to a past, present, or future event depending on the adverb, as can be seen in (46):

(46) Wo (jintian/zuotian/mingtian) qu tushuquan
I (today/yesterday/tomorrow) go library
'= I am going to the library (today)'
'= I went to the library (yesterday)'
'= I will go to the library (tomorrow)'

Moreover, Chinese seems to disallow v-to-T raising. This suggests that it lacks both the interpretable features [past] and [present] on T and the uninterpretable [*u*Infl] feature on v. Unlike Chinese, Japanese finite verbs have overt tense morphology but lack agreement morphology. Also like Chinese, Japanese lacks the uninterpretable [*u*Infl] feature on v. This also suggests that both groups of learners need to know that English has both the interpretable and uninterpretable features associated T and v.

Thematic verb-raising languages, on the other hand, seem to have both overt tense and agreement morphology, as illustrated by the following examples from French:

(47) a. Jean lit tous les soirs
Jean read-nonpast all the evenings
'Jean reads every evening'

b. Jean lisait tous les soirs
Jean read-past-imperf all the evenings
'Jean (used to) read every evening'

This suggests that the verb-raising languages have the relevant interpretable features on T and the uninterpretable features on v. However, unlike English, thematic verb languages seem to have both habitual/existential interpretations:

(48) a. Jean lit tous les soirs/Jean lit à present
'Jean reads every evening'/'Jean is reading at the moment'

b. Jean lisait tous les soirs /Jean lisait quand je suis arrivé
'Jean (used to) read every evening'/ 'Jean was reading when I arrived'

Furthermore, speakers of verb-raising languages must learn that English v has weak [*u*Infl], but strong [*u*Infl] of progressive *be*.

To test their awareness of the contrast between raised and non-raised verb constructions in English, the L2 learners were presented with an acceptability judgement task. The test consists of an open text and two potential continuations of the context, as shown below:

(49) Whenever Mary and Alan meet ...
a. they talk about Linguistics until late
b. they are talking about Linguistics until late

Each pair of sentences show a contrast between a thematic verb with habitual interpretation (49a) and *be* + *-ing* with existential interpretation (49b).

In general, the results show that although all of the L2 groups can distinguish the interpretations associated with *be* + *-ing* and simple finite tense form, their distinction is significantly different from that of native speakers. Chinese and Japanese speakers, in particular, are significantly less likely to accept an existential interpretation associated with

be + *-ing* than native speakers or verb-raising groups. Hawkins *et al.* argue that this is because Japanese and Chinese groups failed to establish the uninterpretable [*u*Infl] feature associated with Progressive that indicate the existential interpretation associated with *v* + *-ing*. Moreover, Chinese and Japanese speakers also seem to accept an existential interpretation with thematic verbs in English. This is due, according to Hawkins *et al.*, to those speakers failing to establish the uninterpretable [*u*Infl] feature associated with v. Speakers of verb-raising languages, by contrast, are significantly indistinguishable from the native controls in determining the appropriate interpretation of *be* + *-ing*. However, the Verb-raising groups are less likely to reject a *be* + *-ing* with a habitual interpretation than the Japanese, Chinese, or native speakers. These results, according to Hawkins *et al.* seem to support their claim that uninterpretable features not activated in the L1 will pose a learnability problem for older L2 speakers.

Whereas Vainikka and Young-Scholten (1996) assume that only lexical categories transfer from the L1, Schwartz and Sprouse (1994, 1996) argue that both functional as well as lexical categories transfer from the L1. For them the L1 steady state represents the L2 initial state. However, once the L2 learner is exposed to input in the target language, changes to the initial grammar take place to accommodate aspects of the input which cannot be represented in the grammar. These changes are drawn from the principles of UG and result in different stages. To support their argument, Schwartz and Sprouse analyzed data from the acquisition of German by an adult Turkish speaker, Cevdet. They focused on verb placement, a phenomenon which differs in matrix clauses in German and Turkish. Both languages are VO, but only German exhibits the so-called V-Second in matrix clauses. Schwartz and Sprouse state that Cevdet passes through three different stages in his acquisition of verb placement in German. The earliest data show that Cevdet is able to raise the finite verb to the front (50) resulting in (X)SVO order.

(50) a. jetzt er hat Gesicht [das is falsches Wagen]
now he has face that is wrong car
'now he makes face (that) is wrong car'

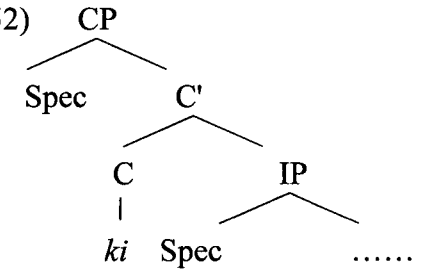
At this point, Schwartz and Sprouse pose two relevant questions, one of which is: *why is there fronting of the finite verb?* And the second: *why does the subject always precede the finite verb?* To answer the first question, Schwartz and Sprouse posit that Turkish

embedded clauses allow a small number of verbs to precede a full clausal complement, as can be seen in (51).

(51) a. Duydum [ki [sen gel -ecek -sin]]
I-heard that you-SG come -FUT -2SG
'I heard that you will come'

Schwartz and Sprouse propose that the complementizer *ki*, as exemplified in (51), provides some evidence for a C position on the left periphery which Cevdet exploits as a landing site for the fronted finite verb in his L2 German. The relevant structure proposed by Schwartz and Sprouse is shown in (52):

(52)



In answer to the second question of *why the subject almost always precedes the finite verb*, Schwartz and Sprouse propose that nominative case is only assigned under the Spec Head agreement relation, and as a result, the subject must move to Spec-C in order to get case from the nearby verb in C.

A final issue that they discuss at this stage is this: *why do some constituents optionally precede the subject?* Schwartz and Sprouse explain the optional fronted element as being an adjunction to the CP projection, an option that is allowed in L1 Turkish.

At stage 2, the (X)SVO pattern of the previous stage is adjoined with a new pattern, namely $XVS_{[+pron]}$. Consider the example in (53).

(53) dann trinken wir bis neun Uhr
then drink we until nine o'clock
'then we drink until nine o'clock'

Utterances at this stage show that only pronominal subjects can follow the verb and that non-pronominal subjects are almost absent. This behaviour, however, differs from German

structure, which requires the application of V2 rule regardless of the [± pronominal] status of the subject. Schwartz and Sprouse suggest that Cevdet $XVS_{[+pron]}$ pattern is a way to satisfy the case filter. Following Rizzi and Roberts (1989) for French, they argue that a pronominal subject can be incorporated into the verb that has moved to C.

At the third stage, the non-pronominal subjects are no longer banned in postverbal position, as (54) shows.

(54) das hat eine andere Frau gesehen
that has an other woman seen
"another woman saw that"

Schwartz and Sprouse propose that the non-pronominal subject in (54) is assigned case through government from the verb in C. In other words, Cevdet is now able to use the same mechanism of case assignment as that of standard German.

Now how does Cevdet's interlanguage grammar relate to the issue of functional categories? Schwartz and Sprouse argue that since a mature L1 contains functional projections, and there is full transfer onto the L2 grammar, then there will be functional projections in the early stage of the L2 grammar as well.

2.3.5 Language Transfer in L2 Acquisition

One of the central issues in second language research is whether the learner's native language influences the L2 course of development. It has always been assumed that the native language plays an important role in learning a second language[30]. The emphasis on the role of L1 has always been tied to the nature of the theoretical perspective of second language research. In the early days of the contrastive analysis hypothesis much emphasis was put on the role of L1 influence to account for the course of L2A. Lado (1957: 2), for instance, stated this position clearly: "individuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native and culture to the foreign language and culture".

However, the emergence of the principles and parameters framework (Chomsky, 1981) has given a new tool for investigating the role of transfer in L2A. This has taken the

[30] See Jarvis and Pavlenko (2008) for a recent review of the issue of cross-linguistic influence in language and cognition. See also Gass and Selinker (1992) for an earlier account of several issues in language transfer.

form of parametric value transfer. Therefore, the last couple of decades have seen a plethora of research examining transfer of parametric values in L2A (Liceras 1986, 1989; Phinney 1987; White 1985, 1989, among many others). In this regard, the first language can influence the acquisition of the second language in one of two ways. If L2 setting of a particular parameter is the same as of L1, the L2 learner will rely on his L1 setting. However, if L2 parameter setting is different from that of L1, then the L2 learner will have to assign a new value for L2. The following section discusses the various hypotheses proposed for L1 transfer within a functional category approach to L2A.

2.3.5.1 Transfer Hypotheses

In general, there have been three competing hypotheses about the nature of L1 influence in the L2 learners' initial grammatical representation. These approaches are referred to in the literature as Full Transfer, Partial Transfer and No Transfer. We will discuss the three approaches briefly in the following subsections.

A. Full Transfer Hypothesis

According to the Full Transfer/Full Access Hypothesis of Schwartz and Sprouse (1994, 1996), the L1 steady state represents the L2 initial state. It proposes that all the properties of L1 grammar transfer into L2 grammar. Therefore, previously acquired knowledge of functional as well as lexical categories transfer into the interlanguage grammar of L2 learners.

B. Partial Transfer Hypotheses

There are two partial transfer hypotheses, namely Minimal Trees Hypothesis and Valueless Feature Hypothesis. The Minimal Trees Hypothesis espoused by Vainikka and Young-Scholten (1994, 1996, 1998) assumes that only lexical categories transfer from L1 to the interlanguage grammar. The advocates of this position argue that functional categories are non-transferable, but emerge later in development. Under this approach, sentences are VPs rather than full TPs or CPs as in the case of adult grammar.

The other partial transfer hypothesis is the Valueless Features Hypothesis of Eubank (1994a, 1994b, 1996). This hypothesis assumes that both lexical and functional categories

transfer from L1 to L2. Features, however, are not initially specified for weak/strong value. Eubank argues that functional categories will gradually be assigned value according to L2 specifications.

C. No Transfer Hypothesis

Last but not least, there is the Full Access Hypothesis of Epstein *et al.* (1996) and Flynn (1996). The advocates of this approach argue that L2 learners have full access to Universal Grammar. Thus, UG constitutes the L2 initial state. Proponents of this hypothesis do not propose any role for L1 in L2 initial state. This Full Access approach also assumes that L1 and L2 initial states are alike and their developing grammars are similar. In other words, L2 acquisition is "a replay process, a relearning of language" (Herschensohn, 2000: 3).

Although the aforementioned approaches are usually discussed with adult L2 in mind, it is, however, reasonable to argue that L2 children who are 4, or even younger, are subject to L1 influence given the fact they have already acquired another language.

2.4. Child Second Language Acquisition Research

Before we proceed we need first to define the term child second language acquisition. According to McLaughlin (1978), child L2A denotes successive acquisition of two languages in childhood. That is, the acquisition of the second language occurs at an age after which the first language has been well established. The proposed age according to Schwartz (2004) is between four and seven years. However, the issue of terminus age has always been tied to the debate of whether there is a critical period[31] in language acquisition. For this reason, several researchers have proposed different terminus ages for child L2 acquisition: seven years (Johnson and Newport 1989; Schwartz 2004; Unsworth 2005), eight years (Bialystok and Miller 1999; Meisel 2008), nine years (Penfield and Roberts 1959), puberty (Lenneberg 1967), and 15 years (Long 1990). I assume, following Schwartz that the terminus age for child L2A is seven years. Schwartz (2004) suggests this age

[31] The Critical Period Hypothesis (CPH) states that there is a period during which language acquisition is successful and beyond which it is difficult. Birdsong (1999) defines the CPH as follows: "the CPH 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. Once this window of opportunity is passed, however, the ability to learn language declines" (p. 1).

because she observes that studies on age and L2 ultimate attainment like Johnson and Newport (1989, 1991) and DeKeyser (2000) support her claim. She notes that in these studies L2 children whose first exposure to the target language is before the age of eight "perform as native speakers do on a variety of tasks on a variety of (morphosyntactic) phenomena" (p. 2). The following section discusses the literature on the availability of grammatical knowledge in child second language acquisition.

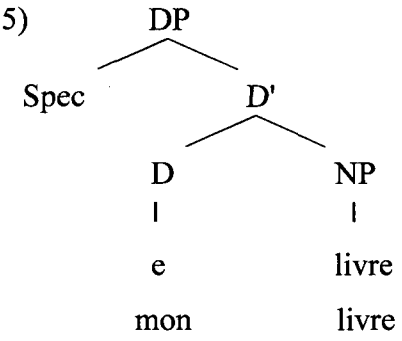
2.4.1 Functional Categories in Child L2 Acquisition

As in child L1 and adult L2, researchers have investigated grammatical knowledge in child L2 acquisition. The question is whether child L2 grammar is complete with respect to both lexical and functional categories. In effect, the picture from child L2 acquisition seems to offer more compelling evidence than the other two groups of learners in support of the availability of functional categories in L2 acquisition[32]. Grondin and White (1996), for example, analyzed longitudinal data from two 5-year-old English speaking boys acquiring French as an L2. They argue that functional categories and their projections are available from the earliest stages of acquisition. To support their argument, Grondin and White examined the acquisition of the DP, IP and CP systems in the emerging grammar of the two children.

First, Grondin and White provide evidence from the acquisition of the DP system. In French, both possessives and determiners are assumed to head the DP projection, as shown in (55).

[32] Most studies on child L2 acquisition argue in favour of a strong continuity model which assumes the existence of both lexical as well as functional categories from an early stage of acquisition. Lakshmanan (1995: 312) specifically states that "the emerging evidence regarding the status of functional projections seems to strongly suggest that functional categories and their projections are available from the very beginning stages of the L2."

(55)



Grondin and White show that both children consistently use possessives and determiners from the earliest utterances available. The first boy, Greg, produced determiners 86% of the time in the first sample, while Kenny, the second boy, produced 67% starting from sample 2 and 90% in sample 3. Grondin and White argue that the "high incidence of determiners" in Greg and Kenny's data contrast with child L1 French where determiners are constantly omitted. Some representative examples are given in (56).

(56) a. le lion mange les girafes.
the lion eats the giraffes

b. Ça c'est la maman.
that it's the mother

Evidence in support of the acquisition of the IP system comes from the verb position with regard to negation, adverbs and quantifiers. French is a verb raising language, so when the verb is raised to I, negation should occur postverbally. The French data show that both children consistently raise the verb to the left of negation. This suggests that INFL is apparently available in child L2 grammar. Examples of verb position with respect to negation are given in (57).

(57) a. Ça c'est pas le ferme
that it's not the farm
"that's not the farm"

b. Non j'ai pas joué avec
no I've not played with
"no I did not play with"

The two children also show that they are able to raise the verbs to I across adverbs and quantifiers. Although the occurrence of adverbs is limited, they are always correct. Some representative examples are given in (58).

(58) a. Ils ont toujours un parachute.
they have always a parachute

b. Toi tu peux jamais aller ici.
you you can never go here

In the case of the CP system, Grondin and White admit that complementizers appear rather late in L2 French. The first occurrence of complementizers in Kenny was before month 9 and month 14 for Greg. Following Schwartz (1998), Grondin and White argue that the delayed appearance of complementizers is due to the learners' inability to recognize which lexical items are complementizers and which verbs subcategorize for CP complements. Some examples of utterances containing complementizers are given in (59) below.

(59)a. Je crois qu'il est cassé.
I think that it is broken

b. Regarde qu'est-ce que la marionnette fait.
look-at what the puppet is doing

Another source of evidence in support of the CP layer comes from wh-questions. It is a well-known fact that French allows both wh-movement and wh-in situ in matrix clauses (Mathieu 1999). In the former case, the wh-phrase moves to Spec-C and the verb to the head C. The latter movement is allowed only with clitic subjects. Thus, in colloquial French, if the subject is not a clitic, wh-phrases move to Spec-C without verb movement to C.

The French data show an early setting of the wh-movement with and without inversion. The data also show some utterances with wh-in situ in later samples. Some examples are given in (60).

(60) a. Qui est ça?
who is that

b. Où ça va?
where it goes

c. C'est où?
It is where

d. Le lion est où?
the lion is where

Inversion in yes/no questions appeared rather late in the data of both children. Grondin and White explain that this delay is due to the fact that inversion is not very common in spoken French.

Although the data show that both DP and IP projections are present from the earliest stages of acquisition, the status of the CP is not as clear, especially when considering yes/no questions and complementizers introducing embedded clauses. Grondin and White argue, however, that it is the wh-questions which provide stronger evidence in support of the presence of the CP projection. They state that both children seem to "produce and comprehend" wh-questions with and without inversion from the earliest utterances available. However, I believe that the absence of tensed complementizers introducing embedded clauses cannot in any way be taken as evidence that it is not available at that stage; since it is difficult to build an argument on the basis of the absence, as there could be many possibilities for the lack of the complementizer other than the inability of the child to produce it. Cook and Newson (2007: 209) state that "Arguing from what didn't occur is inherently problematic".

Likewise, Lakshmanan and Selinker (1994) provide data from their study of one Spanish and one French child acquiring English as a second language. They examined the development of the CP projection. The data show that the tensed complementizer emerges very early in both children's grammar. Some examples are given in (61).

(61) a. I forgot I need a book.
b. I could pretend I'm a doll.
c. I think it's for me.
d. I wish I could help you.

The examples in (61) show that the complementizer *that* is never overt[33] even in later samples in both children[34]. Lakshmanan and Selinker argue, however, that there are other complementizers which are realized in tensed embedded declaratives such as *if*. The complementizer *if* appears as early as sample 3 for Muriel and sample 7 for Marta. Some representative examples are given in (62).

(62) a. If you don't won, I'll get one of yours.
b. If you want to be, you could.
c. I don't know if they are for seven and a half.

Lakshmanan and Selinker also present some evidence from inversion in yes/no questions. They argue that both children produced fronted auxiliaries from the very beginning. In yes/no questions, the preposed auxiliary is assumed to move from I position to the head of CP. This movement suggests that the C position does exist in child L2 grammar. Further evidence in support of the existence the CP system comes from wh-questions. In wh-questions, there are two movements: the wh-phrase moves to Spec-C and the auxiliary to the head C. According to the authors, both wh-phrases and auxiliary verbs are always preposed in all the samples by Marta and Muriel.

A third piece of evidence proposed by Lakshmanan and Selinker concerns embedded questions. They state that embedded questions appeared fairly early and that embedded wh-phrases are always preposed from the very beginning for both children. Some examples are given in (63).

(63) a. I don't know what it is.
b. You know what I am doing?
c. I know where it goes.

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[33] Lakshmanan and Selinker suggest that L2 learners may initially treat the complementizers as obligatorily null, or that children may simply have a strong preference for a null complementizer.

[34] This contrasts with the children's L1s since tensed complementizers in both French and Spanish are obligatorily overt in declaratives, as shown in (i).

(i) a. *Jane a dit (que) Maria a acheté un livre.
b. Jane a dit que Maria a acheté un livre.

(ii) a. *Jane dijo (que) Maria compro un libro.
b. Jane dijo que Maria compro un libro.

Embedded questions in the data give more evidence in support of the availability of the CP projection. This, along with evidence from wh-questions and yes/no questions, suggest that C and its maximal projection are operative from early on.

On similar ground, Lakshmanan (1998) argues that child L2 has access to the functional category IP from the earliest stage of acquisition. Material that is assumed to belong to the category IP is attested in child L2 data from the earliest recordings. For this purpose, Lakshmanan examined the acquisition of English by nine child L2 learners: three native speakers of Spanish, three native speakers of French, and three native speakers of Chinese. The first piece of evidence in support of the availability of the IP system comes from copula *be*. Lakshmanan argues that copula *be* is overtly present in child L2 from early on. This is exemplified in the following utterances from Marta.

(64) a. My teacher is Christine. (S 1)
b. This is big bird. (S 2)
c. This dress is here. (S 2)

The second piece of evidence in support of the IP system comes from the auxiliary *be*. According to Lakshmanan, in imitation tasks, the auxiliary *be* is rendered uncontracted, even though the stimulus sentence is contracted, as can be seen in the following examples from Marta.

(65) Native speaker (NS): Mother's cooking supper
Marta: Mother is cooking supper. (S 2)

NS: Where's the baby sleeping?
M: Where is the baby sleeping? (S 2)

The third piece of evidence in support of the emergence of the IP system concerns negation and inversion in questions. Lakshmanan argues that negative elements always follow copula and auxiliary *is* and modal *can*, but precedes thematic verbs. This can be seen in the following examples.

(66) a. You can't tell her. (S 8)
b. The whale is not like the sky. (S 9)
c. Is no circle like this one. (S 9)

The final evidence in support of the early emergence of INFL comes from the infinitival complements of the verb *want*. Unlike in child L1 as observed by Radford (1990), Lakshmanan argues that the infinitival particle *to*, which occupies INFL, is rarely omitted in child L2 data. This is illustrated by the following examples.

(67) a. I wanna see you tomorrow. (Marta, S2)
b. I want to wash my hand. (Muriel, S3)
c. I want to go to today. But I want to give you some more lunch. (Cheo, S6)

Haznedar (2001; 2003) develops similar arguments based on child L2 acquisition of English. She shows that the data from her Turkish-speaking boy, Erdem, offers more evidence in support of both the IP and CP projections from a very early stage[35]. With respect to IP, Haznedar (2001) argues that the IP-related elements such copula *be* and auxiliary *be* appear from the earliest samples available. The copula *be* was among the first verbs to appear in Erdem's data, as shown in (68).

(68) a. It's a pig
b. This is my mum shoes.
c. It's a banana.

However, Haznedar does not exclude the possibility that utterances like those in (68) are unanalyzed forms. For this reason, she marks the real emergence of copula *be* as sample 8 where it is used consistently and with subjects other than *it* and *this*. Consider the following examples.

(69) a. Mummy is very funny.
b. I'm not hungry.

The emergence of the auxiliary *be* also appears very early on (after two months of exposure) and is used in the correct context as shown in (70).

(70) a. I am painting.
b. My dad is driving the car.
c. I'm something eating.

[35] Similar findings from Turkish child learners of English are also found in Geçkin and Haznedar (2008). It should be noted, however, that the children in this study acquired English in an institutional setting, unlike Erdem, Mayyas, etc.

Haznedar (2003) presents evidence that the CP projection is also available at early stages of language development. She shows that yes/no questions, *wh*-questions, *wh*-complement clauses and embedded clauses with complementizers are operative from early on. The first yes/no questions in Erdem's data were mostly formed by intonation. However, starting from sample 16, Erdem starts to produce them productively (more than 90% of the time) and with various auxiliary verbs and modals, as shown in (71).

(71) a. Is it very very big?
b. Are you going to stay in my house?
c. Did you colour your picture?
d. Can you help me in that one?

Haznedar went on to discuss the status of *wh*-questions in Erdem's data. She states that they first appeared in sample 8 (less than 4 months of exposure), yet with some errors. Some of the observed errors concerned missing auxiliaries, non-inversion in non-subject wh-questions and very few wh-in situ instances (only 6 in the entire data). Some examples are given in (72).

(72) a. What you doing Belma?
b. What we are doing again?
c. You say what?

However, as Haznedar argues, errors in wh-questions decrease by time. In samples 19 and 20, for example, there are only 2 inversion errors out of 17 (11.8%).

Erdem's first utterances with embedded clauses containing *if* and *because* and *wh*-complements appeared in sample 13 and productively from sample 15 on. Consider the examples in (73).

(73) a. You can get it because it is good.
b. I don't know if I can get it out.
c. I don't know where is it.

With respect to the complementizer *that*, Haznedar states that these are very rare in Erdem's data (5 occurrences in the entire corpus). Some examples are given in (74).

(74) a. I don't think that I could get xxx.
b. Do you remember that I show you a one red man?

Although most studies to date on child L2A support a continuity approach where both lexical and functional categories are available from the ouset, a recent study by Mobaraki, Vainikka and Young-Scholten (2008) claim that L2 children start just with a VP as in adult L2A. Mobaraki, Vainikka and Young-Scholten investigate the acquisition of two Farsi-speaking children learning English as L2 in a natural setting. The main focus of this study is to look at the status of subjects and compare that to Hazendar's subject Erdem. Mobaraki, Vainikka and Young-Scholten first observe that, like Erdem, both children do transfer the final VP headedness of their L1 into L2 English, as can be seen in the following examples:

(75) a. my ice-cream like. (Melissa S4)
b. we tennis play. (Bernard S 4)

They further note that even after three months of constant exposure to English, the two children continue to produce head final VPs in their L2 English. This suggests that in the early stage of L2A, the VP headedness is transferred from the learner's native language.

Second, Mobaraki, Vainikka and Young-Scholten consider the status of subjects in the two children's L2. Following Meisel (1994), they assume that "two contrasting forms" are required to mark the existence of a function. In this respect, they claim that both children lack case distiction in the earliest samples. The evidence for such a claim lies in the fact that both children produced mainly nominative pronoun forms until sample 14.

(76) a. she jumper is yellow. (Bernard S 8)
"her jumper is yellow"

b. We house is white. (Bernard S 10)
"our house is white"

According to Mobaraki, Vainikka and Young-Scholten, the lack of case distiction is is due to the fact that the AgrP projection has not been projected as yet. Moreover, unlike Erdem, both children produce few non-nominative subjects in the earliest samples just like L1 children, as reported by several researchers (e.g., Radford 1990; Vainikka 1994; among others).

(77) a. My boy. (Bernard S 8)
"I am a boy"

b. My here on the chair
"I am here on the chair" (Melissa S 11)

The data also show that out of 108 utterances with thematic verbs and unlike Erdem, who produced less than 1% in the entire data, both children produced null subjects 38% of the time. The final point the authers consider here is the status of the copula in the two children's data. For this matter Mobaraki, Vainikka and Young-Scholten observe that the copula is frequently absent up to sample 14. Missing copulas mostly occur with non-nominative pronominal subjects, as nomintive subjects would require copula for case assigning/valuation. However, according to Mobaraki, Vainikka and Young-Scholten, copula *be* never occurs with anything other than the nominative subject pronoun.

One possible explanation for the behavior of both children with regard to null subjects and the lack of case distiction is their delayed exposure to English; Bernard at 8;4 and Melissa 7;4. Erdem, Mayyas, and the children from Lakshmanan (1994a), on the other hand, started aquiring English at an earlier age, around 4-5. According to Herschonsohn (2007), L2 children under the age of 5 are distinct from older children and adult L2 learners in numerous morphosyntactic aspects. She further claims that after age 5 "learners' achievement is more evidently nonnative" (p. 232). Moreover, various studies on ultimate attainment (e.g., DeKeyser 2000; Johnson and Newport 1989, 1991; among others) have reported that L2 children who commence before the age of seven reach native-like competence in morphosyntax.

2.4.2 Child L2 Acquisition in an Institutional Setting

While the discussion about child L2A in this chapter has mainly focussed on language acquisition in a naturalistic setting, this section provides an overview of child L2 acquisition in an institutional (formal) setting[36]. One important and obvious difference between naturalistic versus institutional lies in the fact that children in the latter situation are separated from peers of the target language. McLaughlin (1978) argues that L2 children

[36] See Hyltenstam and Abrahamsson (2003) for a recent review of the issue of institutional versus naturalistic settings in L2 acquisition.

in an institutional setting are more likely to be affected by the L1 influence than children in a naturalistic setting. Moreover, in emphasizing the role the native-speaking peers, Selinker *et al.* (1975) have argued that language transfer, among other things, affected the target language in the production of the 7- to 8-year-old children in the French immersion program studied. According to them, the L2 system of these children did not develop and even suffered fossilization due to the absence of the native-speaking peers of the target language. Selinker *et al.* (1975: 140-141) explain:

> We have distinguished settings where native speaking peers of the TL are present from those where native speaking peers of the TL are absent because the several studies that have investigated non-simultaneous child-language acquisition when native speaking peers of the TL are present (Dulay and Burt 1972, Ervin-Tripp 1974) suggest that many errors are "developmental" in nature, that is, they are eradicated over time. However, when native speaking peers are absent, there is some indication (Naiman 1974a) that not all errors are developmental; some become "fossilized". It is this characteristic of fossilized errors which is reminiscent of adult second-language speech.

Thus, the quality of the input seems to be seen as a major factor in second language outcome. In other words, enhanced input can affect the speed of acquisition, and it can affect performance as well (Hawkins 2001).

In this section we look at a study by García Mayo *et al.* (2006) that investigates the acquisition of L2 English by bilingual Spanish/Basque-speaking children in an institutional setting. The data come from 20 children placed in 3 diffrent groups according to their age at the time of interviews: group 1 (7-8), group 2 (11-12) and group 3 (13-14). All the participants in this study recieved 3 hours a week of English. García Mayo *et al.* investigated the acquisition of subject pronouns at 2 different points in development: the first time after 4 years of exposure and the second time after 6 years of exposure. An interesting finding during the first period is that these children appear to produce a pronoun in the presence of a DP constituent as illustrated in (78):

(78) a. The boy *he* listen one song.
b. Wallace and Gromit *he* catch them.

García Mayo *et al.* suggest that the presence of the subject pronoun "*he*" is a realization of the rich verbal inflection of Bsque/Spanish. In other words, *he* is a form of transfer from the

L1 where *he* is a 'placeholder' for tense/agreement affixes in the two L1s[37]. However, after 2 more years of exposure, these children have acquired the whole pronominal system and *he* no longer appear in the presence of a DP. Another interesting finding of this study relates to the production of verbal inflections in these children's L2 grammar. García Mayo *et al.* observed that the production of verbal inflections represent around 15% for the first period studied and around 40% for the second period. However, García Mayo *et al.* argue that the increase in verbal inflections is related to the acquisition of the English pronominal system (see table 1 below, adapted from García Mayo *et al.* 2006: 93). In other words, there seems to be "a relationship between the acquisition of independent subject pronouns and inflectional forms (p. 93)".

Table 1 Independent pronouns and inflected forms

	Independent pronouns	**Inflected forms**
Time 1	30/373 = 8.04%	31/205 = 15.12%
Time 2	141/544 = 25 25.91%	161/394 = 40.86%

What is interesting here is that the production of verbal inflection seems to be very low compared to the production of the L2 children in a naturalistic setting, as we will see in chapter 4.

2.5 Conclusion

In this chapter, I have discussed several issues related to the theoretical framework of this study and learnability theories in both L1 and L2 acquisition. In the first part, I discussed the feature-based theory of functional categories from a minimalist perspective. It was shown in that section that functional categories are assumed to have features which require checking other features on lexical categories to derive the phrase structure through the operations *merge*, *Agree* and *move*. This system has the advantage of looking directly into the features and their acquisition rather than on the abstract functional projections *per se*. Under this approach, children as well as adult learners need to acquire the system of formal

[37] In another study, García Mayo *et al.* (2005), show that the same children also produce *is* + bare V in oral narratives like "the boy *is* came", where *is* is considered a realization of the rich verbal inflection of the two L1s. This construction is also viewed as a 'placeholder' for tense/agreement affixes as a result of transfer from the L1. Moreover, Perales et al. (2009) find evidence from these same children with regard to transfer of negative construction to the L2 grammar of these children.

features and determine their distribution on relevant functional heads. Therefore, one of the core proposals of the present thesis is that both children and adult learners have access to the same structural skeleton but may differ with respect to the way they assemble formal features on those functional heads. While providing evidence for such a claim requires much more work than a single thesis, the data presented in chapters 4 and 5 will offer some important facts about child L2A. It will be shown that the data presented in this work are best explained under a model where both lexical and functional categories are present.

The second part of the current chapter presented some important developmental theories of L1 and L2 acquisition. I first discussed early child grammatical knowledge with regard to the maturational and continuity hypotheses. These hypotheses were discussed in more detail with respect to the availability of functional categories in child L1A. Although both hypotheses have their advantages and disadvantages, an important fact about the maturational hypothesis is that it fails to account for issues like optionality and individual differences. Therefore, in this thesis I argue in favour of a strong continuity approach where the universal principles are available to the child L2 from the outset and that all child grammars fall within the patterns of adult grammar.

An important issue that will be discussed in chapter four is transfer in child L2A. Although most studies discussed in the present chapter report no L1 influence, Haznedar (2001) and Mobaraki, Vainikka and Young-Scholten (2008) confirm that child L2 is subject to L1 transfer as is the case with adult L2 learners. Both studies report that their children do transfer word order into the interlanguage system. More interestingly, the present work confirms this issue in yet another syntactic aspect. Chapter five shows that Mayyas uses resumptive pronouns in her interlanguage grammar, a phenomenon that is not possible in English. Since Arabic allows resumptives in different syntactic positions, I suggest that these are transferred into Mayyas's L2 grammar.

Another important topic that will be raised in the following chapters is the issue of optional infinitives in child L2A. It is widely observed in the literature that L1/L2 learners produce a mix of inflected and uninflected verbal morphology in the target grammar. A question that has interested researchers is whether optionality in tense and agreement morphology reflects the absence of the relevant functional categories/features in the relevant systems. In the field of L1A, the issue has been analyzed in terms of root

infinitives as suggested by Rizzi (1994b), among others. However, Haznedar and Schwartz (1997) have argued convincingly that optional infinitives in child L2 differ considerably from that of child L1. In this thesis, however, I present further support for Haznedar and Schwartz's argument that uninflected verb forms is not the type observed in child L1A. The data analysis in chapter four will present evidence that Mayyas's bare verb forms represent a mapping problem *à la* Lardiere (1998a, 1998b, 2000, 2007).

The last part of this chapter reviewed the literature with regard to the acquisition of functional categories/features in child L1, adult L2 and child L2 respectively. It was shown that researchers are divided as to whether L1 children have access to the full array of lexical and functional projections. With respect to child L2A, most studies have shown that child L2 has full access to both lexical and functional categories from the earliest stages of language development. Recasting these analyses in minimalist terms, the data analysis in chapters four and five seem to present further support for the previous work on the acquisition and assembly of formal features. Assuming a strong continuity approach, the data analysis in the following chapters suggests that feature acquisition/assembly is operative from the very beginning. Mayyas is able to carry out a number of syntactic operations related to both the TP and the CP systems from the earliest data available. In conclusion, these findings will be compared with those from child L1 and adult L2 learners. This section ends with a short review of child L2 acquisition in an institutional setting. Children in formal settings appear to be less successful in the acquisition of a target language than children in naturalistic settings probably due to the absence of the native peers in the former situation.

Chapter 3
Methodology

3.0 Introduction

The first section of this chapter describes the subject and the data which were used for the study reported here. The second section describes data transcription and coding. The transcription method used here is that of CHILDES (MacWhinney 2000). The third section of this chapter presents a data analysis of the subject's L1 in order to show that her Arabic grammar had a fully operational functional system before L2A began.

3.1 The Subject

The subject of the present work, Mayyas, is a child native speaker of Saudi Arabic (henceforth Arabic). Mayyas is the first daughter of a graduate couple who came to Canada in 2004 when Mayyas was four. The data comes from a longitudinal corpus of spontaneous production data elicited from this child when she started attending English kindergarten at age 4;2. Mayyas had no exposure to English prior to arrival in Canada. She arrived in August 2004 and was at home with her parents until the beginning of October when she started kindergarten. At home, she spoke mainly Arabic, but had an adequate amount of exposure to English via animated films. Mayyas had no contact with English native speakers of any sort until she joined kindergarten. At kindergarten, she participated in activities conducted in English for 7 hours a day. She was first audio-recorded[38] by her father at the age of 4;5, that is almost three months later. Mayyas was recorded approximately 2 times a month covering a period of 11 months[39]. The data were generously made available to me by Mayyas's father (my best friend) who carried out the recordings. It should be noted that Mayyas's father is an advanced L2 English speaker who mainly spoke English to Mayyas during the interviews. Although there are some Arabic utterances in the data, they were neither transcribed nor included in the samples.

[38] Although the interviewer was planning to record all the sessions using a video camera, Mayyas was so distracted that she could not allow him to use it.

[39] It should be noted that there is a gap of 2 months of data collection after the age of 4:10 when Mayyas was on vacation with her family for the months of July and August. Moreover, it should also be noted that Mayyas was sick for the first two weeks of December and did not go to the kindergarten.

Table 2: Information about Mayyas		
Sample	Amount of exposure in months	Age
1-2	3	4;5
3-4	4	4;6
5-6	5	4;7
7-8	6	4;8
9-10	7	4;9
11-12	8	4;10
13-14	11	5;0
15-16	12	5;1
17-18	13	5;2

Most of the data were collected in the afternoon during the week days, soon after Mayyas came back from school. The data were collected mostly in situations where the interviewer was reading a story or doing homework with Mayyas. In these situations, Mayyas seemed to be willing to talk and share her experience at school with the interviewer. Some representative examples are given below.

Mayyas: The teacher said three days no school.
Mayyas: The other day there is school.
Mayyas: Today teacher said I'm all busy. (22-JAN-2005)

Data were also collected in other situations while Mayyas was playing a game, drawing, colouring or just conversing with the interviewer.

3.2 Data Transcription

The data collection for this study consists of 18 audio-recordings covering a period of 11 months. Each recording consists of about 45 to 90 minutes. These recordings were transcribed using CHAT format (MacWhinney 2000). Standard transcription symbols used in CLAN are used here to refer to syntactic transcriptions. For example, a symbol "< > [/]" is used to refer to a repeated utterance as the following examples show:

Mayyas: <it goes> [/] it goes on my head.
Mayyas: <I know> [/] I know don't tell me. (12-NOV-2005)

When an utterance is unintelligible, a symbol "xxx" is used to indicate the unintelligibility of that utterance, as shown below.

Mayyas: because a butterfly uses a lot of xxx.
Mayyas: cause I don't like it like xxx. (12-NOV-2005)

Other symbols used here include self-interruption, "+//", and retracing with reformulation, "[///]", as represented below.

Mayyas: dad, can I +// ?
Mayyas: Is Sunday the first day of school?
Mayyas: I got [///] I always put on my jacket. (11-OCT-2005)

Contextual information and comments were also provided in order to clarify certain situations:

Mayyas: who's tomorrow?
%com: she's wondering who's doing presentation in her class the next day.
(12-NOV-2005)

The 18 samples of data were all transcribed in CHAT format and CLAN was run to calculate frequencies. However, in many occasions I checked the frequencies manually just to make sure that they were accurate.

Since Mayyas learned English under almost similar conditions to Haznedar's subject, Erdem, a comparison of the two subjects will shed some light on the early development of L2 English. For this reason a note about Erdem is in order. Erdem is a son of a graduate couple who were studying in the UK at the time of data collection. The family arrived in England in November 1993 when Erdem was 4 years old. Like Mayyas, Erdem spent the first 2 months at home with his Turkish-speaking parents. Also like Mayyas, Erdem had no exposure to English prior to arrival in England. In January 1994 Erdem started attending nursery school. However, unlike Mayyas who had more than 7 hours a day in the daycare and instruction conducted mainly in English, Erdem had only two and a half hours a day with no instruction in English. Moreover, in the case of Erdem, data collection started almost 2 months after he started nursery school; while the data collection from Mayyas started after 3 months of exposure to English. This shows that the quality and quantity of input in the case of the two children is rather different, which may account for the apparent

differences in the results of the two children as we analyze the data in the next two chapters.

3.3 Mayyas's L1 Arabic and Functional Categories/Features

In this section I present data from Mayyas's L1 Arabic to show that her L1 grammar contains both lexical and functional categories/features long before she started acquiring English as an L2. The Arabic data from this child is also based on a longitudinal corpus collected over a period of 13 months. The data, which consist of 26 samples, were generously given to me by the same interviewer, who deserves special thanks. However, for the purpose of the present section, I will look at the first 6 samples and the last 2 samples as they have sufficient data to illustrate the issue at hand[40]. I will look mainly at the TP and CP systems with their related features. This will include null/overt subjects, word order, subject-verb agreement, question formation and relative clauses. Examples of the use of the latter structures will be reported below.

3.3.1 The TP System

Like most dialects of Arabic, Saudi Arabic is a null subject language. It allows null subjects in main clauses as well as in embedded clauses as shown in (1) below:

(1) a. *pro* aktub al-risalah
write-1SG def-letter
'I write the letter'

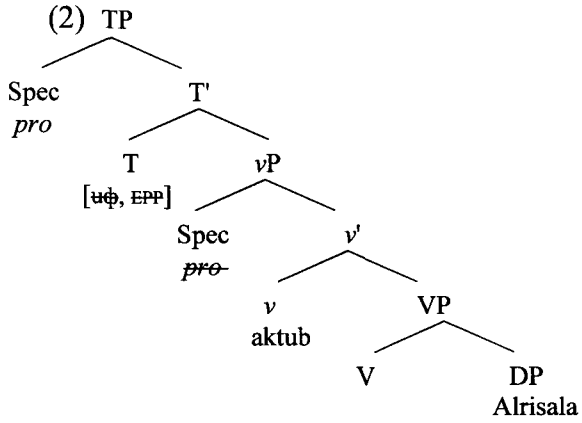
b. *pro* a?rif ?inu *pro* i?tasal
know-1SG that telephoned-3SGM
'I know that he has telephoned'

Following standard minimalist analysis of null/overt subjects (Chomsky 2000, onward), we assume that probe T is specified for EPP feature which requires the raising of a subject or

[40] The Arabic data were also given to me on tape recordings and for the purpose of this section, I transcribed the first 6 and last 2 samples in standard Latin orthography, unlike the English data which I transcribed both in standard Latin orthography and in CHAT format.

pro depending on the structure[41]. In sentence (1a), for example, the EPP feature associated with T triggers the raising of the goal, i.e., *pro*, to the Spec-T[42].

(2)



As in adult Arabic, child Arabic allows both null subject sentences as well as sentences with thematic subjects[43]. The data show that as in the adult grammar, both preverbal and postverbal subjects are employed in Mayyas's grammar. It is worth noting, however, that there are fewer postverbal subjects than in the adult grammar. Consider the following examples:

(3) a. shiribt kul alHaleeb
drank-1SG all the-milk
'I drank all the milk' (Mayyas, 1:10)

b. abġa hatha
want-1SG this
'I want this' (Mayyas, 1:10)

c. ana ašuuf
I see-1SG
'I see' (Mayyas, 1:10)

[41] Holmberg (2003) argues that *pro* in null subject languages functions as a real subject in that it is specified for a full set of interpretable ϕ-features. He states that *pro* externally merges in Spec-*v* where it gets its case feature valued and deleted under Agree with T probe.

[42] An alternative analysis is to suppose that in a null subject construction T probe has no EPP feature at all.

[43] Subject pronouns are used in adult Arabic for emphasis or to signal a change in topic. For child Arabic, however, it seems that they are used mainly for emphasis, at least in the samples that I revised.

d. ana beksiruh
I will-break-1SG-it
'I'll break it' (Mayyas, 1:10)

e. bektub ana
will-write-1SG I
'I will write' (Mayyas, 2:00)

f. akul ana pizza
eat-1SG I pizza
'I eat pizza' (Mayyas, 1:10)

Table 3: Null and Overt Subjects in Mayyas's L1

File	Age	Null Subjects	Overt Subjects
1-2	1:10	57 (82.61%)	12 (17.39%)
3-4	1:11	97 (85.09%)	17 (14.91%)
5-6	2:00	70 (84.34%)	13 (15.66%)
Total		**224 (84.21%)**	**42 (15.79%)**

Examples (3a and b) represent null subject sentences. Although the subject is missing, the inflection on the verbs shows that the subject is a first person singular. This type of sentence is the most frequent in both adult and child Arabic (see table 3). Examples (3c and d) show sentences with thematic subjects. This type of sentence is not very frequent in either adult or child grammar. The last two examples (3e and f) show the so-called verbal sentence[44]. In these sentences, the subject appears postverbally. Note that all the verbs in examples (3) are inflected and the verb markers indicate that the subject is a first person singular in all the verbs cited. However, the inflection on the verbs is not limited to the first person singular as shown by the following examples.

[44] In Arabic, there are two different main types of sentence structure, namely nominal sentence and verbal sentence. The verbal sentence is the one that begins with a verb and has the VSO word order. Nominal sentence, on the other hand, is the one that begins with a noun and has the SVO word order

(4) a. raaH
went-3SGM
'He has gone' (Mayyas, 1:10)

b. yatlaaoun
go-up-3PL
'They are going up' (Mayyas, 1:10)

c. raahet alHamam
went-3SGF the-bathroom
'She went to the bathroom' (Mayyas, 2:00)

The above examples show that the inflectional system in Mayyas's grammar is fairly rich. Example (4a) shows that the verb is inflected for past tense and for third person singular masculine, whereas example (4b) is inflected for present tense and for third person plural. Finally, example (4c) shows third person singular and past tense. This suggests that the features Tns as well as all ϕ-feature (person, number, and gender) are employed in Mayyas's grammar from early on.

3.3.2 The CP System

In this section we look at Mayyas's CP system represented by the use of subordinate clauses and wh-questions[45]. As we saw in chapter two, the CP projection is assumed to host a number of formal features. In the wh-question in English the head C is assumed to host *u*wh feature and Tns feature both associated with EPP. In Arabic, by contrast, in the present tense the Tns feature in C is not associated with EPP feature as there is no movement to C.

Wh-questions in Mayyas's data appear from an early stage, notably from sample 1. In the early data investigated here, we find movement of wh-words like "what", "how", "when", etc, to the specifier position of CP[46]:

[45] I will not look at Mayyas's yes/no questions as there is no movement in this type of structure. Yes/no questions in Arabic usually differ from declarative sentences in intonation only.

[46] Note here that while English requires a copula in such constructions, those utterances in Arabic are expressed without copula in the present tense. However, in the past form of the utterance a copula is required, as shown in (i):

(i) Kam kaant alsaa?ah?
What was the-time

(5) a. Kam alsaa?ah?
what the-time
"what is the time" (Mayyas, 1:10)

b. Laish fakuh azuuz?
why open-3SGM azuuz
"why did azuuz open it?" (Mayyas, 1:10)

c. Miin baara?
who outside
"who is outside?" (Mayyas, 1:10)

d. Wain alsukar?
where the-sugar
"where is the sugar?" (Mayyas, 1:10)

e. Wain raaH alkhusan?
where went-3SGM the-horse
"where did the horse go" (Mayyas, 1:10)

f. Waish fih hatha alkees?
what in-it this the-bag
"what is in this bag" (Mayyas, 1:10)

Further evidence in support of the presence of the CP system in Mayyas's L1 comes from relative clauses. Like wh-questions, relative clauses show wh-movement but without auxiliary inversion. Following recent minimalist analysis, relative clauses are CPs containing a C with *u*Wh feature and a Tns feature with the latter not associated with EPP feature. On this view, the relative pronoun in a sentence like "The man *who* I like" is supposed to have undergone movement to Spec-C triggered by the feature combination [*u*Wh, EPP].

Now let us consider relative clauses in Mayyas's data. First, it should be noted that there are very few examples of this type mostly found in later samples around the age of 3 years. Consider the following examples from samples 25 and 26:

(6) a. shuft altais illi fi atalajah
saw-1SG the-goat that in the-fridge
"I saw the goat that is in the fridge" (Mayyas, 2:10)

b. jabat-le alHalawa illi yiHba**ha**
brought-3SGF-him the-candy that like-3SGM-it
"she brought him the candy which he likes" (Mayyas, 2:10)

c. aHib illi induh sayarah
like-1SG that has a-car
"I like the one who has a car" (Mayyas, 2:10)

d. abga akalim illi fi altelivizion
want-1sg talk-1sg who in TV
"I want to talk to the one who is on TV" (Mayyas, 2:10)

Note that the relative clause in example (6b) has a resumptive pronoun in the direct object position (yiHba**ha**). This will be of particular interest as we discuss resumptive strategy in Mayyas's interlanguage, a phenomenon that is not allowed in English.

The fact that Mayyas produces preposed wh-questions as well as relative clauses shows that her grammar contains a CP system. This also indicates that she is aware of the fact that the head C contains a *u*Wh feature associated with EPP that requires a movement of a wh-word to the front.

Overall, the data presented here and in the previous section show that Mayyas's L1 grammar contains both lexical and functional projections. The functional system is represented by the use of EPP feature and ϕ-features in declarative structures and the use of *u*wh feature in interrogative and embedded constructions. It has been shown that Mayyas is able to form wh-questions, relative clauses, overt subjects, subject-verb agreement, and correct word order in her L1 Arabic.

3.4 Conclusion

This chapter has dealt with methodological issues including data collection and data coding and transcription. In the first part of this chapter I presented the subject of the study and some information about her initial exposure to English. Although Mayyas seems to have acquired English in conditions similar to Haznedar's subject, Erdem, their exposure to English appears to differ both qualitatively and quantitatively. While Mayyas and Erdem both started acquiring English at almost the same age, the amount of exposure in the two children differs significantly. This may account for the fact that Mayyas developed much

more rapidly than Erdem. We will see in the following chapters that by the time Mayyas had already mastered certain morphosyntactic aspects, Erdem, by contrast was still struggling with the same aspects at the same developmental stage.

The second section presented the method used for coding and transcribing the data. The CHAT format (MacWhinney 2000) was used for this purpose. Codes and symbols used in CHAT were also used to transcribe Mayyas's data.

Finally, the third section of this chapter examined Mayyas's L1 Arabic with regard to the availability of functional categories/features. In general, the data show that Mayyas was making productive use of these structures long before she was introduced to English. This analysis of Mayyas's L1 will be equally important as we analyze her English with respect to the acquisition of functional features in the following chapters. It will allow us to determine whether and where L2 formal features are transferred from Mayyas's L1.

Chapter 4

The Acquisition of the TP System

4.0 Introduction

This chapter investigates the status of the TP system in Mayyas's interlanguage grammar. As we saw in chapter 2, the TP projection is assumed to host a number of formal features including ϕ-features, the Tns feature and the EPP feature. These features must be checked through the Agree relation on the basis of feature-match. This chapter consists of three sections. The first section, named TP related elements, will be concerned with null subjects, case assignment as well as copula *be*, auxiliary *be* and modal verbs. The second section of this chapter will be concerned with issues related to tense and agreement morphology in Mayyas's data. In section 3 I will discuss different hypotheses related to the optionality of finiteness in tense and agreement inflection reported in the data. Finally, section 4 will be a conclusion of the present chapter.

4.1 TP Related Elements

4.1.1 Null/Overt Subjects

In this section, I discuss the acquisition of null/overt subjects and their relation to the EPP feature. As we saw in chapter 2, the head of the TP constituent contains an EPP feature besides ϕ-features and the Tns feature. Basically, an *Agree* relation between a *probe* and a *goal* must be followed by the raising of the *goal* to the Spec-T. Thus, in a language like English where T has an EPP feature, subjects have to move to the front. Arabic, in contrast, is a null subject language where T is not associated with EPP in such constructions. Moreover, besides the SVO structure, Arabic is also a VSO language where T has no EPP feature to trigger the movement of the subject to Spec-T. Therefore, it is possible to argue here that Mayyas's L1 may interfere with her L2 when acquiring the EPP feature requirements of English.

In the first two samples, there are more than 300 utterances where Mayyas could possibly violate the EPP feature requirement of English. Consider the following examples:

(1) a. I brought three color. (S 1)
b. I tell you your turn. (S 1)
c. Mommy said yes or no. (S 1)
d. She look very nice. (S 2)
e. I forgot that. (S 2)

Based on the examples in (1) alone, it could be argued that these subjects are not in Spec-T, as there is no indication of their movement. It is possible to argue that the verb and the subject are both located inside the VP projection as suggested by Radford (1990). However, there are many examples in the data which clearly show that the subject is definitely in Spec-T and not in Spec-V. Consider the following examples, also from the first 2 samples:

(2) a. My room is not very clean. (S 1)
b. I can do it first. (S 1)
c. I will draw a girl. (S 1)
d. He doesn't know like Dora. (S 2)
e. I'm gonna use my eraser. (S 2)
f. It could be white the eraser. (S 2)

The movement of the subject from Spec-*v* to Spec-T is evident by its position vis-à-vis negation, copula *be*, etc., as shown in (2). Under standard minimalist analysis, copula *be*, auxiliary *be* and modal verbs are assumed to be located under the head of the TP projection. Unlike English-speaking children, Mayyas produces copula *be*, auxiliary *be* and modal verbs from the very beginning of data collection. In sum, the elements in the head of TP show beyond doubt that the subjects in utterances like those in (2) are in Spec-T.

Now let us consider the amount of null subjects in Mayyas's data. The count in this section will include all instances of null subjects in declaratives, yes/no questions and wh-questions; but will exclude imperatives as commonly done in standard analysis of null subjects. In the first sample, out of 107 contexts there are only 2 instances of null subjects.

(3) a. Like your hand. (S 1)
b. Now is your turn. (S 1)

In the first example, the first person singular subject "I" is missing, while example 2 shows that the expletive subject "it" is omitted. The overall percentage of the missing subjects in sample 1 is very low, only 1.86%. It should be noted, however, that while the 2 missing subject pronouns in the first sample are the first person pronoun "I" and the expletive

pronoun "it", these 2 pronouns are among the most produced subject pronouns in the entire data. Consider the following representative examples from sample 1.

(4) a. I will do like a rope.
b. I will put some black (color).
c. I have purple (crayon).
d. It broke again.
e. It's not like that.
f. It climb in your hand (monkey). (all from sample 1)

Table 1 in the Appendix shows that in the first 2 samples the subject pronoun "I" represents 29.56%, while the expletive pronoun "it" represents 26.52% of the overall amount. In general, and as can be seen in table 2 in the Appendix, null subjects in Mayyas's data are extremely low: 8 out of 2976 (0.27%). The other 6 instances of null subjects are scattered all over the data as shown in (5) below:

(5) a. Bring mine (pencil). (S 5)
b. Happened for real. (S 11)
c. Pretend I got a mistake. (S 12)
d. Finished daddy. (S 16)
e. Finished curly line. (S 16)
f. Goes on my head (monkey). (S 18)

Note that the missing subjects in Mayyas's data only occur with the first person pronoun "I" and the expletive subject pronoun "it" as exemplified in (4) and (5) above. This is, however, reminiscent of the same phenomenon found in colloquial adult English, e.g. in sentences such as (6):

(6) a. Can't find it.
b. Nice day, isn't it? (Radford *et al.* 2009: 352)

The fact that Mayyas uses the expletive pronoun "it" productively from early on is an interesting fact as her L1 Arabic does not have expletive subject pronouns like "it" and "there". This shows that Mayyas is aware of the fact that English, unlike Arabic, is not a null subject language where null subjects are freely allowed in this type of construction, and in minimalist terms, this means that Mayyas knows that English T is always specified

with EPP feature which triggers subject movement to the front. Therefore, since the total amount of null subjects is extremely low and all errors are very selective, lack of linguistic competence cannot be the explanation for these errors. A better explanation for these few dropped subjects would be that Mayyas, like in colloquial adult English, drops subjects in certain situations and with specific subject pronouns.

It should be noted, however, that research from child L2A seems to support Mayyas's behavior with regard to the acquisition of null/overt subjects. Ionin and Wexler (2002), for example, show that null subjects constitute only 1.8% in the speech of all the children studied. Likewise, Lakshmanan (1994a) shows that her subjects rarely drop subjects in their L2 acquisition of English. Uguisu, the Japanese child, in particular dropped the subject only in three (0.11%) occasions out of 7606 contexts. Similarly, Haznedar's subject also shows similar behavior with regard to null subject in his L2 grammar. Null subjects in Erdem's data represent only 0.93%. This suggests that the L1 does not seem to play a role in the acquisition of null/overt subjects. We saw that it does not matter whether the native language is a null subject (e.g. Arabic, Turkish, Japanese, etc) or non-null subject language (e.g. French). In this case, child L2 learners seem to override language transfer effects.

However, this appears in sharp contrast with findings from both child L1 and adult L2 acquisition. First language acquisition research has shown that early child language is characterized by a stage where lexical subjects are missing (Hyams 1986; Radford 1990). Children between the ages of 2-3 optionally omit sentential subjects whether or not their languages allow them. The following examples come from: Danish, English, Dutch, German and French respectively:

(7) a. se, blomster har. (Jens, 2;2)
look flowers have/has
'look, (I/you/she/we) have/has flowers'

b. want more apple. (Eric, 2;1)

c. wordt al donker. (Hein, 2;6)
becomes already dark
'(it) is already getting dark'

d. bin wieder lieb. (Elisa, 2;10)
am again good
'(I) am good agan'

e. veut pas lolo. (Nathalie, 2;0)
want not water
'(I) don't want water' (Cited in Haman 2002: 152)

The issue of null subjects in early child grammar has been widely investigated, and there have been various proposals to account for this phenomenon. Hyams (1986), for instance, was the first to account for null subjects within the Principles and Parameters framework. She has argued that these subject less sentences should be accounted for under the so-called Pro-drop Parameter or the Null Subject Parameter. She further argued that this phenomenon of absent subjects in children's early English reflects the unmarked setting of this parameter. However, since this account of early null subjects by Hyams was disputed by several researchers for various reasons, Hyams revised her analysis in later work (e.g., Hyams 1992).

Another account of null subjects in early child grammar has been proposed by Bloom (1990), who adopts a processing account. Bloom proposes that children normally know more than what they say. He argues that null subjects are due to performance factors. According to him, longer utterances are more difficult for processing. However, in response to this claim, Hyams (1987) argues that children are normally capable of producing longer sentences in other situations and that null subjects occur in both short and longer utterances. However, the results from child L2A do not seem to support either position with regard to the issue of null subjects. The lack of competence account (e.g., Hyams 1987; Hyams and Wexler 1993), and the deficit processing account (Bloom 1990), cannot account for Mayyas's null subjects as there are very few instances to make any generalizations about.

Although there have been diverse analyses of the issue of dropped subjects in early child grammar, most accounts agree on the robustness of this phenomenon at this developmental stage. Hyams and Wexler (1993), for instance, report that English children drop subjects at a rate of 48%, while Haman (2002: 158) states that "In English, French and Dutch the empty subject phenomenon occurs massively (with peaks of 60%) between the ages of 2;0 to 3;0".

Similarly, L2A research has also shown that adult L2 learners go through a stage where lexical subjects are optionally omitted, mostly due to L1 influence. Liceras (1989) and White (1985) among others argue for initial transfer and a gradual re-setting of the parameter. This suggests that child L2 learners are different from both child L1 and adult L2 learners with respect to the acquisition of null subjects in language development.

4.1.2 Case Assignment

This section examines case assignment/valuation in Mayyas's data. As we saw in chapter 2, Case is assigned through Agree relation between a ϕ-complete *probe* and a *goal*. Thus, learners need to know that only a ϕ-complete probe can assign a value to the unvalued case feature of the goal. This implies that Nominative Case assignment is available only through a T that is finite and ϕ-complete. Likewise, Accusative Case is also assigned under the same mechanism but with a finite *v* (light verb). What is relevant here for language acquisition is that L1/L2 learners should realize, at least at the abstract level, that only a ϕ-complete probe can assign a value to the unvalued case feature of the goal. Since English nouns are not marked for case, we only consider pronouns which are variably marked for nominative, accusative or genitive case (the latter case is not discussed here)[47]. We look first at nominative case and then accusative case.

4.1.2.1 Nominative Case

Table 1 in the Appendix presents the distribution of pronominal subjects in Mayyas's data. Starting from the first two samples, Mayyas is able to recognize and employ all kinds of subject pronouns, as the examples in (8) illustrate.

(8) a. *He* is not so small. (S 1)
b. *I* color it. (S 1)
c. *She* has a nice hair. (S 1)
d. *You* can color first. (S 1)
e. *It* was very sharp. (S 1)
f. *We* do it again. (S 1)
g. *They* didn't see it. (S 2)

[47] In English, morphological case distinction is only expressed overtly on non-2nd pronouns. Arabic, on the other hand, has full paradigm of morphological case that overtly expressed on both nouns and pronouns.

It is interesting to note that Mayyas never produces case errors. In all instances of pronominal subjects, we find only nominative case with no exceptions. She is also able to distinguish between nominative, accusative and genitive case depending on the context. Similar findings have been reported for other L2 children (Haznedar 2001; Geçkin and Haznedar 2008; Ionin and Wexler 2002; Gavruseva and Lardiere 1996; Lakshmanan 1994b). Haznedar (2001), for example, observes that Erdem almost never produces non-nominative subjects in his interlanguage grammar. There are, however, 3 instances where Erdem produced non-nominative subjects out of 5,163 (0.06%). The 3 examples from Erdem are given in (9) below.

(9) a. Me is finish. (S 8)
b. This is not # me big # me very very. (S 9)
c. No # me not break this is bicycle. (S 14)

This, however, contrasts with results from child L1A research which confirm that English-speaking children produce nominative as well as non-nominative subject pronouns in the early stages of acquisition (Radford, 1990; Vainikka, 1994; Rispoli, 1994; among others). Radford (1990) observed that young children acquiring English produce case errors, as the examples in (10) show.

(10) a. Me got bean. (Stefan 17)
b. Me want one. (Helen 18)
c. Me going out back. (Gavin 21) (Radford 1990: 175)

These examples show that these children are using object pronouns in contexts where adults would use nominative pronouns. Similarly, Vainikka (1994) has reported that children acquiring English use oblique case where the adult target requires nominative case, as the following examples illustrate:

(11) a. My see that. Adam see that. (Adam, 2;3)
b. My play bulldozer, hmm? (Adam, 2;3)
c. My close it. (Nina, I; 11) (Vainikka 1994: 268)

However, unlike child L1A, research from L2A has shown that adult L2 learners are aware of the pronominal case markings from early on. Lardiere (1998a), for instance, found that

the distribution of pronominal case in her L2 learner, Patty, is perfectly set from the first recording available. According to her, Patty shows 100% correct occurrence of nominative case assignment, as well as appropriate accusative pronouns in non-nominative contexts (see also White 2003b for similar findings from a Turkish speaker of L2 English). In this case, Patty seems to resemble L2 children rather than L1 children with respect to the acquisition of case assignment. As we saw in this section for Mayyas, all instances of subject pronouns are always nominative with no exception. As table 1 in the Appendix shows, there are 2450 subject pronouns in Mayyas's data with not a single case error. Thus, the error rate with nominative case is obviously 0%. This suggests that Mayyas has acquired the mechanisms by which nominative case is assigned. To put it in technical terms, Mayyas seems to know that the head T must be specified with the relevant features, namely person, number and Tns features which are required to value the case feature of the goal via the operation Agree. Therefore, Mayyas is aware of the fact that any missing feature of T (i.e., ϕ-incomplete) would prevent Case valuation and consequently will cause the derivation to crash at the interface.

4.1.2.2 Accusative Case

As is the case with subject pronouns, Mayyas also seems to employ all types of object pronouns from the earliest data available. Consider the following examples:

(12) a. You want *me* to draw book. (S 2)
b. Did you see *her*? (S 2)
c. It looks like *him*. (S 2)
d. I need to color *them*. (S 1)
e. I tell *you* your turn. (S 1)
f. I don't know *it*. (S 1)
g. Mr. Salt, could you give *us* the other clue? (S 9)

Again, as is the case with nominatives, there are no case errors with object pronouns. In all the instances of object pronouns, we find only accusative case at a rate of 100%. It should be noted that the object pronoun "it" is the most frequent pronoun in the entire data at a rate of 48%, while the object pronoun "us" is the least frequent (1.5%) pronoun, which also did not appear until sample 9. A possible explanation for the rarity of the object pronoun "us"

in the data is that there are fewer contexts for this very pronoun even at the later stages (see table 3 in the Appendix).

Table 3 in the Appendix shows that Mayyas produced 600 object pronouns with not a single case error. The fact that Mayyas's interlanguage exhibits a perfect distribution of nominative and accusative case marking suggests full specification of features (ϕ-complete) associated with TP. This suggests that Mayyas's case system is error-free and therefore she has fully acquired this feature from the earliest stages of development.

4.1.3 Copula Be

The copula *be* is among the first TP elements to appear in the data. In the first sample for example, there are 19 contexts for copula *be* and Mayyas was able to supply it in 18 contexts at a rate of 94%. Consider the following examples:

(13) a. It's like a pencil.
b. My hair, it's too long.
c. It's nice.
d. It's my turn.
e. It's cool.
f. It's not fair. (all from sample 1)

Although the above examples show that Mayyas produces copula *be* productively, it is possible to argue that some of these utterances are unanalyzed forms, as most of these have the form of *It's*. However, there is ample evidence in the data which confirm that the copula instances in some examples are not unanalyzed forms, as the following examples illustrate:

(14) a. He is not so small. (S 1)
b. My room is not very clean. (S 1)
c. It was very sharp. (S 1)
d. I'm smaller, you're big. (S 1)
e. He is black (book). (S 1)
f. Three people were sick. (S 2)
g. My name is bigger than you. (S 2)

These examples show that Mayyas is able to use the copula *be* in different contexts with different subject pronouns like "*he*", "*you*" and "*I*". Moreover, examples (14c,f) show that Mayyas is even able to produce the copula *be* in the past form like "*was*" and "*were*" from

early on. The only utterance in this sample where Mayyas failed to produce the copula is in a context where she omitted both the subject and the copula.

(15) a. Now your turn. (S 1)
(cf. Now it's your turn)

Although Mayyas appears to have fully acquired the copula *be* construction at an early stage and at an overall rate of 98%, missing copula *be* did not disappear until sample 14, i.e., after 11 months of exposure to English (see table 4 in the appendix). Some representative examples of missing copulas in the data are given in (16) below:

(16) a. Something stuck.
b. I scared of it.
c. This even mean.
d. My favourite book Blues Clues.
e. It just a new one. (all from sample 1)

One possible explanation for the omission of the copula in Mayyas's data could be attributed to the L1 influence. As mentioned in chapter 3, Arabic does not require a copula *be* in the present tense construction as in examples like those in (16). Interestingly, missing copulas in Mayyas's data are all of the present tense type, which strengthen the transfer account of these errors. Another possible explanation for these errors is to assume that they are just performance errors, since there are very few to make any generalization about.

It should be noted, however, that although Mayyas sometimes omits the copula *be* in different contexts and with different subject pronouns, she almost never uses the non-finite form of *be* in finite contexts, as also noted by Schütze (2004) for early English. In fact, there is only 1 utterance in the entire data of this sort which is given in (17) below.

(17) a. Sometimes they be grey or white. (S 6)

In addition to omitting the copula in certain contexts, Mayyas also appears to produce very few agreement errors with copula *be* found throughout the data, as can be seen in the following utterances:

(18) a. There is only 3 letters. (S 2)
b. There is no more hats. (S 4)
c. Six letters is a lot.[48] (S 4)
d. There is still too many papers. (S 14)
e. There is scribbles in it. (S 15)
f. There is 2 diamonds. (S 18)

The early appearance of copula *be* in Mayyas's data seems to be supported by research from child L2 acquisition (Dulay and Burt 1974; Haznedar 2001; Lakshmanan 1994b, 1998; Ionin and Wexler 2002). Haznedar, for instance, observes that copula *be* in Erdem's data started at a very early stage, namely sample 4[49]. As is the case with Mayyas, Erdem appears to produce copula *be* at a high rate of 96%. This suggests that copula *be* is among the first TP elements to emerge and be mastered early on. Note, however, that Mayyas's success in acquiring copula *be* cannot be due to transfer from her L1 as utterances like those in (18) are expressed without copula in Arabic (see footnote 46 for details).

With respect to L1 acquisition, research has shown that young children acquiring English produce utterances like (19), in which they omit the copula *be* (Brown 1973; Becker 2000; Hyams 1986; Schütze 2004; Radford 1990)[50].

(19) a. Lisa naughty. (Bethan 20)
b. Mommy busy. Baby busy. (Kathryn 21)
c. Sausage bit hot. (Jem 23) (Radford 1990: 156-7)

In his pioneering work, Brown (1973) studied the acquisition of 14 morphemes using longitudinal data from three children, Adam, Eve and Sarah, and reported that the copula *be* in its uncontracted form is acquired by the age 2;3-3;3, while the contracted form is acquired by the age of 2;5-4;1. Compared to the other grammatical morphemes, uncontracted *be* ranked seven, while the contracted form ranked thirteen. Note that according to Brown, a morpheme is considered acquired if it is used correctly in at least 90% of obligatory contexts. This, however, suggests that the copula *be* in its two forms is

[48] Lia Walsh (p.c.) pointed out to me that this is widely used in spoken English and that many native speakers do not consider it ungrammatical. In this context, the copula agrees with "a lot" and not the item(s).
[49] Note that in the first 4 samples, Erdem did not produce many utterances which led Haznedar to consider sample 5 as the first context for the presence of copula *be*.
[50] Using a grammar-based account, Becker (2004) argues that there is some sort of a correlation between the omission of the copula and the semantic feature of the predicate. She specifically shows that it is copula *be* with a locative value (e.g., It's here) rather than copula *be* with nominal value (e.g., This is lady) that is highly omitted in early child grammar.

not among the earliest morphemes to be mastered, unlike in child L2A. One possible explanation for the delayed acquisition of copula *be* is given by Radford (1990). Radford, as we saw earlier, holds the position that early child grammar lacks functional categories altogether, and since copula *be* is assumed to be located in a functional head, i.e., T, which is missing at this stage, copula *be* does not make it into the grammar.

With respect to L2A, research has shown that although adult L2 learners are more successful in supplying copula and auxiliary verbs than verbal inflections (Zobl and Liceras 1994), their performance still falls short of the adult target. Lardiere (2007), for example, found that her subject, Patty, was able to supply the correct forms of copula and auxiliary verbs at a rate of 82% for the first recording, i.e., after 10 years of exposure to the target language input. Therefore, Patty's performance with regard to the acquisition of copula appears to be different from that of child L2 learners, where Mayyas and Erdem reached the 97% accuracy in less than 16 months of exposure to the target language input.

4.1.4 Auxiliary Be

The auxiliary *be* in Mayyas's data is also among the earliest TP elements to be acquired[51]. In the first sample, there are 14 contexts for the auxiliary *be* and Mayyas was able to supply it in 12 contexts at a rate of 85%. Some representative examples from sample 1 are given in (20) below.

(20) a. Rimas is playing. (S 1)
b. Then I'm coloring the Ruba. (S 1)
c. I'm gonna go down. (S 1)
d. I'm singing. (S 1)
e. He's gonna eat it. (S 1)
f. He's gonna hurt xxx. (S 1)

These examples provide enough evidence that Mayyas has already acquired the auxiliary *be* from the earliest recording available. As can be seen from the examples in (20), Mayyas is able to use the contractible form of the auxiliary *be*, especially "is", in different contexts and also with different nouns and pronouns. The only utterance in this sample where Mayyas could not provide the auxiliary was in the following context:

[51] Recall that "acquired" is used here in the sense of Brown's criterion measure for an item that is successfully acquired.

(21) a. This gonna eat the small (animal). (S 1)

The missing auxiliary in (21) could be attributed to a phonological error where the two "s" are adjoined in such constructions. Besides the missing auxiliary in (21), there is one context where Mayyas used the dummy operator "do" instead of the auxiliary *be*, as shown in (22).

(22) a. He doesn't gonna eat the bird. (S 1)

In the following two samples there are 10 contexts for the auxiliary *be* and Mayyas was able to supply it successfully in all the contexts at a rate of 100%, as the following examples illustrate:

(23) a. I'm telling you glasses. (S 2)
b. You're not playing well. (S 2)
c. It's going out. (S 2)
d. They're playing. (S 3)
e. You're talking to somebody? (S 3)
f. Which one you're talking about? (S 3)

However, in the next sample, i.e. 4, there are 6 contexts for the auxiliary *be* but Mayyas failed to supply it in 2 contexts at a rate of 34%, which is considered relatively high compared to the other samples, including sample 1. The two missing auxiliary contexts are given in (24) below:

(24) a. We gonna come back to those. (S 4)
b. We not gonna take the shortcut. (S 4)

As can be seen in table 5 in the Appendix, starting from sample 5, the rate of missing auxiliary *be* decreased dramatically to 0% for samples 5-11; then there are very few missing *be* until sample 17 which seems to mark the demise of missing auxiliary *be* in the data. The rest of the missing auxiliary *be* instances in the data are given in (25).

(25) a. If you still playing you have to finish. (S 12)
b. I saw him when he playing basketball. (S 12)
c. You gonna get me in trouble. (S 13)
d. Somebody reading on a beach. (S 14)

e. Someone sitting and writing a book. (S 14)
f. Because it gonna take a long time. (S 17)

Although the very few missing auxiliary *be* (less than 6%) may qualify as performance errors, a possible explanation is to assume a language transfer account. An important difference between Arabic and English with respect to auxiliary *be* is that Arabic, unlike English, does not allow auxiliary verbs in the present tense context. In other words, Arabic requires the presence of auxiliary verbs only in the past tense context. One piece of evidence in support of the transfer account is that Mayyas drops auxiliaries mainly in the present tense contexts as it is required by her L1 Arabic. In fact, out of 9 missing auxiliary *be*, 8 (89%) appear in the present tense context and only 1 (11%) appears in the past tense context.

It is worthwhile to note here that while missing copula *be* in Mayyas's data disappeared as early as sample 14, missing auxiliary *be*, by contrast, made it into the data until sample 17. Also compared to copula *be*, auxiliary *be* was mastered at a relatively lower rate at 94%. Although the rate of acquisition in the case of the two types of *be* is rather insignificant, copula *be* 98% and auxiliary *be* 94%, both child L1 and child L2 research seem to confirm that the auxiliary *be* develops slower than copula *be* (Brown 1973; Valian 1992; Lakshmanan 1994b; Ionin and Wexler 2002). Haznedar (2001), for instance, shows that Erdem also developed auxiliary *be* in a relatively similar way to copula *be*. In the first sample in Erdem's data there was no context for the copula *be*, but starting from sample 2 Erdem starts to produce it correctly and productively. Likewise, Lakshmanan (1994b) reports similar findings from Marta with regard to the acquisition of auxiliary *be*. According Lakshmanan, in an imitation task, the auxiliary *be* is rendered uncontracted even though the stimulus sentence is contracted. This suggests that Marta was not only able to recognize the presence of the auxiliary *be* but also able to produce the uncontractible counterpart in repetition tasks.

With respect to L1 acquisition, Brown (1973) reported that the auxiliary *be* in the three children is acquired late compared to the other morphemes studied. Specifically, the uncontracted form of *be* comes 12th in the scale, while the contracted counterpart comes 14th. As we saw earlier, Radford (1990) has argued that the earliest grammars developed by young children are characterized by the lack of functional elements. He assumed that young

children acquiring English as their first language omit the auxiliary *be* in the contexts where it is obligatory in adult speech[52]. According to Radford, the lack of the T constituent in child grammar results in the lack of auxiliary *be*, as the following examples illustrate.

(26) a. Baby talking. (Harley 20)
b. Wayne sitting gate. (Daniel 21)
c. Daddy coming. (Helen 21)
e. Mummy doing dinner. (Daniel 22)

Overall, our findings show that the auxiliary *be* is acquired correctly and productively from early on. Mayyas is able to use *be* in its contracted and uncontracted form both in the present and past contexts, which seems to be compatible with the other child L2 studies reported in the literature. These findings, as we saw earlier, contrast with findings from both child L1 and adult L2 acquisition. As for L1A, Brown (1973) has shown that the acquisition of auxiliary *be* ranks at the bottom of the hierarchy for all the 3 children in his study. In other words, the auxiliary *be* in child L1 is acquired late compared to the other morphemes studied. Likewise, Lardiere (2007) has shown that her L2 learner could not acquire (in the sense of Brown 1973) the auxiliary *be* even after 10 years of constant exposure to the target language input. It is only after recording 2 (after more than 18 years of exposure) that Patty acquired the auxiliary at a rate of 93%.

4.1.5 Modal Verbs

Another source of TP elements in the data is modal verbs like *can, could, should, will*, etc. Like the other TP related elements reported here, modal verbs in Mayyas's data also appeared quite early, as the following examples from sample 1 illustrate.

(27) a. I can do it first.
b. I will draw a girl.
c. Then I will color it
d. Can you sharp it dad?
e. I will draw it like this.
f. You can hear it. (all from sample 1)

[52] It should be noted here that even though Radford (1990) used examples from a large number of children, a quantitative analysis of the data was not provided.

Although Mayyas was successful at supplying the right modal verb in the right context in sample 1 at a rate of 90%, we only find two types of modals at this stage, namely *can* and *will* in its uncontracted form. This is, however, compatible with child L2 studies like Haznedar (2001) who reports that the modal verb *can* is the first modal to appear in the data. Similarly, Bellugi (1967) observed the same pattern for child L1 grammar. Moreover, as can be seen in table 6 in the Appendix, the modal verbs in Mayyas's data are limited to 4 types in the first 9 samples: *can*, *can't*, *could* and *will*. Some representative examples are given in (28).

(28) a. Can you spell it? (S 2)
b. It could be white the eraser. (S 2)
c. Close it, I will not open it. (S 2)
d. I can't play. (S 3)
e. I can draw a lot of trees. (S 4)
f. I could carry a wall with a hammer. (S 4)
g. I'll bring my crayon. (S 5)
h. Could I do it one more time? (S 8)

Moreover, starting from sample 10, we find different types of modal verbs including *won't*, *should*, *couldn't*, and *wouldn't*. Some representative examples are given in (29) below.

(29) a. You won't see me. (S 10)
b. Should I open the door? (S 10)
c. No, it wouldn't happen. (S 12)
d. Franklin couldn't get his ball back. (S 12)

Although Mayyas productively makes use of modal verbs in appropriate contexts from early on, some modal verbs did not appear in the entire data like *must*, *would*, *may* and *might*. In fact, the only context where the modal verb *would* was required, Mayyas erroneously used *could* instead, as can be seen in (30).

(30) a. Red could be nice. (in choosing among several colours)
(cf. Red would be nice)

It is worthwhile to note that Mayyas not only uses modal verbs productively from early on but she also recognizes their syntactic properties as she never misanalyzes modal verbs as

main verbs. In the data there are no utterances where Mayyas uses verb inflections (e.g., 3SG-S or ed) with modal verbs; utterances such as (31) are not attested in the data.

(31) a. *He cans.
b. *She coulds.

Also not attested in the data are examples where Mayyas would use a finite verb form after a modal verb, as in (32).

(32) a. *He can drove.
b. *They would leaves.

The high incidence of modal verbs in the data seems to be supported by research from child L2 acquisition. Haznedar (2001), for instance, reports that although modal verbs in Erdem did not appear until sample 15, there is "morphological and syntactic evidence for the correct use of modal verbs in Erdem's speech" (p. 14). Like Mayyas, Erdem makes neither inflectional nor misplacement errors, which suggests that both children have acquired this property quite early. On the contrary, however, child L1 acquisition of English has shown that modal verbs are acquired relatively late (Bellugi 1967; Brown 1973; Radford 1990). Radford (1990) reports that children at the VP-stage not only lack the productive use of modals, but they also tend to omit them when repeating or replying to utterances which contain modal verbs.

4.2 Tense and Agreement Morphology

4.2.1 Subject-Verb Agreement (3SG-S)

Before we proceed in discussing the status of subject-verb agreement 3SG-S in the data, a note about the count is in order. Although auxiliary *be* and copula *be* are inflected for agreement, both will be excluded from the count as they do not have the same status as 3SG-S agreement. As we saw in this chapter, copula *be* and auxiliary *be* are acquired by Mayyas from early on, which is not the case with the main verbs as we will see in this section. Phillips (1995), for instance, argues that copula *be* and auxiliaries *be* cannot be equated with verbal inflections as they do not have the same distribution as main verbs[53].

[53] See also Hawkins (2001) for similar proposal for L2A that copula be cannot *be* equated with verbal inflections like 3rd sing-s and irregular past forms.

He states that there is no "evidence which justifies equating missing auxiliaries with missing inflection on main verbs" (p. 21). Therefore, the data analysis in this section will be restricted to main verbs only.

As stated above, this section examines Mayyas's use of 3rd person present singular inflection –s (3SG-S). The overall results are given in table 7 in the Appendix. Table 7 shows that in the first sample, there are 5 obligatory contexts for the 3SG-S, but none of these verbs are inflected, as shown in (33). Figure 1 shows the proportion of 3SG-S in obligatory contexts in the entire data under investigation.

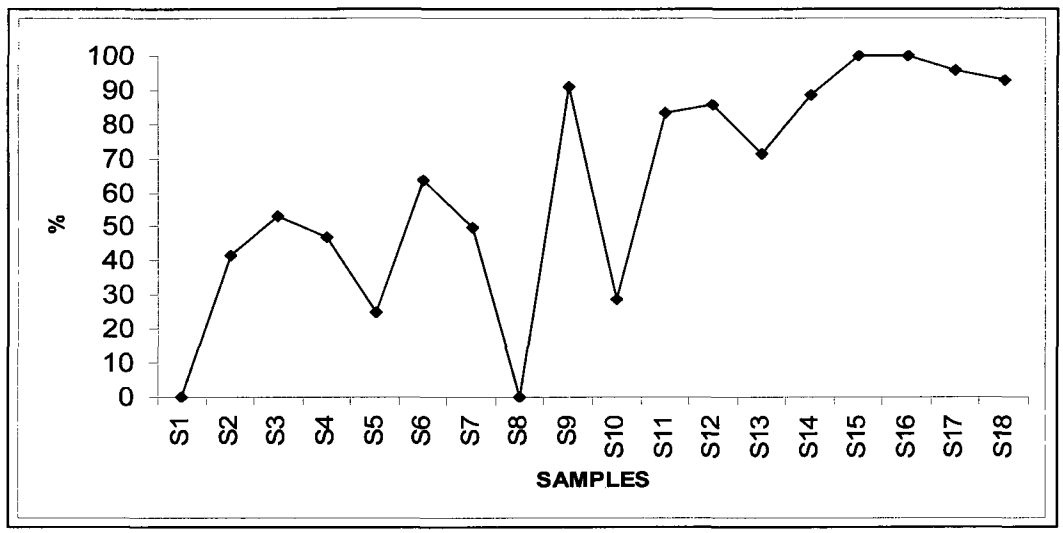


Figure 1: Percentage of inflected 3SG-S in obligatory contexts

(33) a. Malak sometimes erase it.
b. She look very nice.
c. It hurt you very much!
d. It climb up in your hand.
e. She write like this. (all from sample 1)

Moreover, sample 2 shows a rapid increase of the 3SG-S inflection to more than 40% compared to 0% for sample 1. In this sample, there are 12 contexts for 3SG-S and Mayyas successfully provided the right inflection in 5 contexts at a rate of 41.66%. Consider the following examples in (34).

(34) a. It looks like him, right?
b. It looks like a pencil.
c. It looks like Dora.
d. It looks like this.
e. It looks funny. (all from sample 2)

It is clear from these examples that they all start with "It looks", which may raise some doubt on whether these utterances represent unanalyzed forms which Mayyas memorized as pure chunks. However, we find in the same sample similar uninflected utterances which also begin with "It look". If we assume that the examples in (34) are unanalyzed forms then the question to ask is why Mayyas is not pronouncing the inflections on these verbs if these are purely memorized chunks.

(35) a. It look like O.
b. It look funny. (all from sample 2)

It is also worthwhile to mention here that whenever there is an element (notably adverbs) intervening between the subject and the verb, Mayyas never pronounces the 3SG-S inflection, as the following examples illustrate (36).

(36) a. Malak sometimes erase it. (S 1)
b. She always scream. (S 3)
c. She always say na na na. (S 3)
d. She always say like that. (S 3)
e. She always do that. (S 3)
f. She even hate it. (S 10)

Moreover, looking at table 7 in the Appendix, we find that the inflected verb forms fluctuate between 0% for sample 8 to 63% for sample 6, which suggests that Mayyas has not yet fully acquired this property at this stage. However, sample 9 shows a sudden increase of the 3SG-S inflection at a rate of 90%, but again it suddenly decreases to 28% for the next sample, i.e., 10. It should be noted that Mayyas is able to produce other types of inflected verbs other than "looks" and "sounds", as the following examples illustrate.

(37) a. It starts with a D. (S 3)
b. The giraffe eats the tree. (S 3)
c. She likes it. (S 4)
d. She wants it. (S 5)
e. When he wants to eat he go down. (S 5)

f. It fits in here. (S 6)
g. The rain comes like this down. (S 6)
h. He eats even small fishes. (S 7)
i. It means you need to be careful. (S 7)
j. He takes a lot of people in the bus. (S 9)

However, starting from sample 11 we notice a gradual and stable increase in the production of inflected verbs with 3SG-S. With sample 11, the production of 3SG-S increases from 28% for the previous sample to 88.33%, and stabilizes thereafter. In addition, in sample 15, Mayyas reaches the 100% level for the first time in the data, but decreases to 95% for sample 17 and 92% for the last sample, i.e., 18. This suggests that even though Mayyas reaches the 100% level at some points, she was not able to keep it up. It is worthwhile to mention here that the uninflected forms drop significantly to less than 8% for the last sample. For the percentage of correct inflected verbs 3SG-S in the L2 data, refer to table 7 in the Appendix.

An important observation about children's knowledge of inflectional morphology is that when they use it, they use it correctly (Phillips 1995). As also noted by Haznedar (2001) for Erdem, Mayyas rarely produces agreement errors. In the whole data and out of 233 contexts, there is only one subject-verb agreement error. Similar findings are also reported in Ionin and Wexler (2002).

(38) a. Hundred rocks falls down. (S 4)

In sum, subject-verb agreement errors occur from early on in the acquisition process, and are found for several months afterwards. Specifically, the 3SG-S in Mayyas's data is acquired slower than the other morphosyntactic features discussed in this chapter. This observation has also been attested in the literature of both child L1 and child L2 acquisition (Brown 1973; Hyams 1986; Radford 1990, 1992; Haznedar 2001; Lakshmanan 1994b; Ionin and Wexler 2002; Geçkin and Haznedar 2008). Brown (1973), for example, observed that children systematically omit verbal inflections (i.e., 3SG-S) in their earliest stages of acquisition. According to Brown's criterion for morpheme acquisition, the 3SG-S comes 10th in the scale. This suggests that 3SG-S is acquired relatively faster than copula *be* and auxiliary *be*, unlike in child L2A, where these are acquired faster than the 3SG-S.

As for child L2 acquisition, Haznedar (2001) and Geçkin and Haznedar (2008) have argued that the 3SG-S omission is one of most persistent problems in child L2A. Haznedar (2001) observed that the contexts for 3SG-S in Erdem's corpus did not appear until sample 9, and that the inflected 3SG-S verbs were first produced in sample 15. In general, the number and percentage of inflected 3SG-S verbs are less than the uninflected 3SG-S verbs until sample 36. It is only after sample 36 that the inflected 3SG-S starts to exceed the uninflected 3SG-S. It should be noted, however, that while Mayyas and Erdem both produced inflected and uninflected 3SG-S verb forms throughout the data, their general performance is rather different. First, Mayyas seems to outperform Erdem in the number and percentage of the inflected 3SG-S verbs at a rate of 72% compared to 46% for Erdem. Second, the contexts for the inflected 3SG-S in Mayyas's data appeared as early as sample 1, while Erdem did not produce any inflected 3SG-S verb forms until sample 15. Finally, given Brown's criterion for morpheme acquisition, Mayyas seems to be a faster learner than Erdem, as she has acquired verbal inflection after 11 months of exposure to the input, compared to more than 16 months for Erdem. One possible explanation for this difference is that, unlike Erdem, the very early stage of acquisition in Mayyas's corpus is missing. However, a more convincing explanation, in my view, is that Mayyas, unlike Erdem, had more stable and systematic exposure to the interlanguage input (see chapter 3 for more details).

Similar findings have been reported in the acquisition literature for adult L2 learners (Lardiere 1998a, 1998b, 2000, 2007). Lardiere examined data from an L1 Chinese-speaking near native of English, named Patty. The overall suppliance rate for inflected 3SG-S in Patty's data is 4.5%, which is considered extremely low compared to Mayyas's and the other L2 children in the literature. According to Lardiere, the production of verbal inflections in Patty's corpus remains problematic even after 18 years of constant exposure to the target language input. Patty seems to suffer fossilization in the domain of tense and agreement morphology. Although Patty produces both inflected and uninflected 3SG-S verb forms in her L2 grammar, her performance is far inferior to that of the L2 children reported here. In sum, omission errors of inflected 3SG-S is a common phenomenon in child L1, child L2 and adult L2 learners, but they differ in the overall rate of acquisition and to the extent this phenomenon is fossilized.

4.2.2 Regular Past Tense –ed

First, the count applied for the subject-verb agreement 3SG-S will be applied here, too. Therefore, copula *be*, auxiliary *be* and modal verbs will not be included in the count. As is the case with 3SG-S, Mayyas also produces inflected as well as uninflected regular past tense verbs in obligatory past contexts. Table 8 in the Appendix shows the number and percentage of regular past tense in obligatory contexts for Mayyas throughout the investigation. The first context for a regular past tense –ed appears in sample 1. Out of 3 contexts in this sample, only 1 (33%) context was supplied correctly, as can be seen in (39).

(39) a. I fixed it. (S 1)

In sample 2 there are 2 contexts for regular past tense –ed, but none of them are inflected, as can be seen in (40).

(40) a. Look, I fix it myself. (S 2)
b. I open the door like this. (S 2)

Samples 3 and 4 show a sudden increase of inflected past tense –ed forms to 66% and 75% respectively. Some examples are given below.

(41) a. They climbed up to the tree. (S 3)
b. I coloured it and I saw. (S 3)
c. She opened the wall. (S 4)
d. She opened it over herself. (S 4)

However, looking at samples 4 through 8, we find that once again the uninflected forms exceed the inflected ones, and at some points drop to 0% as is the case with samples 5 and 8. At this point, the number and percentage of inflected past tense –ed forms are neither stable nor gradual, as the graphical representation in (2) illustrates.

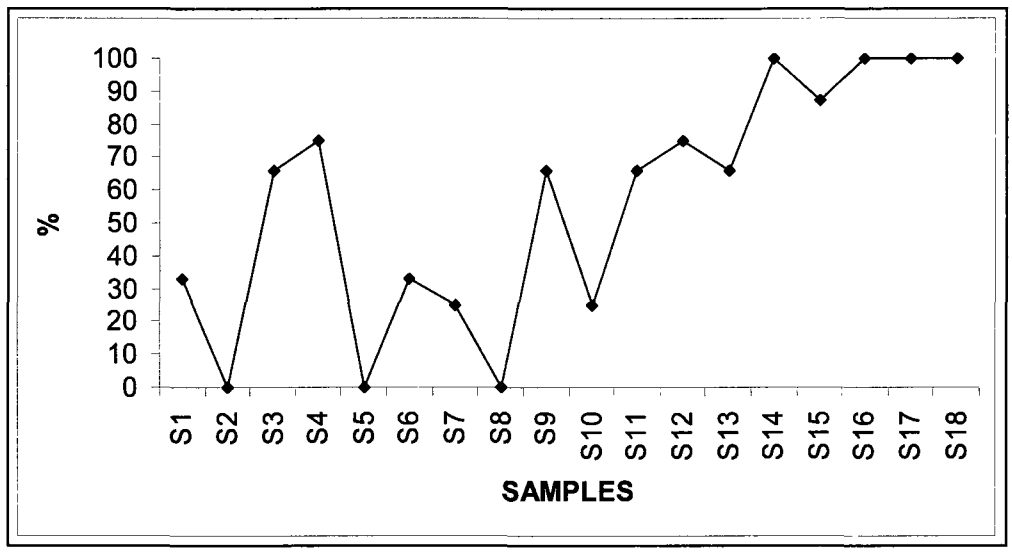


Figure 2: Percentage of inflected regular past in obligatory contexts

The percentage for samples 9 through 13 fluctuates between 25% for sample 9 to 75% for sample 12. It is only after sample 13 that the inflected past tense –ed starts to stabilize. The last 3 samples show that Mayyas appears to have mastered the inflected –ed forms at a rate of 100%. It should be noted, however, that Mayyas, like the other L1 and L2 children in the literature, appears to overgeneralize the past tense –ed form to other non-regular past tense forms. The exhaustive list is given in (42) below.

(42) a. She bited me hard. (S 4)
b. He hitted six (rocks). (S 10)
c. He buyed it for 5 cents. (S 12)
d. He wrote the words and cutted the words that he got. (S 16)
e. And putted the arrow on the face. (S 16)

These verbs should not be taken as problematic as Mayyas is able to produce the same exact verbs correctly even in the same samples where the incorrect counterpart were produced. Some examples are given below:

(43) a. He bought lots of book. (S 12)
b. I put it in the place where it's suppose to go. (S 16)

It is also interesting to note that Mayyas rarely overgeneralizes the –ed form to other grammatical classes. There is only 1 utterance in the entire data where Mayyas extends this to an adjective, but she immediately recognizes her mistake and corrects it.

(44) a. Mayyas: I smalled it.
Interviewer: What?
Mayyas: I made it small. (S 4)

Thus, although Mayyas does not use inflections systematically in obligatory contexts, example (44) shows that she is able to recognize which inflection belongs to which grammatical class.

Another important observation about the data is that Mayyas never produces inflected past tense –ed forms in nonfinite contexts. Utterances of the sort "I didn't played" or "I can't played" are not attested in the data under investigation.

As we saw in this section, inflected past regular –ed follows almost the same pattern as 3SG-S in Mayyas's data. Unlike with copula *be* or auxiliary *be*, Mayyas appears to produce both inflected and uninflected regular past tense forms in obligatory past contexts. This alternation appears to co-occur until sample 16 where Mayyas stops producing uninflected forms in obligatory contexts. The alternation between finite a non-finite regular past –ed forms in Mayyas's data also finds support from both child L1 and child L2 research. Haznedar (2001) also observed that Erdem produces both inflected and uninflected past –ed forms in his data. However, unlike Mayyas, Erdem's suppliance for inflected past –ed forms is relatively low (25%) compared to Mayyas (at 64%). Likewise, Geçkin and Haznedar (2008) report similar findings with regard to the alternation in regular past –ed context. However, the 3 children from Geçkin and Haznedar were more accurate in supplying the correct past -ed forms than Erdem at a higher rate (28%, 56% and 57%, respectively).

As for child L1 acquisition, Brown (1973) observed that young children also alternate between inflected and uninflected regular past –ed forms in the earliest stages of acquisition. According to Brown's hierarchy of morpheme acquisition, the past –ed is acquired before the 3SG-S but after the irregular past tense forms. Likewise, adult L2A research confirms the issue of morphological variability with respect to the acquisition of the past -ed forms. Lardiere (2007) reports that Patty's production of regular past -ed forms

appears to stabilize around 6% in obligatory contexts. This suggests that Patty's performance seems to fossilize as her performance did not improve over 18 years of exposure to the target language input. In this case, Patty seems to be different from both child L1 and child L2 with regards to the acquisition of past tense morphology.

4.2.3 Irregular Past Tense

Again, as with the count of 3SG-S and regular past –ed, the same procedure will be applied here, too. Looking at table 9 in the Appendix, we find that the first contexts for irregular past tense verbs appear in sample 1. In this sample there are 12 contexts for irregular past tense and Mayyas was able to supply the correct forms in 7 contexts and a rate of 58.33%. Some examples from sample 1 are given below.

(45) a. I brought 3 color.
b. Mammy said yes or no.
c. Because he gave me my book. (all from sample 1)

Looking at samples 1 through 4, we find that the percentage is rather high compared to the first 4 samples for the regular past –ed. However, sample 5 shows a sudden decrease in percentage to 11%, where only one out of 9 irregular past tense contexts was supplied correctly. Some uninflected irregular utterances are given in (46) below.

(46) a. He come upside down.
b. He fall down.
c. He draw a book.
d. She come beside me.
e. I draw a book.
f. It take me a while.
g. Look what I write. (all from sample 5)

However, starting from sample 6 with a rate of 66.63%, we notice a relatively gradual increase in the inflected irregular forms over the uninflected ones. Although Mayyas reached the 90% level for the first time in sample 11, it decreases again to 72.72% for sample 12 and 42.10% for sample 16. This fluctuation in percentage is clearly illustrated in figure (3) below.

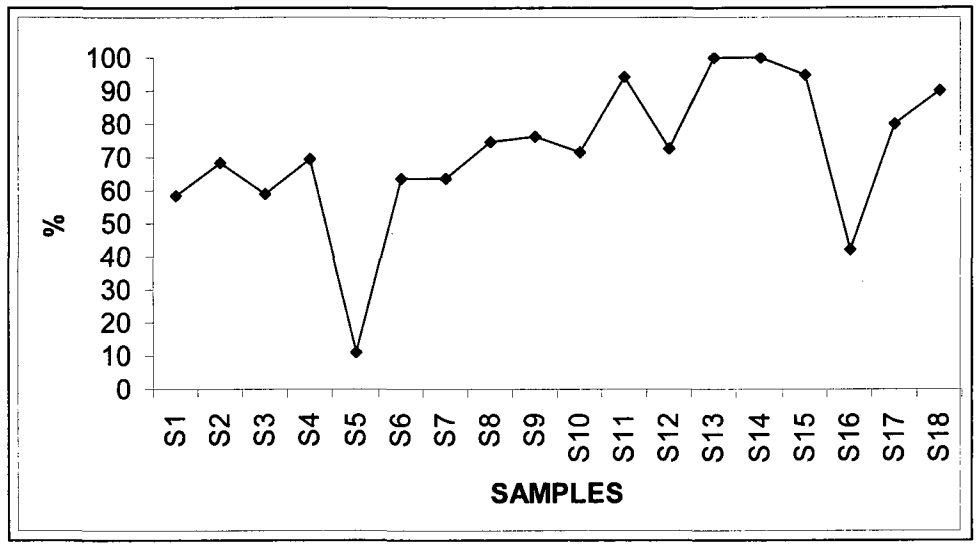


Figure 3: Percentage of inflected irregular past in obligatory contexts

Comparing the percentages of the irregular past tense versus the regular past, there are 189 (71.86%) correct irregular forms in comparison to 42 (64.61%) for the correct regular past in obligatory contexts. This should come as no surprise as research from both child L1 and L2 confirm that irregular past tense is acquired before the regular past tense[54]. Brown (1973) observed that the irregular past is acquired earlier than the regular past in the case of the three children in his study. Similar observations have been reported for both child and adult L2 learners (Haznedar 2001; Geçkin and Haznedar 2008; Lardiere 2007). One possible explanation for the discrepancy between the acquisition of regular versus irregular past tense is to assume, following Pinker and colleagues (see footnote 54), that while the regular past tense forms are generated by a rule, the irregular past forms are rote-learnt which might be easier for the learner to retrieve than the regular forms.

[54] According to Pinker and his colleagues (Pinker and Prince 1988; Prasada and Pinker 1993; Pinker 1998), the regular and irregular past are represented differently in the mind. In other words, the knowledge of English past tense is that a regular rule generates the regular past tense forms, whereas the irregular past tense forms are simply memorized as different lexical items unrelated to the present. This account may predict different outcomes in terms of errors and accuracy of acquisition of the regular and irregular past tense forms.

4.3 Optional Infinitives in Child L2 Acquisition

It has been widely observed in the acquisition literature that young children acquiring non-null subject languages go through an initial stage where they alternate between finite and nonfinite verbs in contexts where a finite form is required in the target language (Boser *et al.* 1992; Bromberg and Wexler 1995; Hoekstra and Hyams 1995; Jonas 1995; Poeppel and Wexler 1993; Roeper and Rohrbacher 1994; Rizzi 1994; Schütze and Wexler 1996; Wexler 1994). This phenomenon has been observed in a number of languages including English, French, Dutch, German and Danish. Examples of this phenomenon are given below (examples from Wexler 1994).

(47) a. Michel dormir la. (French)
'Michel sleep there'

b. Thorstn das haben. (German)
'T. that have'

c. Pappa schoenen wassen. (Dutch)
'Daddy shoes wash'

d. Der ikke vaere. (Danish)
'It not be'

This phenomenon has been known as Optional Infinitives (OI, Wexler 1994) or Root Infinitives (RI, Rizzi 1994b). As we saw above, OIs are also attested in child L2 grammar (Haznedar 2001, 2007; Haznedar and Schwartz 1997; Lakshmanan 1994b; Ionin and Wexler 2002; Geçkin and Haznedar 2008). Although there are varying approaches to the OI stage in child L1 research, we will restrict our discussion to the three main hypotheses indentified in recent L2 acquisition literature. The first is Rizzi's truncation hypothesis (1994b), the second is the Missing Surface Inflection Hypothesis (Haznedar and Schwartz 1997; Lardiere, 1998a; 2000; Prévost and White 2000a, b) and finally the Underspecification of Asp Hypothesis (Gavruseva 2002, 2003, 2004).

Rizzi (1994a,) first starts with the observation that all clauses are CPs, declaratives included. He proposes the following axiom for the adult grammar:

(48) Root = CP

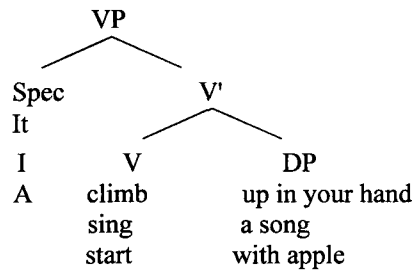
Rizzi further assumes that while the root principle in (48) is obligatory in the adult grammar, it is only optional in that of the child's. The optionality of the root principle in child grammar may result in the clause initially truncated anywhere below CP. Under this account, children may project any kind of roots, i.e., CP, TP or even VP. If VP is the root, the functional categories CP and TP will not project and verbs will stay in V and will appear in nonfinite forms, i.e., OI. Rizzi further suggests that in a truncated structure overt subjects may show some case errors as there is no position under which case assignment may take place, i.e., TP. Another prediction is that null subjects should occur more frequently in nonfinite contexts than in finite contexts (Haegeman 1995), and that OIs and subjectless sentences should disappear at the same time.

Now let us see if the truncation hypothesis can account for the facts about Mayyas's OIs. Recall that the truncation hypothesis assumes some structural deficiency since it proposes that OIs occur in VPs where functional projections are missing. As we saw in this chapter, Mayyas produces both finite and nonfinite utterances in contexts where only finite are possible. Now according to the truncation hypothesis Mayyas's uninflected verb forms as in (49) should be bare VPs.

(49) a. It climb up in your hand. (S 1)
b. I sing a song. (S 2)
c. A start with apple. (S 3)

For these utterances, it is possible to argue that they are mere VPs where the subject and the nonfinite verb both locate inside the VP layer, as the following tree illustrates.

(50)



However, there is ample evidence in the data which suggests that Mayyas's OIs are not VPs but full TPs. First, in Mayyas's data, there is no correlation between null subjects and OIs, contrary to what the truncation hypothesis predicts. As we saw in section 4.1 above,

out of 2976 contexts for null subjects, only 8 (0.27%) utterances were formed without a subject. More interestingly, the very few null subjects in the data occurred mainly in finite contexts, as the following examples illustrate.

(51) a. Happened for real. (S 11)
b. Finished curly line. (S 16)
c. Goes on my head (monkey). (S 18)

Another piece of evidence against the truncation hypothesis as an explanation for the OIs in Mayyas's data comes from case assignment. The truncation hypothesis assumes, as we saw earlier, that case errors should co-occur with OIs, since there is no position under which case assignment may take place. This prediction, however, is not supported by the data from Mayyas or from the other L2 children whose data are reported here. In the case of Mayyas, we saw in section 4.1 that case assignment is perfectly set from early on. There are 2450 subject pronouns in the data and case errors are nonexistent. Similarly, Haznedar and Schwartz (1997) also observed that there is no correlation between null subjects and OIs in Erdem's data. They also showed that case errors never occur with OIs which support the claim that there is no association between OIs and case assignment, at least in child L2 acquisition. Another important piece of evidence against the truncation hypothesis comes from a study by Gavruseva and Lardiere (1996). In this study, the authors reported that their Russian-speaking child learner of English produced a large number of uninflected/missing TP elements in embedded clauses introduced by the complementizer *that*. In this particular case, the truncation hypothesis falls far short of accounting for such data, since it does not predict the co-occurrence of uninflected material in the presence of the CP root.

However, the main problem with the truncation hypothesis is that it proposes two or more structural skeletons for the same developmental stage; that is, a child in the same point in development may sometimes project up to VP, sometimes TP and other times CP. This, however, is less economical than a theory that proposes a single clause structure for the proposed stage. Therefore, we rule out any sort of truncation analysis for Mayyas. Specifically, the morphological variability in her L2 grammar does not show the same associations with other grammatical characteristics as those observed for L1 children that were mentioned earlier.

The second hypothesis we investigate here is Gavruseva's Underspecification of Aspect Hypothesis. In recent work, Gavruseva (2003, 2004) proposed a new analysis of OI in child L2 acquisition. She examined the relationship between finiteness and the lexical aspect of the verb. The idea of Gavruseva's proposal is that infinitive-like verb forms result from the underspecification of syntactic aspectual heads in early child L2 grammar. Based on a simplified typology of the Aktionsart proposed by Vendler (1967), Gavruseva proposes a typology of verb aspect based on two semantic features, namely telicity and punctuality. The telicity feature indicates whether or not an event has an inherent endpoint. Thus, the term telic describes an event that possesses such an inherent endpoint (i.e., Achievement), while atelic refers to an event without such an inherent endpoint (i.e. Statives). According to Gavruseva, Eventive verbs are divided into punctual (Achievement) as well as nonpunctual (Activities and Accomplishments) eventives. Therefore, Stative verbs (inherently atelic) and punctual verbs (inherently telic) enter the syntax with their aspect feature already specified. The telicity of nonpunctual eventives, on the other hand, is dependent on the verb's arguments (Verkuyl 1999). Thus, a verb such as *eat*, as in sentence (52a), with "specified quantity argument" is considered telic, while the same verb in sentence (52b) is considered atelic as its argument is interpreted as "non-specified quantity".

(52) a. John ate an apple.
b. John ate apples.

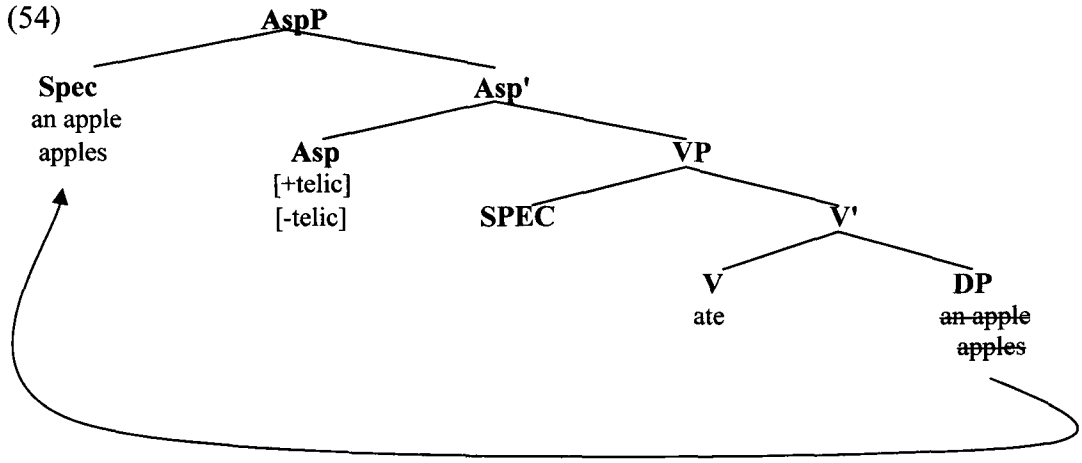
The aspectual typology proposed by Gavruseva is summarized in the following representation:

(53) Statives: V[-telic]
Punctual eventives: V[+telic]
Non-punctual eventives: V[+/-telic]

Following Borer (1994), Gavruseva proposes that the telicity feature of the verb is checked in the AspP projection. Therefore, with nonpunctual eventives like *ate* as in (52a), the DP argument "an apple", which is quantity specified, moves to Spec-AspP to check the [+telic] feature on the aspectual head. The DP argument in (52b), on the other hand, checks the [-

telic] feature as its argument is quantity non-specified. The latter point is represented in the following diagram.

(54)



Finally, following Hoekstra and Hyams's (1998) work on temporal chain in child acquisition, Gavruseva proposes that the temporal interpretation of the clause is determined by a tense chain which includes AspP. According to her (2003: 112), syntactic licensing of the temporal chain is based on the following constraint:

(55) A tense operator cannot bind T unless telicity of a VP predicate is specified.

Root infinitives, then, appear when the syntactic aspectual projection is underspecified and a tense chain cannot be formed. Gavruseva's assumptions predict that statives and punctual eventives, both inherently specified for telicity, must license a tense chain, while bare forms will appear with non-punctual eventives, as they require a grammatical specification of Asp to license a tense chain. These predictions are represented in (56).

(56) *Predictions for the acquisition of inflections*:

(a) Statives (e.g. want, love, need) should be finite.
(b) Punctual eventives (e.g. find, forget, notice) should be finite.
(c) Non-punctual eventives (go, run, eat) should be nonfinite.

To begin, let us compare statives, punctual eventives and nonpunctual eventives in terms of finiteness rate in Mayyas's data[55]. Table (4) represents tense/agreement morphology in the first 10 samples of the data[56]:

Table 4 Aspectual Class

	Stative		Punctual		Non-punctual	
	Finite	Non-finite	Finite	Non-finite	Finite	Non-finite
Mayyas	49 (83%)	10 (17%)	76 (56%)	59 (44%)	48 (61%)	30 (39%)

First, as prediction (56a) suggests, Stative verbs seem to occur more often in finite contexts than in nonfinite contexts. Table 4 shows that Mayyas seems to prefer finite statives (83%) over nonfinite Statives (17%). However, the other two predictions (i.e. b and c) do not seem to be supported by the data. Gavruseva argues that punctual eventives should appear mainly in finite contexts (prediction (b)). Table 4, in contrast, shows that only 56% of punctual eventives appear in finite contexts, which suggests that there is no preference in this regard. With respect to prediction (c), nonpunctual eventives appear more often in finite contexts (61%) than in nonfinite contexts (39%). This shows that finite nonpunctuals outnumber bare nonpunctuals which is evidently against prediction (c) and therefore against Gavruseva's proposal. Haznedar (2007) also reported similar findings for child L2 acquisition. She also finds that bare nonpunctuals outnumber finite punctual verbs at a rate of 56%, while the finite punctual verbs slightly outnumber bare nonpunctual at a rate of 63%. In general, the data from Mayyas and also the data from Haznedar's subject, Erdem, show that finite and nonfinite verbs occur with punctual as well as with nonpunctual almost equally, which may suggest that bare forms do not seem to have any aspectual preferences at the OI stage. Therefore, I conclude that there does not seem to be any strong correlation between finiteness and the lexical aspect of the verb or at least not in the way proposed by Gavruseva.

[55] Following Torrence and Hyams (2005), and unlike Gavruseva, I include both tense and agreement in the count. Torrence and Hyams claim that the exclusion of the 3SG-S agreement in Gavruseva's study is not empirically justified, which only helps to "stack the deck in favour of the telicity hypothesis since nonpunctual verbs occur disproportionately more often in the present tense" (p. 6).

[56] In this section, I exclude the last 8 samples as the non-inflected forms drop to less than 10%. See table 10 in the Appendix for details.

Now the question to ask at this juncture is how does the missing inflection affect Mayyas's interlanguage grammar? Recall that formal features play a crucial role in determining agreement, case relations and movement processes. The absence of formal features from the sentential structure implies directly the absence of these relations and processes. Thus, if we assume that missing inflections entail missing features then we should expect the absence of the relevant syntactic operations.

For this matter, the underspecification of Asp hypothesis proposed by Gavruseva does not seem to account for Mayyas's OI as it relies on some deficiency of syntactic knowledge, which is not the case with Mayyas's interlanguage, as constructions that are supposed to relate to tense and agreement features seem to be acquired early. We saw in section (4.1) that Mayyas's Case system as well as other T-related structures are perfectly set from early on. Then *why do these infinitival forms occur and how come they do not affect syntactic derivations?* The answer to the second question comes from the Distributed Morphology framework (Halle and Marantz 1993), according to which vocabulary insertion takes place after the syntactic computation of a given structure is complete[57]. Syntax manipulates only abstract morphosyntactic feature bundles which are replaced by actual words in PF. This proposal has been adopted in second language research under different names ("Missing Inflection Hypothesis" Haznedar and Schwartz (1997); "Missing Surface Inflection Hypothesis (MSIH)" Prevost and White (2000a, b); "Dissociating Syntax from Morphology" Lardiere (1998a, b))[58]. The MSIH, for instance, assumes that the missing inflection in the L2 grammar does not represent a failure in the interlanguage system, but rather a problem of realizing surface morphology. White (2003a), for instance, states that it is important to differentiate between abstract morphology and their associated surface forms. She explains:

[57] This may occur once per phase as in Chomsky (2001a, 2008).

[58] This proposal has also been suggested for child L1A. Phillips (1995: 1), for instance, has argued that infinitive forms in child language are in fact finite in which merging with their inflections has been delayed due to a problem of "*accessing* morphological knowledge".

> One must distinguish between abstract features, such as Tense and Agreement, and how they are realized or spelled out morphologically. There is no one-to-one correspondence between underlying representation and surface form [..] [T]here is nothing in UG that specifies that past tense in English must be realized by a morpheme */-ed/* [..], absence of surface morphology does not necessarily imply absence of more abstract categories and features. (p.180)

We saw that although Mayyas produces variable uses of tense and agreement inflections, she has access to all the syntactic operations associated with those inflections. Therefore, I suggest that Mayyas's missing inflections are best explained under the MSIH which emphasizes that the problem of missing tense and agreement represent a mapping problem rather than a deficit in the interlanguage grammar.

Now to answer the first question of why nonfinite occurs in finite contexts. In other words, why optionality? I suggest, following Lardiere (2007), that bare forms could be explained in overgeneralization terms. It is possible to argue that children acquiring English might overgeneralize the most common inflectional form which happens to be a zero morpheme in English. These errors, however, should be seen as mere product of performance limitations, probably caused by communication pressure. Therefore, morphological variability in Mayyas's L2 system is a developmental phenomenon that will eventually be overcome, as it is in L1 acquisition.

4.4 Conclusion

This chapter has dealt with several issues related to the acquisition of the TP system and its related syntactic features in the data. The first issue discussed in this chapter was the relation between overt/null subject and EPP feature. As discussed in chapter 2, the head of the TP constituent is assumed to have several features including ϕ-features, Tns feature and EPP feature. Under current minimalist assumptions, the EPP feature of T triggers the raising of the subject to the Spec-T. The question to ask is how did Mayyas perform with regard to the EPP and subject movement in the data? In other words, is Mayyas able to recognize that English T is always specified for an EPP feature that requires the presence and movement of a subject to the front? The answer is simply yes; we saw in this chapter that Mayyas rarely drops subjects even in the earliest recordings. Null subjects represent less than 1% in the whole data. This, in fact, suggests that Mayyas has already acquired the required knowledge to set this feature correctly.

A related issue discussed in the present chapter is case assignment/valuation. As we saw in chapter 2, Case is assigned through Agree relation between a ϕ-complete *probe* and a *goal*. In this case, Mayyas needs to know that only a ϕ-complete probe can assign a value to the unvalued case feature of the goal. Thus, Nominative Case assignment is available only through a T that is finite and ϕ-complete. Unlike child L1, Mayyas never produces case errors, as errors of this sort are virtually nonexistent. Out of 2450 contexts for subject pronouns in the data, there is not a single case error in the entire data. This indicates that Mayyas knows from early on that only a ϕ-complete probe can assign the right value to the unvalued case of the goal. In this regard, Mayyas's case system is complete and almost adult-like.

This chapter also discussed other TP related elements in the data as copula *be*, auxiliary *be* and modal verbs. In general, the figures presented for the abovementioned elements indicate that Mayyas has no problems producing and integrating these elements from early on. For example, auxiliary *be* in the data appeared productively from sample 1. Missing auxiliaries in the data represent less than 6% which suggests that the auxiliary *be* is among the first features to be acquired. Similar observations can be applied to copula *be* and the modal verbs.

Section 4.2 was devoted to tense and agreement morphology in the data. The first observation in this regard is that Mayyas did experience some difficulty with tense and agreement morphology from early on. Like child L1 and other child L2 learners discussed in this thesis, Mayyas appears to alternate between finite and nonfinite verbs in contexts where a finite form is required in the target language. Unlike copula *be* and auxiliary *be*, the regular past –ed was missing in the first 8 samples from Mayyas's data at a rate of 48%, compared to less than 5% for auxiliary *be*. This behaviour also extends to the other tense and agreement features in the data. In fact, the overall percentage of bare tense and agreement morphology for the first 10 samples is 41.28% which is considered extremely low compared to the other elements of the TP system. The question we asked is whether this alternation between finite and nonfinite verbs in contexts where only finite is required is considered some sort of deficiency in Mayyas's interlanguage grammar? The answer, as discussed in some detail in section 4.3, is simply no. This is because data from copula *be*,

auxiliary *be*, case assignment and the pronominal system do not show any evidence for defective tense.

The final issue discussed in this chapter was Optional Infinitives in the data. We saw that finite and nonfinite roots co-occur in Mayyas's L2 data, suggesting variability. Therefore, in order to investigate this issue, three hypotheses were discussed and evaluated with respect to the findings. We first presented the truncation hypothesis (Rizzi 1994b) as a possible explanation of the OI stage. The main tenet of the truncation hypothesis is that the syntactic tree is reduced to VP in the case of nonfinite structure. This suggests that some or all functional categories are missing at some point in the derivation, which entails some deficiency in the interlanguage grammar. However, the data analysis shows no signs of deficiency in Mayyas's interlanguage grammar, contrary to the predictions of the truncation hypothesis. The second hypothesis we investigated was the Underspecification Hypothesis of Gavruseva (2002, onward). Gavruseva tries to relate OIs to the aspectual properties of the predicate. Specifically, she proposes that OIs should occur with nonpunctual eventives but not with statives or punctual eventives. The reason for such a claim is that statives and punctual eventives are both inherently specified for telicity and therefore will always license tense chain. Nonpunctual eventives, on the other hand, enter the derivation with their telicity feature not yet specified since these require a grammatical specification of Asp to license a tense chain. However, the data presented in this chapter show clearly that Mayyas has no preference concerning verb aspect, which suggest that there is no correlation between lexical aspect and finiteness.

Although Mayyas seems to resemble child L1 and adult L2 learners in certain morphosyntactic aspects, the differences among the three groups of learners are more than the similarities. We saw in this chapter that Mayyas's L2 development, like other L2 children, is not characterized by a stage where missing subjects are prevalent, as in child L1 and adult L2 acquisition. Moreover, while child L1 learners appear to go through a stage where they produce nonnominative case pronouns in nominative case position, a similar behaviour has not been attested for child and adult L2 learners, including Mayyas. We also saw in this chapter that Mayyas and the other L2 children reported here differ from both child L1 and adult L2 learners in the acquisition of copula *be*, auxiliary *be* and also in verbal inflections. An important point discussed in this chapter is that adult L2 learners

appear to suffer fossilization in verbal inflections, a phenomenon attested in neither child L1 nor child L2 acquisition.

In sum, this chapter has clearly shown that Mayyas's TP system including its formal features is completely mature. Formal features like EPP, ϕ-feature, Tns as well as syntactic operations related to the TP system are operative and functional from early on. We saw, for example, that the pronominal system represented in overt subject and case assignment is acquired fairly early. Null subjects in Mayyas's data are rare, while her case system is almost error-free. Moreover, the other TP-related elements like copula *be*, auxiliary *be* and modal verbs are also acquired from the earliest recordings available. However, although Mayyas's tense and agreement morphology is incomplete, it is by no means defective. We saw that data from copula *be*, auxiliary *be* and pronominal subjects do not show any evidence for defective tense. This suggests that Mayyas's functional system, at least for the TP now, is complete from early on, which is apparently against any structural building approaches to child L2 acquisition. These findings, however, are compatible with a strong continuity approach that assumes full functional system for language acquisition. We will see in the next chapter that Mayyas not only has a complete TP system but her CP system is operative from early on. Anticipating the discussion in chapter 5, evidence from wh-questions, yes/no questions and embedded clauses all suggest that the CP system in Mayyas interlanguage is almost target-like.

Chapter 5

The Acquisition of the CP System

5.0 Introduction

This chapter examines the status of the CP projection and its related syntactic features in Mayyas's interlanguage grammar. As discussed in some detail in chapter 2 above, the CP projection is assumed to host a number of formal features. Pesetsky and Torrego (2001) argue that the head of the CP projection contains an uninterpretable wh-feature (*u*Wh) and an uninterpretable tense feature (*u*T), both associated with EPP. In the case of wh-questions, for instance, the EPP feature triggers the movement of a wh-phrase and an auxiliary verb through the operation Agree. In this view, L1/L2 learners need to acquire these features and their distribution on the relevant syntactic heads. In this chapter, we will be looking at Mayyas's yes/no questions, wh-questions, embedded clauses and relative clauses, respectively.

5.1 Yes/No Questions

The distribution of formal features on the functional head C in yes/no questions is the same as in wh-questions. C bears an uninterpretable Tns feature and an uninterpretable wh-feature both associated with EPP, as suggested by Pesetsky and Torrego (2001). The Tns feature on C enters into Agree relation with the head T and the EPP feature triggers the raising of the auxiliary verb to C. Now since yes/no questions are not introduced by wh-words, the question to ask is how is the *u*wh feature satisfied in such a construction? The answer to this question, as noted by Radford (2009), goes back to earlier work by Katz and Postal (1964) who argue that yes/no questions contain an abstract question particle[59], which is assumed to be base-generated in Spec-C. Therefore, under this analysis, the *u*wh feature is satisfied by merging a null yes/no question particle in Spec-C. This analysis has the

[59] Bresnan (1970), as also noted by Radford (2009), suggests that this particle is the null counterpart of *whether*, since in Elizabethan English yes/no questions used to be introduced by the overt question word *whether*, as the following examples illustrate:

(i) Whether had you rather lead mine eyes or eye your master's heels?
(ii) Whether dost thou profess thyself a knave or a fool? (Radford 2009: 196)

advantage of unifying the mechanism for deriving both wh-questions and yes/no questions in the C-domain.

While yes/no questions in English require the movement of either a form of *do* support or subject-auxiliary inversion, Arabic, on the other hand, uses an intonation mechanism for forming yes/no questions, as the follow example illustrates:

(1) a. raaH al-madrasah?
went-3SGM the-school
"Did he go to school?"

In fact, yes/no questions in Arabic usually differ from declarative sentences in intonation only, and therefore no movement is required in such constructions. However, to maintain a unified analysis for both child Arabic and child English, I assume here that yes/no questions in Arabic are derived in the same way as in child English, except for the fact that in Arabic the uninterpretable Tns feature is not specified for EPP feature which justifies the lack of movement to C.

Now to the data. The first occurrence of yes/no questions in Mayyas's data appears in sample 1. Out of 9 contexts in this sample, only 2 questions were formed with intonation, as can be seen in (2).

(2) a. It hurt you very much? (S 1)
b. We can dad? (S 1)

In sample 2, out of 36 yes/no questions, there is only one utterance which is not inverted. There are also 2 (4.2%) other non-inverted questions in sample 3 out of 47 contexts. However, the occurrence of non-inverted questions should not come as a surprise, as English yes/no questions can also be formed through intonation.

(3) a. You want me to draw book? (S 2)
b. You don't know a cow? (S 3)
c. You don't know even a car? (S 3)

As can be seen from table 11 in the Appendix, it is the modal verb *can* and the auxiliary *do* which are the first verbal elements to appear in the data. Out of 7 contexts there are 5 instances of *can* and 2 instances of *do*. Some representative examples are provided in (4).

(4) a. Can I draw a girl?
b. Can you sharp it dad?
c. Do you know it?
d. Do I have to tell you?

However, starting from sample 2 and on, we can see that Mayyas starts to produce more yes/no questions with various verbal elements other than *can* and *do*. These include the copula *is*, the modal verb *could* and the auxiliary *did*, as can be seen in (5) below.

(5) a. Is it real?
b. Is it plastic?
c. Did you see her?
d. Could you please next time xxx?

Although sample 2 has more verbal elements in yes/no questions, the modal verb *can* (60%) and the auxiliary *do* (28%) still represent the majority at this stage. It is relevant to mention here that until sample 9, the verbal elements appearing in yes/no questions are restricted to the following ones: *can*, *could*, *do*, *did* and *is*. However, starting from sample 10, more verbal elements start appearing gradually, including different copulas, modals and auxiliaries. Some representative examples are given in (6).

(6) a. Does it say print? (S 11)
b. Were there real dinosaurs? (S 11)
c. Have you ever seen a T-rex? (S 11)
d. Am I gonna play now? (S 11)
e. Should I open the door? (S 11)
f. Are we going to get pizza? (S 10)

Looking across table 12 in the Appendix, we can see that Mayyas appears to invert yes/no questions in a more systematic way than what is reported for child L1 (e.g., Klima and Bellugi 1964). Table 12 also shows that non-inverted questions represent less than 7% for the entire data. This suggests that Mayyas appears to know that the preposing of auxiliaries in yes/no questions is required whenever the head C is specified with *u*T associated with EPP, but no preposing is required when C is not specified with EPP feature. It is worthwhile to mention here that Mayyas never preposes main verbs but almost always uses the *do* auxiliary in the inverted pattern from early on.

The early appearance of preposed yes/no questions in Mayyas's data seems to be supported by research from child L2 acquisition (Haznedar 2003, Gerbault 1978;

Lakshmanan and Selinker 1994; Lakshmanan 1994b). Lakshmanan and Selinker (1994), for instance, observe that preposed yes/no questions appear from the earliest recordings in the case of the two children in their study. In the case of the first child, Marta, the first verbal elements to appear in yes/no questions (sample 1) were the auxiliary and copula *is*. However, in the case of the second child, Muriel, the first preposed auxiliaries occurred in sample 2 with *can* and *could*, and as also reported in Gerbault (1978), these auxiliaries were preposed 100% of the time. Haznedar (2003) also reports that in the case of Erdem, preposed yes/no questions appeared from early on. Although Erdem seems to produce some yes/no questions signalled through intonation, the preposed questions represent more than 95% in the entire data under investigation. This suggests that child L2 appears to invert yes/no questions in a more systematic way than what is reported for child L1, as we will see shortly.

As for child L1, it has long been noted that early child grammar differs from adult grammar with regard to question formation (Klima and Bellugi 1966; Guilfoyle and Noonan 1992; Radford 1990, 1994). Klima and Bellugi (1966), for example, have argued that child English learners go through different stages in the process of acquiring yes/no questions. In the first stage, yes/no questions are formed mainly with rising intonation, as there are no auxiliaries or modals at this stage[60]. In the second stage, modal verbs and auxiliary verbs emerge and yes/no questions show T-to-C movement.

With respect to adult L2 acquisition, research has shown that L2 learners go through a stage where yes/no questions are formed only by intonation. Pienemann *et al.* (1988) proposed different stages for the acquisition of yes/no questions for L2 learners of English from a variety of first language backgrounds. In the first stage, yes/no questions are formed with intonation as inversion is not yet available to the L2 learners. Stage 2 shows some inversion but limited only to auxiliary *do*. In the third stage, L2 learners start to produce inverted yes/no questions with auxiliaries other than *do*. However, an important characteristic of the latter stage is that L2 learners produce questions with inverted main verbs such as "Like you basketball", a phenomenon not attested in child L2A.

[60] Base on experimental data from children between the ages of 2 to 5, Santelmann *et al.* (2002) challenge the view that the syntax of inversion develops slowly in the case of child L1A. They argue that inversion in yes/no questions is available from the earliest testable ages of child L1 development.

5.2 Wh-Questions

Following minimalist analyses of English wh-questions (e.g. Chomsky 1995, onward), we assume that the wh-phrase originates in a sentence internal position and then moves to the beginning of the sentence, leaving a gap (copy) in the direct object position. This is also accompanied by auxiliary movement to C in the case of non-subject wh-questions[61]. The movement of the wh-word and the auxiliary, as we saw in chapter 2, are triggered by the *u*Wh and *u*T features in C under the operation Agree. This is represented in the simplified structure in (7).

(7) a. [C, *u*T, *u*Wh] [TP [*John*] T [VP *bought what*]
b. [CP [*What*]$_i$ [C *did*, ~~*u*T~~, ~~*u*Wh~~]$_j$ [TP [*John*] T$_j$ [VP *buy what*]$_i$

Wh-questions in Arabic, on the other hand, do not require T-to-C movement since there is no EPP feature associated with *u*T of C. Therefore, *u*T of C in such constructions is deleted under long-distance Agree with T.

This section discusses the acquisition of wh-questions in the data. Mayyas produces wh-questions at an early stage of development. The following examples in (8) show the first instances of Mayyas's wh-questions taken from sample 1.

(8) a. What's that dad? (S 1)
b. What's that? (S 1)
c. What's this? (S 1)

At first sight, these examples seem to be formulaic as all of them start with *what's*. Following Brown (1968), I assume that these early wh-questions follow a formulaic pattern as they consist of a wh-word, an optional contracted copula and an NP. However, at the same time as producing utterances like those in (8), we find other examples, as in (9) below, which suggest that *what's* questions are not unanalyzed forms.

(9) a. Where is the T? (S 1)
b. Where is mom? (S 2)
c. Dad, What you did with that? (S 2)
d. What he can draw? (S 3)

[61] In subject wh-questions like "*who bought the car*", there is no T-to-C movement. Then the question to ask is what deletes the *u*T on C? According to Pesetsky and Torrego (2001), being a subject of a tensed clause, the wh-word carries a Tns feature which deletes the *u*T of C when moved to Spec-C.

e. What did you say? (S 4)
f. What time is it? (S 4)

As in child L1 acquisition (e.g., O'Grady 2005), *what* and *where* are the first wh-question words to appear in the data. *What*, for example, first appeared in sample 1 and then throughout the whole corpus. It is the most frequent wh-word in the data, as the following figure illustrates.

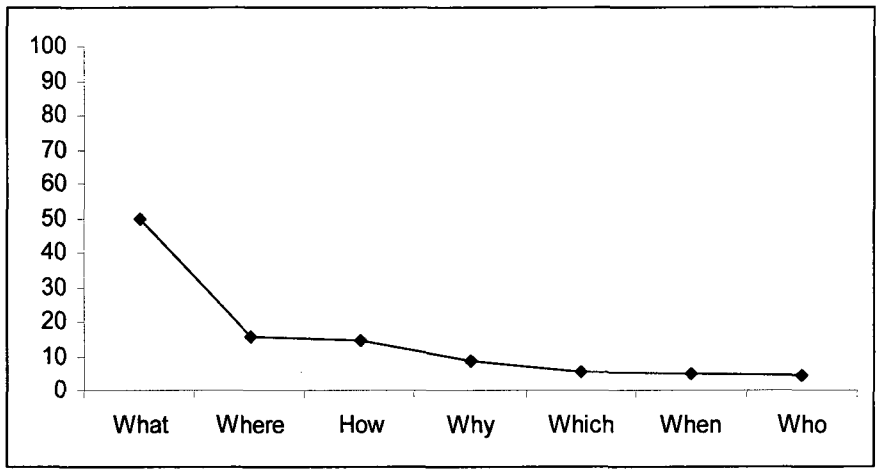


Figure 4: Distribution of wh-words in wh-questions

Table 13 in the Appendix also shows that other wh-words like *how*, *why*, *when*, *which* and *who* also appear in later samples, as the following examples illustrate.

(10) a. How many do I have? (S 4)
b. Why she doesn't sit beside me? (S 5)
c. Which one you want me to draw? (S 6)
d. Who is the biggest? (S 6)
e. When is it gonna be dry? (S 11)

Although there are very few instances of *when* questions, *when* appears frequently in complement clauses, as shown in (11).

(11) a. When you say bingo they give you a treat.
b. When I was little I was scribbling.
c. When you catch him it turn like this.
d. When mom goes, go and get the pizza, ok.

Another observation about the wh-questions in Mayyas's data is that the wh-word *whose* never appears in the entire data under investigation. Although *whose* is considered among the latest wh-words to appear in child L1 data (e.g., O'Grady 2005), it seems to emerge sometimes at around 36 months of age. This, however, should not be taken as evidence that the particular wh-word "whose" is missing from Mayyas's grammar, but could be attributed to the lack of appropriate discourse contexts in the data under investigation (Demuth 1996). In fact, this is one of the disadvantages of using spontaneous production data as it is difficult to find every piece of "structure", especially when working only with one child.

Now we look at potential subject-auxiliary inversion errors in non-subject wh-questions in Mayyas's data[62]. In Mayyas's L2 English, this type of error is infrequent and represents only 8% in the entire data[63] (see table 14 in the Appendix for details). In sample 1, for instance, there are 9 contexts for subject-auxiliary inversion and surprisingly with no inversion errors. However, in samples 2 and 3 we find 3 errors out of 13 in non-subject wh-questions. These are given in (12) below.

(12) a. Dad, What you did with that? (S 2)
b. What he can draw? (S 3)
c. Which one you're talking about? (S 3)

It should be noted that most of the errors occurred in sample 6 which represents 36% of the overall errors[64].

(13) a. What you want to draw with this?
b. Which one you want to color it?
c. Which one you want to draw?
d. What the train could be?
e. What it mean? (All from sample 6)

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[62] I only consider the non-subject wh-questions as they require subject-auxiliary inversion. Subject wh-questions, in contrast, do not involve inversion as shown in the following example:

(i) *Who did buy the book?
(ii) Who bought the book?

[63] I do not look at missing auxiliaries in wh-questions separately. Thus, for the sake of discussion, I consider those under the subject-auxiliary inversion errors.

[64] It is interesting to note that Mayyas never preposes main verbs in wh-question despite the fact that her L1 Arabic allows preposing main verbs in such constructions.

As in child L1 acquisition (e.g., Klima and Bellugi 1966), wh-questions in Mayyas's data have both inversion errors as well as missing auxiliaries. In fact, out of 14 errors, only 4 (28%) of these are real subject-auxiliary inversion errors while the rest represent missing auxiliaries. The exhaustive list of inversion errors are given in (14).

(14) a. What he can draw? (S 3)
b. Which one you're talking about? (S 3)
c. What the rain could be? (color) (S 6)
d. But, why he is not going? (S 10)

It is interesting to note that the missing auxiliaries in wh-questions are all of the type of *do*-support at a rate of 100%. The exhaustive list is given in (15).

(15) a. Dad, What you did with that? (S 2)
b. What I need to do? (S 5)
c. Which one you like? (S 5)
d. Which one you want to color? (S 6)
e. What you want to draw with this? (S 6)
f. Which one you want to color it? (S 6)
g. Which one you want me to draw? (S 6)
h. What you call this one? (S 10)
i. When it pump? (S 11)

It is also important to note that subject-auxiliary inversion errors are more frequent in the earlier samples as they represent almost 50% at certain stages, like in samples 2 and 5. However, the number of such errors decreases with time and finally disappears by sample 10. At this stage, Mayyas no longer makes inversion/missing errors and begins to raise the auxiliary to C 100% of the time. It is also equally important to mention that subject-auxiliary inversion in Mayyas's data includes all types of auxiliaries; namely modal verbs, *do* support, copula *be* and auxiliary *be*. Some representative examples are given in (16) below.

(16) a. Where is the page? (S 3)
b. Who can draw a word? (S 3)
c. What did you say? (S 4)
d. What time is it? (S 4)
e. What is he doing with him? (S 7)
f. How do you spell bed? (S 14)
g. Where should I put them? (S 14)
h. How do you say Dora's grandpa? (S 14)

i. Why is there marker on them? (S 16)
j. Why did you throw this on me? (S 16)

It is important to note at this point that unlike child L1A, as observed by Klima and Bellugi (1966), there is no stage in Mayyas's interlanguage in which she inverts auxiliaries in yes/no questions but not in wh-questions (a similar observation for child L2 is found in Gerbault 1978 and Lakshmanan and Selinker 1994).

These observations about Mayyas's wh-questions apparently show that inversion/missing auxiliary errors are rather sporadic and represent only 8% of the overall amount of non-subject wh-questions. However, a possible explanation for these few errors is to assume that they are a result of transfer from Arabic. As stated previously, wh-questions in Arabic do not exhibit auxiliary inversion which suggests that the *u*T feature lacks an EPP feature, which would require the movement of the auxiliary to the head of CP[65]. Yet, other possible explanations like performance limitations, simplicity or default options cannot be entirely eliminated. Nonetheless, by all standards, such a low error rate would be regarded as proof that the target structure has been acquired, and in more technical terms, Mayyas seems to know that a head C in non-subject wh-question contains a *u*T and *u*Wh features both associated with EPP. These uninterpretable features enter into Agree relation with the corresponding interpretable features and delete. The EPP feature associated with *u*T and *u*Wh trigger the movement of the wh-phrase and the auxiliary to C and Spec-CP respectively.

Research from child L2A seems to support Mayyas's development with regard to the subject-auxiliary inversion in wh-questions. Lakshmanan and Selinker (1994), for example, observe that the two L2 children in their study appear to prepose auxiliaries from the earliest data available. In the case of Marta, the first child, preposing first occurred in sample 1. According to Lakshmanan and Selinker, Marta preposed the auxiliary and copula *be* in all instances at a rate of 100%, and an overall rate of 94% for all the preposed auxiliaries in all the samples under investigation. Similarly, in the case of Muriel, the

[65] Another possible explanation is to assume a processing load account. It is possible to argue that when processing load becomes too heavy, children are more likely to start a sentence with only one inversion, then stop there. However, such an analysis does not explain why Mayyas does not produce non-inverted wh-words e.g., *did you like what*? Nor does it explain why Mayyas sometimes preposes both the wh-phrase and the auxiliary in embedded questions.

second child, a parallel pattern was also found. Preposed auxiliaries in Muriel first occurred in sample 1 and also at a rate of 100% and an overall rate of 82% of the time[66]. Also like Mayyas, Lakshmanan and Selinker did not observe any stage in which the two children would prepose auxiliaries in yes/no questions but not in wh-questions. Haznedar (2003) also observed that Erdem appears to prepose auxiliaries in non-subject wh-questions from the earliest contexts on. Although Erdem preposes auxiliaries at a lower rate (71%) than Mayyas, Marta and Muriel, there are no stages in Erdem's interlanguage where preposing is not available[67].

It has long been noted that early child grammar differs from adult grammar with regard to question formation. Klima and Bellugi (1966) argue that child English learners go through different stages when acquiring wh-questions. They propose that during the first stage, wh-words appear in sentence initial position, but without subject-auxiliary inversion. Klima and Bellugi state that wh-questions formed at this stage are restricted to *what* and *where* and these appear to be associated with specific verbs. According to Brown (1968: 279), "The first wh-questions seem to be unanalyzed routines or constructions not involving transformations". In the second stage, wh-questions appear with more wh-words than in the first stage. This stage also witnesses the emergence of modals and auxiliaries but subject-auxiliary inversion is not available yet. However, in the final stage, wh-questions are more adult-like where wh-word locates in Spec-C and auxiliaries are forced to move to the head C.

Like in child L1A, adult L2 learners seem to follow a specific sequence during the acquisition of wh-questions. Pienemann *et al.* (1988) report a sequence in the acquisition of questions in L2 English from a variety of first language backgrounds. In the first stage, wh-words appear in sentence initial position but there is no auxiliary inversion at this point.

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[66] The rather low rate in preposed auxiliaries in Muriel's case, especially in samples 14 and 17, was attributed by Lakshmanan and Selinker to the fact that in those samples Muriel inserts a complementizer *that* in C which would block T-to-C movement. Although the occurrence of the complementizer in such constructions is ungrammatical in English, it however shows that Muriel is aware of the fact that preposing cannot occur to an already filled head, i.e., C.

[67] Contrary to what Haznedar (2003: 19) claims, there seems to be no stage in Erdem's interlanguage where he preposes auxiliaries in yes/no questions but not in wh-questions. The non-occurrence of contexts for auxiliary inversion in wh-questions until sample 19 does not mean that auxiliary inversion is not available in Erdem's grammar in the earlier samples. In fact, Erdem was successful in preposing the auxiliary 6 times (86%) out of 7 contexts for the first context, and 8 times (89%) out of 9 contexts for the next sample.

In the next stage, however, there appears to be auxiliary inversion but mainly restricted to copula *be*. In the final stage of question acquisition, adult L2 learners appear to have acquired wh-questions in a target-like fashion, as they seem to move the wh-word to the front and the auxiliary before the subject. However, these sequences are not attested in child L2 acquisition. In other words, as we saw in this chapter neither Mayyas nor the other child L2 learners reported here seem to go through a stage where the auxiliary inversion is missing or where the inversion is mainly limited to the copula *be*. Therefore, child L2 appears to differ from both child L1 and adult L2 with respect to wh-question acquisition.

5.3 Embedded Clauses

In this section we examine the development of embedded clauses in Mayyas's interlanguage grammar. We first discuss embedded questions (indirect questions), then we discuss embedded declaratives with *because*, *if* and complementizer *that*. Before we proceed with our discussion, a note about the syntax of embedded questions is in order. In embedded wh-questions like those in (17), the head C is assumed to have a *u*wh feature with EPP and a *u*T feature not associated with EPP feature, unlike in root wh-questions.

(17) a. I don't know what it is.
b. I wonder where she goes.

In embedded questions like (17a and b), the wh-phrase is assumed to move from a position inside the lower TP to the specifier position of the embedded CP. However, since the *u*T feature in C is not associated with EPP feature, Agree takes place without moving the auxiliary to C. In other words, the *u*T feature is deleted through Agree at a distance. The question to ask at this point is how do we know that the wh-phrase moves to Spec-C and not somewhere else? The answer to this question is given by Henry (1995) who argues that unlike in Standard English, in Belfast English embedded wh-questions allow the co-occurrence of a wh-phrase with the complementizer *that*, as can be seen in (18).

(18) a. I wonder which dish *that* they picked.
b. They didn't know which model *that* we had discussed. (Henry 1995: 107)

These examples from Belfast English show that the complementizer *that* is located in the head C, which confirms that the wh-phrases in examples like those in (17) must be located in the Spec-C[68].

Now to the data. The first occurrence of embedded wh-questions in Mayyas's L2 English appears in sample 2 and then in every sample afterward. It should be noted that embedded wh-questions occur both in declarative as well as question sentences, as the following examples illustrate.

(19) a. I don't know how to write snake. (S 2)
b. Do you know how to draw potato? (S 2)
c. You don't know what is it even. (S 3)
d. Do you know who draw that? (S 8)
e. I know what this is. (S 8)
f. I know what I'm doing. (S 10)

In all the samples under investigation, the embedded wh-phrase is always preposed from the very beginning, as the representative examples in (19) illustrate. However, in the case of auxiliaries, preposing only occurs with copula *is* in its uncontracted form, as also noted by Lakshmanan and Selinker (1994) for Marta and Muriel[69]. In fact, out of 16 contexts for embedded wh-questions with copula *is*, copula *is* was preposed 12 times at a rate of 75%. Some representative examples are given in (20) below

(20) a. You don't know what is it. (S 3)
b. I know where is the French. (S 4)
c. I know who is this. (S 7)
d. I know what is art. (S 9)
e. I know exactly where is it. (S 13)
f. Do you know where is the museum? (S 18)

As can be seen from example (20f), preposing of copula *is* seems to continue until the very end of the data collection. However, it is not clear to me why Mayyas preposes only copula *is* but not any other auxiliaries like modal verbs, auxiliary *be* or other types of copula *be*. In fact, I have nothing insightful to share about this behavior as there is no indication that it is

[68] Standard Arabic, as well as Saudi Arabic, also behave like Belfast English with respect to the co-occurrence of a wh-phrase and a complementizer in embedded questions.
[69] Although Haznedar (1997, 2003) does not discuss the issue of auxiliary inversion in embedded wh-questions, it seems to me that Erdem also preposes copula *is* as it is clear from the very few examples cited in Haznedar's work.

a result of transfer from her L1, since Arabic does not allow preposing in such construction, and this behavior seems to be unique to embedded questions only with copula *is* and in its uncontracted form. Although one could argue that these errors are due to overgeneralization in the sense that Mayyas is overgeneralizing from direct questions, the question remains: why is she only overgeneralizing with copula *is* and not with other elements?

Now we examine the development of embedded (declarative) clauses in Mayyas's L2 English. We first discuss clauses with *because* and *if*, then we discuss clauses with complementizer *that*. The first occurrence of *because* appears in sample 1 and then in every sample afterward. Some examples are given in (21):

(21) a. Because he gave me book. (S 1)
b. Can you erase the Z because it's S? (S 2)
c. Because when you go out you say I'm hungry. (S 3)
d. Because there is no space. (S 4)
e. And this one doesn't because he is short. (S 7)
f. But I can't because I don't have like this card. (S 15)

Similar to *because* clauses, *if* clauses first appear in sample 2 and then in every sample afterward. As also noted by Haznedar (2003) for Erdem, Mayyas produces *if* clauses in both conditional contexts and in cases where it introduces complements of verbs like *sure*. Some representative examples are provided in (22).

(22) a. If you like to color you can color. (S 2)
b. If you want to be nice you have to choose. (S 3)
c. If he bring potatoes or ketchup I'm not going to eat it. (S 10)
d. If you lose you all over. (S 11)
e. I'm not really sure if it's gonna work. (S 13)
f. But I'm not sure if it's gonna stick. (S 13)

Let us now turn to embedded clauses introduced by complementizer *that*. Tensed embedded clauses in Mayyas's L2 grammar appear fairly early, as the following examples illustrate.

(23) a. My mom said you can clean some of them. (S 1)
b. I thought you buy me two pizzas. (S 2)
c. I think it's a girl. (S 3)
d. Mom said you could have it. (S 4)
e. I think you're looking on me. (S 6)

f. Pretend I got a mistake. (S 12)
g. It means you got a paper. (S 12)
h. I told her I like my old one. (S 13)
i. I guess I need to write this word. (S 15)
j. It means you're the star of the week. (S 16)
k. I wish there is some more. (S 18)

It is interesting to note that Mayyas never produces embedded clauses with complementizer *that*. As can be seen in table 5, Mayyas produced more than 75 embedded clauses with not a single utterance that is introduced by the complementizer *that*.

Table 5 Comp in embedded declaratives

Sample	Null Comp	Overt Comp
1-2	7(100%)	0(0%)
3-4	11(100%)	0(0%)
5-6	2(100%)	0(0%)
7-8	3(100%)	0(0%)
9-10	4(100%)	0(0%)
11-12	24(100%)	0(0%)
13-14	10(100%)	0(0%)
15-16	4(100%)	0(0%)
17-18	12(100%)	0(0%)
Total	77(100%)	0(0%)

Although the complementizer *that* in embedded declaratives is optional in both Mayyas's L1 and L2 grammars, it seems to be that only null complementizer is available in her L2 English. This behavior, however, is not unique to Mayyas as similar observations have been reported in the field of child L2A. Lakshmanan and Selinker (1994) report that in the case of the two children in their study, neither Marta nor Muriel ever produced an embedded clause introduced by the complementizer *that*. Although the contexts for such structure emerge as early as sample 3 for both children, and despite the fact that the two children's L1s, French and Spanish, require a complementizer, these children tend to prefer null complementizer in such construction. Similarly, Haznedar (2003) also reports that Erdem rarely produces embedded clauses introduced by the complementizer *that*. Although Haznedar states that Erdem produced only 5 utterances with complementizer *that*, she does not give number and percentage for the overall contexts.

Research from child L1A also confirms that tensed embedded *that*-clause appears late in language development. Phinney (1981) studied the acquisition of complementizers from children between the age of 3 and 9 and reported several stages for the acquisition of complementizer *that*. In an imitation task, children were first reported to respond to an embedded clause such as "The bear said that the turtle tickled the horse" with the production of only the embedded clause and without the complementizer. In the second stage, children tend to repeat the whole clause but also without the complementizer. It is only at stage three that children start to render the clause exactly like the test sentence which includes the complementizer *that*.

Now the question to ask at this point is why these children always omit the complementizer *that* in such constructions. One possible explanation is to assume that the word *that* is not yet available as a lexical item in these children's early grammar. However, such analysis does not seem to be possible, at least in Mayyas's case, as she appears to produce utterances with *that* in relative clauses from early on[70]. Consider the following examples.

(24) a. Because it has something that kill. (S 7)
b. I want the one that says print. (S 11)
c. One of the words that I don't know. (S 15)

These examples show that Mayyas produces the complementizer *that* in relative clauses as early as sample 7. An important question that arises at this point is why is it the case that Mayyas produces the complementizer *that* in relative clauses but never in embedded clauses, even though *that* is optional in both constructions? One possible explanation is that the complementizer *that* is optional in embedded clauses in Arabic but obligatory in relative clauses, which suggests that Mayyas is transferring the optionality/obligatoriness of the complementizer from her L1 into her L2 grammar. Another possible explanation, proposed by Lakshmanan and Selinker (1994: 26), is to suggest that "the L2 learners may merely be displaying a strong preference for a null complementizer". Or it may be the case that this choice reflects the more informal (oral) language children are exposed to. A final possible explanation for the null complementizer choice is to assume that it is a reflection

[70] Lakshmanan and Selinker (1994) also reported that the complementizer *that* first appeared in the relative clauses of two children in their study.

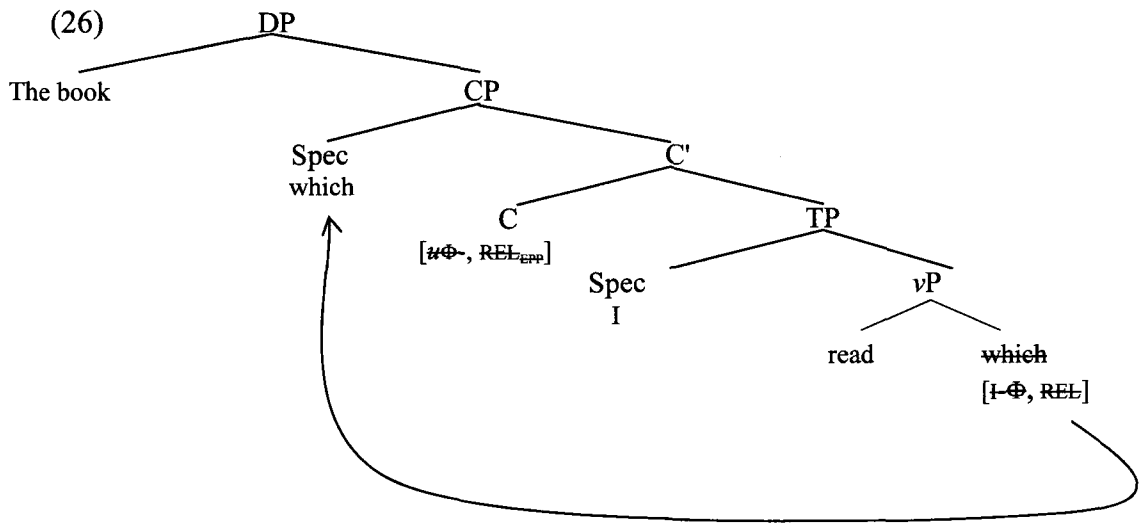
of a developmental stage that children go through during their language acquisition as we saw with the children from Phinney (1981). However, the absence of the complementizer *that* from Mayyas's L2 English does not mean that her CP system is defective, as other elements related to the CP projection are available from the very beginning of data collection. We saw in this chapter that utterances with *because*, *if* and embedded wh-questions appear early on.

5.4 Relative Clauses

This last section examines the acquisition of relative clauses in Mayyas's L2 English. Like root wh-questions, relative clauses show wh-movement but without auxiliary inversion. They are CPs containing a C with [*u*Φ, REL_{EPP}][71] features (Rouveret 2008). The interpretable [REL] feature on C marks the clause type as relative and the [EPP] feature ensures that the relative pronoun moves to the front. Consider the following sentence in (25) and its representation in (26):

(25) The book which I read.

(26)



[71] Rouveret (2008: 173) assumes that the EPP feature could be, but need not be, "viewed as a property associated with the REL feature".

In this configuration, the unvalued ϕ-features of C enter into Agree relation with the *goal* *which* that has matching valued ϕ-features. As a result, the *goal* values and deletes the ϕ-features of the *probe* C which in its turn values the unvalued [REL] feature of the goal and deletes it. The [REL] feature marks the clause as Relative and the associated [EPP] feature triggers raising of the wh-operator (*goal*) to the left periphery of the relative clause (i.e., CP)[72]. The operator that moves can be either a wh-word like *which* as in example (25), or a phonetically empty operator as in (27 and 28) below.

(27) The book [$_{CP}$ OP that [$_{TP}$ I read ~~OP~~]]

(28) The book [$_{CP}$ OP [$_{TP}$ I read ~~OP~~]]

Sentence (27) contains no wh-word, but contains the relative complementizer *that*. The third relative clause (28), on the other hand, contains neither a relative pronoun nor the complementizer *that*. It is important to note that the complementizer *that* cannot co-occur with an overt wh-phrase as example (29) illustrates.

(29) *The book which that I read.

[72] Agree relation in relative clauses is more complicated than what is presented here. Given that CPs and *v*Ps are phases and also given the Phase-Impenetrability Condition (PIC), which assumes that elements (wh-pronouns here) in the domain of phase head is impenetrable to the CP periphery, I assume, following Rouveret (2008: 173), that a mediating element, i.e., *v*, bears *u*Φ and *u*REL, as illustrated bellow.

(i) DP [C T[... v .... pronoun...]]
u-Φ *u*-Φ i-Φ
i-REL/EPP *u*-REL *u*-REL

Now since all the three elements, i.e., C, v and the pronoun, are active by virtue of each having an uninterpretable feature, Agree relation takes place cyclically between the features of the pronoun and v, then between the features of v and C. The result of Agree will value the unvalued features on C and on the pronoun, and at the same time delete the EPP feature associated with C by moving the pronoun to the left periphery of CP. The "resulting configuration does not contain any uninterpretable/unvalued feature and satisfies the demands of the interface" (Rouveret 2008: 173).

Now compare examples (25-28) with the corresponding relative clauses in the native language of Mayyas (i.e. Arabic). Note that since Mayyas produced only subject and object relatives, I will limit my discussion to these here and throughout[73].

(30) a. l-kitaab [$_{CP}$ OP illi [$_{TP}$ qarait-uh]]
the-book that read-1SG-it
"The book that I read"

b. *l-kitaab [$_{CP}$ OP illi [$_{TP}$ qarait]]
the-book that read-1SG
"The book that I read"

c. *l-walad [$_{CP}$ OP illi [$_{TP}$ huwa qaraa l-bitaab]][74]
the-boy that he read-3SG th-book
"The boy that read the book"

Now what are the differences between the relative clause structure of the two languages? One crucial difference is that in Arabic, object relative clauses obligatorily include a pronoun at the position of the gap called a resumptive pronoun (RP)[75]. Resumptive pronouns are obligatory in direct object, indirect object, genitive and prepositional relatives. Subject relatives (cf. example (30c)), in contrast, do not allow an overt RP; only a gap is allowed in the relativized subject position. Moreover, whereas English relative clauses have two relativizers – *wh*-words and OP – and two complementizers: *that* and Ø, Arabic, on the other hand, has only one null relativizer – OP – and one invariable relative complementizer – *illi*. On this view, I assume, following Rouveret (2008: 172), that the operator (OP) moves to Spec-C in relatives where movement is involved, but base-generated in cases which do not involve movement, where only resumption is allowed.

However, the corresponding examples in (30a,c) with RPs are not grammatical in English, as English requires gaps in those positions, as indicated by the ungrammaticality of the following examples in (31) below.

[73] It appears that L2 learners also prefer subject and object relatives as their early grammar is also restricted to those (Lightbown and Spada 2006: 90).
[74] The gap in the subject position can be identified as an instance of pro-drop, which is generally available in almost all varieties of Arabic.
[75] Demirdache (1991: 12) defines RPs as "pronouns that occupy the position that a gap created by S-structure movement of a *wh-pronoun* would."

(31) a. *The book that I bought *it*.
b. *The boy who *he* read the book.

Moreover, resumptive pronouns in Arabic are not only restricted to relative clauses but are also found in root wh-questions as the following examples illustrate.

(32) a. Aiu rajulu qaabalt-*hu*?
which man met-2SGM-him
"Which man did you meet?"

b. Aiu laun tuhebe-*hu*?
which color like-2SGF-it
"Which color do you like?"

However, it is interesting to note that resumptive pronouns also occur in the speech of children acquiring their first language. Pérez-Leroux (1995) presents evidence about RPs in the speech of children acquiring English as their first language – a language that does not allow RPs. Other studies have confirmed the use of resumptives in early relative clauses in other languages like French (Labelle 1990, 1995) and Spanish (Pérez-Leroux 1995). However, it should be pointed out that the RPs produced by the children in Labelle and Perez-Leroux's studies were obtained only from experimental data. In fact, I am not aware of any production data that confirms RPs in English, French, Spanish or any other child language that does not allow them.

Now given the difference in structure of relative clauses in the two languages, Mayyas needs to know a couple of things about English relative clauses. One is that subject relatives are like Arabic in that they do not allow resumptive pronouns. Another thing is that resumptives in object relatives are not allowed in English, and that English relatives have two relativizers and two complementizers compared to one relativizer and one complementizer for Arabic. How is this information acquired by Mayyas?

First, relative clauses are infrequent in early child speech (O'Grady 1997). This seems to be true for Mayyas, too. Overall, the data include only 38 relative clauses. However, Mayyas appears to have relative clauses from the earliest transcripts, as shown by the examples in (33) below.

(33) a. The song I have it in my book. (S 1)
b. There is something I can't draw. (S 1)

c. Something I can't tell you. (S 2)
d. There is something you didn't do it. (S 3)
e. This is the one you need it. (S 3)

There are several characteristics of Mayyas's early relative clauses as they appear in the examples in (33). First, early relative clauses include neither relative pronouns nor relative complementizers, which is also grammatical in the target language. However, starting from sample 7, we find relative clauses with either overt complementizer (34a,b) or overt wh-operator (34c,d), but no relatives that have both, as it is ungrammatical in English.

(34) a. Because it has something that kill. (S 7)
b. I want the one that says print. (S 11)
c. It's the other person who got all X. (S 12)
d. I have a girl who is in a house. (S 14)

Second, Mayyas initially produces only object relatives until sample 6[76]. It is not until sample 7 that subject relatives make their first appearance in the data[77], as can been seen from the examples in (35) below.

(35) a. Because it has something that kill. (S 7)
b. There is people play on the computer. (S 10)
c. But somebody who is not big. (S 14)
d. Give me the one that's right up next. (S 16)

The examples in (33-35) show that Mayyas seems to have acquired the features and mechanisms which derive relative clauses in English. Examples (34c,d), for instance, suggest that Agree relation between the probe and the goal is followed by the movement of the wh-operator to Spec-C which marks the clause as relative. In the cases where there is no wh-operator (e.g., 35a,b), a null-operator is supposed to move or merge in Spec-C depending on whether there is a gap or a RP.

However, one important finding of this study is that Mayyas alternates between the gap strategy and the resumptive strategy in the domain of relative clauses in her interlanguage grammar. Recall that while Arabic requires RP in object position, as well as

[76] Mayyas's data seem to pose a challenge to the noun phrase accessibility hierarchy (Keenan and Comrie, 1977), according to which object relatives should not be acquired before subject relatives. Out of 7 relative clauses in the first 6 samples, there is not a single subject relative clause.
[77] That children's early relative clauses do not include subject relatives is also reported for child L1A (e.g., Limber 1973).

in other positions, English, on the other hand, does not allow RPs in any syntactic position. It is interesting to note that in the first 3 samples and out of 5 contexts, Mayyas produced 3 (60%) relative clauses with RPs, as indicated by the following examples in (36) below.

(36) a. The song I have *it* in my book. (S 1)
b. There is something you didn't do *it*. (S 3)
c. This is the one you need *it*. (S 3)

The examples in (33) and (36) indicate, interestingly, that optionality occurs between gap and resumptive strategies in the case of direct object relativization only. It is also interesting to note that this optionality continues to the very end of data collection, as can be seen in table 6 below.

Table 6 RPs in relative clauses

Sample	RP	Gap
1-2	1(33%)	2(67%)
3-4	2(100%)	0(0%)
5-6	2(100%)	0(0%)
7-8	0(0%)	1(100%)
9-10	0(0%)	2(100%)
11-12	0(0%)	4(100%)
13-14	0(0%)	7(100%)
15-16	3(27%)	8(73%)
17-18	1(17%)	5(83%)
Total	9(24%)	29(76)

Although most resumptive pronouns in Mayyas's data are of the type *it*, it is by no means the only one, as the few examples in (37) illustrate.

(37) a. Do you have the papers that you stick *them* on? (S 15)
b. Where are my small pictures that I cut *them* out? (S 17)

The examples in (37) indicate, interestingly, that RPs in Mayyas's data are not restricted to declaratives, but also occur in interrogative relatives. In fact, in the last 6 samples, interrogative relative clauses are as frequent as declarative relatives. Some representative examples are given (38).

(38) a. Do you have any special sticky tape that you don't need? (S 13)
b. Where is the zip lock that has the words? (S 16)
c. Could you glue the pictures that I printed from the computer? (S 17)
d. Could you please find something that I can understand? (S 17)

Now how can these errors (i.e., RPs) be accounted for? One obvious and straightforward explanation is that they are a result of transfer from L1 Arabic. Another possibility would be that Mayyas, like English and French children, acquired resumptive strategy directly through UG. Since RPs are available in several natural languages (Arabic, Hebrew, Irish, etc.), it becomes a possible UG option that can be used by language learners even if their target language does not license them. However, the latter explanation does not seem to be supported by the data. There is, in fact, ample evidence that resumptive pronouns in Mayyas's interlanguage grammar come from her L1 Arabic. First, as Pérez-Leroux (1995: 121) reports, English children produce both subject as well as object resumptives in their relative clauses as shown in (39) below.

(39) a. He's a little kid that *he* talks.
b. Smoky is an engine that *he* pulls a train.
c. I hurt my finger that Thomas stepped on *it.*
d. Twenty numbers that we counted *them.*

While examples (39a and b) show that subject resumptives are possible in child English, Mayyas never produces them, as they are not possible in her L1 grammar. There is not a single utterance where Mayyas uses subject resumptive in the entire data. The second piece of evidence that Mayyas's RPs are a result of transfer from her L1 comes from resumptive NPs. Unlike Mayyas, Labelle (1990) reports that French-speaking children produce many relatives with resumptive NPs as shown in (40).

(40) a. Sur la balle qu'i(l) lance *la balle*
'On the ball that he throws the ball'

b. Le garçon que le chien du *garçon* court
'The boy that the dog of the boy runs'

Again, Mayyas never produces resumptive NPs in her interlanguage grammar, as they are not allowed in her L1 Arabic. A third piece of evidence in support of transfer of resumptive strategy in Mayyas's data comes from wh-questions. Labelle (1990) reports that French

children never produce resumptive pronouns in wh-questions. Mayyas, on the other hand, produced several resumptive pronouns in wh-questions throughout the data. Some representative examples are provided in (41) below.

(41) a. Which color did you need **it**? (S 3)
b. Which color did you like **it**? (S 3)
c. Which one you want me to draw **it**? (S 6)
d. Which triangle did you do **it**? (S18)

Example (41d) is of a particular interest as it shows that Mayyas never stops producing RPs even after 12 months of consistent exposure to the target input. Mayyas, at this particular stage, should have already encountered enough input to indicate the non-existence of resumptive pronouns in English. This seems to suggest that the influence of the mother tongue in this particular area of grammar is so pervasive that it may take a long time to disappear.

The use of resumptive pronouns in children's early relatives has been analyzed by some researchers as evidence that movement has not occurred (Labelle 1990, 1995). One of Labelle's main arguments for the non-movement analysis is based on the assumption that resumptive strategy has not been attested in questions in early child French. However, a non-movement analysis for Mayyas's resumptives is not feasible for several reasons. First, resumptive pronouns are available in Mayyas's wh-questions as shown by the examples in (41) above. Second, and more importantly, at the same point in development when Mayyas produces resumptives, wh-movement in questions and other constructions have already been acquired. We saw in section 5.2 above that Mayyas is able to move wh-words in questions from the very beginning of data collection.

Now the question to ask at this juncture is how to account for the fact that Mayyas produces both relatives with gaps, which are derived by wh-movement, and relatives with resumptives, which are derived by base-generation. One possible explanation is to argue, following Guasti (2002), that both types of relatives hold for the adult targets. In some languages, resumptive pronouns and traces seem to alternate relatively freely, as the examples from Standard Arabic in (42) illustrate. In this respect, child language would not be different.

(42) a. qaratu l-kitaaba llathii shtaraa-hu T-Taalibu
read-1S the-book that-3SM bought-3SM-it the-student
"I read the book that the boy student bought"

b. qaratu l-kitaaba llathii shtaraa T-Taalibu
read-1S the-book that-3SM bought-3SM the-student
"I read the book that the boy student bought"

Now what about adult L2 acquisition of English relative clauses? Do L2 learners of RP languages also alternate between resumptive and gap strategies? In general, studies of relative clause acquisition (e.g., Gass 1979; Bolotin 1995; Tsimpli 1997; Hawkins and Chan 1997) have shown that learners of English whose L1 requires RPs are likely to use them in their L2. In her seminal work (1979), Gass studied the acquisition of English relative clauses by learners from different L1 backgrounds (Arabic, Chinese, Farsi, French, Italian, Korean, Japanese, Portuguese and Thai). Based on a Grammaticality Judgment (GJ) task, Gass found that speakers of languages with RPs are more likely to accept ungrammatical sentences in English with PRs than speakers of languages without RPs. In another study, Bolotin (1995) tested the acquisition of English relative clauses by child and adult Arabic speakers. In this study, Bolotin gave the learners a GJ task with English sentences containing either an RP or a gap. She found that both child and adult learners accepted the ungrammatical sentences with RPs at a rate 55% for children and 49% for adults[78]. More interestingly, Bolotin repeated the same GJ task to a group of Hebrew (a language with RPs) child and adult learners and to another group of subjects whose L1 was a European language (language without RPs), and found that while child and adult Hebrew speakers accepted the ungrammatical sentences with RPs at a rate of 67% and 83%, the European language speakers rejected those ungrammatical sentences at a rate of 100%. Although Bolotin's main interest in this study was to show that the age factor does not affect L2 acquisition, it is clear from the results that language transfer plays a major role in the acquisition of the L2 grammar.

[78] Véronique (1984) also found that Arabic speakers of L2 French use resumptive pronouns in their acquisition of relative clauses, as the following example illustrates:

(i) le professeur que je *le* connais.
the professor that I *him* know
"The professor that I know" (Véronique 1984: 207)

To summarize, then, Mayyas appears to alternate between gap and resumptive strategy in her L2 English grammar for the whole data under investigation. Since Arabic allows resumptives, I argued that these are carried over into Mayyas's L2 grammar. In fact, there is ample evidence in support of the transfer analysis. One piece of evidence in support of this claim is that resumptives in Mayyas's L2 grammar seem to obey the rules of resumption of Arabic. We saw that Mayyas never produces subject resumptives as they are not allowed in her L1. Moreover, resumptive NPs, which are ungrammatical in Arabic, are not available in Mayyas's L2 grammar. This suggests that Mayyas tries to avoid producing resumptives in the positions which are not available in her L1 system. Another piece of evidence in support of a transfer strategy of resumptives in Mayyas's L2 is that this phenomenon has not been attested for child L2 learners whose L1s do not require RPs. Further support for the transfer analysis comes from other L2 studies like Bolotin's (1995) who argues that Arabic and Hebrew speakers, both children and adults, of L2 English are more likely to accept ungrammatical sentences with RPs than speakers of other languages whose native languages do not have RPs.

5.5 Conclusion

This chapter has dealt with several issues related to the CP system in Mayyas's L2 English. The first section investigated the acquisition of yes/no questions in the data. The observation here is that Mayyas seems to be aware that English, unlike Arabic, requires preposing of the auxiliary to the front, and more technically, Mayyas appears to know that the head C in English yes/no questions contains *u*T feature associated with EPP, which requires Agree between the head C and the head T followed by the preposing of the auxiliary to Spec-C. Overall, preposed auxiliaries represent 94% of all yes/no questions in Mayyas's data. I suggest that an explanation based on language transfer does not, however, appear to be convincing, giving the fact that Arabic does not allow auxiliary inversion in yes/no questions. Similar to the acquisition of yes/no questions, Mayyas appears to know that wh-questions require the movement of a wh-phrase and an auxiliary to the C-domain triggered by the feature composition of the head C. Also unlike in child L1A, there is no stage in the acquisition of wh-questions where Mayyas would prepose the wh-phrase but not the auxiliary. This suggests that Mayyas knows from the very beginning that the *u*Wh

feature in C must be valued and deleted through Agree with the wh-phrase in the lower TP, and the *u*T must be valued and deleted with Tns feature on T followed by the raising of the auxiliary to C.

An important issue discussed in this chapter is the acquisition of complementizer *that* in embedded clauses. Although Mayyas was able to produce the complementizers *because* and *if* from early on, the complementizer *that* was never produced for the whole period under investigation. Since the complementizer *that* in embedded clauses is optional in English, Lakshmanan and Selinker (1994) proposed that child L2 has strong preference for null complementizer over the overt one. However, the problem arises when we consider the status of the complementizer *that* in relative clauses at least in Mayyas's data. We have seen that Mayyas first produces relatives with *that* in sample 7 and consistently from sample 11 on. The question to ask at this point is why is Mayyas producing the complementizer *that* in relative clauses but never in embedded clauses, even though *that* is optional in both constructions? One possible explanation is that the complementizer *that* is optional in embedded clauses in Arabic but obligatory in relative clauses.

Another important issue discussed in the present chapter is the use of resumptive pronouns in Mayyas's data, a phenomenon that is not available in English. We saw in section 5.4 that Mayyas alternates between resumptive and gap strategies for the whole period under investigation. We proposed, following work in child L1A (e.g., Labelle 1990), that since resumptive pronouns are attested in some natural languages (e.g., Arabic, Chinese, Hebrew, Irish, etc), it becomes a UG option that could be selected by L1/L2 learners during the acquisition process even if the target language does not allow them. However, we saw that there is ample evidence from Mayyas's data which suggests that these resumptives are a result of transfer from this child's L1. Specifically, Mayyas seems to produce resumptive pronouns only in the positions allowed in her L1 Arabic.

Syntactic variability is a robust phenomenon that is widely attested for both child and adult learners. In this case, Mayyas is no different from those learners. We saw in this chapter that Mayyas's L2 system is characterized by some degree of variability at certain stages of development. We saw that Mayyas alternates between resumptive and gap strategy in her L2 grammar even though the latter strategy is not allowed in her L2 grammar. Syntactic variability in Mayyas's L2 system also appeared with different

structures like auxiliary inversion in wh-questions and embedded wh-questions and the non-occurrence of the complementizer *that* in tensed embedded clauses. Now why does syntactic variability occur in Mayyas's interlanguage grammar? In general there are several reasons, but we will limit ourselves to those relevant to Mayyas's situation. Thus, the most obvious reason for Mayyas's variability is the interference from the native language which seems to cause some problems in the syntactic areas mentioned above. For example, Mayyas alternates between gap and resumptive strategy because her L1 allows the latter but her L2 requires the former strategy. Another important factor that may cause variability is the quality and quantity of the input available to L2 learners. Unlike in child L1, L2 children have more variation in input toward their L2 as it is divided between two languages. This may also cause communication pressure in certain situations which lead to variation in acquisition. However, Mayyas's Variability seems to be a developmental phenomenon which she will eventually overcome, as is the case with child L1.

Chapter 6
Discussion and Conclusion

6.0 Introduction

The first section of this chapter provides an overview of Mayyas's interlanguage grammar through the development of the TP and CP systems. The purpose of this is to show that Mayyas's L2 English is complete with respect to the functional system of this child. In so doing, I hope to show that, as stated in the first chapter, structural building approaches (e.g., Mobaraki, Vainikka, and Young-Scholten 2008) cannot account for the developmental facts of child L2A. In the second section, I will be discussing some problematic structures produced by Mayyas during her L2 acquisition of English and will try to give solutions whenever possible. Section three will compare Mayyas L2 development to child L1A as well as to adult L2A. The third section will be devoted to language transfer in child L2A in general and in Mayyas's interlanguage in particular. This chapter ends with a conclusion.

6.1 The Acquisition of Formal Features

This thesis presents evidence in support of the availability of formal features in child L2 English. Based on the data analysis, Mayyas is able to carry out a number of syntactic operations related to both the TP and the CP systems from the earliest data available. We saw in chapters 4 and 5 that Mayyas is able to assemble features in a manner almost similar to that of adults. For example, the head of the TP constituent in Mayyas's data usually contains the same features assumed to be present in the adult's counterpart. Specifically, T seems to project ϕ-features, Tns feature, and EPP feature in most relevant structures. Starting from the earliest samples, Mayyas knows that English, unlike Arabic, is not a null subject language and always requires overt subjects in tensed clauses. Some examples are provided in (1).

(1) a. I brought three color. (S 1)
b. I can do it first. (S 1)
c. I don't know nothing. (S 2)
d. It's not good. (S 2)

These examples show that Mayyas not only retains the subject in these obligatory contexts, but also knows that the subject should move to the front, namely to Spec-T. This movement, a stated previously is triggered by the EPP feature in T. That the subjects in these examples are in Spec-T is evident by their position with respect to negation, copula *be* and the modal verbs as in examples (1b, c and d) above. This suggests that the requirement of the EPP feature in such constructions is satisfied from early on. Moreover, the head T in examples like those in (1) also has an interpretable Tns feature that needs valuing and deletion. In the case of example (1a), for instance, T bears a tense feature with the value [past] and *v* bears an uninterpretable tense feature which is unvalued. Thus, application of Agreement results in the verb [bring], first merged unvalued, being valued as past [brought][79]. Besides the EPP feature and Tns feature, T also bears uninterpretable ϕ-features [person/number] and the subject in Spec-*v* carries interpretable ϕ-features which are valued. The result of Agree will value the unvalued ϕ-features of T and as a side effect of this Agreement, the unvalued case feature of the goal is valued.

Similar to the TP projection, the CP projection is assumed to host a number of formal features including *u*T, *u*Wh, Rel, ϕ-features and EPP feature. As with TP, Mayyas also seems to project all the relevant features in a manner almost similar to that of the adult target. In wh-questions, for instance, the head C bears an uninterpretable Tns feature and an interpretable wh-feature both associated with EPP feature. Consider the following examples.

(2) a. Where is the page? (S 3)
b. What time is it? (S 4)
c. When is it gonna be dry? (S 11)
d. Why do you have to fix it? (S 12)
e. Where should I put them? (S 14)

The examples in (2) show that Mayyas preposes both the wh-phrase and the auxiliary to the left periphery of the clause, namely to Spec-C and C, respectively. In example (2e), for instance, the wh-word *where* is assumed to originate inside the *v*P constituent and moves from there to Spec-C. Likewise, the auxiliaries in the same examples are assumed to originate in the head T and move from there to the head C. What is important here is that

[79] Recall that English verbs do not show morphological realization in the present simple form other than with the third person singular subjects.

Mayyas knows from early on that the *u*Wh feature must Agree and delete its uninterpretable feature with a matching goal inside the lower clause, and the *u*T feature on C must Agree with a matching goal in T for valuing and deleting its uninterpretable feature. Moreover, the CP projection also contains other features like Rel in relative clauses as we saw in the previous chapter. Some examples of relative clauses are provided in (3) below.

(3) a. I wanna show you which game I want. (S 10)
b. I want the one that says print. (S 11)
c. It's the other person who got all X. (S 12)
d. I have a girl who is in a house. (S 14)

In these examples the embedded C is assumed to have uninterpretable ϕ-features and a Rel feature associated with EPP. In example (3a), for instance, the *u*ϕ enters into Agree relation with the goal *which game* in the lower clause which has matching valued ϕ-features. As a result, the *goal* values and deletes the ϕ-features of the *probe* C which in its turn values the unvalued Rel feature of the *goal* and deletes it. The [REL] feature marks the clause as Relative and the associated [EPP] feature triggers raising of the wh-operator *goal* to the left periphery of the relative clause (i.e., CP). Therefore, the distribution of these features and their acquisition in Mayyas's interlanguage grammar strongly suggest that formal features associated with both the TP and the CP systems are acquired early on. This is apparently in contrast to what Mobaraki, Vainikka and Young-Scholten (2008) have recently suggested for child L2A. These authors have extended their analysis (the 2nd and 3rd authors 1994, 1996) for adult L2 learners that early language development lacks functional categories/features. Specifically Mobaraki, Vainikka and Young-Scholten argue that the L2 initial state lacks all types of functional categories and that only lexical categories project at this stage of acquisition. Functional categories are gradually added to the learners' grammar once triggered by positive evidence in the input. According to Vainikka and Young-Scholten (1998) the evidence for the gradual building up of syntactic structure in the L2 initial state comes from the lack of functional morphemes and their associated syntactic derivations. These include the lack of verb raising, modals/auxiliaries, agreement paradigm, complementizers and complex wh-questions. However, such analysis for child L2 grammar is implausible given the fact that Mayyas has both lexical as well as functional categories/features from the very beginning of data collection. We saw in chapter 4 and 5

that Mayyas's initial state has all the functional morphemes and their associated syntactic derivations that are claimed to be missing by Vainikka and Young-Scholten. Moreover, most studies to date on child L2A (e.g., Gavruseva and Lardiere 1996; Haznedar 2001, 2003; Lakshmanan 1994b, 1995; Lakshmanan and Selinker 1994) strongly suggest that functional categories/features are available from the earliest stages of acquisition, and it is with the latter authors that we agree.

6.2 Problematic Structures in Mayyas's L2 Grammar

Although Mayyas seems to have mature knowledge of functional categories and their related syntactic features from the very beginning, she appears to have some problems concerning the TP and CP projections in her L2 grammar. First starting with the TP, Mayyas seems to have problems with verbal inflections, especially in the earlier stages. Specifically, in contexts where adults require a finite clause, Mayyas appears to alternate between finite and nonfinite clauses. In the first 10 samples of Mayyas's data, the uninflected verb forms represent almost half of the overall contexts for inflected forms. Some representative examples are given in (4).

(4) a. It climb up in your hand. (S 1)
b. She write like this. (S 1)
c. He eat honey. (S 2)
d. It looks like Dora. (S 2)
e. I thought you buy two pizzas. (S 2)
f. It starts with a D. (S 3)

These examples show that Mayyas does alternate between finite and nonfinite verb forms, sometimes even within the same clause as in example (4e). In chapter 4, we have discussed a number of proposals to account for this phenomenon and came to the conclusion that Mayyas's uninflected verb forms are best characterized as a mapping problem between surface morphology and abstract morphosyntactic features (Haznedar and Schwartz 1997; Lardiere 1998a, b, 2000; Prévost and White 2000a, b). In other words, even when learners have acquired the morphological manifestations of abstract features, they may not always be able to retrieve the right representation of a given form. However, the question to be asked at this point is how do we know that this is a mapping problem and not some sort of deficiency in the interlanguage system of the learner? There is some evidence in support of

a mapping account in child L2A. First, an important observation about Mayyas's knowledge of inflectional morphology is that when she uses it, she uses it correctly. As noted by White (2003a: 196) when "L2 learners are inaccurate in their suppliance of inflectional morphology, the problem is missing inflection rather than faulty inflection". As also noted by Haznedar (2001) for Erdem, Mayyas rarely produces agreement errors. In other words, Mayyas sometimes fails to inflect but she rarely supplies the wrong inflection. In fact, in the whole data and out of 233 contexts, there is only one subject-verb agreement error. This observation about accuracy of inflection has also been reported in several child L2 studies including Ionin and Wexler (2002), Grondin and White (1996) and Haznedar and Schwartz (1997). Now since Mayyas's morphological variability does not result from an underlying representational deficit in the syntax, then why is there alternation in inflectional morphology? A possible explanation, as mentioned in chapter 4, is that Mayyas overgeneralizes the default form which happens to be a zero morpheme in English. This overgeneralization is seen as a mere product of performance limitations probably caused by communication pressure in certain situations. Another possible explanation for the morphological variability is to assume a phonological account. It is quite possible to argue that Mayyas, under communication pressure, may sometimes tend to omit the final morpheme in the case of 3SG-S and *-ed* past forms. But what about irregular past forms? If we assume following Pinker (1998) that irregular past tense forms are represented as different lexical items in the mind, then one could argue that these forms are not fully memorized and that children may sometimes get confused between the present and the past tense forms. However, morphological variability in Mayyas's interlanguage grammar is developmental in nature and appears to be eradicated over time. We saw in chapter 4 that the production of the 3sg-s forms, for instance, started with 0% for sample 1 then ended up with 100% for sample 15 and on.

Another important deviation in Mayyas's interlanguage grammar is that she seems to alternate between gap and resumptive strategies in her L2 English, a language that does not allow resumptives. We saw in chapter 5 that Mayyas uses resumptive pronouns in contexts where only gaps are possible, as can be seen in (5) below.

(5) a. There is something you didn't do *it*. (S 3)
b. Do you have the papers that you stick *them* on? (S 15)

c. The crayon that has colors on *it*. (S 16)
d. where are my small pictures that I cut *them* out? (S 17)

Although English does not allow resumptives in examples like those in (5), children acquiring this language tend to use them in their early speech as reported in several experimental studies (e.g., Labelle 1990, 1995; Pérez-Leroux 1995). An important question that we raised in this regard is whether resumptives in Mayyas's L2 English is the type reported for child L1? The answer according to the data analysis is simply no. We saw that, unlike child L1, Mayyas never produces subject resumptives nor does she use resumptive NPs. Moreover, and also unlike child L1, Mayyas produces resumptives in wh-questions such as those in (6) below.

(6) a. Which color did you need *it*? (S 3)
b. Which one you want me to draw *it*? (S 6)
c. Which triangle did you do *it*? (S 18)

These examples along with other examples in Mayyas's data, which are not attested in child English or in Child French, led to the conclusion that resumptives in Mayyas's interlanguage grammar are a result of transfer from her L1 Arabic. Although resumptives in Mayyas's data appear in all samples under investigation, they represent only 24% of the overall count. This alternation between gap and resumptive strategies, as we saw in chapter 5, is possible in a number of natural languages including standard Arabic.

Apart from the two major problems with Mayyas's interlanguage grammar; namely infinitives in place of finites and resumptives, there are few minor issues concerning the CP projection. In embedded clauses, for instance, Mayyas seems to produce tensed embedded clauses from early on, but the complementizer *that* is never overt. It appears that Mayyas strongly prefers null complementizers over overt ones. We proposed in chapter 5 that this choice may reflect the more informal (oral) language children are exposed to. However, this should not be taken as a real problem as complementizer *that* in tensed embedded clauses is optional in English. Another minor issue with Mayyas's CP projection concerns subject-auxiliary inversion in yes/no questions and non-subject wh-questions. In these structures, there are a few times when Mayyas does not invert the auxiliary which results in ungrammatical utterances like those in (7) below.

(7) a. You want me to draw book? (S 2)
b. What he can draw? (S 3)
c. Which one you're talking about? (S 3)

Although Mayyas sometimes produces utterances like those in (7), the overall percentage is extremely low compared to the utterances with preposed auxiliaries. We proposed in chapter 5 that the subject-auxiliary problem could be attributed to L1 influence since Arabic does not allow auxiliary inversion in either yes/no questions or wh-questions.

Moreover, Mayyas also appears to have some problems with regard to embedded wh-questions, as the following examples illustrate.

(8) a. I know where is the French. (S 4)
b. I know who is this. (S 7)
c. I know exactly where is it. (S 13)
d. Do you know where is the museum? (S 18)

The examples in (8) show that Mayyas preposes the auxiliary in embedded wh-questions which is not possible in the target language. As stated in chapter 5, auxiliary inversion in embedded questions is mainly restricted to copula *is*. However, an explanation based on language transfer does not appear to be convincing, given the fact that Arabic does not allow auxiliary inversion in embedded wh-questions. However, a possible explanation for this behaviour is to assume that Mayyas is just overgeneralizing from direct questions where the auxiliary inversion is required. In other words, Mayyas seems to overgeneralize the structure of direct questions to embedded questions by adjoining the direct question to the matrix clause.

6.3 The Role of the L1 in Mayyas's L2 Grammar

The issue of L1 influence during second language acquisition has long been an important topic in L2A research. While it is generally accepted that L1 influence plays an important role in adult L2 acquisition, the issue is subject to much more controversy in child L2 acquisition. Much of the earlier work on child L2A argues in favour of a position where the native language plays a minor role in language development (Dulay and Burt 1974;

McLaughlin 1978; Ravem 1974)[80]. However, recent work on child L2A seems to offer a mixed picture with regard to the role of the native language. While some researchers argue in favour of a no-transfer position (e.g., Blom and Polišenská 2005; Lakshmanan 1994b; McLaughlin 1978; Zdorenko and Paradis 2008), others find evidence in support of a position that assumes a role of the L1 in the acquisition of the L2 (e.g., Haznedar 1997; Ionin 2008; Mobaraki, Vainikka and Young-Scholten 2008). The following section discusses the role of L1 in Mayyas's interlanguage grammar.

Although English differs from Arabic in numerous morphosyntactic aspects, the L1 effect seems to be limited to certain syntactic aspects in Mayyas's interlanguage grammar. One main difference between Arabic and English is word order. While English is an SVO language, Arabic on the other hand is a VSO language (both in declaratives and interrogatives). Therefore, it is expected that transfer may occur in this syntactic area, especially in the earlier samples. However, this expectation was not borne out since Mayyas never produces VSO order in declarative or in interrogative constructions, not even in the earliest recordings available. Moreover, besides word order, English also differs from Arabic in that the latter is a null subject language while the former is not. It was also expected that Mayyas may produce some null subject utterances as a result of L1 influence. Again the effect of the mother tongue here is also insignificant as the null subject utterances in Mayyas L2 English represent less 1% of the overall count which is considered extremely low by all standards.

Although Mayyas's interlanguage grammar seems to be immune to the L1 effect in certain constructions, this does not seem to be true for other syntactic constructions such as relative clauses and wh-questions. We saw in chapter 5 that Mayyas alternates between gap and resumptive strategies in her interlanguage grammar. While English does not allow resumptives in relative clauses in most syntactic positions, Arabic on the other hand does allow resumption in most syntactic positions except in the subject position. We have seen that around 24% of relative clauses in Mayyas's L2 English have resumptive pronouns, mainly in the object position. Since the distribution of resumptive pronouns in Mayyas's L2

[80] McLaughlin (1978) argues that there is no L1 transfer in child L2 acquisition unless the child is separated from peers of the target language; that is, transfer will most likely occur in immersion setting. This claim seems to be questionable as we saw here that Mayyas is not separated from native peers but she still suffers from the L1 effects.

English seems to follow the rules of resumption in Arabic, we concluded that resumption is a result of transfer from Mayyas's L1. However, an important observation about resumptive pronouns in Mayyas's L2 grammar is that they continue to appear to the very end of data collection. This is in fact the only real problem that Mayyas continues to have throughout the whole period under investigation. The question to ask at this point is why is Mayyas still producing these ungrammatical structures although she seems to have a mature L2 grammar? One possible explanation is to assume that the L1 input Mayyas is exposed to has too many relative clauses with resumptives that may interfere with her L2 production of English relative clauses and delay the acquisition process in this area of grammar. The next question to ask is whether this would result in fossilization in Mayyas's L2 grammar. In fact, there are no signs that this would ever disappear, as we find resumptive pronouns even in the last sample of data collection. However, I had the chance to meet with this child a couple of years later and asked her what she thinks about structures with resumptive pronouns in relative clauses and wh-questions like "Which color did you like it (sample 3)?" She immediately corrected them and laughed and said "who in earth would say something like this?" I told her, "you when you were 5 years old". This potentially confirms that resumption is not fossilized in Mayyas's interlanguage grammar, as she is able to identify the problem and provides the correct structure.

While as we saw above that L1 influence seems to be very limited and selective in the case of child L2A, Haznedar (1997) adpots the Full Transfer/Full Access Hypothesis (Schwartz and Sprouse 1994, 1996) to account for Erdem's behaviour with regards to his interlanguage system. Haznedar's argument that Erdem's entire L1 system transfers into his L2 grammar is based mainly on one single structure that has to do with word order. Although Erdem transfers the OV order of his L1 Turksih into his L2 English, this is only limited to the first 8 samples which are presented with few utterances. Lakshmanan and Selinker (2001) argue that the utterances produced by Erdem are sparse and cannot all be taken as real instances of an OV structure (see Lakshmanan and Selinker 2001 for details). Therefore, based on the data from Mayyas, Erdem and many other L2 children in the litterature, it is important to revaluate the role of L1 in child L2 grammar. It is necessary to propose a new theory that is compatible with the selective nature of L1 transfer in child L2A.

6.4 Comparison with Child L1 and Adult L2

In this section we compare the acquisition of functional categories/features reported in this study with other studies from child L1A (e.g., Radford; Vainikka 1994) and studies from adult L2A (Vainikka and Young-Scholten 1994, 1996). This section will end with a discussion of the debate of whether child L2 resembles child L1 or/and adult L2 in the domain of syntax/morphology as recently discussed in Meisel (2008) and Schwartz (2003, 2004).

6.4.1 Child L2 Versus Child L1

The acquisition literature, as reviewed in chapter 2, shows that child L2 learners differ from child L1 learners with regard to the acquisition of functional categories. Radford (1990), for instance, supports the idea that child grammar develops through a process of maturation. He claims that children go through an initial lexical stage where functional projections are entirely absent (See also Vainikka 1994 for similar proposal). Radford takes the lack of INFL related elements such as infinitival marker *to*, auxiliaries *be* and *do* and modal verbs as evidence for the absence of the IP projection. These findings differ from my results reported in chapter 4 above. I showed in that chapter that all T-related elements are available from the first sample on. The following examples show that infinitival marker *to*, auxiliaries *be* and *do*, and modal verbs are all present from the first sample.

(9) a. He doesn't want to go with me. (S 1)
b. I'm singing. (S 1)
c. She doesn't want to be big. (S 1)
d. I will read book. (S 1)

According to Radford, the evidence for the lack of the CP system comes from yes/no questions and wh-questions. He argues that children's early utterances lack T-to-C movement in both types of questions. In the current study, however, I have shown that my subject exhibits T-to-C movement in yes/no and wh-questions from the earliest data available. The following examples show that Mayyas projects both wh feature and T feature in the case of a wh-question, and T in the case of yes/no questions.

(10) a. Can I draw a girl? (S 1)
b. Is it yellow? (S 2)

c. What's that song? (S 1)
d. What is your favourite one? (S 3)

These examples show that Mayyas differs from child L1 with regard to the acquisition of the functional projections TP and CP. However, we saw in chapter 2 that not all studies support the lack of functional categories in child L1A. The claim that functional categories are available in child L1 comes from languages other than English, namely French (Pierce 1992; Déprez and Pierce 1994) and German (Déprez and Pierce 1994; Poeppel and Wexler 1993). However, for the sake of the discussion we will assume following Radford (1990, 1995) and Vainikka (1994) that child L1 English goes through a stage where functional categories are initially absent.

6.4.2 Child L2 Versus Adult L2

The difference between child and adult second language learners has already been noted several decades ago within Chomskyan linguistics. Chomsky expresses this in the following lines:

> "It is a common observation that a young child of immigrant parents may learn a second language in the streets, from other children, with amazing rapidity, and that his speech may be completely fluent and correct to the last allophone, while the subtleties that become second nature to the child may elude his parents despite high motivation and continued practice (Chomsky 1959: 42)."

This section compares the findings of the present study with studies from adult L2A (e.g., Vainikka and Young-Scholten 1996, 1998). Vainikka and Young-Scholten (1996, 1998) subscribe to the weak continuity approach, where functional projections are absent in the initial stage of acquisition. They assume that functional projections appear later in development. Based on data from German, Vainikka and Young-Scholten argue that adult L2 learners go through three stages of language development, the first being the VP stage. In this stage, L2 learners did not show any evidence for verb raising, and their interlanguage lacks modals/auxiliaries, agreement paradigm, complementizers and wh-movement. This seems to be in apparent contrast with the results obtained from the current study. Mayyas, on the contrary, appears to have all the features that seem to be absent in the VP stage described for adult L2 learners. As we saw in chapter 4, Mayyas employs

modals/auxiliaries and uses agreement paradigm in her interlanguage starting from the first two samples, as shown in (11) below.

(11) a. I will draw a girl. (S 1)
b. Rimas is playing. (S 1)
c. It sounds like O. (S 2)
d. It looks like a pencil. (S 2)

These examples result from the assembly of all related features. In this case, the head T seems to project ϕ-features, Tns feature, and the EPP feature. Moreover, contrary to the VP stage, Mayyas seems to employ complex wh-questions, embedded wh-questions and relative clauses, as shown in (12):

(12) a. What do you want me to draw for you? (S 4)
b. I don't know how to write snake. (S 2)
c. I wanna show you which game I want. (S 10)

These examples show that Mayyas's early grammar contains the same complex structures found in the adult target. Relative clauses, for instance, appear as early as sample 1 and productively from sample 3 on.

6.4.3 Mayyas Versus Erdem

This final section will be comparing Mayyas's development with Erdem's, the child from Haznedar (1997, 2001, 2003). Before we do this, a word of caution, however, is in order. Mayyas and Erdem differ in the amount of exposure to the target language input. Whereas Mayyas had 7 hours a day for the first 8 months, Erdem, on the other hand, had only 2 and a half hours for the first 3 months. Moreover, unlike Mayyas, Erdem also did not receive any instruction in English during his nursery school for the first 3 months. It is equally important to mention here that while the data collection from Erdem started after 2 months of exposure to L2 English, the data from Mayyas started after almost 3 months of exposure[81].

As we have seen so far, this study presents clear evidence in support of the availability of formal features from the very beginning of data collection. Unlike in Haznedar (2003), who argues that the CP-related constructions like T-to-C movement do

[81] As pointed out earlier, Mayyas did not go to school for the first two weeks of December as she was sick.

not appear productively until sample 16, Mayyas's data show that T-to-C movement in yes/no questions appears productively from the first two samples on (42 out of 45), and represents more than 94% of the whole data. With respect to T-to-C movement in wh-questions, table 14 shows that Mayyas uses them productively from the very beginning. In samples 1-4, for example, of 29 T-to-C contexts, 26 are correct, and with a rate of 90%.

Regarding the TP projection, Haznedar (2001) shows that the productive use of INFL-related elements such as copula *be* starts with sample 8, i.e., after more than 5 months of exposure. Although auxiliary *be* appears early in the data, Haznedar states that the rate error of missing auxiliaries in samples 10-22 is more than 65%. In Mayyas's data, however, the use of copula *be* and auxiliary *be* appear productively from the very beginning. In sample 1, for example, there are 19 auxiliary *be* contexts with only 1 missing instance. Similarly, out of 14 copula contexts in sample 1, 12 have the copula *be*. Finally, Haznedar shows that modal verbs did not appear until sample 15 in Erdem's data. This contrasts with the results from my study which show that modal verbs appear very early and are produced frequently. In sample 1, there are 20 modal contexts, yet with no errors. However, one aspect of Mayyas's L2 grammar that seems to be shared with Haznedar's subject is that of tense and agreement morphology. As we saw in chapter 4, Mayyas failed to use the proper verbal inflections 36% of the time. I argued in that chapter that this does not seem to be a deficiency in Mayyas's grammar, as she is able to produce constructions that seem to depend on tense and agreement morphology. The problem as discussed earlier is just a performance limitation caused by communication pressure.

Moreover, an interesting finding that Mayyas seems to share with Haznedar's subject is that of transfer. Mayyas seems to transfer some aspects of her L1 grammar into her interlanguage. We saw in chapter 5 that she transfers resumptive strategy in relative clauses into her L2 English. Around 24% of Mayyas's relative clauses were formed with resumptive pronouns, a phenomenon that has not been reported for child L2A before. I suggested in that chapter that resumptive strategy does not seem to affect Mayyas's interlanguage grammar as they represent only 24% of the whole data. Additionally, chapter 5 also shows that L1 influence may occur in other constructions like T-to-C movement in yes/no questions and wh-questions. In sum, this section shows that Mayyas seems to be a faster learner than Erdem in numerous morphosyntactic aspects. Why is that? One possible

explanation, as stated earlier, is that Mayyas had more exposure to the input and also had systematic instruction in the target language, unlike Erdem. However, another possible explanation would attribute this matter to individual differences. This is in fact possible, since we saw above that the three children in Brown's (1973) study differ in their development of grammatical morpheme acquisition. While Eve reached the 90% level around the age 2;3, Sarah reached this stage much later, by the age of 4.

Overall, the results of this study show that child L2 differs from child L1 with respect to the availability of functional features. Therefore, if Radford's maturational account of L1 is correct, then my results should be on the right track, since Mayyas had already passed the pre-functional stage in her first language. In fact, most studies on child L2A (Haznedar, 2001, 2003; Lakshmanan and Selinker, 1994; Grondin and White, 1996; among others) show that all functional categories are present in child L2 grammar from the earliest stages of development. In addition, the results of this study seem to show that child L2A is also different from adult L2A with respect to the availability of functional categories/features, the patterns of variability and the nature of the L1 influence (cf. Vainikka and Young-Scholten 1996)[82].

However, the discussion in this section leads us to the debate of whether child L2 resembles child L1/adult L2 in the domain of syntax/morphology as recently discussed in Meisel (2008), Schwartz (2003, 2004) and Weerman (2002). Meisel (2008), for example, argues that child L2 resembles adult L2 in the domain of morphology. Schwartz (2004), by contrast, claims that it is in the domain of morphology that child L2 is like child L1 and both are distinct from adult L2. This comparison merits investigation since child L2 shares some similarities and differences with respect to the other two groups of learners. On the one hand, child L2 resembles child L1 in the age factor, but, on the other, resembles adult L2 as both groups already have knowledge of another language, namely an L1. In this regard, the findings reported in the present work suggest that Mayyas's L2 grammar appears to be different from child L1 and adult L2 both syntactically and morphologically.

Let us start with morphology first. We saw in chapter 4 that Mayyas differs from child L1 in the acquisition of a number of morphological aspects. First, chapter 4 shows

[82] The critical period hypothesis comes into play when considering adult L2 performance with regard to the availability of functional categories.

that morphological items like copula *be* and auxiliary *be* are among the first elements to appear in Mayyas's data. Copula *be* and auxiliary *be* are produced productively from sample 1 on, a finding that most child L2 studies confirm (Haznedar 2001, Dulay and Burt 1974; Lakshmanan 1994b, 1998; Ionin and Wexler 2002). On the contrary, however, research from child L1A (e.g., Brown 1973; Radford 1990) reports that young children acquiring English go through a stage where they omit copula *be*. According to Brown (1973), children acquiring English fully acquire this morpheme by the age of 2;3-4;1. Likewise, Mayyas also developed auxiliary *be* in a relatively similar way to copula *be*. However, unlike Mayyas, Brown has shown that the development of auxiliary *be* in early child English is acquired late compared to the other morphemes studied. In fact, the auxiliary *be* is roughly considered the latest morpheme to be acquired among the other 14 morphemes. Finally, the acquisition of modal verbs in Mayyas's data seems to follow the same developmental path as copula *be* and auxiliary *be* which differs from the acquisition of modals in child L1A as argued for in Radford (1990). Radford has argued that children acquiring English as their first language tend to omit modal verbs in the early stages of acquisition. However, one important area that Mayyas seems to share with child L1 learners is that of missing verbal inflections. Like child L1, Mayyas appears to alternate between finite and nonfinite verb forms in contexts where only finite is possible. Even though this could be considered a point which both groups of learners seem to share, the interpretations of this phenomenon do not seem to converge for both grammars. While most accounts on child L2A (e.g., Haznedar 2001) consider the uninflected verb forms to be a mapping problem, child L1 studies consider it a deficiency (e.g., Radford 1990).

Now let us see how Mayyas differs from child L1A syntactically. In fact, there is ample evidence that Mayyas's L1 grammar differs from the corresponding grammar of child L1 in several aspects. First, Mayyas's L2 grammar seems to differ from her L1 in terms of usage of subject case marking and in terms of null subjects. We saw in chapter 4 that Mayyas rarely drops subjects in contexts where overt subjects are required. Overall, null subjects in Mayyas's data represent less than 1% for the entire period, a fact supported by most studies on child L2A (Lakshmanan 1994a; Haznedar 1997, 2001; Geçkin and Haznedar 2008; Grondin 1992). However, L1A research has shown that early child language is characterized by a stage where lexical subjects are missing (Haman 2002;

Hyams 1986; Radford 1990). Children between the ages of 2-3 optionally omit sentential subjects whether or not their languages allow them. Moreover, concerning the use of subject case, the data presented here clearly show that Mayyas never produces case errors. In all instances of pronominal subjects, we find only nominative case with no exceptions. She is also able to distinguish between nominative, accusative and genitive case depending on the context. Similar findings have been reported in the field of child L2A (Haznedar 2001; Geçkin and Haznedar 2008; Ionin and Wexler 2002; Gavruseva and Lardiere 1996; Lakshmanan 1994b). This, however, contrasts with results from L1A research which confirm that English-speaking children produce nominative as well as non-nominative subject pronouns in the early stages of acquisition (Radford, 1990; Vainikka, 1994; Rispoli, 1994). Moreover, child L2A and child L1A also appear to differ with regard to the acquisition of yes/no questions and wh-questions. While child L1A research shows that English-speaking children go through one or more stages where these types of questions lack subject-auxiliary inversion (Klima and Bellugi 1966; Guilfoyle and Noonan 1992; Radford 1990, 1994), child L2A research reports no stages which lack such inversion (Haznedar 2003, Gerbault 1978; Lakshmanan and Selinker 1994; Lakshmanan 1994b).

To sum up this section, I have shown that child L2A is different in most syntactic, as well as morphological, aspects from child L1A. Both groups of learners seem to differ with respect to the acquisition of copula *be*, auxiliary *be* and modal verbs, which confirms that both learners differ morphologically, contrary to Schwartz's claim. Likewise, this section has also shown that child L2 differs from child L1 in several syntactic aspects, these include null subjects, case, yes/no questions and wh-questions.

In this section, I argue that child L2 learners do not have the same developmental path as adult L2 learners both syntactically and morphologically. Let us consider syntax first. We saw in the previous chapters that child L2 learners differ from adult L2 learners in the acquisition of null subject, yes/no questions and wh-questions. However, one of the main reasons researchers consider child L2 learners to be similar to adult L2 learners is that both learners already have another language in place, which may result in language transfer. Although Mayyas's L2 English appears to be influenced by her L1, there is ample evidence that this influence is limited. We saw in chapters 4 and 5 that while Arabic and English differ from each other in numerous morphosyntactic aspects, including null subject,

word order, question formation, etc., L1 influence in these constructions is almost non-existent. This suggests that there are more differences than similarities between child L2 and adult L2 learners, contrary to Schwartz's claim. Now what about morphology? The most important difference in this regard concerns the acquisition of verbal morphology. While both L2 learners have difficulties with verbal inflections, they seem to differ both quantitatively and qualitatively. As we saw in chapter 4, while Mayyas, Erdem and most L2 children whose data reported here have reached more than 50% in the acquisition of verbal inflection in less than a year of exposure, Patty, an adult learner (Lardiere 1998a, 2000, 2007) did not reach the 5% level even after 18 years of constant exposure to the target language, which suggests a fossilization, a phenomenon not reported for child L2A. In sum, this section has shown that child L2 learners differ from adult L2 learners in numerous morphosyntactic aspects. Therefore, based on the argument reported here, it is safe to argue that child L2A, at least in the case of Mayyas, also differs morphologically from adult L2A.

6.5 Conclusion

In this study, I have argued that on the basis of the L2 data from a child L2 learner of English, feature acquisition/assembly is operative from the very beginning. My informant is able to carry out a number of syntactic operations related to both the TP and the CP systems from the earliest data available. This critically challenges several hypotheses regarding the developmental course that L2 learners (especially children) follow in the acquisition of language, in which the role of functional categories/features are non-existent (e.g., Mobaraki, Vainikka and Young-Scholten 2008). Contrary to these proposals, our findings provide empirical evidence suggesting that child L2 learners not only recognize functional features, but are also able to integrate them into their language system from early on. As discussed in chapters 4 and 5, Mayyas's L2 grammar contains both simple and complex utterances. She is in fact able to form complex questions, tensed embedded clauses and relative clauses introduced by complementizers and relativizers. Although Mayyas's interlanguage system seems to be rather mature from a developmental perspective, her L2 English is by no means complete. As discussed above, Mayyas seems to have some problems with inflectional morphology almost throughout the data. She appears to produce both finite and non-finite verb forms in contexts where only finite are allowed. However,

we proposed in chapter 4 that infinitive forms in Mayyas's interlanguage are in fact finite. I suggest that Mayyas's missing inflections are best explained under the MSIH which emphasizes that the problem of missing tense and agreement represent a mapping problem rather than a deficit in the interlanguage grammar. Another problem with Mayyas's interlanguage system concerns her use of resumptive pronouns in contexts where only gaps are possible. We proposed in chapter 5 that resumptive pronouns in Mayyas's grammar are the result of transfer from her L1 Arabic, a language that allows resumption in certain positions.

This study also discussed potential similarities and differences between child L2 and child L1A, as well as child L2 and adult L2A, both morphologically and syntactically. While Meisel argues that child L2 resembles adult L2 in the domain of morphology, Schwartz (2004), by contrast, claims that it is in the domain of morphology that child L2 is like child L1 and both are distinct from adult L2. However, in the current work, we saw that Mayyas appears to differ morphologically from both groups of learners. While child L1 seems to go through a stage where copula *be*, auxiliary *be* and modal verbs are lacking, Mayyas on the other hand did not experience such a stage. Moreover, Mayyas also seems to differ from adult L2 learners in the acquisition of morphology. Although Mayyas does alternate between inflected and uninflected verbal forms, she was able to acquire (in the sense of Brown 1973) the right inflection after less than a year of exposure, unlike Patty (the L2 learner from Lardiere 2000) who could not acquire the morphological marking even after 18 years of constant exposure to the L2 input. Now what about syntax? Is Mayyas similar to child L1 or adult L2? The simple answer is that Mayyas resembles neither group of learners. We saw above that Mayyas differs from child L1 in the acquisition of overt subjects, case assignment and question formation. Mayyas also appears to differ from adult L2 learners in the acquisition of questions as we saw in chapter 5.

However, although there are clear transfer effects on the development of relative clauses throughout the data, there are no other areas where L1 influence is detected even though the two languages differ in numerous morphosyntactic aspects. That the L1 effect in child L2A is very limited also finds support from other child L2A studies. Haznedar (2001) reports that while Erdem transfers the VP headedness into his interlanguage grammar in the earlier few samples, the other morphosyntactic areas are immune to the L1 effect. However,

the fact that Mayyas differs from child L1 both syntactically and morphologically does not imply that her L2 grammar is not guided by the same innate principles as child L1. While Mayyas's L2 grammar deviates from the target grammar in certain aspects, it still falls within the boundaries of UG. In other words, UG seems to continuously guide and constrain the time course of acquisition in child L2A.

I would like to conclude that further research on the status of functional features in child L2 grammars from experimental and spontaneous data is needed. This will allow to further determine the role of the L1 and access to innate mechanisms in child L2 development. Moreover, since the issue of resumptive pronouns has not been attested in other child L2 studies, advanced experiments for young L2 children would be worth investigating. In addition, it would be revealing to study more L2 children whose L1/L2 are languages other than English, French and Spanish. Examining more source and target languages will provide a better understanding of the issues concerning the source of knowledge available to L2 children.

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Appendix

Table 1: Number of pronominal subjects								
Sample	I	You	She	He	We	They	It	Total
1	34	21	6	8	3	0	16	88
2	34	51	0	6	0	6	45	142
3	86	79	12	10	4	4	40	235
4	85	25	16	4	9	0	60	199
5	27	33	4	6	0	1	14	85
6	48	40	6	2	0	5	27	128
7	41	20	0	29	0	10	24	124
8	33	6	0	2	1	0	10	52
9	55	33	1	11	0	1	15	116
10	52	18	1	9	6	2	8	96
11	83	24	0	3	3	9	23	145
12	53	52	2	66	6	5	36	220
13	50	30	1	7	0	0	29	117
14	55	92	15	12	2	3	44	223
15	81	29	13	2	4	5	14	138
16	63	35	2	8	3	2	9	122
17	69	37	0	0	3	9	14	132
18	45	24	0	1	3	2	12	88
Total	994	649	79	186	47	64	440	2450
Percen.	40.57%	26.48%	3.22%	7.59%	1.91%	2.61%	17.59%	100%

Table 2: Number and percentage of overt vs. null subjects					
Sample	**null**	**overt**	**total**	**% null**	**% overt**
1	2	105	107	1.86	98.14
2	0	197	197	0.0	100
3	0	248	284	0.0	100
4	0	206	206	0.0	100
5	1	91	92	1.09	98.91
6	0	150	150	0.0	100
7	0	149	149	0.0	100
8	0	58	58	0.0	100
9	0	127	127	0.0	100
10	0	113	113	0.0	100
11	1	173	174	0.57	99.43
12	1	229	230	0.43	99.57
13	0	114	114	0.0	100
14	0	269	269	0.0	100
15	0	194	194	0.0	100
16	2	173	175	1.14	98.86
17	0	202	202	0.0	100
18	1	170	171	0.58	99.42
Total	8	2968	2976	0.27	99.73

Table 3: Number of pronominal objects								
Sample	Me	You	Her	Him	Us	Them	It	Total
1	3	3	1	1	0	3	26	37
2	13	9	0	2	0	0	16	40
3	18	3	1	0	0	3	12	37
4	4	0	2	0	0	3	22	31
5	9	0	2	2	0	2	13	28
6	6	1	0	1	0	3	8	19
7	6	4	0	4	0	0	3	17
8	3	1	0	0	0	0	13	17
9	5	1	0	2	3	3	7	21
10	4	4	0	4	0	1	4	17
11	7	3	4	0	0	3	7	24
12	5	3	0	5	0	1	9	23
13	1	0	2	0	0	5	21	29
14	7	2	3	2	0	11	26	51
15	11	6	1	0	0	8	15	41
16	14	3	1	0	2	2	28	50
17	13	6	2	0	1	5	37	62
18	10	1	0	0	3	5	23	42
Total	151	50	19	23	9	58	290	600
Percent.	26.1%	8.3%	3.1%	3.8%	1.5%	9.6%	48.3%	100%

Table 4: The distribution of copula *be*					
Sample	**Copula *be***	**Missing copula *be***	**Total**	**% *be***	**% missing *be***
1	18	1	19	94.73	5.27
2	56	1	57	98.24	1.76
3	42	0	42	100	0
4	49	2	51	96.07	3.93
5	9	0	9	100	0
6	30	0	30	100	0
7	39	0	39	100	0
8	12	0	12	100	0
9	32	2	34	94.11	5.89
10	16	0	16	100	0
11	30	0	30	100	0
12	46	0	46	100	0
13	22	2	24	91.66	8.34
14	54	0	54	100	0
15	21	0	21	100	0
16	36	0	36	100	0
17	41	0	41	100	0
18	37	0	37	100	0
Total	590	8	598	98.66	1.34

Table 5: The distribution of auxiliary *be*					
Sample	**Aux *be***	**Missing aux *be***	**Total**	**% aux *be***	**% missing *be***
1	12	2	14	85.71	14.29
2	4	0	4	100	0
3	6	0	6	100	0
4	4	2	6	66.66	34.34
5	1	0	1	100	0
6	5	0	5	100	0
7	7	0	7	100	0
8	2	0	2	100	0
9	6	0	6	100	0
10	15	0	15	100	0
11	20	0	20	100	0
12	18	2	20	90	10
13	15	1	16	93.75	6.25
14	16	2	18	88.88	11.12
15	6	0	6	100	0
16	5	0	5	100	0
17	15	1	16	93.75	6.25
18	7	0	7	100	0
Total	164	9	173	94.80	5.20

Table 6: The distribution of modal verbs										
Sample	**Can**	**Can't**	**Could**	**Couldn't**	**Will**	**Won't**	**Would**	**Wouldn't**	**Should**	**Total**
1	12	1	0	0	7	0	0	0	0	20
2	27	3	2	0	13	0	0	0	0	45
3	48	3	1	0	5	0	0	0	0	57
4	25	1	4	0	4	0	0	0	0	34
5	17	1	0	0	5	0	0	0	0	23
6	15	0	3	0	5	0	0	0	0	23
7	6	1	12	0	1	0	0	0	0	20
8	2	0	3	0	7	0	0	0	0	12
9	1	1	12	0	0	0	0	0	0	14
10	2	2	8	0	9	1	0	0	3	25
11	3	0	6	0	7	0	0	0	4	20
12	1	4	8	2	10	0	1	2	0	25
13	2	0	3	0	4	1	0	0	0	10
14	4	0	14	0	3	1	0	0	3	25
15	9	4	6	0	4	0	0	1	1	24
16	4	0	7	0	5	0	0	0	0	16
17	24	0	18	0	3	0	0	0	1	46
18	9	0	9	0	2	0	0	0	0	20
Total	211	24	116	2	94	3	1	3	12	466
Percent	45.27	5.51	24.89	0.42	20.17	0.64	0.21	0.64	2.57	100

Table 7: The distribution of 3SG-S					
Sample	**Inflected 3SG**	**Uninflected 3SG**	**Total**	**% Inflected 3SG**	**% Uninflected 3SG**
1	0	5	5	0	100
2	5	7	12	41.66	58.34
3	8	7	15	53.33	46.67
4	8	9	17	47.05	52.96
5	1	3	4	25	75
6	7	4	11	63.63	36.37
7	8	8	16	50	50
8	0	1	1	0	100
9	10	1	11	90.91	9.09
10	2	5	7	28.57	71.43
11	5	1	6	83.33	16.67
12	30	5	35	85.71	14.29
13	5	2	7	71.43	28.57
14	23	3	26	88.46	11.54
15	1	0	1	100	0
16	10	0	10	100	0
17	21	1	22	95.54	4.46
18	25	2	27	92.59	7.41
Total	169	64	233	72.53	27.47

Table 8: The distribution of regular past tense *-ed*					
Sample	**Inflected Regular**	**Uninflected Regular**	**Total**	**% Inflected Regular**	**% Uninflected Regular**
1	1	2	3	33.33	66.67
2	0	2	2	0	100
3	2	1	3	66.67	33.33
4	6	2	8	75	25
5	0	1	1	0	100
6	1	2	3	33.33	66.67
7	3	1	4	75	25
8	0	1	1	0	100
9	4	2	6	66.66	33.34
10	1	3	4	25	75
11	4	2	6	66.66	33.34
12	6	2	8	75	25
13	2	1	3	66.67	33.33
14	1	0	1	100	0
15	7	1	8	87.5	12.5
16	2	0	2	100	0
17	1	0	1	100	0
18	1	0	1	100	0
Total	42	23	65	64.61	35.39

Table 9: The distribution of irregular past tense					
Sample	**Inflected Irregular**	**Uninflected Irregular**	**Total**	**% Inflected Irregular**	**% Uninflected Irregular**
1	7	5	12	58.33	41.67
2	13	6	19	68.42	31.58
3	13	9	22	59.09	40.91
4	18	8	26	69.23	30.77
5	1	8	9	11.11	88.89
6	7	4	11	63.63	44.45
7	7	4	11	63.63	44.45
8	6	2	8	75	25
9	13	4	17	76.47	23.53
10	5	2	7	71.48	28.58
11	16	1	17	94.11	5.89
12	16	6	22	72,72	27.28
13	8	0	8	100	0
14	16	0	16	100	0
15	18	1	19	94.73	5.27
16	8	11	19	42.10	57.90
17	8	2	10	80	20
18	9	1	10	90	10
Total	189	74	263	71.86	28.14

Table 10: Finite and non-finite verb forms		
Sample	**Finite**	**Nonfinite**
1	8(40%)	12(60%)
2	20(62.5%)	12(37.5%)
3	23(57.5%)	17(42.5%)
4	32(62.74%)	19(37.26%)
5	2(14.28%)	12(85.72%)
6	15(60%)	10(40%)
7	18(58.06%)	13(41.94%)
8	6(60%)	4(40%)
9	27(79.41%)	7(20.59%)
10	8(44.44%)	10(55.56%)
Total	203(63.63%)	116(36.37%)

Table 11: The distribution of auxiliaries in yes/no questions											
Sample	**Can**	**Could**	**Is**	**Did**	**Do**	**Does**	**Am**	**Are**	**Have**	**Should**	**Were**
1	5	0	0	0	2	0	0	0	0	0	0
2	21	1	2	1	10	0	0	0	0	0	0
3	32	0	1	3	8	0	0	1	0	0	0
4	15	2	6	2	5	0	0	0	0	0	0
5	12	0	1	1	1	0	0	0	0	0	0
6	9	0	0	3	5	0	0	0	0	0	0
7	0	12	6	1	3	1	0	0	0	0	0
8	1	2	1	0	0	0	0	0	0	0	0
9	1	8	1	0	6	0	0	0	0	0	0
10	3	1	1	0	3	0	1	1	0	1	0
11	3	5	6	1	2	6	0	0	2	2	2
12	0	4	0	0	10	0	0	2	0	0	0
13	2	0	4	0	8	0	0	0	0	0	0
14	4	5	7	0	19	5	0	1	1	0	0
15	4	5	5	2	5	2	0	1	2	1	0
16	2	7	1	0	3	0	0	1	0	0	0
17	7	19	7	0	3	0	0	2	0	0	0
18	0	9	6	1	2	1	1	1	0	0	0
Total	121	80	55	15	95	15	2	10	5	4	2
Percent	30%	20%	14%	4%	24%	4%	0.5%	2%	1%	0.9%	0.5%

Table 12: Number and percentage of *yes–no* questions			
Sample	**T-to-C Movement**	**Intonation**	**Total**
1	7	2	9
2	35	1	36
3	45	2	47
4	28	2	30
5	15	1	16
6	17	0	17
7	23	3	26
8	4	0	4
9	16	2	18
10	11	2	13
11	29	3	32
12	16	2	18
13	14	1	15
14	42	2	44
15	27	0	27
16	14	0	14
17	38	0	38
18	21	1	22
Total	402	24	426
Percentage	94%	6%	100%

Table 13: Distribution of wh-words								
Sample	**What**	**Where**	**When**	**Who**	**Which**	**How**	**Why**	**Total**
1	7	1	0	2	0	0	0	10
2	2	1	0	0	0	0	0	3
3	3	3	0	2	3	0	2	13
4	6	0	0	0	0	1	1	8
5	4	3	0	0	0	0	1	8
6	13	1	1	1	4	0	0	20
7	5	2	0	1	0	0	0	8
8	5	1	0	0	0	1	0	7
9	4	5	0	0	1	2	0	12
10	5	2	0	1	0	0	2	10
11	2	0	6	2	2	1	1	14
12	2	2	0	0	0	4	2	10
13	1	1	1	0	0	1	0	4
14	7	2	1	1	0	14	1	26
15	10	5	0	2	0	1	1	19
16	6	2	0	0	0	0	5	13
17	6	1	1	0	0	4	1	13
18	8	2	1	0	1	3	0	15
Total	107	34	11	12	11	31	18	214
Percent.	50%	15.8%	5.1%	4.4%	5.6%	14.4%	8.4%	100%

Table 14: Number and percentage of non-subject wh-questions			
Sample	**T-to-C Movement**	**No T-to-C movement**	**Total**
1	9	0	9
2	2	1	3
3	8	2	10
4	7	0	7
5	5	2	7
6	13	5	18
7	7	2	9
8	7	0	7
9	12	0	12
10	9	1	10
11	12	1	13
12	10	0	10
13	2	0	2
14	23	0	23
15	15	0	15
16	13	0	13
17	9	0	9
18	16	0	16
Total	179	14	193
Percentage	92%	8%	100%