Child Second Language Acquisition of English: A Longitudinal Case Study of a Turkish-speaking child

by

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Canım anneme ve babama

Sevgilerimle

To my parents

with love

ABSTRACT

Child Second Language Acquisition of English: A Longitudinal Case Study of a Turkish-speaking child

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This dissertation is a longitudinal case study of child second language acquisition within the Principles and Parameters framework. The spontaneous English data covering a period of 18 months come from a Turkish-speaking child who was 4;3 year-old at the start of data collection.

The main theoretical issues addressed in this dissertation are as follows: (i) the issue of L2 initial state and the extent of L1 influence; (ii) the similarities and differences between child L1 acquisition and child L2 acquisition vs. the similarities and differences between child L2 acquisition and adult L2 acquisition); (iii) the question of the presence of functional categories in early child L2 acquisition.

The results show that: (i) even a very young child L2 learner initially utilises L1 knowledge; (ii) functional categories are present in child L2 acquisition.

The dissertation consists of eight chapters: 1) Introduction; 2) Early work on child L2 acquisition; 3) Linguistic theory and language ccquisition; 4) L1 influence on child L2 acquisition; 5) The acquisition of the IP system; 6) Optional Infinitives in child L2 acquisition; 7) The acquisition of the CP system; 8) Conclusion.

Declaration

I declare that this thesis, which I submit for the degree of Doctor of Philosophy at the University of Durham, is my own work and is not the same as any which has previously been submitted for a degree in this or another university.

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Acknowledgements

It all began on a typically rainy day in Durham. I realised that doing an MA could only be a starting point in one's academic life. I had to learn more. Suddenly, I found myself in a big forest, full of syntactic trees. It took me quite a while to learn how to climb up those trees. Sometimes I fell out of the tree without knowing why I was going up. In some courses our trees got taller and taller, including AgrSP and TP and in others I was swinging on an S level.

In this syntactic world, I would like to thank Joe Emonds for creating a nice academic atmosphere where research, constant support and encouragement were the main issues. I was the first PhD student in his new research program. Now I am leaving, and I have to ask someone as I really do not know the exact number of PhD students in the department. Warm thanks also go to Maggie Tallerman for her crosslinguistic syntax courses. I will never forget the day I was doing a presentation on Breton in her syntax seminar. By definition, it was a crosslinguistic seminar and as a native speaker of Turkish, I had to do my bit: something on Breton. I never had enough time to attend S.J's or Mike's phonology lectures, although I always wanted to. But, they deserve special thanks for the big smiles on their faces.

Walking up and down in the theoretical world for more than a year, I got extremely tired and was looking for the entrance to the empirical work. A little bird told me that a young Turkish boy, Erdem, arrived in Durham with his parents. I would never have imagined how difficult and also how pleasurable it would be to work with a young child for such a long time. I must admit at the beginning it was rather difficult to make him speak in English. There were times he did not want to speak, there were times he was chatty more than ever, there were times he was angry with me, and there were times he had a good sense of humour, as shown in the following lines.

Belma: Why do you always give me short answers?

Erdem: I like giving little answers, if I give if I always give big answers, my mouth +/.

Belma: Your mouth gets tired? (2 June 1995)

Someone who has never collected longitudinal data may not realise how inconvenient it can be to visit a family three or four times a month for nearly three years. For that alone, I will always be grateful to "my little friend" Erdem and to his parents who were always supportive even when they really did not have the time. I also thank Erdem's parents for being loyal to our mutual secret: the English-only rule during the data collection period. I apologise for making them speak English at all times until the day before they left the UK.

Perhaps, data collection was the first step, followed by technical work which took quite a long time. Then came the analysis of the data and the writing process. I can never thank my supervisor, Bonnie D. Schwartz, enough for her generous help and support throughout this study. She read and offered suggestions on every chapter of this dissertation, which made me rethink and clarify ideas in this study. I am also indebted to her for helping me prepare for conference talks and write conference papers. Thanks to her careful eyes.

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My last word goes to my family: my dear parents, brothers, sisters, nephews and nieces whose constant love has always helped me throughout my life. I thank my elder brother for keeping my eyes open with world-wide discussion panels in his incredibly long letters. Have I ever known anybody else who speaks and writes in Turkish so beautifully?

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Many second language acquisition (L2) studies over the last 10 years have focussed on a principles and parameters model of acquisition. The aim has been to determine whether Universal Grammar (UG), an innate system of parameterised principles assumed to constrain first language acquisition (L1), also guides L2 acquisition.

Although much work within this framework has focussed on adult L2 acquisition, several recent studies have examined the acquisition of English by child learners (e.g. Hilles 1986, Hilles 1991; Lakshmanan 1994, Lakshmanan 1993/94; Lakshmanan & Selinker 1994).

However, no study to date has considered the acquisition of English syntax by a Turkish-speaking child. The aim of this study is to contribute to the area of child L2 acquisition on the basis of longitudinal data from a Turkish-speaking child (Erdem) who started acquiring English at age 4.3 in a naturalistic setting.

1.1 An overview

The theory of UG has led to important theoretical and empirical advances in both L1 and L2 acquisition. Much research on L2 acquisition in the 1980s explored whether or not L2 grammars are subject to the constraints imposed by UG on L1 grammars. Among others, there are mainly two opposing views with regard to the "UG-accessibility" problem. For the proponents of a UG-based L2 model, similar to L1 learners, L2 learners also make use of UG-based knowledge in acquiring a second language (e.g. Flynn 1987; Schwartz 1991, 1992; Thomas 1993; White 1985, 1989, 1990/91). For others, (adult) L2 acquisition is

fundamentally different from L1 acquisition and is mediated by general problem-solving strategies, but these strategies are not necessarily linguistic-specific (e.g. Bley-Vroman 1989, 1990; Clashen & Muysken 1986, 1989; Schachter 1989, 1990).

What is important, however, is that no matter what theoretical position L2 researchers adopt, there are certain facts on which they all agree. Perhaps it is uncontroversial to assume that some of the processes which characterise L1 acquisition may not apply to L2 in the same way, as L2 learners have previous instantiations of another language and might tend to transfer abstract properties of their L1 to the L2. Moreover, with respect to the issue of ultimate attainment, it is generally assumed that while L1 learners reach a perfect mastery of their language, (adult) L2 learners do not. In other words, unlike L1 acquisition, the end result of L2 acquisition is rarely native-like.

It is important to point out, however, that in contrast to adult L2 learners it is generally assumed that child L2 learners are typically successful with regard to the issue of ultimate attainment in an L2 (e.g. Felix 1985, 1991; Johnson & Newport 1989). In this regard, compared to the non-native-like nature of adult L2 acquisition, child L2 learners' success has been generally taken as evidence for the view that the L2 child constructs a grammar in the same fashion as the L1 child, and therefore child L2 grammars are assumed to be constrained by UG. However, the fact is that like adult L2 learners, child L2 learners have also knowledge of a previous language. That is, the starting point of non-native grammatical development is different from that of L1 acquisition both in adult and child L2 acquisition. Hence comparisons of child L2 acquisition with both child L1 acquisition and adult L2 acquisition should provide us with a better understanding of the UG-based analyses of L2 acquisition. The motivation for this study is therefore to investigate the similarities and differences firstly between child L1 acquisition and child L2 acquisition, and secondly between child L2 acquisition and adult L2 acquisition.

With respect to differences between child L1 and child L2 acquisition, one of the topics considered in this dissertation is the issue of L2 initial state and the extent of L1 influence. L2 initial state which has been addressed in recent studies refers to the starting point in L2 acquisition (e.g. Eubank (1996); Schwartz & Sprouse 1996; Vainikka & Young-Scholten (1996a, 1996b). While many researchers today assume that L2 acquisition is guided by UG, there is no consensus among L2 researchers as to the precise charaterisation of the L2 initial state. Within the framework of generative L2 acquisition research there are mainly three recent hypotheses that specifically address this research topic. According to the Full Transfer/Full Access hypothesis of Schwartz & Sprouse (1996), the entirety of the L1 grammar defines the L2 initial state in the sense that all of the principles and parameters of the L1 carry over to L2 acquisition. Following the Weak Continuity Approach, Vainikka & Young-Scholten (e.g. 1994, 1996a), however, argue that the extent of language transfer in L2 acquisition is limited: only lexical categories and their linear orientation transfer into the L2 initial system. In his Valueless features hypothesis Eubank also subscribes to the idea that L1 transfer is restricted. For Eubank, the L2 initial state comprises all of the L1 grammar but not the values of features under functional heads. These three approaches to the L2 initial state will be addressed in detail in this dissertation.

While L2 research has generally focussed on the question of L1 influence in adult L2 acquisition, little work has explored child L2 acquisition in this respect, in particular in the early stages of acquisition. Perhaps in previous studies this was partly due to methodological problems in that data collection started after the learner had been exposed to the L2 for some time or the learner had passed through a "silent period" (e.g. Cancino, Rosansky & Schumann 1974, 1978; Hakuta 1975). Since the data analysed in this study come from very early stages of child L2 acquisition, I first investigate whether and, if so, to what extent the subject of this study, Erdem, initially utilised properties of the L1 in his early L2

acquisition. I next address the question of whether functional categories were present in his early child L2 acquisition.

The analyses presented in this study are based on the transcripts of production data collected on average three times a month and cover a period of 18 months, virtually from the beginning of the acquisition process.

In the following section, I will briefly present the outline of the dissertation.

1.2 The outline of the dissertation

This thesis is organised as follows. Chapter 2 mainly deals with early research on child L2 acquisition carried out in the 1970s. In the first section of the chapter we discuss two major approaches adopted in early L2 studies: Contrastive Analysis hypothesis and the Creative Construction hypothesis. For the proponents of the Contrastive Analysis hypothesis, those properties of the L2 which are similar to the L1 will be easy to learn, while those features different from the learner's L1 will be more difficult, suggesting that the learner's L1 plays a major role in L2 acquisition. In contrast, the Creative Construction hypothesis holds that previous L1 knowledge does not play a central role in L2 acquisition. Rather, similar to L1 acquisition, L2 acquisition is a creative process which is guided by innate principles. However, the question of to what extent the processes involved in early child L2 acquisition are similar to those of L1 acquisition was never addressed. Both hypotheses will be critically discussed and the reasons why they came under serious attack will be addressed. We then move on to a discussion of early child L2 acquisition studies, in particular morpheme order studies and developmental studies, with special emphasis on the development of negation and questions, as these phenomena will also be addressed in this dissertation (e.g. Cancino *et al.* 1974, 1978; Dulay & Burt 1972, 1973, 1974a, 1974b; Hakuta 1975, 1976; Milon 1974, Ravem 1968, 1970; Wode 1976, 1977).

Chapter 3 reviews research on L2 acquisition within the principles and parameters approach and examines how recent advances in linguistic theory have influenced both L1 acquisition and L2 acquisition research. First, a number of arguments will be presented for UG in L1 acquisition. We then deal with the question of whether or not L2 learners also make use of an innate structure in the form of UG, an issue which has been debated since the 1980s. In light of the fact that L2 learners have previous instantiations of UG principles and parameters, we then discuss the issue of L2 initial state in L2 acquisition. With respect to the question of L1 influence, three recent hypotheses on the issue of language transfer will be reviewed: Vainikka and Young-Scholten's Minimal Trees hypothesis (1994; 1996a; 1996b), Eubank's Valueless features hypothesis (1993/94, 1996) and Schwartz and Sprouse's Full Transfer/Full Access hypothesis (1996). As outlined above, according to Vainikka & Young-Scholten, only lexical projections and their linear representations transfer into the initial representation of L2 while functional categories do not. On Eubank's account, both lexical and functional categories along with their linear orientation transfer into L2. However, strength of inflection associated with functional categories does not transfer. With their Full Transfer/Full Access hypothesis Schwartz and Sprouse (1996) claim that the initial state of the L2 acquisition is entirely determined by the properties of the L1.

Chapter 4 discusses the earliest data in Erdem's L2 English. First, detailed background information about Erdem, his L1 Turkish and the data collection procedure will be presented. We then review theoretical assumptions adopted in this dissertation, with special reference to the clause structure in English and Turkish. With regard to the earliest data in Erdem's L2 English, we examine the development of Verb Phrase (VP) and negation. After presenting the observed facts, we analyse the data and discuss the findings in terms of recent theorizing on the issue of L1 influence. The results of this study show that child L2 acquisition, like adult L2 acquisition, is subject to language transfer. In more specific terms

on the basis of Erdem's early data, I argue that contrary to Vainikka & Young-Scholten's Minimal Trees hypothesis, language transfer is not limited to lexical categories.

The second issue addressed in this dissertation concerns the question of whether or not functional categories IP and CP are present in Erdem's early L2 grammar. In recent theories on L2 acquisition, some researchers argue that functional categories are present in early L2 grammars (e.g. Grondin & White 1996; Lakshmanan 1993/94; Schwartz & Sprouse 1994, 1996). Others (e.g. Vainikka & Young-Scholten 1994, 1996) argue that early L2 grammars are purely lexical in nature and thus are characterised by the absence of functional categories. Our aim in Chapter 5 is to investigate whether or not there is evidence for IP-related elements in Erdem's L2 grammar. A number of findings are presented: utterances with the verb *be* both as an auxiliary and a copula; the use of modal verbs; the development of inflectional morphology, 3sg *-s* and past tense forms and the distribution of overt subjects and nominative subjects. We then discuss the findings in light of the Minimal Trees hypothesis.

Chapter 6 examines the development of verb inflection and the demise of null subjects in Erdem's L2 grammar from the perspective of the phenomena of Optional Infinitives/Root Infinitives. Crosslinguistic work on L1 acquisition has revealed that young children go through a stage during which both finite and nonfinite verb forms are optionally used in main clause declaratives. This is known as the Optional Infinitive stage. First, we examine work which explores the relationship between finiteness and null subjects in L1 acquisition. We then review how recent approaches in L1 acquisition address this phenomenon. The hypotheses reviewed include Wexler's "Deficit in T" hypothesis, Hoekstra & Hyams's "Underspecification of NumP" hypothesis and Rizzi's Truncation hypothesis. According to Wexler (Bromberg & Wexler 1995; 1994), early child grammar lacks either the entire Tense (T) projection or the features related to T. Based on the observation that a much lower proportion of RIs is found in the

acquisition of languages with rich subject-verb agreement, Hoekstra & Hyams (1996) tie the optionality of verb inflection, of overt subjects and of definite determiners to the underspecification of Num(ber)P. In Rizzi's (1993/94, 1994) Truncation hypothesis, on the other hand, children may not project the full clause structure but can truncate it at a point below CP. The purpose of this chapter is to find out whether Erdem goes through a stage which mirrors the OI/RI stage of L1 acquisition, that is whether there is a phase in which inflection is 'optional', and if there is, whether there is a link between the form of the verb and the occurrence of null subjects.

Chapter 7 examines the acquisition of CP in Erdem's interlanguage. We first present assumptions about CP in English and then discuss the acquisition of CP-related elements in child L1 and child L2 acquisition of English. Next, we describe Erdem's data, focussing on the development of yes/no questions, wh-questions and embedded clauses. As in Chapter 5 the findings are again discussed with respect to Vainikka & Young-Scholten's theory of the development of functional categories.

Chapter 8 brings together the results of the previous chapters and presents a discussion of differences and similarities in child L1 and L2 acquisition, as well as in child L2 acquisition and adult L2 acquisition.

CHAPTER 2

EARLY STUDIES ON CHILD L2 ACQUISITION

2.0 Introduction

Recent advances in generative linguistics have influenced the study of both first language (L1) acquisition and second language (L2) acquisition. Over the last three decades, the number of studies on L1 acquisition and in particular on adult L2 acquisition has increased immensely, the focus being on the question of how linguistic theory informs and guides acquisition research.

Apart from several longitudinal and cross-sectional studies carried out in the 1970s, research on child L2 acquisition, however, is rather scarce. As this study investigates child L2 acquisition of English, we first present some background on early child L2 acquisition research.

This chapter has three major sections. Section 2.1 reviews the historical development of L2 acquisition research, focussing on two major traditions which influenced L2 research for decades, namely, the Contrastive Analysis hypothesis and the Creative Construction hypothesis. In Section 2.2, we present a discussion of early research on child L2 acquisition dealing with the morpheme order studies. Section 2.3 presents a critique of these early child L2 studies. In Section 2.4, we discuss longitudinal studies focussing on the development of negation and wh-questions. Finally, in Section 2.5 we conclude with a brief summary.

2.1 Second language acquisition

2.1.1 The Contrastive Analysis hypothesis

Early studies on L2 acquisition in the 1950s and 1960s were mainly based on the assumptions of the Contrastive Analysis (CA) hypothesis according to which difficulties that L2 learners face are related to differences between the L1 and L2.

It was assumed that by comparing the linguistic systems of the learner's L1 and L2, researchers and teachers would be able to predict the areas of difficulty in L2 acquisition and this would ultimately lead to more effective language teaching methodology. In his classic book *Teaching and Learning English as a Foreign Language*, Fries (1945) argues that the L2 learner builds up a set of habits for production and comprehension of a second language. Fries' primary concern was to design teaching materials which would allow the L2 learner to develop automatic and unconscious habits for the sound and structural systems of the target language. Following Fries' ideas, Lado (1957) hypothesised that the learner's errors could be predicted on the basis of comparing his/her L1 to the target language. In his view, the structures[1] which are similar in both languages will be easy to learn, but the ones which are different will cause difficulty, because when transferred they will deviate from the target forms and will have to be reanalysed. Thus, the basic idea is that the difficulties that L2 learners have can be determined through a contrastive analysis of the two languages involved.

The main thrust of the Contrastive Analysis model is rooted in the dominant psychological and linguistic frameworks of the time, namely, Behaviourism and Structuralism. Behaviourist theories are essentially based on observable behaviour, and in language learning the focus is placed primarily on the role of the environment. The main representative of this approach in the study of learning is Skinner (1957). Observing animals' responses to stimuli in laboratory experiments, Skinner drew conclusions about human language behaviour. For him, each utterance is uttered as a result of some verbal or non-verbal stimuli. If there is a stimulus, the person responds with an utterance. Thus, in his view, language is learned through observation of the world around the learner, in technical terms, through *operant conditioning*. This is a completely passive process and does not involve any kind of active learning by the learner.

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[1] Note that Lado was concerned with not only structural analyses of language but also cultural aspects of language learning. The L2 learner was assumed to transfer forms and meanings as well as the culture of his/her native language to the L2.

In a similar vein, under the CA hypothesis, language acquisition was viewed as a process of habit formation. The L2 learner was assumed to replace his/her L1 habits with new L2 habits by responding to stimuli and receiving feedback on the use of L2 constructions. The primary mechanisms of language learning were memorization, repetition and practice of correct responses, which ultimately led to the rise of the Audiolingual Method in language teaching. It was considered that when students became aware of structural differences between languages, the teacher could focus on their errors and help them overcome the difficulties. One of the predictions was that the errors produced by L2 learners would reflect the structures of their first language as a result of interference[2] from the L1. This is also known as *negative transfer*. Similarly, *positive transfer*, also known as *facilitation*, was assumed to occur when L1 and L2 structures in both languages were the same.

To a large extent, then, the major motivation for the emergence of Contrastive Analysis was pedagogical and the aim was to improve language teaching methodology. It was hypothesised that through an intensive contrastive study of the systems of L1 and L2, the areas of difficulty would be specified and the student's attention could be directed to these areas so that predicted difficulties would be avoided.

From a theoretical perspective, the association of Contrastive Analysis with behaviourist learning theory ultimately led to its collapse. In a long review of Skinner's *Verbal Behavior*, Chomsky (1959) criticised behaviourist ideas on language learning. Emphasising the fact that language is unique to humans, he argued that human behaviour cannot be explained by animal behaviour. Chomsky's main objection to Skinner's position centered on the notion of syntactic productivity, which had played no role in the behaviorist model. For

[2] The term 'interference' has been used to refer to two different phenomena: one of them is purely psychological, the other is sociolinguistic. While in a psychological sense interference refers to the influence of old habits over new ones, the sociolinguistic use of the term refers to social interactions, such as linguistic borrowing and switching which happen when two languages are in contact (Weinreich 1953 and Haugen 1953, cited in Dulay, Burt & Krashen 1982).

him, the essence of knowing a language is acquiring knowledge that allows a speaker to produce and understand utterances that s/he has never heard or produced before. As we will discuss in Chapter 3, the crucial assumption is that linguistic knowledge is so abstract that it is not possible for the child to acquire language only from experience. For Chomsky, certain aspects of language do not have to be learned. They are provided by an innate linguistic component, known as Universal Grammar (UG). The issue of what it is that enables young children to acquire language has become a major research question since the emergence of these ideas formulated within the generative framework.

Clearly, the underlying assumption of Contrastive Analysis is entirely different from that of modern linguistic theories. While some linguistic theories aim at describing and classifying languages from a typological perspective, others such as Chomsky's generative grammar have the goal of providing an account of innate linguistic knowledge and language acquisition. That is, on the one hand, the aim is to account for unconscious linguistic knowledge of a native speaker, on the other, to be able to explain how a native speaker acquires this complex knowledge.

In line with Chomsky's theory that language acquisition is not a process of habit formation, L1 research in the 1960s focussed on describing children's performance and writing rule-based grammars to explain how language is acquired (e.g. Brown & Fraser 1963). On an empirical level, the errors produced by young children provided evidence for Chomsky's theory of language acquisition. Data from English-speaking children, for example, revealed errors such as *he goed, she eated, two foots*, suggesting that children were generating rules for past tense and plural formation in English. These errors were also taken as evidence for the view that children's grammar construction was not merely based on repetition of the forms in the input.[3] Chomsky's theory had a radical

[3] Brown & Fraser (1963) are the first to argue that the occurrence of systematic errors in the child's speech provides the best evidence that the child is constructing a rule-based grammar. If the child always speaks correctly, one might argue for the possibility that s/he is repeating something that is heard in the input.

influence on child language studies. However, these early attempts to explain the phenomenon of language acquisition were rather descriptive, and researchers working within transformational grammar concentrated on complex transformational rules, mainly in English syntax. The question of how children acquire these rules was not generally addressed (Lightbown & White 1987).

Research in L2 acquisition also adopted the basic assumptions and advances of linguistic theory and language acquisition of the time. This new approach coincided with the degrading of the CA hypothesis. One important challenge to the CA hypothesis deals with the predictive validity of contrastive analyses (CAs) among languages. When predictions arising from CAs were empirically tested, it became obvious that CAs predicted some errors (Chamot 1978) but not all types of errors (Hyltenstam 1977). Chamot (1978) reports on interference errors from both French and Spanish in the L2 acquisition of English by a 10-year-old bilingual child. She points out that contrastive analyses between languages are better at explaining learners' errors than predicting them. Similarly, Richards (1974) and Selinker (1972) cited many examples which were not attributable to the learners' L1, but were mainly developmental, which will be discussed shortly. Moreover, some errors never occurred (Dulay and Burt 1974b), although they were predicted by the CA hypothesis. For some, interference errors varied depending on the learner's age and proficiency (Taylor 1975). For others, the basic assumption of the CA hypothesis—similarities imply ease, and differences imply difficulty—did not seem to receive support. Kleinmann (1977), for example, argued that when certain structures in L1 and L2 differed, this could lead the learner to notice these structures more easily than others. As will become clearer in the next section, there is no doubt that there were some discrepancies in terms of the classification of errors. For Dulay and Burt, for example, most of the seemingly L1-related errors are ambiguous in that they are also found in L1 acquisition. Also, some errors, known as *intralingual* errors, are produced by L2 learners regardless of their L1 background.

The fact that similar errors were found in the speech of L2 learners regardless of their L1 background led some researchers to hypothesise that L1 and L2 were similar processes (e.g. Dulay and Burt 1972, 1973, 1974a). For them, such errors were simply developmental errors found both in L1 and L2 acquisition, and hence L2 acquisition is as creative as L1 acquisition. This approach, known as the Creative Construction or L1=L2 hypothesis, will be reviewed in the next section.

2.1.2 The Creative Construction hypothesis

As we have seen, under the CA hypothesis, errors are predicted to appear in structures where L1 and L2 differ, since they are assumed to be the result of transfer of L1 structures onto L2 structures. Dulay & Burt (1972, 1973), however, argue that L2 learners produce different kinds of errors. As the (child) L2 learner is assumed to reconstruct the new language irrespective of his/her L1 linguistic knowledge, errors reflecting L1 structures should not occur. Instead, errors produced by L2 learners should be developmental in that they are similar to those produced by children acquiring that language natively. Hence, from the viewpoint of the L1=L2 hypothesis, Dulay & Burt make two predictions:

- Children below the age of puberty will make errors in L2 that are similar to L1 developmental errors (e.g. omission of grammatical elements such as missing determiners, missing tense endings, missing possessive markers).
- Children below the age of puberty will not make errors that reflect transfer of the structure of their L1 onto the L2 they are learning.

(Dulay & Burt, 1972: 241)

Dulay & Burt (1972) report on the extent of interference errors in L2 acquisition and classify learners' errors into four categories.

- L1 developmental errors: those that are not associated with the learner's L1 but are found in L1 acquisition of the target language. For example, if the answer given to a question like *why do the baby birds want food?* is *they*

hungry, the error (omission of the copula) is classified as developmental, because according to their analysis this is also produced by children acquiring English as a first language.

- Ambiguous errors: those that can be viewed as either interference or L1 developmental errors.
- Unique errors: those that reflect neither the L1 nor the L2.
- Interference errors: those that show L1 influence and are not attested in L1 acquisition of the target language.

On the basis of data from 179 Spanish-speaking 5 to 8 year-old children, Dulay & Burt (1974b) discussed 513 *unambiguous* errors in the data. Only 4.7% (24/513) of the errors are classified as "interference errors" whereas 87.1% (447/513) of the errors are called developmental, similar to those produced by children acquiring English as an L1.

Citing research by Ravem (1970) on wh-questions and Milon (1974) on negation (see below), Dulay & Burt claim that evidence from these studies complies with the L1=L2 hypothesis in that L2 errors mirror L1 developmental errors. As for the errors that reflect L1, they attempt to explain them along the lines of the L1=L2 hypothesis. Consider the following sentences from Spanish$_{L1}$ L2 learners of English.

(1) a. *Now she's putting *hers clothes* on.

b. *She's gonna brush *hers teeths.* (Dulay & Burt, 1972: 245)

Although these errors refer to number agreement, which is obligatory in Spanish but impossible in English, Dulay & Burt hypothesise that they may be instances of overgeneralised constructions where the possessive *-s* is used with proper nouns, as in *John's, Bill's* or in forms of *NP is X's,* as in *It's hers, it's Tom's.* In addition, with regard to utterances reflecting Spanish complement structures such as, **I know to do all that, *I finish to watch TV when it's 4 o'clock,* replacing *know* and *finish* with *want,* Dulay and Burt again suggest that

these constructions are frequently used in English as in *I want to go to the Grandma's*. They argue that these utterances can be interpreted as overgeneralisations of the L2 rules rather than as evidence of transfer from the mother tongue.

Similarly, in their 1972 article, Dulay & Burt acknowledge that in Ravem's study, for example, yes-no questions produced by a Norwegian child involve subject-main verb inversion as in *Like you ice-cream*?, which is entirely compatible with Norwegian. What they say is "To account for this, one might make the weak argument that because of the limitations of natural data collection, utterances reflecting, say, subject-verb inversion in yes/no questions might have been made by Adam, Eve and Sarah when Brown and his colleagues were not there to collect them" (Dulay and Burt, 1972: 244). After some twenty years, however, at least to my knowledge, a similar pattern in more recent longitudinal studies has never been reported in child L1 English (e.g. Fletcher, 1985; Radford, 1990).

Despite these views, L2 research concerned with the question of learner's errors revealed that, in addition to developmental errors, a large number of errors could still be traced to the learner's L1 (e.g. Richards 1974). Following Corder (1967, reprinted in Richards 1974) and Selinker (1972, reprinted in Richards 1974), the emphasis shifted from Contrastive Analysis to the Interlanguage hypothesis. Selinker, for example, postulated five central processes in L2 acquisition, one of which has to do with the learner's errors. He argued that errors cannot be attributed to a single source. While some might be due to L1 interference, some might be rooted in fossilization or overgeneralisation of certain forms. These views led to a new tradition in L2 acquisition: the study of learners' language development through error analysis.

The error analysis tradition was not the only type of L2 research carried out in the 1970s. To some extent, the decline of error analysis coincided with the emergence of the studies known as the morpheme order studies and

developmental sequence studies, which became popular in child L2 acquisition research. In the next section, we first briefly review the morpheme order studies and then look at how and why these studies came under serious attack.

2.2 Morpheme-order studies

The early morpheme order studies were mainly conducted by Dulay and Burt (e.g. 1973, 1974a, 1974b), focussing on the use of morphemes by 5 to 8 year-old children acquiring English as a second language. As has been noted earlier, much of the L2 acquisition research in the early 1970s centered around assumptions and findings of L1 acquisition research. Based on a longitudinal study of three English-speaking children, Adam, Eve and Sarah, Brown (1973) found that there was an invariant sequence of acquisition[4] for 14 English morphemes, such as noun and verb inflections, articles, auxiliaries and prepositions.[5] The research question that Dulay and Burt had in mind was whether or not children acquiring English as a second language use these morphemes in a similar fashion as L1 children. For them, a similar pattern between child L1 and child L2 acquisition might suggest a similar universal mechanism, operating in both L1 and L2 acquisition.

In an early study, Dulay & Burt (1973) attempted to determine what percentage of times a child L2 learner of English correctly used a morpheme in obligatory contexts. The accuracy order was assumed to show acquisition order. The subjects in this study were 151 Spanish-speaking children aged 5-8. They lived in three different parts of the USA: 95 of them came from Sacramento, 30 from East Harlem and 26 from San Ysidro.[6]

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[4] In Brown's morpheme studies, a morpheme was assumed to be acquired when it was used over 90% in obligatory contexts for three consecutive recordings.

[5] This finding is replicated by de Villiers & de Villiers (1973) in a cross-sectional study on the basis of data from 21 English-speaking children.

[6] These three groups of children were exposed to different amounts of English. Most of the Harlem children had not lived in the US more than a year and received English input in school in a balanced bilingual programme where courses were taught both in Spanish and English, so they had the least exposure to English. The San Ysidro children used English only in the school.

Based on a test, called the Bilingual Syntax Measure, Dulay & Burt showed children cartoon pictures and asked a series of questions. All of the questions were designed to elicit spontaneous speech that contains most of the morphemes described in Brown's study, such as *-ing*, plural *-s*, 3sg *-s*. Dulay & Burt examine all of the instances where these morphemes are obligatory in English and then determine whether or not each child produces the correct form. For each grammatical morpheme, they used a three point scale (0, when the morpheme was not produced; 0.5, when an incorrect form was used; 1, when the correct grammatical morpheme was produced). Overall, Dulay & Burt (1973) found that the three groups showed roughly the same patterns in their use of the morphemes in obligatory contexts. Table 2.1 shows the accuracy order for the three experimental groups and the acquisition order for the English-speaking children in Brown's study.

Table 2.1 L1 Acquisition vs. L2 Accuracy order

Morpheme	Brown's study	Sacramento	San Ysidro	Harlem
-ing	1	2	2	2
Plural *-s*	2	1	1	1
Irregular past	3	7	7	5
Possessive *-s*	4	8	5	7
Article *a/the*	5	5	8	3
3sg *-s*	6	3	6	8
Copula *be*	7	6	4	6
Auxiliary *be*	8	4	3	4

As can be seen from Table 2.1, the ranking of morphemes for the three L2 groups is different from the acquisition order found in L1 acquisition. Dulay & Burt suggest that the difference between L1 and L2 acquisition can be attributed to the cognitive development of the children, as older children are cognitively and conceptually more mature. For them, there is a common sequence in the use of English morphemes among child L2 learners (see also Dulay, Burt & Krashen 1982).

The Sacramento group received the most exposure to English, as most of them were born in the US.

In another study with Chinese and Spanish learners of English, Dulay & Burt (1974a) looked at the use of English morphemes to test whether the same accuracy order could be found with children who had different L1s. They compared 55 Chinese-speaking children's morpheme orders with that of 60 Spanish-speaking children. As in the previous study, the Bilingual Syntax Measure was used in order to elicit data. Examination of the data revealed that the accuracy order of the morphemes was almost the same for both groups. Dulay & Burt argued that different L1 backgrounds did not play any role, and that the morphemes under discussion were produced in the same sequence. The overall conclusion is that L2 acquisition is as creative as L1 acquisition.

It is obvious that Dulay & Burt's model minimizes the role of L1 in L2 acquisition. The term "creative construction" refers to a subconscious process through which language learners organise the language they hear and hence generate sentences (Dulay, Burt & Krashen 1982). For Dulay & Burt, this mechanism is crucially the same internal programme that underlies L1 acquisition. The principles of this theory are summarised as follows.

- The mechanism underlying L1 and L2 acquisition is essentially the same.
- L2 acquisition develops regardless of the L2 learner's L1.
- While the L2 system is being constructed, there may be some non-target like forms. These forms refer to developmental errors, rather than errors originating from L1 knowledge.

• Summary

What we have attempted to do up to this point is to review some of the previous child L2 studies and highlight a series of phases that the study of L2 acquisition passed through. After the virtual collapse of Contrastive Analysis, the dominant view in L2 acquisition was Dulay and Burt's L1=L2 hypothesis. Researchers examined L2 acquisition only from a target language perspective, focussing primarily on when and in what order target forms appeared and whether

or not they were produced regularly in the L2 learner's speech. The major breakthrough was the idea that the learner's L1 does not appear to play a major role in L2 acquisition. Results from studies conducted by other researchers, however, did not always comply with these findings and the morpheme studies are criticised by many researchers. In the next section, we therefore consider some of the shortcomings of the morpheme studies discussed in this chapter.

2.3 A critique of morpheme-order studies

From a methodological perspective, McLaughlin (1987) points out that Dulay & Burt's morpheme order studies are based on cross-sectional samples in which the data are collected at a single point in time from many subjects who may have different degrees of proficiency. What is measured is the *accuracy* order, rather than the *acquisition* sequence, since Dulay & Burt are interested in the percentage of the correct form of the morpheme in obligatory contexts. Furthermore, Dulay & Burt do not compare groups of learners at different levels to figure out the developmental stages, but either lump all of the learners into one group (Dulay & Burt, 1973), or separate them in terms of their first language (Dulay & Burt, 1974a). In sum, the results of the morpheme studies do not in fact reflect an acquisition sequence, because these studies measure the percent of times subjects supply morphemes correctly in obligatory contexts at one point in time.

On similar grounds, Rosansky (1976) also focusses on the methodological problems with the morpheme studies. She points out that in Brown's study, the acquisition of the 14 morphemes was observed over time and determined when they were acquired in terms of the mean length of utterance (MLU), but in contrast, there is not a similar metric comparable to MLU in the L2 morpheme order studies. She also raises the question of whether or not the morpheme rankings found using an elicitation technique in the Dulay & Burt studies look like the order of morphemes obtained from spontaneously collected L2 data. She finds that her spontaneous data do not correlate with the order of the morphemes

found in Dulay & Burt's work, but with the orders found in Bailey, Madden & Krashen (1974)[7] and Larsen-Freeman study (1976).[8] Rosansky (1976) also notes that the 1973 Sacramento sample shows an order which correlates with the 1974 Spanish-speaking sample but not with the 1974 Chinese sample in the same study. This casts doubts on the results of Dulay & Burt's study because Dulay & Burt argue that the data from the Spanish and Chinese learners are highly correlated and this is taken as evidence that native language of the learners is not important.

Another serious criticism is raised by Hatch (1983), and this concerns the scoring itself: how do we define an obligatory context? For example, looking at a picture book, the investigator might ask the child *what does the little girl do?* The child might say *running, running, run.* Is the answer an obligatory context for the 3sg *-s*, since the investigator has set up that context in his/her question? Or is it an obligatory environment for progressive since the picture denotes an ongoing action?

A related issue concerning obligatory contexts is that certain morphemes may appear both in correct and incorrect contexts. Gass & Selinker (1994) point out

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[7] Following Dulay & Burt, Bailey, Madden & Krashen (1974) conducted research to test the hypothesis that adult second language learning may also involve a natural sequence of acquisition. 73 adult subjects aged 17 to 55 were tested. 33 of the subjects were Spanish, and the non-Spanish group consisted of 40 students with different L1s (Afghan, Arabic, Chinese, Greek, Hebrew, Italian, Japanese, Persian, Thai, Turkish, Vietnamese). Questions were asked to elicit the use of 8 English morphemes: progressive *-ing*, copula *be*, plural *-s*, articles, auxiliary *be*, past irregular, 3rd person *-s*, possessive *-s*. Based on the findings, Bailey *et al.* conclude that despite the differences in adult learners with respect to the amount of instruction, exposure to English and first language, there is a common order of "acquisition" for morphemes in adult L2 acquisition.

[8] The motivation behind Larsen-Freeman's work (1976) is again Dulay & Burt's claim that there is a natural order in the use of English morphemes by Chinese and Spanish children. Dulay & Burt look at the production of these morphemes in obligatory contexts in elicited data. Larsen-Freeman is concerned with the question of whether the same morpheme order will be found if different data collection procedures are utilised, rather than the Bilingual Syntax Measure (BSM). She collected data from 24 adult L2 learners; six from each of 4 native-language backgrounds: Arabic, Japanese, Persian and Spanish. Five tasks are used: the BSM, a sentence-repetition test, a listening comprehension test, a reading cloze passage, and a writing test. Larsen-Freeman finds statistically significant similar accuracy orders among these L2 learners. She also points out the similarities between her listening, BSM and repetition tasks and Dulay & Burt's BSM order, even though there are differences between these orders and the ones that she obtained for reading and writing tasks.

that considering only obligatory contexts may not inform us about the appropriate use of a particular form. An example of this is found in Wagner-Gough's study (1975, reprinted in Hatch 1978). Wagner-Gough discusses data from a Persian child (Homer) acquiring English as a second language. Her primary concern is to propose a functional analysis for the acquisition of progressive *-ing*.

Wagner-Gough observes that progressive *-ing* is one of the first morphemes acquired by this Persian child. What is interesting about Homer's development, however, is the fact that he uses the progressive with reference to 4 different time periods. Consider the following examples.

(a) Immediate intention

(2) a. I'm taking 'nother one.

b. I'm going and found them. (Wagner-Gough, 1978: 159)

(b) Intentions of the distant future

(3) a. I my dad and then going /in/ beach and then airplane and water like that.

b. I my tomorrow going /in/ beach. (Wagner-Gough, 1978: 159)

(c) Past

(4) a. Mark and Fred going /in/ outside.

b. I'm playing with that Mark. (Wagner-Gough, 1978: 159)

(d) Imperative

(5) O.K. sitting down like that. (Wagner-Gough, 1978: 159)

The examples above show that Homer uses progressive *-ing* not only in obligatory contexts but also in inappropriate contexts. For Gass & Selinker (1994), including only obligatory contexts for *-ing* in the counting procedure will skew the results, as it will not reveal the whole picture of the learner's use of a form, namely, the incorrect use of *-ing*.

One should also note the diversity of the morphemes involved in these studies. Under current linguistic theory the morphemes investigated by Dulay

and Burt are associated with different functional heads: plural morpheme *-s* and possessive *'s* are under DP, regular past *-ed*, irregular past and 3sg *-s* are under IP. In Dulay & Burt's studies, "these grammatical morphemes are viewed as discrete lexical items which are assumed to be used one after another, rather than as part of grammatical structures and systems" (Cook, 1993: 31). As Gregg (1984) points out, the morphemes are given in an accuracy order, but there is no mention of any kind of relation of these morphemes to each other or to other properties of the language. For Gregg (1984), the morpheme studies "make no principled distinction between comparable and non-comparable structures" (1984: 85). He argues that the fact that certain grammatical morphemes are used in roughly the same order by L2 learners does not entail that other linguistic properties, such as relative pronouns, indirect objects or modals, etc., are also ordered with respect to other grammatical morphemes or with respect to each other. Focussing on the diversity of the morphemes in question, one might argue that these morphemes exemplify a large range of properties. Some of them are bound morphemes such as 3sg *-s*, plural *-s* and some of them are unbound like the articles, *the, an,* copula, and auxiliary *be.*

Wode, Bahns, Bedey and Frank (1978) argue that any approach which is completely based on "the chronology of target-like mastery of several items" is bound to miss all kinds of development before the final state. Although the final state of (adult) L2 acquisition is generally not known, Wode *et al.* address an extremely important issue, namely, the developmental stages that the L2 learner passes through on the way to the target language. They emphasise the importance of the notion of interlanguage grammar and the processes underlying its development.

Secondly, based on an analysis of data from four German-speaking children acquiring English, Wode *et al.* point out that morpheme order studies underestimate avoidance facts. Regarding possessive constructions in child L2 English, for example, Wode *et al.* observed that the learners always produced

constructions of the kind *N's+N*, where N is a proper noun, as in *Mary's dress*, but they never produced utterances in which N is any other kind, such as *the dog's leg,* or *the door's handle.* According to Wode *et al.* the reason for this avoidance might be the fact that such constructions are not grammatical in the learners' L1, German.

It should also be noted that not all child L2 studies come up with the same sequence of morphemes. Based on longitudinal data from a 5-year-old Japanese child, Uguisu,[9] Hakuta (1976), for example, found a different sequence for certain morphemes, compared to L1 learners of English in Brown's study. Following Brown's criterion of acquisition (see fn 4), Hakuta discusses the acquisition of 14 morphemes in Uguisu's speech. In order to compare Hakuta's morpheme order with the earlier studies, de Villiers and de Villiers (1973) and Dulay and Burt (1974a), study the following table.

Table 2.2 Morpheme orders in child L1 and L2 acquisition of English

Child L1 English (de Villiers & de Villiers 1973)	Child L2 English (Dulay & Burt, 1974a)	Child L2 English (Hakuta 1974b)
1. Progressive *-ing*	1. Progressive *-ing*	1. Present progressive
2. Plural *-s*	2. Plural *-s*	2. Copula *be*
3. Past irregular	3. Contractible copula	3. Auxiliary
4. Articles (*a, the*)	4. Contractible auxiliary	4. Aux. Past (*didn't*)
5. Contractible copula	5. Articles (*a, the*)	5. *Did* (interrogative)
6. Possessive *-s*	6. Past irregular	6. *Doesn't*
7. 3sg *-s*	7. 3sg *-s*	7. *On*
8. Contractible auxiliary	8. Possessive *-s*	8. Possessive
		9. Past irregular
		10. Plural *-s*
		11. Articles
		12. 3sg *-s* (regular)
		13. Past regular
		14. Gonna Aux

Table 2.2 shows that while the plural morpheme *-s* appears as one of the first morphemes in the two cross-sectional studies, it is among the last morphemes in

[9] The data from Uguisu were collected every two weeks and cover a period of 15 months. At the beginning of the study, Uguisu had been in the USA for five months, during which, according to Hakuta, she went through a silent period. Uguisu had no previous exposure to English. Her first contact with English started at nursery school.

Hakuta's study. Hakuta argues that the acquisition order found in his study does not correlate with the studies discussed above. Furthermore, unlike monolingual children, Uguisu acquires the possessive morpheme *-s* earlier than the plural *-s*, which, according to Hakuta, might be evidence for transfer from Japanese, as Japanese has an overt particle for possessive, but not for plurality.

Finally, when one considers the morpheme order studies in terms of the assumptions of current linguistic theory, the difficulty we are faced with is the implausibility of the view that any linguistic theory, for example, UG, informs us about the acquisition of these morphemes, which are entirely language-particular. In other words, under current linguistic assumptions it is not clear why UG would have to explain the acquisition/accuracy order of language-specific morphemes. As we have seen, no attempt was made to explain such an order on a theoretical basis. Perhaps this was partly due to the drastic changes in linguistic theory in the 1960s and 1970s during which there was a great flux in research questions and theoretical assumptions (see Lightbown & White for reviews of some of these changes).

In addition to the morpheme order studies, another research area in child L2 acquisition in the 1970s was concerned with developmental sequences, which will be discussed in the next section. Some of the issues addressed in these child L2 studies will also be discussed in this dissertation on the basis of Erdem's L2 English. Therefore, it will be useful to know about these early child L2 studies.

2.4 Longitudinal studies in the 1970s

During the same period, a group of L2 researchers were interested in the development of particular phenomena over time. Unlike the morpheme order studies, the focus was longitudinal. The two major phenomena studied at this time were negation and questions. Let us first examine previous work on negation.

2.4.1 Negation

One of the earliest studies of the acquisition of negation in child L2 acquisition is reported by Ravem (1968, reprinted in Richards 1974). On the basis of data from a 6 1/2-year-old Norwegian-speaking child, Rune, Ravem investigated the development of negation. Ravem notes that when the study began, Rune had some rudimentary knowledge of English acquired during a previous stay in England, but Ravem does not make clear how long and to what extent Rune was exposed to English beforehand. As Klima & Bellugi's (1966, reprinted in Bar-Adon & Leopold 1971) work served as the basis for Ravem's analysis of the child L2 data, let us first examine the development of negation in child L1 English as viewed at that time.

Klima & Bellugi (1966) described three developmental stages for the acquisition of negation in child English. At Stage 1, the negative element *no* is found only in sentence external position.[10] No negatives are attested within the clause, nor are there auxiliary verbs. Some examples are given in (6).

Stage 1. sentence-external negation

(6) a. No eating that one.
b. No Fraser drink all tea.
c. No Adam find truck.

In Stage 2, negation is placed in sentence internal position, as in (7).

Stage 2. sentence medial *no/not*

(7) a. I not swimming now.
b. I not going to be baker.
c. I not fall.

[10] All examples are found on CHILDES transcripts (MacWhinney 1991).

Stage 3 is characterised by the occurrence of target-like negated utterances.

(8) a. Don't get on my feet.

b. I don't see you.

c. I can't wear it.

Ravem (1968) was particularly interested in the acquisition of *do*-support. His study employed two types of data, one involving spontaneous production data and the other a translation task. The translation task included 50 negative utterances and 50 interrogative sentences. Ravem traces the development of *do*-support through four different times, which he labels as Conversation 1 (C1), C2, C3 and C4. The study covers just over 3 months of conversation data, from 31 December 1965 until 6 March 1966. The translation test was used within a week of the conversation recordings. During Periods C1 and C2, *do*-support is absent in negated utterances, although sentences with auxiliary/modal+Neg in these stages are target-like as shown in (9).

(9) a. I mustn't take that aeroplane open.

b. I can't do it. (Ravem, 1968 reprinted in 1974: 127)

c. One is not crying. (Ravem, 1968 reprinted in 1974: 128)

Note that unlike the English negation pattern, in Norwegian main clauses the negative element *ikke 'not'* is placed after the verb, be it a main verb or an auxiliary, as shown in (10).

(10) a.Han arbeider ikke.

He works not

'He doesn't work' (Ravem, 1968 reprinted in 1974: 128)

b. Vi tok det ikke.

We took it not

'We didn't take it' (Ravem, 1968 reprinted in 1974: 128)

Ravem argues that the negative sentences at this first stage do not show any evidence of transfer from Norwegian. On the contrary, *not* precedes the main verb, as in (11).

(11) a. I not like that.

b. I not looking for edge. (Ravem, 1968 reprinted in 1974: 128)

c. I not sitting on my chair. (Ravem, 1968 reprinted in 1974: 130)

Unfortunately, with respect to the development of negation, it is rather difficult to draw any conclusions from Ravem's study. From a methodological perspective, in addition to not providing any numbers for negated utterances, Ravem does not give examples of negation for the other two later stages. Furthermore, the claim that L1 does not have any effects on Rune's negation might be premature. As will become clear in the next section, at least some yes/no questions in Rune's speech are formed in such a way that the main verb is inverted with the subject as in *Like you ice-cream*? Moreover, although Ravem argues for similarities between L1 and L2 developmental sequences, Rune appears to be far too advanced in comparison to English-speaking children in Klima & Bellugi's study. The following examples all come from Ravem's C1.

(12) a. I not like that. (Ravem, 1968 reprinted in 1974: 126)

b. I have try that. I can't do it.

c. Can I give that to Sooty?

d. I can sing Blaydon Races for you. (Ravem, 1968 reprinted in 1974: 127)

Rune is capable of producing declarative sentences and questions with auxiliaries or modal verbs at Ravem's C1. The examples in (12) could not belong to the early stages of child English, because in Klima & Bellugi's Stage 1 and Stage 2, modal verbs and *be* are absent.

Another study on the development of negation was carried out by Milon (1974). Milon examined the developmental stages of negation in English L2 data

from a 7-year-old Japanese boy, Ken. Prior to his arrival in the USA in September 1970, Ken had had no exposure to English. At the onset of data collection, he had been attending a public school for two months. The data cover over a period of six months from November 1970 until June 1971. Milon also note that for three weeks before the study began, Ken had been in daily half-hour ESL classes with three students who were fluent speakers of Hawaiian Creole. These were mainly conversation classes in the sense that there was no structured grammar teaching or instruction.

Milon's aim, like that of Ravem's, was to find out whether or not the acquisition of negation in child L2 English would follow the same developmental sequence reported by Klima & Bellugi (1966) for L1 English-speaking children.

Milon divides the data into three stages. Of the 321 negative utterances, 47 occur in Stage 1, 143 in Stage 2 and 131 in Stage 3. Some examples are given in (13).

(13)

Stage 1	Stage 2	Stage 3
a. No my turn.[11]	a. I not going Japan.	a. I never saw yours.
b. No more sister.	b. I not giving you candy.	b. You don't play.
(Milon, 1974: 139)	(Milon, 1974: 140)	(Milon, 1974: 142)

Milon concludes that the developmental stages that the child progressed through are the same as the children studied by Klima & Bellugi. However, it is not clear how stages are determined in his study. It appears that most of the negated utterances in Stage 2 fall under Stage 1, as Milon himself notes "...of the 143 negative utterances in Stage 2, 90 are captured by Ken's Stage 1 rule, 48 are describable by a very slightly modified version of Klima and Bellugi's Stage 1

[11] Milon does not differentiate between anaphoric and non-anaphoric negation. Anaphoric negation refers to instances where the negative element *no/not* refers to the previous utterance in the discourse, as in the following examples (Bloom 1970).

(i) Adult: Do you want cookies?
Child: No, chocolate.

rule (this includes 17 instances of *I don't know*), and 5 are listed as anomalous" (Milon, 1974: 140).[12] Furthermore, in Klima & Bellugi's study, auxiliary verbs and modals do not occur in declaratives and questions until Stage 3. In contrast, Milon observes that auxiliaries are produced in both declaratives and questions all through Stage 2.[13]

Milon also points out that although negation in Japanese is realised as a suffix attached to the verb stem, there are no utterances in which the negative element is placed after (main) the verb. Thus, he concludes that Ken's data do not show any evidence of transfer from Japanese. For him, one of the implications of this study is that, similar to Dulay & Burt's claim, the L2 learner displays the same developmental stages as L1 learners. Hence, L1 and L2 acquisition are captured by the same Creative Construction model.

Such claims of similarity regarding developmental sequences of L1 and L2 acquisition, however, are challenged by various researchers. Cancino, Rosansky, and Schumann (1974, 1978) also studied the acquisition of English negation. Their 10 month longitudinal study is based on data from six native Spanish speakers: two children, age 5; two adolescents, ages 11 and 13; and two adults. The two adolescents and children in the study were all exposed to English at school after they arrived in the USA. One of the adults, Alberto, who made the least progress, worked in a factory where he was exposed to English from native speakers as well as non-native speakers. The other adult (Dolores) was a baby-sitter for English-speaking children. The data collection procedures ranged from spontaneous data to elicited imitations to preplanned social interactions, such as

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[12] Milon includes utterances such as *I don't know* even in Stage 1, which are presumably not analysed.

[13] Note also that there are certain differences between Ken's dialect, Hawaiian Creole, and the standard English dialect of Klima & Bellugi's English-speaking children. *Never* and *go* are overt past and future tense markers, respectively, in Hawaiian Creole. Consider the following examples from Milon's Stage 3.

(i) a. I never saw yours
b. I not saw.
c. You no go win.
d. I never do.
e. You never cut yet. (Milon, 1974: 142)

going to parties, museums, restaurants. Unlike the previous studies mentioned above, Cancino *et al.* (1978) pointed out that there was evidence in the L2 data which suggests that L2 learners do not seem to pass through exactly the same stages as L1 learners. The developmental stages that the six Spanish learners pass through are given in (14).

Stage 1: Subject+*no*+V structures

(14) a. I no can see.
b. You no walk on this.
c. They no have water.
d. I no understand. (Cancino *et al.* 1978: 210)

The next stage contains negatives in the form of *don't+V.*

Stage 2: *don't*+V structures:

(15) a. He don't like it.
b. I don't see nothing mop.
c. I don't can explain. (Cancino *et al.* 1978: 210)

At stage 3, the learners produce Auxiliary+Neg structures, where the Auxiliary is situated to the left of negation.

Stage 3: Aux+neg:

(16) a. Somebody is not coming in.
b. It's not danger.
c. No, he is not skinny.
d. I wasn't so big. (Cancino *et al.* 1978: 211)

Stage 4: In the final stage, the analysed forms of *don't* appear.

(17) a. My father didn't let me.

b. Because you didn't bring.

c. We didn't have a study period.

d. It doesn't spin. (Cancino *et al.* 1978: 211)

In Cancino *et al.* (1978), Klima & Bellugi's Stage 1, in which the negative element is placed in a sentence-external position, is not observed. However, as noted by Cancino *et al.*, in addition to age and socio-economic differences among the subjects, there are also differences in terms of their exposure to English. It may well be the case that the learners had already passed the sentence-initial negation stage when the data collection started.

A more serious criticism for the view that child L2 learners follow the same developmental path as child L1 learners comes from Wode's (1976) longitudinal study based on four German-speaking children, aged between 3 and 9, acquiring English in a natural setting. Wode (1977) argues that there are systematic differences between L1 English and L2 English negation patterns. Of the five successive stages in Wode's data, Stage 1 involves the first negated utterances with anaphoric negation, as in *no, no Tiff.* At Stage 2, negation is placed in a "sentence-external" position, as in (18).

(18) a. No finish.

b. No milk.

c. No cold.

d. No play baseball. (Wode, 1977 reprinted in 1983: 145)

Stage 3 marks the use of internal negation, with copula structures constituting the main portion of the data.

(19) a. That's no right.

b. You not dummy.

c. It's no Francisco. (Wode, 1977 reprinted in 1983: 145)

Stage 4, however, is marked by the use of post-verbal negated utterances.

(20) a. Marlyin like no sleepy.

b. John go not to the school

c. I'm steal not the base.

d. Shut not your mouth.

e. Hit it not over the fence. (Wode, 1977 reprinted in 1983: 145)

The examples in (20), where the negative elements *no/not* are positioned after the verb, reflect the German negation pattern, and they are not attested in monolingual English-speaking children's speech. This clearly shows that German child L2 learners of English make use of their previous linguistic knowledge.

Wode points out that post-verbal negated utterances as in (20) do not appear at an early stage of L2 acquisition. So, the question is why the L2 learners fell back on their L1 at Stage 4. For Wode, language transfer takes place when there is sufficient evidence that the two languages are similar with respect to a particular phenomenon. In his words, "...an L2 child will draw on his L1 only if crucial prerequisites are met within his own L2 development. Such prerequisites are a sufficient degree of similarity between the structures involved" (Wode, 1977, reprinted in Wode 1983: 149). In an attempt to explain the V+Neg order in child L2 English, Wode argues that English also allows "post-verbal" negation, as the verb *be*, auxiliaries and modals are followed by the negative particle. For Wode, with the emergence of copula constructions in L2 English, the learner is able to find the similarity between German and English negation. Note that in German the negative morpheme comes after the copula. In his view, then, there is a crucial similarity between the target L2 structure and the previously acquired L1 negative placement. Thus, it is at this late stage that the learners' grammars are influenced by German.

Wode's (1977) findings are important, because they provide evidence that certain errors in L2 data owe their origin to the L1 even for child L2 learners. As we have seen, these errors do not occur in L1 acquisition. This result is perhaps even more important in light of the fact that it was highlighted at a period during which L1 influence was degraded.

In sum, Wode claims that his data do not support the view that L1 and L2 developmental sequences are entirely parallel. Thus, unlike other researchers, according to Wode, there may be ordered developmental sequences for both L1 and L2 acquisition, but that these sequences do not have to be exactly alike.

2.4.2 Questions

Another area of interest for developmental sequences was questions. Following early analyses of Wh-questions in child English (Brown 1968; Klima & Bellugi 1966), some L2 researchers also investigated the development of questions in child L2 acquisition. One of the first studies of this sort was conducted by Ravem (1970). Ravem compares his L2 data with early studies on the development of questions in child English. Before proceeding with Ravem's study, let us first look at how the acquisition of questions by English-speaking children was viewed at the time.

On the basis of data from the three Harvard children, Adam, Eve and Sarah, Klima & Bellugi (1966) reported that in the first period, when the average MLU was 1.75, they all marked yes/no questions with rising intonation, but there were no auxiliary verbs or analysed wh-questions. Stage B was marked by missing auxiliaries and inversion errors, as in the following examples.

(21) a. Where my kitten?
b. What book name?
c. Why you smiling?
d. What the dollie have?

(Klima & Bellugi, 1966, reprinted in 1971: 422)

It was only by the third period (Stage C), when the MLU was 3.5, that auxiliary verbs were produced and correctly used in clause initial position in yes/no questions. However, Wh-questions still did not have subject-auxiliary inversion, as in (22).

(22) a. Where I should put it when I make it up?

b. Why he don't know how to pretend?

c. Which way they should go?

d. Why kitty can't stand up?

e. How he can be a doctor?

f. What he can ride in? (Klima & Bellugi, 1966 reprinted in 1971: 423)

Ravem's study attempts to show that for the two Norwegian children acquiring English as an L2, there are striking similarities between L1 and L2 acquisition in regard to the development of questions. The data include mainly translation and imitation tests, as well as spontaneous speech, covering a period of 5 months with 3-4 week intervals. The task consisted of utterances in Norwegian such as *go and ask mother if.....* He presents his data in 4 different periods (Times). Although Ravem argues for a developmental pattern in the analysis of the acquisition of wh-questions, it is again not easy to see how the stages are determined in this study. Different from child L1 English, for example, no intonation questions are mentioned in Ravem's study. It is true that individual examples from these two Norwegian children resemble utterances found in early child English. On closer inspection, however, we see that in Ravem's study most of the examples in Times 1, 2 and 3 are similar in terms of the error types, namely, lack of inversion and omission errors. Different stages in Ravem's analysis seem to be hard to confirm. Consider the following examples.

Wh-questions in Ravem's study Times 1-4

(23) Time 1

a. What is that?
b. What you eating?
c. What he's doing?
d. What you going to build tomorrow?
e. What she is doing? (Ravem, 1970 reprinted in 1974: 141)

(24) Time 2

a. What Jane give him?
b. What you think Pappy name is?
c. What is mummy doing not?
d. What you going to do tomorrow?
e. What you like? (Ravem, 1970 reprinted in 1974: 141)

(25) Time 3

a. What you knitting?
b. What he's doing?
c. What you did in Rothbury?
d. Why the baby crying?
e. Why we not live in Scotland? (Ravem, 1970 reprinted in 1974: 141)

Perhaps, due to methodological problems in data collection, Ravem's early stages do not in fact represent the very early stages of the children. More importantly, Ravem's data do show L1 influence on the acquisition of questions. The Norwegian inversion pattern was used in which the main verb was inverted in yes/no questions. Consider the following examples.

(26) a. Know you?

b. Climb you?

c. Like you scholl, Rannveig?

d. Drive you car to-yesterday?

e. Like you me not, Reidun?

f. See you not on TV to-yesterday?

g. Say it you not to daddy?

h. Like you ice-cream? (Ravem, 1970 reprinted in 1974: 130-131)

Recall that under Ravem's analysis, the L2 children pass through the same developmental stages that L1 learners do and make similar transitional errors. It is true that similar to L1 English, Ravem's subjects also have omission and inversion errors. Likewise, the auxiliary *do* does not initially appear in negative sentences and wh-questions. However, English-speaking children never go through a stage where they incorrectly invert main verbs and subjects in questions. This is important, because those who argue for the same developmental stages with respect to a certain phenomenon in both L1 and L2 will have the problem of explaining these observed differences in the developmental pattern.

Regarding the development of questions, Cancino *et al.* (1978) were also interested to see whether the developmental order in L2 acquisition paralleled the results found in the L1 acquisition of English. Among the specific questions explored in the Cancino *et al.* (1978) study were (i) Are Wh-questions produced in the uninverted form? (ii) Are uninverted Wh-questions produced before inverted Wh-questions? (iii) Do yes/no questions appear in the uninverted form? (iv) Does Klima & Bellugi's Stage C[14] exist for Spanish L2 learners of English?

[14] Recall that Klima & Bellugi (1966) report that English-speaking children go through a stage (Stage C) in the development of interrogatives in which they consistently invert auxiliaries in yes/no questions, but fail to invert in wh-questions.

Under the Cancino *et al.* analysis, all of the learners in the study use both yes/no questions and Wh-questions in the uninverted form. Some examples of uninverted Wh-questions are given in (27).

(27) a. Why you study?

b. Where you get that? (Cancino *et al.* 1978: 222)

It should be noted that the two examples[15] in (27) in fact do not indicate whether the learners invert or fail to invert in wh-questions. These two examples refer to omission errors rather than inversion errors. In other words, as there is no overt auxiliary, one cannot argue for the presence or the absence of the phenomenon of subject-auxiliary inversion in the learners' L2 grammar.

Cancino *et al.* also report that the copula *be* is always inverted in all wh-questions from the beginning. However, they do not rule out the possibility that *what's* and *where's* are unanalysed forms.[16] With respect to the auxiliary *do*, they find that *do* is inverted more frequently in wh-questions than in yes/no questions.

According to the developmental sequence they propose, at Stage 1 the learner is not able to distinguish between simple and embedded wh-questions and both types are uninverted, as in (28):

(28) a. What you study?

b. That's what I do with my pillow. (Cancino *et al.* 1978: 222)

Then, the learner starts producing both inverted and uninverted wh-questions at the same time.

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[15] These two are the only examples cited in Cancino *et al.* for uninverted forms in *simple* wh-questions.

[16] Cancino *et al.* also argue that the early appearance of the copula *be* in wh-questions might be due to Spanish wh-questions, as in the following examples.

(i) a. What is? = ¿Qué es?
b. Who is? (it) = ¿Quién es?
c. How is? (it) = ¿Como es? (Cancino *et al.* 1978: 220)

(29) a. How can you say it?

b. Where you get that? (Cancino *et al.* 1978: 222)

Finally, the learner comes to know that wh-phrases are inverted in simple questions but not in embedded sentences, as in (30).

(30) a. Where do you live?

b. I don't know what he had. (Cancino *et al.* 1978: 222)

What is highlighted in the Cancino *et al.* study is that there is no evidence for Klima & Bellugi's stage C where only yes/no questions are inverted but not wh-questions. Therefore, unlike Ravem's proposal that L1 and L2 learners follow similar development stages, Cancino *et al.* argue that the L2 developmental pattern is not similar to that described by Klima & Bellugi for L1 acquirers of English.

2.5 Summary

As we have seen, most of these early child L2 studies focus on whether there are similarities between L1 and L2 acquisition. The underlying assumption, moreover, is that L1 and L2 grammars invoke the same mechanisms if they show similarities, in these particular cases, similar morpheme rankings or similar developmental stages. On the basis of data from the accuracy order of certain morphemes in English, Dulay & Burt argue that L1 acquisition is equal to L2 acquisition because the L2 learner constructs the grammar of an L2 regardless of L1 knowledge. As we have discussed, however, these studies are seriously criticised. For one thing, Dulay & Burt's work compared the accuracy order of certain morphemes in child L2 English with the acquisition order of similar morphemes in child L1 English. Moreover, the results of longitudinal studies do not agree with the results of Dulay & Burt's cross-sectional studies (e.g. Hakuta 1976). On similar grounds, early attempts to explain the development of negation and wh-questions mostly concentrated on similar stages that L1 and L2 learners

pass through. Unlike Ravem and Milon who claim L1-L2 similarity, however, Wode actually shows that there are clear transfer effects in child L2 acquisition of English negation, an issue which will also be addressed in this dissertation.

Perhaps another shortcoming of the (child) L2 studies in the 1970s concerns the fact that researchers in general focussed on descriptions of learners' utterances and comparisons of these speech samples with target language forms. The aim was to account for consistencies or differences between the (child) L2 learner's speech and target language forms. Mainly because of the lack of strong connections between linguistic theory and language acquisition theory, a substantial body of acquisition data remained descriptive in nature.

Recognition of the need to explain the learner's interlanguage as well as recent advances in linguistic theory led to a new research framework. Starting in the 1980s, both L1 and L2 researchers began looking at language acquisition in more theoretical terms. The aim of the next chapter is to explore this interaction between linguistic theory and L2 research. We will mainly be concerned with the arguments regarding the role of Universal Grammar in L1 and L2 acquisition. Within the generative framework, UG deals with abstract linguistic principles that are assumed to underlie all natural languages. These principles are considered to involve a language faculty with which all individuals are equally endowed. UG is also hypothesised to involve properties known as parameters. Hence, unlike the earlier views discussed so far, language acquisition in this framework is viewed as a process of parameter setting, rather than acquiring language-specific grammatical rules.

Recall that the major theoretical departure from the early work in Contrastive Analysis was to show that the (child) L2 learner's L1 did not have significant effects on L2 acquisition but rather their grammars are organised by a Universal mechanism, that is, L1 acquisition = L2 acquisition (Dulay, Burt & Krashen (1982). However, it was never clear in Creative Construction what was meant by universal mechanisms and it was never specified what was underlyingly the same

in L1 and L2 acquisition. Given these facts, in Chapter 2 we discuss how UG-based analyses address these issues.

CHAPTER 3

LINGUISTIC THEORY & LANGUAGE ACQUISITION

3.0 Introduction

The relationship between linguistic theory and language acquisition has always been a central issue in current research, as we cannot possibly construct a theory of acquisition without knowing what it is that we acquire (e.g. Schwartz 1986). With the introduction of the Principles and Parameters theory (Chomsky 1981), the interaction between the two areas has been enriched, as evidenced by numerous studies within this framework (e.g. Hyams 1986; papers in Roeper & Williams 1987). Specific proposals have been postulated with regard to the properties of Universal Grammar (UG) which is assumed to constrain all languages. The concept of parameters has been introduced to account for variation among languages. These changes within current linguistic theory have also had a substantial influence on L2 acquisition research. L2 researchers have adopted and tested linguistic proposals in order to find out whether L2 grammars are subject to the constraints imposed by UG.

Our concern in this chapter is to examine this close interaction between linguistic theory and language acquisition. We first briefly review some of the current assumptions proposed for L1 acquisition of syntax from a UG-based perspective and then discuss how and to what extent these assumptions are adopted or rejected in L2 acquisition with respect to the issue of UG accessibility. It is well known that while all L1 learners attain perfect mastery of their L1, (adult) L2 learners typically do not. Among others, one factor might be related to the fact that L2 learners have previous knowledge of L1. In the last section of this chapter, therefore, we address the issue of L1 influence in L2 acquisition, as it is also related to our discussion of Erdem's earliest data in Chapter 4.

This chapter is structured as follows. Section 3.1 presents certain assumptions and potential explanations offered for L1 acquisition. Section 3.2 discusses the issue of whether the assumptions proposed for L1 acquisition are applicable to interlanguage development, in particular, the question of UG "accessibility". Section 3.3 deals with the issue of L1 influence within the Principles and Parameters framework. In Section 3.4, three recent hypotheses on language transfer will be discussed.

3.1 First Language Acquisition

3.1.1 Theoretical background

Every normal child who is exposed to a particular language comes up with the grammar of that language. The knowledge system that the child has acquired at the end enables him/her to be able to understand and produce an infinite number of sentences which have not been heard or produced before. This is known as the *creative aspect of language acquisition* (Chomsky 1965). It is remarkable that this complexity or richness occurs no matter what kind of input the child gets. It is well-known that there are individual differences among children in terms of their socio-economic environments and linguistic input they experience during the course of language acquisition. Despite these differences, however, all children end up with perfect knowledge of their language.

Research in L1 acquisition has shown that young children seem to know more about their language than what they hear in their linguistic community. For instance, children know that certain constructions are not grammatical or some of them might paraphrase each other or some of them are ambiguous, as in this example, *Belma didn't finish her thesis to please Bonnie,* meaning *in order to please Bonnie, Belma didn't finish her thesis* or *it was not in order to please Bonnie that Belma finished her thesis* (e.g. Hornstein & Lightfoot 1981).

If the working hypothesis is that children are not informed about these facts, the question arises as to the source of this knowledge. This is, in fact, an old issue which has been repeatedly addressed by language acquisition researchers who work in different theoretical frameworks. For some acquisitionists, the answer lies in the claim that parents speak to their children in a simplified form, which is known as *motherese* (e.g. Snow 1977). The main idea is that language acquisition might be facilitated by "simplified input". This assumption, however, has several shortcomings. First of all, providing children with simplified input does not explain how young children come to know all sorts of complexities and ambiguities in their language. Furthermore, as Hornstein and Lightfoot (1981) point out, the data that the child hears do not tell the child anything about the grammaticality or ungrammaticality, that is, the input does not come labelled. So, the question that we are faced with still remains: how do children attain their linguistic complexity?

One might think that parents help children and correct their mistakes, that is, parents provide "negative feedback" to their children. What we mean by negative feedback is simply the information about which sentences are not grammatical in a language. This hypothesis also seems to face a number difficulties. First of all, it is fair to say that there is no plausible way of knowing to what extent children pay attention to the corrections made by their parents. In other words, we do not know whether the child uses correction to any significant extent (Marcus 1993). Secondly, we do not know how often and when parents provide direct negative feedback to their children.

I assume in this study that systematic negative evidence is not available to children (Brown & Hanlon 1970). Even if it is sometimes available, I take the position that correction by parents in the form of *you shouldn't speak like this* or *you shouldn't say that* cannot be used to construct linguistic knowledge, as it is in general related to the pragmatics of the language.

Another important fact about child language is that the kinds of errors produced by children seem to be quite limited. Children do not appear to make certain errors which are logically possible. One classic example is concerned with the principle of "Structure-dependency" which holds that linguistic knowledge depends on the internal relations among the constituents in a sentence rather than the linear order of elements. For example, one might think that when the child hears a question, as in (1a), s/he might conclude that questions are formed in English by fronting the auxiliary *will.*

(1) a. John will attend the meeting.

b. Will John attend the meeting?

However, based on this hypothesis one could expect at least some children to produce questions as in (2b).

(2) a. The man who will attend the meeting is away.

b. *Will the man who attend the meeting is away?

As shown in an experimental study by Crain and Nakayama (1987), children do not form questions as in (2b). Despite the fact that they are not explicitly taught about this rule, they in fact know that the form of English questions does not depend on the linear order of words in the sentence but on the syntactic relations among the words. One might argue that children do not make such errors as they never hear them in their input. This kind of reasoning, however, does not seem to explain some consistent errors in children's speech. In other words, one would not expect to find other types of errors as none of them are available in the input.

The primary aim of linguistic theory is to be able to explain how children acquire such a complex grammatical system so rapidly, without any training or instruction. Under the assumption that the kind of input the child hears is not perfect, certain aspects of the grammar do not explicitly exist in the input that the

child hears. It thus follows that some aspects of language are *underdetermined* by the input available in the environment. The gap between the linguistic input the child receives and the complex system s/he arrives at has been referred to in the literature as *"the logical problem of language acquisition" or "the learnability problem".*

Within a generative framework, the problem of language acquisition is explained in terms of a domain-specific mechanism. Every child is considered to be born with an innate language faculty, Universal Grammar, which is specifically designed for language acquisition. Its principles can only be used for language acquisition, not for other cognitive domains or other types of learning (Chomsky 1972).[1]

In earlier work, Chomsky defines UG as the system of principles, conditions, and rules that are elements or properties of all human languages: the essence of human linguistic knowledge. Along the lines of new formulations of UG within the Principles and Parameters framework (e.g. Chomsky, 1981; 1986a; 1986b), Chomsky proposes that UG consists of two components:

- a set of principles that apply to all languages.
- a set of parameters whose values might differ from one language to another.

Within the Principles and Parameters framework, children use input in combination with UG and a learning mechanism in order to attain their grammars. It should be noted that one crucial aspect of a parameter setting model

[1] From a somewhat different perspective, Fodor (1983) also proposes a domain-specific language module in the mind. Fodor's theory holds that the mind consists of independent modules, such as vision, hearing, etc, and that language is one of these modules. The idea behind this hypothesis is that when one hears linguistic input, this information can only be handled by the language module, just like when one sees something in the environment, whatever seen is dealt with by the vision module. Each module is assumed to be domain specific in that the input for the language module, for example, cannot be processed by the vision module. According to the modularity thesis, language is independent from other cognitive domains, so it cannot be dealt with by domain-general mechanisms (see Schwartz 1986 for discussion of the implications of modularity for L2 acquisition).

is that parameters link clusters of properties which superficially might seem to be unrelated. Thus, a wide range of phenomena is assumed to result from a single parameter. This brings us to the issue of how parameters are set.

3.1.2 Parameter setting

Under standard assumptions, UG principles are invariant as they are part of our genetic coding. With respect to how parameter setting occurs, the assumption is that the relevant parameter is present in the child's mind but the child still has to figure out which setting is appropriate. Consider the case of the head parameter. The head parameter is present in the child's mind, but the child has to figure out whether the value of the parameter has to be set for the initial or the final value on the basis of positive evidence. For instance, suppose that the child hears the following Turkish sentence:

(3) Elif hergün kitap oku-r.
Elif everyday book read-present-Ø
'Elif reads a book everyday'

The child is expected to set the head parameter as having a head-final value, as the verb follows all its complements. If the child hears an English sentence such as *Elif reads a book everyday*, the parameter is expected to be set for the head-initial value. The basic idea is that the child is assumed to set parameters to the appropriate values in any particular language being acquired on the basis of positive evidence.

It should be noted that linguistic theory approaches language acquisition from an abstract perspective in the sense that acquisition is instantaneous. Language acquisition theory, on the other hand, addresses the question of how language develops over time. Within the Principles and Parameters framework, various proposals have been put forward to account for how development takes place and why certain aspects of grammar appear earlier than others. Among others, one

pioneering study concerning the issue of how the child sets the correct value of a parameter is Hyams' (1983, 1986) work on the null subject phenomenon in early child English.[2] In recent years, studies within the Principles and Parameters approach have centered on other aspects of grammar. One central area of research concerns the acquisition of functional categories which refer to formal properties of grammar such as agreement and tense. Before proceeding with hypotheses about the acquisition of functional categories, we first define what is meant by functional categories.

3.1.3 Functional categories in L1 acquisition

Within the generative framework, syntactic categories in adult grammar are divided into two groups: lexical and functional. While lexical categories consist of nouns, verbs, adjectives and prepositions, functional categories constitute closed-class elements such as determiners, inflections and complementisers (e.g. Chomsky 1986b; Abney 1987). One major property of lexical categories is that they are thematic in that they contribute to the meaning of the sentence, and with the exception of prepositions, they generally have large numbers of members. Functional categories, on the other hand, are usually restricted and do not readily add new members.

X-bar-theory holds that all phrasal categories project from their heads, where heads can be lexical categories N, V P, A, or functional categories such as INFL and COMP. A category X projects to X' by the addition of a complement YP, and X' projects to XP by the addition of a specifier, as shown in (4).

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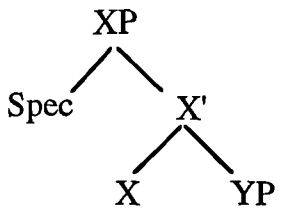
[2] Hyams (1983) attempted to account for the use of null subjects in early English, following the assumption of "extrinsic ordering" along the lines of markedness. It is assumed that in cases where X is unmarked with respect to Y, it is easier for the learner to adopt the unmarked value. In this particular example, it was assumed that the mechanism underlying the possibility of null subjects has an unmarked value, giving rise to null subjects in Italian-type languages, while a marked value rejects null subjects in languages such as English. For further discussion of learnability, see also Berwick (1985); Wexler & Manzini (1987).

(4)



We now turn to the specific proposals which have been put forth in regard to the acquisition of functional categories in child language. The three hypotheses on the status of functional categories in early child grammar are the Maturation hypothesis, the Strong Continuity hypothesis and the Weak Continuity hypothesis.

3.1.3.1 The maturation hypothesis

Due to the lack of functional elements in early child grammar, it has been argued that child grammars initially project only lexical categories while functional categories develop maturationally (e.g. Guilfoyle & Noonan 1992; Lebeaux 1989; Ouhalla 1991; Platzack 1990; Radford 1990; Tsimpli 1992). Syntactic properties that must be attributed to functional categories should be absent in the early speech of children. This instantiation of the maturational view entails that early grammars are fundamentally different from adult grammars. The most developed form of the maturation hypothesis is Radford's (1990) Small Clause hypothesis according to which children start off with small clauses that are projections of lexical heads, and project functional categories on the basis of a maturational schedule. We will return to Radford's hypothesis in Chapter 5 and Chapter 7.

3.1.3.2 The strong continuity hypothesis

Proponents of the Strong Continuity hypothesis, on the other hand, argue that child grammars have the same clausal structure as adult grammars (e.g. Boser, Lust, Santelmann & Whitman 1992; Hyams 1992; Pierce 1992; Pinker 1984; Poeppel & Wexler 1993). The main idea is that early grammars are represented

by a full CP projection, that is, all functional projections are present from the beginning. Evidence in support of the Strong Continuity hypothesis is based on data from the acquisition of languages such as French and German. In these languages, young children produce inflectional elements at an early age. Furthermore, children's early utterances provide evidence for syntactic processes such as verb raising and verb second, which require the presence of functional categories (e.g. Clashen 1991; Déprez & Pierce 1993; Hyams 1992; Meisel & Müller 1992; Pierce 1992; Poeppel & Wexler 1993).

3.1.3.3 The weak continuity hypothesis

An intermediate position between the Maturation and Continuity hypotheses is argued for by Clashen, Eisenbeiss & Vainikka (1994) and Vainikka (1993/94) according to which functional categories are initially not available, but emerge gradually via interaction between input and X'-theory. At first sight, the Weak Continuity hypothesis appears to be similar to maturational accounts of linguistic development in that both models allow for an early stage where functional categories are not projected. The Weak Continuity hypothesis, however, differs from the maturational view in that functional categories develop gradually, through lexical learning. It has been proposed that principles of X'-theory are available to the child from the onset of language development, and that phrase structure emerges later. The underlying prediction is that while the child starts off with a grammar containing only lexical categories, functional categories follow a developmental sequence in which the VP is acquired first, followed by IP which is in turn followed by CP.[3] This view is also referred to as the lexical learning hypothesis.

While these three hypotheses attempt to account for early child grammar, they all face certain problems. The maturational hypothesis, for example, has

[3] Another proposal concerning early phrase structure holds that one or two functional projections such as AgrP or TP are available but the full phrase structure involving CP is not (e.g. Clashen 1991; Meisel & Müller 1992).

problems in accounting for the acquisition of languages such as Dutch, German, Italian. As mentioned earlier, in these languages, it has been shown that young children not only produce inflectional elements at an early age but also control some of the syntactic operations associated with functional categories.

As pointed out by Vainikka (1993/94), the Weak Continuity hypothesis has difficulties in explaining how the mapping between semantics and syntax occurs in early grammar. Vainikka notes that it is generally assumed by proponents of the Strong Continuity hypothesis that "semantic propositions are mapped onto full CP in the syntax, whereas referring expressions are mapped onto DPs. Any theory that posits reduced structures, such as the Weak Continuity approach, is incompatible with this constraint on mapping" (Vainikka, 1993/94: 261). Furthermore, the claim that functional categories (e.g. CP) are missing precisely because functional elements (e.g. complementisers) are not utilised by young children has been challenged in recent work (e.g. Hyams 1992, 1994).

The Strong Continuity Hypothesis does not require any additional mechanisms to move from one stage with missing structure to the next with more structure. On the contrary, the full clause structure is assumed to be present from the beginning. This position is not, of course, without difficulties. Part of the problem in language acquisition is to explain why certain constructions develop at a certain time, or why certain constructions precede or come after others. A fundamental feature of the Continuity Hypothesis is that principles are constant over the course of development. The question then is why early child grammar might fail to show evidence for certain properties in certain domains.

- **Summary**

As we have seen, the motivation behind the assumption that there is an innate body of linguistic knowledge in L1 acquisition stems from *the logical problem of language acquisition*: the big gap between the input children hear and the system that they eventually attain. The fact is that in a relatively short period of time,

children come up with this knowledge without instruction or negative evidence. In this section, we have touched upon two important issues that L1 acquisition researchers are concerned with:

- Linguistic theory provides an answer to the logical problem in that there are innate principles of grammar in the child's mind.

- Language acquisition theory has to contend with the actual development. It has to explain how the child can attain perfect mastery of the adult grammar given the limited data.

We have also discussed, briefly, recent proposals concerning the acquisition of functional categories, as the issue of functional categories in Erdem's L2 English will be dealt with in great detail in this dissertation. Having established some conceptual background for L1 acquisition, we now move onto L2 acquisition. What are the guiding hypotheses in L2 acquisition? Are they similar to those of L1 acquisition?

3.2 Second language acquisition

As we have discussed, within the Principles and Parameters model of language acquisition, it is commonly assumed that L1 acquisition is constrained by the innate language faculty, UG. Such a consensus, however, does not apply to L2 acquisition. One of the major themes in L2 acquisition theory over the last 15 years has been the role of UG in interlanguage. A considerable number of L2 researchers working within the Principles and Parameters framework have raised questions about whether or not the L2 learner is also faced with the same learnability problem, namely, whether or not L2 learners also acquire a complex grammar which is beyond the input available in the environment. Despite the fact that there are differences between L1 and L2 acquisition with respect to the issue of ultimate attainment, the aim has been to explain knowledge of L2. Many L2

studies in the 1980s examined the issue of L2 acquisition from a UG perspective (e.g. Bley-Vroman 1989, 1990; Clashen & Muysken 1986, 1989; Felix 1985; Flynn 1987; Hilles 1986; papers in Eubank 1991 and Flynn & O'Neill 1988 and Gass & Schachter 1989, Schwartz 1991, 1992; White 1985, 1989). In this section, I would like to discuss some of these studies dealing with the "availability" or "non-availability" of UG as an operative mechanism in L2 acquisition.

With regard to this question of UG availability, it is important to note that the majority of L2 research in the 1980s concentrated on adult L2 acquisition. Therefore, much of the discussion in this section will be based on studies focused mostly on the development of adult L2 grammar. Studies on child L2 acquisition within the framework of UG will be reviewed throughout the dissertation.

For the purposes of this study, I will discuss two major positions on the issue of whether or not L2 learners have access to UG. One group of researchers argue for the view that adult L2 acquisition falls within the limits of UG, *the UG is available model.* Others argue that UG is not accessible to adult L2 learners, *the UG is not available model.*[4] These theories differ with respect to the issue of L1 influence, as summarized in (5) and (6).

(5) *The UG is not available model:* UG is not accessible to the L2 learner, but aspects of UG utilised in the L1 can be used in L2 acquisition.

(6) *The UG is available model:* UG is accessible to the L2 learner, but initially L1 parameter values are utilised.[5]

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[4] See also Mazurkewich (1984) for the view that UG is available to L2 learners and works in an identical way to L1 acquisition.

[5] It should be noted that with respect to the issue of UG in L2 acquisition, a group of L2 researchers argue L2 is acquired via UG alone, that is, there is no transfer of the L1 setting (e.g. Flynn 1987). According to Flynn, for example, in cases where L1 and L2 have different parameter settings, L1 influence might delay or cause difficulty in acquiring the L2 parameter values.

3.2.1 UG is not available

Among research which focuses on the non-availability of UG, considerable attention has gone into the differences between L1 and L2 acquisition (Bley-Vroman 1989, 1990; Clashen & Muysken 1986, 1989; Schachter 1989, 1990). In his Fundamental Difference Hypothesis, Bley-Vroman (1989, 1990) claims that L1 acquisition and adult L2 acquisition are fundamentally different processes. Although UG is operative in child L1 acquisition, in the case of L2 acquisition, it is replaced by non-linguistic systems which involve analogy and hypothesis testing. In his view, adult L2 acquisition is guided by general problem-solving mechanisms which are entirely different from what is assumed for child L1 acquisition. (7) summarizes Bley-Vroman's view on child L1 acquisition and adult L2 acquisition.

(7)

Child language development	Adult foreign language development
a. Universal Grammar	a. Native language knowledge
b. Domain-specific learning procedures	b. Problem-solving systems

(Bley-Vroman, 1989: 51)

Much of Bley-Vroman's argumentation relies on comparing the ultimate attainment of young L1 children and adult L2 learners. For example, he points out that although every normal child attains native speaker competence, adult L2 learners generally do not reach this level. That is, unlike L1 acquisition, there is a general failure in adult L2 acquisition with respect to ultimate attainment. He also claims that while there is no instruction or training involved in L1 acquisition, adult L2 is characterised by systematic, organised and controlled practice. A related issue is the use of negative evidence in L2 acquisition. As is widely accepted, L1 acquirers are not assumed to make use of systematic negative feedback in the form of corrections. Bley-Vroman, among others, argues that negative evidence in L2 acquisition might be useful, even necessary.

Schwartz (1990) presents a detailed critique of Bley-Vroman's Fundamental Difference Hypothesis. While she does not deny the fact that there are differences between L1 acquisition and L2 acquisition, the crucial point she makes is related to the type of knowledge created in both cases. In her view, the two knowledge systems, L1 and L2, may be *epistemologically equivalent.* Recall that for Bley-Vroman the two processes are different due to lack of equivalent ultimate attainment and to observed differences between L1 and adult L2 acquisition. In regard to the notion of *epistemological non-equivalence*, Schwartz focuses on historical changes in language. Based on the notion of "*abductive change*" proposed by Andersen (1973), Schwartz argues that simply because Modern English and Old English differ, this does not mean that they represent two different types of knowledge. Similarly, for Schwartz, the final state of L1 and L2 acquisition of a particular language might differ, but they may be *epistemologically equivalent* (Schwartz 1990), i.e. the knowledge created in both L1 and L2 acquisition could be of the same type. What is crucial in Schwartz's argument is that the lack of success in ultimate attainment alone does not entail a different knowledge type in L2 acquisition.

Clashen (1988) and Clashen & Muysken (1986, 1989) are also among those who argue that some innately specified system like UG does not operate in adult L2 acquisition. They examine the acquisition of German as a first language and compare these child L1 data with L2 German data from adult native speakers of Italian, Spanish, Portuguese and Turkish. Clashen & Muysken (C&M) show that L1 children acquire German word order through a series of steps compatible with principles of UG, while adult L2 learners do not pass through similar stages. Rather, their word order patterns involve, according to C&M, illegitimate generalizations and movements. In addition, C&M argue that the L2 learners employ a canonical word order strategy (SVO) which holds regardless of the learner's L1.[6] They conclude that L1 and L2 are different processes: while L1

[6] C&M claim that Turkish learners posit SVO as the basic order of German, despite the fact that Turkish word order is SOV (cf. Vainikka & Young-Scholten 1994, 1996a, 1996b).

acquisition is constrained by principles of UG, the process of adult L2 development involves principles of information processing and general problem-solving strategies.

Schachter (1989, 1990) also argues in favor of a position which rejects the availability of UG to adult L2 learners. Focussing on the role of the L1 in L2 acquisition, Schachter (1989) argues that UG is not accessible to L2 learners but aspects of UG instantiated in the L1 can be activated and used in the L2. In other words, L1 value of parameters will be of use to the L2 learner. Crucially, however, L2 learners cannot reset parameters in the course of L2 acquisition.

3.2.2 UG is available

In contrast to Bley-Vroman, Clashen & Muysken and Schachter, another group of L2 researchers argue for the operation of UG in adult L2 acquisition (e.g. du Plessis, Solin, Travis & White 1987; Tomaselli & Schwartz 1990; White 1989). They have mainly focused on how to account for the L2 data in terms of UG-based hypotheses (e.g. du Plessis, Solin, Travis & White 1987; Schwartz 1991). It is argued that if UG-based analyses can provide an explanation for any particular set of L2 data, they should be preferred over problem-solving strategies or performance related explanations. This is because not much is known about the problem-solving mechanisms, and thus until empirical evidence proves the opposite, UG-based analyses, because they are more explicit, offer a theoretically simpler explanation than problem-solving mechanisms (Schwartz 1991).[7]

The operation of UG in L2 acquisition can be tested in various ways. One way is to show whether or not L2 grammars are compatible with the independently motivated principles and parameters of UG (duPlessis, Solin, Travis & White 1987). One can also look at the presence or absence of clustering associated with a particular parameter (Schwartz 1991; Meisel 1991). Another

[7] See Schwartz (1991) also for empirical evidence which shows that problem-solving mechanisms mispredict word orders which are not attested in the interlanguage of L2 learners.

way, proposed by Schwartz (1992), is to compare the developmental sequences of child L2 and adult L2 acquisition, holding the L1 constant. It is usually the case that child L2 learners end up being native-like, and therefore, perhaps, child L2 grammars are ideal candidates for one to investigate whether L2 grammars are constrained by the principles of UG. With respect to developmental sequences, Schwartz argues that if there is a similar developmental sequence for both adult and child L2 learners, then the UG-based model of L2 acquisition wins over the problem-solving approaches. Problem-solving accounts, on the other hand, predict different developmental sequences for each group. For Schwartz, the fact that L2 systems are usually different from L1 systems in terms of the issue of ultimate attainment cannot be used as evidence for the non-availability of UG in L2 grammar construction, precisely because UG is not responsible for all aspects of grammar construction.

- **Summary**

In this section, we have reviewed one of the major issues in recent L2 research, namely, whether or not UG continues to operate in L2 acquisition. For some researchers, there are fundamental differences between L1 and L2 acquisition, and therefore, L2 learners have no direct access to UG and their interlanguage grammars are guided by non-linguistic general problem-solving mechanisms. For others, who assume a weaker version of this hypothesis, only L1-related UG principles are available to the L2 learner. The claim is that L2 learners cannot reactivate UG but they utilise L1 parameter settings and UG principles. Another group of L2 researchers claim that even though some L1 parameter values make up the initial hypothesis, interlanguages are constrained by UG, and so we expect to find parameter resetting in L2 acquisition.

When considering the issue of UG accessibility in L2 acquisition, the fact that L2 learners already have previous instantiations of UG principles and parameters in their L1 raises the issue of L1 influence in interlanguage grammars. As

pointed out by Schwartz & Eubank (1996), previous linguistic knowledge in L2 acquisition is what makes the *L2 initial state* different from the *L1 initial state*. An immediate question arises as to the extent of L1 influence in L2 acquisition. As Chapter 4 specifically addresses the question of L1 influence in Erdem's earliest data, we will now discuss recent proposals on the extent of the learner's L1 knowledge on the acquisition of an L2. We first discuss briefly the notion of language transfer in early work conducted within the Principles and Parameters approach and then review more specific proposals dealing with the issue of L1 transfer. Three recent hypotheses on the L2 initial state will, then, be presented: The Minimal Trees hypothesis (Vainikka & Young-Scholten 1994, 1996a, 1996b), The Weak Parametric Transfer (Valueless Features) hypothesis (Eubank 1993/94, 1996) and The Full Transfer/Full Access hypothesis (Schwartz & Sprouse 1996).

3.3 Transfer studies within the Principles and Parameters model

With the appearance of the parameter setting model (Chomsky 1981), another trend of transfer studies emerged. L2 acquisition researchers had a new tool for characterising L1 influence, this time, in terms of the transfer of parametric values.

The crucial difference between, on the one hand, early work based on the assumptions of Contrastive Analysis and, on the other, a UG-based approach to transfer becomes more obvious when one considers the nature of UG. While in early approaches to transfer, the emphasis was mainly on surface similarities or differences among languages, in UG-based analyses, L1 influence does not merely refer to surface characteristics, as linguistic theory deals with the mental representation of linguistic knowledge.

The possibility of parameter re-setting, i.e. adopting the L2 value of a parameter when the L1 value was different, became the focus of the L2 research in the 1980s (e.g. Liceras 1989; Phinney 1987; White 1985; 1989). UG-based

research of this type is mostly associated with the pioneering work of Lydia White.

In White's view, when the L1 and L2 parametric values are different, L1 settings are initially adopted in L2 acquisition until the L2 data force re-setting. As an illustration of this view, we examine White's (1990/91) study on the Verb Movement Parameter.[8] White investigates the acquisition of English by 10-12 year-old French-speaking children.

Following earlier work by Pollock (1989) on the differences between French and English, White examines the two languages in terms of adverb placement, negative placement, and question formation. Let us consider these syntactic differences.

a. While in English sentence-internal adverbs precede the finite main verb,[9] in French they follow the finite verb, as shown in (8):

(8) a. Pierre parle souvent anglais.
'Pierre speaks often English'
b. Peter often speaks English.

b. The negative element *pas* in French is placed after the finite main verb, whereas in English *not* always occurs before the main verb.

(9) a. Je ne comprends pas français.
I understand not French
'I don't understand French'
b. I do not understand French.

[8] The data in White (1990/91) will also feature in the illustration of Eubank's (1993/94) and Schwartz & Sprouse's (1996) recent work on language transfer, which is why this particular study is chosen to exemplify parametric transfer.

[9] The discussion is limited to thematic verbs in French and English.

c. French verbs can invert with pronominal subjects, but in English, subject-verb inversion is not permitted with lexical verbs.

(10) a. Parlez-vous anglais?
Speak you English?
'Do you speak English?'

b. *Speak you English?

c. Do you speak English?

According to Pollock's analysis, these differences can be attributed to the notion of verb-raising. In French, all finite verbs raise out of the VP, whereas in English only the auxiliaries *have* and *be* can raise but not lexical verbs. The Verb Movement Parameter allows us to account for these differences in the two languages. The finite verb in French raises, allowing orders such as SVAdvO, as in (8a). The lack of verb raising in English gives the order SAdvVO, as in (8b). Likewise, the lack of verb raising in English explains why the negative *not* is found before the verb, as in (9a), whereas French *pas* is always placed after the finite verb, as in (9b). And finally, the verb is raised in French questions but not in English, as in (10a,b)

The results of White's study show that the French-English learners do not allow verb movement in negatives or questions: They do not allow sentences such as *I understand not French* or *speak you English?*. In other words, what White calls "long movement" is not possible for these learners. With respect to the placement of sentence-internal adverbs, on the other hand, the L2 learners accept and produce the ungrammatical order, SVAdvO, in English. For White, this means that they incorrectly assume that verb raising over the adverb, what she calls "short movement", is allowed in accordance with the French value of the verb-movement parameter. Note that there is no clustering in these data with respect to the properties associated with the Verb Movement Parameter.

Nevertheless, White argues that a UG-based analysis is still possible, as Pollock's (1989) proposal specifically posits different positions to which to verb raises in French: pre-adverb, pre-negation, and pre-subject. For White, in sum, the SVAdvO order in these French-English data are evidence of transfer of the L1 value of the verb movement parameter (see White 1990/91 for details).

The French-English data in White's study formed the basis of recent analyses by other researchers who take different positions on the issue of L1 Influence. It is at this point that we discuss three recent hypotheses on language transfer: (i) The Weak Parametric Transfer (Valueless Features) hypothesis (Eubank 1993/94, 1996), (ii) The Full Transfer/Full Access model (Schwartz & Sprouse 1996), and (iii) The Minimal Trees hypothesis (Vainikka & Young-Scholten 1994, 1996a, 1996b).

3.4 Three recent hypotheses on language transfer

3.4.1 The Weak Parametric Transfer (Valueless Features) hypothesis

Eubank (1993/94) takes another look at White's data. While he agrees with White that the absence of data like (11) is an indication of the absence of "long movement", he notes that in addition to SVAdvO, these learners also allow SAdvVO, as in (12).

(11) a. John likes not Mary.
b. Likes she John?

(12) a. John helps always Mary.
b. John always helps Mary.

For Eubank, that the L2 learners allow both SAdvVO and SVAdvO is the important fact that needs to be explained. He agrees with White that the SVAdvO order is due to verb raising, i.e. "short movement", but for Eubank, this raising is optional. So the question for Eubank is how verb raising can be

optional in the grammar of French-English learners. The answer he provides has to do with the way he views the interaction between morphology and syntax. Eubank follows Pollock's (1989) idea that verb raising is tied to the strength of inflectional features. The values of these inflectional features are in turn dependent on the morphological paradigm of verbs. In French, the morphological paradigm is "richer", and so the value is set to [+strong]. A strong inflectional feature means the verb will raise (e.g. SVAdvO). English, by contrast, has a much more depleted inflectional paradigm for verbs, and so the value is set to weak and the verb does not raise (hence SAdvVO). The fact that both SAdvVO and SVAdvO are produced by the French-English learners shows, according to Eubank, that the initial representation of L2 English does not have the strong inflectional feature of their L1. Eubanks' conclusion is that the strength of inflection does not transfer. He deduces that the reason the strength of inflection does not transfer is because the morphological paradigm does not transfer. For Eubank, then, the initial value of the inflectional feature is instead "inert". Eubank stipulates that an inert value gives rise to optional verb raising; once the value is set, which depends on acquiring the verbal inflection of the target language, i.e. English, verb raising will cease. What this means, in sum, is that while L1 lexical as well as functional projections and their directionality transfer into the L2 initial state, the values associated with morphological paradigms do not.

Eubank's analysis, however, has been challenged by Schwartz & Sprouse (1996) who argue that what transfers from the L1 grammar is not partial but absolute. Let us examine how Schwartz & Sprouse analyse these data.

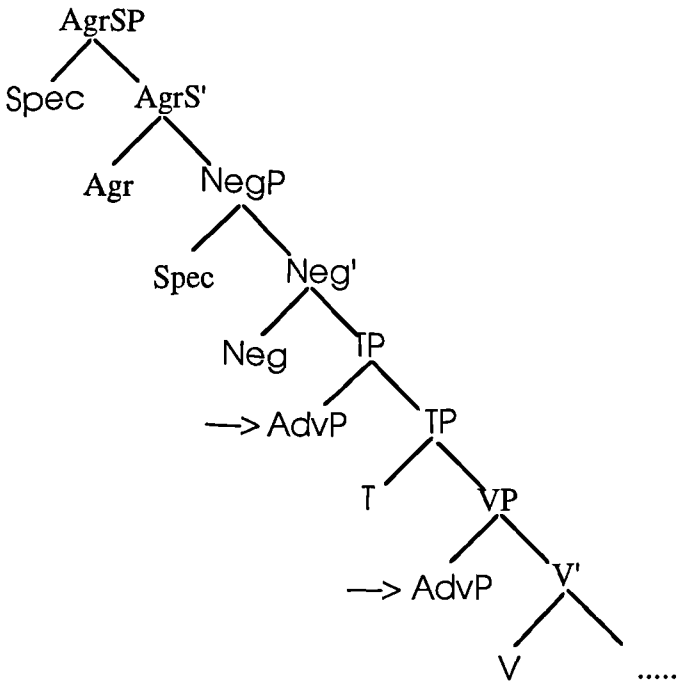
3.4.2 The Full Transfer/Full Access hypothesis

In regard to the SAdvVO / SVAdvO orders in the L2 French-English data, Schwartz & Sprouse (1996) first point out that these data are not necessarily indicative of the L2 initial state, as the learners had already been exposed to

English for some time. Recall that at the time the learners produce both SAdvVO and SVAdvO, they do not raise the verb past negation. According to Schwartz & Sprouse (S&S), input in the form of *do*-support provides evidence for lack of verb raising to AgrS in English (Schwartz 1987). Hence, *do*-support causes the delearning of "long movement". However, input in the form of sentence-internal adverbs in English, they argue, is not sufficient for the delearning of "short movement" and so the SVAdvO order persists.

In S&S's analysis, then, the SVAdvO order is consistent with the French analysis, that is, the adverb is base-generated adjoined to the VP, and the verb raises to T, as shown in (13).

(13)



To derive the SAdvVO order, S&S propose that on the basis of SAdvVO input, the learners posit an additional adjunction site for the adverb, namely to TP, as again shown in (13). In this case, although the verb still raises to T, the adverb is now higher.

The important point in S&S's proposal is that the surface SAdvVO pattern in English has an analysis different from the analysis of the SAdvVO order in the French-English L2 data. While English lacks verb raising, for the French-English

learners, the verb moves as far as T. According to S&S, initially the learners assumed the grammar of French for English (Full Transfer), however, when the L2 English input showed that the L1 grammar was not adequate, the L2 learners restructured their L2 via UG. This is referred to as Full Access.

3.4.3 The Minimal Trees Hypothesis

The third approach to the issue of L1 influence is Vainikka & Young-Scholten's Minimal Trees model. Here we will need to consider a different set of data. Vainikka & Young-Scholten (1994, 1996a) analyse naturalistic cross-sectional data from adult Korean and Turkish learners of German. They find that the earliest data show an OV order. Some representative examples are given in (14).

(14) a. Teekanne die Ofen setzen. (L1 Turkish)
teapot the oven put.
'(I) put the teapot (on) the oven.'

b. Eine Katze Fisch alle essen. (L1 Korean)
a cat fish entire eat.
'A cat ate the entire fish.' (V&Y-S, 1994: 280)

For Vainikka & Young-Scholten (V&Y-S), in this earliest stage the clause is initially projected only to VP, with verbs remaining in their base-generated position. In the second stage, although the learners still produce bare VP utterances of the type exemplified in (14), they also produce utterances in which the verb is no longer in final position, as in (15).

(15) a. Jetzt brau Wohnungsamt fragen. (L1 Turkish)
Now need housing authority ask
'Now (I) need to ask (the) housing authority'

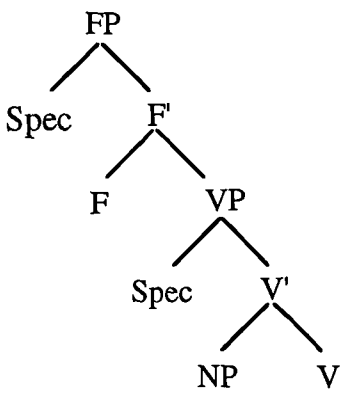
b. Mir machen nichts mehr. (L1 Turkish)

Me make nothing more

'(They will) do nothing more (to) me' (V&Y-S, 1994: 289)

On V&Y-S's analysis, this second stage is characterised by optional verb raising. However, these data generally do not show evidence for agreement morphology: the verbs involve either the infinitive *-n* or no suffix. It should be noted that according to V&Y-S's criterion, the learners are assumed to have acquired the agreement paradigm when they use at least two correct instances of four different agreement suffixes over 60% of the time on raised main verbs. For V&Y-S, then, the learners at this stage have not yet acquired subject-verb agreement and obligatory verb raising, but utilise optional verb raising and some modals and auxiliaries. Nevertheless, as the verb needs a position to raise to, V&Y-S propose that at this stage a functional category has been created. They refer to this projection as FP, an underspecified functional category, as shown in (16).

(16)



In the third stage, referred to as AgrP stage, the learners have acquired the agreement paradigm, obligatory verb raising and the non-pro-drop value of the Null Subject Parameter. Some examples are given in (17).

(17) a. Trinkst du Cola? (L1 Korean)

drink:-2sg you cole?

'Are you drinking cola?'

b. Sie kommt zu Hause. (L1 Korean)

She comes-3sg at house

'She's coming home' (V&Y-S, 1994: 286)

At the AgrP stage, although there is evidence of a few wh-questions and yes/no questions, the use of embedded clauses with overt complementisers is still limited, and thus for V&Y-S CP is still in the process of emerging.

As we have seen, according to V&Y-S's analysis, the learners posit minimal structures. Due to the lack of elements such as auxiliaries, modals, tense or agreement morphemes and complementisers, the initial representation of the phrase structure contains only lexical categories which are transferred from L1. Thus, the L2 learners initially transfer only the headedness of the VP from their L1. Functional categories, on the other hand, develop gradually through the interaction of X'-theory and the input.

This proposal, known as the Minimal Trees hypothesis, is based on the Weak Continuity hypothesis proposed for L1 acquisition according to which children start with lexical projections, while functional projections develop later (e.g. Clashen, Eisenbeiss & Vainikka 1994). On similar grounds, V&Y-S propose a developmental acquisition sequence in which VP precedes IP and IP precedes CP.

The two claims in the Minimal Trees hypothesis, which will become important to our analysis of Erdem's data are, as follows:

- Only lexical categories and their linear orientation, which are transferred from the L1, are present at the earliest stage of L2 acquisition.
- Functional projections are acquired through the VP-IP-CP developmental sequence.

- **Summary**

We can summarise the main points of the three hypotheses in the following terms:

- Eubank (1993/94, 1996): Both lexical and functional projections as well as their directionality values transfer into the L2 initial state; however, syntactic properties related to morphological features do not.
- Schwartz & Sprouse (1996): The whole of the L1 grammar characterises the L2 initial state.
- Vainikka & Young-Scholten (1994, 1996a, 1996b): Only lexical projections and their directionality values transfer from the L1.

As we have seen, while the three hypotheses take very different stands, they all hold that previous L1 knowledge plays a role on characterisation of the L2 initial state. The subject of this study Erdem was only 4.3 years old when the study began. It is generally assumed that children, in contrast to adults, acquire an L2 with more success. However, given the fact that Erdem, like adult L2 learners, has already acquired another language, one might wonder whether or not L1 influence will be evidenced in his L2 acquisition, too. Hence, in Chapter 4, we discuss Erdem's earliest English data with respect to the notion of language transfer.

CHAPTER 4

L1 INFLUENCE IN CHILD L2 ACQUISITION

4.0 Introduction

The primary aim of this chapter is to discuss the earliest data in Erdem's L2 English. We first present a detailed description of Erdem and the data collection procedure and then describe the observed facts in relation to the development of VP and negation. Finally, we present an analysis of the earliest data in this study.

The organisation of the chapter is as follows. Section 4.1 provides background information about Erdem as well as data collection and data transcription. Section 4.2 presents basic facts about syntactic structure in English and Turkish. In Section 4.3, we describe Erdem's data on the development of VP and negation. Section 4.4 presents an analysis of Erdem's early L2 data. In Section 4.5, we discuss our findings in terms of the recent hypotheses on L1 influence discussed in Chapter 3. Finally, in Section 4.6, we consider the findings on Erdem in terms of two issues: similarities and differences between, first, child L1 acquisition and child L2 acquisition, and second, between child L2 acquisition and adult L2 acquisition.

4.1 The subject of this study: Erdem

4.1.1 Data collection

The subject of this study, Erdem, is the first-born child of an academic couple. He was born in Turkey and came to England in November 1993, when he was 4 years old. He had no previous exposure to English prior to his arrival in the UK. During the first two months of his stay, he was always at home with his Turkish-speaking parents. Erdem started nursery school in January 1994, where he spent two and a half hours a day. This is the beginning of his regular exposure

to English. When the data collection started at the beginning of March 1994, Erdem had been attending the nursery school for one and a half months. At school, while he received no instruction in English, he had contact with both native and non-native children. It should be pointed out that no other Turkish children attended the school. By the time of the first sample (9 Mar '94), he had been producing some English words, mainly nouns, which were basically the names of animals such as *dog, cat, lion, pig, bird, duck,* etc.

Erdem's contact with English was occasionally interrupted for several reasons such as holidays and illness. In July 1994, five months after the study began, the whole family went to Turkey for a five-week holiday. After they returned from the summer holiday in August 1994, Erdem spent most of his time at home, mainly with his mother. As they lived in university accommodation allocated to foreign students, all of the children in the neighbourhood were non-native speakers of English. Erdem made friends with two children who hardly spoke any English at the time. His exposure to English from the end of June 1994 until September 1994 is rather sporadic, as he did not attend the nursery and Turkish was always the language spoken at home.

In September 1994 Erdem started infant school. Unlike at the nursery, all of the children, approximately thirty, were native speakers of English. At school, Erdem spent six hours a day, playing and learning with other children, from 9 am until 3 pm. Thus, Erdem's regular contact with English was during the daytime. At other times, in the evenings and on weekends, he was regularly exposed to Turkish. As we shall see in the following chapters, starting in September 1994, drastic changes were observed in his English in terms of the use of a wide variety of phenomena such as modals, yes/no questions, wh-questions, complement clauses.

However, it is important to note that after five weeks, in October 1994, he stopped going to the school for more than four weeks. He expressed a lack of confidence in his ability to speak English like the other children at school. He

constantly said that he did not understand when others spoke English. Consider the following examples in (1).

(1) a. Investigator: Mummy said you had an appointment with the doctor yesterday. What did the doctor say?
Erdem: I didn't understand.
Investigator: You didn't understand what he said? (S 18, 20 Oct '94)
Erdem: Because I am Turkish.

b. Investigator: What did you say? (S 19, 1 Nov '94)
Erdem: I don't want to learn English.
Investigator: Why? Why do you not want to learn English?
Erdem: Because I because I xxx.
Investigator: Sorry.
Erdem: I say I don't understand now.
Investigator: You don't understand what she says?
Investigator: You will understand.
Erdem: I know some English.
Investigator: Of course you do.
Erdem: I don't want to learn another English.
Investigator: You don't want to learn English any more?

He might have been confused by the change in his environment, moving from a nursery school where the majority of the children were non-native speakers of English, to an infant school where he was the only non-native child in the class. Naturally, during these four weeks, his exposure to English was limited, perhaps only to TV and to the sessions that I had with him, which continued throughout the whole period.[1] In spite of this fact, however, his comprehension ability during the same period was normal and he consistently spoke English with me.

[1] Four samples were recorded during this period: Sample 17 (12 Oct 1994), Sample 18 (20 Oct 1994), Sample 19 (1 Nov 1994), Sample 20 (8 Nov 1994).

In the second week of November 1994, Erdem agreed to go to school again. Sample 21 (15 Nov 1994) is the first recording after he went back to school. Table 4.1 presents a rough idea of the amount of exposure to English Erdem had.

Table 4.1 Input Schedule

period		Erdem's age	where/why	English input
Jan '94 – June '94	(5 Months)	4;2 ~ 4;7	Nursery school	some
July '94 – Sep '94	(9 weeks)	4;8 ~ 4;10	Summer holiday	very little
Sep '94 – Oct '94	(4 weeks)	4;10 ~ 4;11	Infant school	a lot
Oct '94 – Nov '94	(5 weeks)	4;11 ~ 5;0	Interruption	little
Nov '94 – June '95	(7 months)	5;0 ~ 5;7	Infant school	a lot
July '94 – Aug '95	(2 months)	5;8 ~ 5;9	Summer holiday	some

The data reported in this study were collected approximately 3 times a month, covering a period of approximately 18 months. Most of the data were collected in the afternoon during the week days, soon after Erdem returned from school. All of the data except the first 3 sessions were tape-recorded. During the first three sessions, Samples 1-3 (9 Mar '94–23 Mar '94), he was distracted by the fact that he was being recorded. He did not accept the presence of the tape-recorder and did not allow me to use it. Therefore, the first three session are hand-written records of Erdem's spontaneous utterances, which were produced in reply to my questions. The first recorded session is Sample 4 (4 Apr '94). In each situation, the data were collected whenever Erdem seemed to be willing to speak English, that is, he was not forced to speak English when he did not want to. Each session continued for 40 to 90 minutes, sometimes more. It should be noted at this point that I never spoke to him in Turkish during the entire data collection period.

Most of the data reported in this study were collected while playing either activity games (e.g. lego, stick-on games, drawing, colouring) or communication games (e.g. role-play with toys, picture tasks) at his home. On several occasions, however, data were collected either at my place or on the playground. Despite the fact that most of the conversations took place between him and me, in some cases, the data were obtained when Erdem talked with his parents, especially with his mother, or with his friends.

4.1.2 Data transcription and data coding

Although the data collection lasted for nearly three years, in this dissertation I will examine the first 18 months of Erdem's interlanguage, as the rest of the data has not been transcribed at the time of writing this dissertation. The first set of recorded data, consisting of 19 audio-cassettes, covers Erdem's earliest English. These data are mainly discussed in this chapter and Chapter 5. I then transcribed the second set of data, 33 audio-cassettes. As of today, these data come to over 600 pages, consisting of 46 Samples. As the data collection continued after the first 18 months, there are still 25 cassettes which need to be transcribed and coded for future research.

In the first set of data, some of the syntactic transcription symbols in CHILDES (MacWhinney & Snow 1985) were used in coding. For example, when an utterance or any part of an utterance was unintelligible, "xxx" was used.

(2) Investigator: Oh # look at these! # Do you like cookies?
Erdem: Very big big # # # cookie # sausages.
Erdem: Wait # this is xxx # look. (S 9, 5 June '94)

When the speech was interrupted, a symbol "+/." was used to indicate that the utterance was not completed, as in (3).

(3) Investigator: I know that you are on holiday and none of the kids +/.
Erdem: But I'm not go nursery.
Erdem: <I go> [//] # # I go # # big school.
Erdem: I say you I go big school. (S 13, 23 August '94)

As the utterances in (2-3) show, the symbol "< > [//]" was used for repeated utterances and "#" was used for pauses. Contextual information and comments were also included in the transcripts in order to clarify the situation. Likewise, when there were Turkish utterances in dialogues between Erdem and his mother, the English translation was provided in the transcripts, as in (4).

(4) Investigator: What are you painting now, Erdem?

Erdem: Kulak # kulak. (S 4, 4 April '94)

%eng: 'Ear'

%com: He doesn't know the word for 'ear' but he understands the question perfectly.

Investigator: What are these? Are they ears?

However, in the second set of transcription, I disregarded not all[2] but some of the symbols such as "< > [//]" and coded the whole corpus in terms of the various syntactic phenomena under investigation in this dissertation. This was largely due to the fact that the symbols in CHILDES are used for a variety of purposes, some for phonological some for morphological data analysis, for instance. I made up symbols which could serve my own purposes. (5) illustrates a small portion of the coded data.

(5) *BEL: Why didn't you buy a green one?

*ERD: u s 1ps dosupport neg v I didn't buy.

u s ls v nonirregpast v My friend just give me.

(S 24, 8 Dec '94)

In (5), *u* stands for utterance, *s* for subject, *1ps* for first person singular subject pronoun, *dosupport* for *do*-support, *neg* for negation, *v* for verb, *ls* for lexical subject, *nonirregpast* for instances where the irregular form of the verb is not provided.

It should also be noted that every file was saved in a CHAT format, and frequencies were calculated by using CLAN. In many cases, however, I often checked frequencies manually to make sure that numbers were correct.

[2] I continued to use symbols such as *com* for contextual information, *eng*, for translations from Turkish into English, and # for pauses.

4.1.3 Erdem's L1 Turkish at the onset of the study

Before proceeding with Erdem's earliest data in English, first some comments on his Turkish are in order. At the beginning of the data collection, he was very articulate and had a good command of Turkish. Although I always spoke English with him, there are some Turkish data in the corpus based on dialogues between Erdem and his parents. The following examples provide us with some ideas about his Turkish morphosyntax at the beginning of the data collection. First, we find that Erdem used morphemes associated with agreement and tense system in Turkish.

(6) a. Mother: Karalama çocuğum. (S 7, 6 May '94)

English: Don't write on the book # son.

Erdem: Ama nasıl oyna-nı-yor ben bil-mi-**yor-um.**

But how play-passive-present I know-neg-**pres-1sg**

'But I don't know how it is played'

b. Investigator: Erdem # you didn't tell your mum what we did in the department today. Why don't you tell her?

Action: Turning to his mother

Erdem: Ama zaten oyna-ma-**dı-k.** (S 10, 13 June '94)

But well play-neg-**past-1pl**

English: 'But we didn't play'

c. Investigator: Your mum has found a ball. (S 12, 9 Aug '94)

Investigator: Ask her where she has found it.

Comment: He understands the question perfectly.

Erdem: Anne nere-den bul-**du-n**?

Mum # where-abl find-past-**2sg**

English: 'Mum, where did you find it'

The examples in (6) show that agreement markers are all in place in Erdem's L1. For example, he is able to use the first person singular agreement morpheme ***-Im***[3] (6a), the first person plural agreement morpheme ***-Ik*** (6b) and the second person singular agreement morpheme ***In*** (6d). All these examples also show the appropriate production of tense morphemes such as ***-dI*** (past tense) (6b), ***-Iyor*** (present) (6a).

Erdem also knows that the third person agreement in Turkish is not overt.

(7) Investigator: Will you give me the scissors # thanks. (S 11, 17 June '94)
Mother: Ne istiyordu, Erdem?
English: What did she want?
Erdem: Kesmek için makas isti-**yor-du-Ø** # ver-**di-m**.
cut-infinitive for scissors want-pres-past-**Ø** # give-past-**1sg**
English: '(She) asked for the scissors to cut. (I) gave (the scissors)'

The example in (7) also shows that Erdem produces embedded clauses in Turkish. In addition, the second half of Erdem's answer to his mother's question in (7), *Ver-di-m* "(I) gave (the scissors)" indicates that he is aware that Turkish is not only a pro-drop but also an object-drop language, precisely because he drops both the subject *I* and the object *scissors*.

In addition to tense and agreement morphology, we also find data on the use of morphemes such as the negative morpheme ***-mA***, the passive morpheme ***-Il***, the infinitive morpheme ***-mEk***. Consider the following examples.

(8) a. Investigator: No # this is the image of the hat in the mirror.
Erdem: Bu say-**ıl-maz**. (S 7, 6 May '94)
This count-**passive-neg**
English: 'This cannot be counted'

[3] Following standard Turkological practice, we use archiphonemes with capital letters.

b. Investigator: Look at this. (S 7, 6 May '94)

Erdem: Anne # oyna-**mak** ne de-**mek**?

Mum # play-**infinitive** what say-**infinitive**

English: 'Mum, what is the word for 'playing'?

Overall, these facts indicate that Erdem had no trouble with the morphosyntactic properties of Turkish at the beginning of the data collection.

There are also some data on his wh-questions in the corpus. Some examples are presented in (9).

(9) a. Erdem: **Nereye** six yaz-ıcaa-m? (S 7, 6-May '94)

Where six write-future-1sg

English: '**Where** am I going to write six?'

b. Erdem: Mum # **nasıl** yaz-ıl-ıyor? (S 7, 6-May '94)

Mum # **how** write-passive-present

English: 'Mum # how is it written?'

c. Investigator: Is this a bear? (S 7, 6 May '94)

Erdem: Yes.

Investigator: Oh # there is a little girl there.

Erdem: **Hangi-si** boya-n-acak?

Which-acc paint-passive-future

English: 'Which one needs to be painted?'

d. Investigator: How about your lion? (S 10, 17 June '94)

Erdem: Oh, lion, sorry # söyle **ne** ist-iyor-sun?

Oh, lion, sorry # tell **what** want-present-2sg

English: 'Oh lion sorry # tell what do you want?'

The examples in (9) show that Erdem produced wh-phrases such as *ne* (what), *nereye,* (where), *nasıl* (how) and *hangisi* (which) and had already mastered the morphosyntactic properties associated with the question formation in Turkish. In

sum, the data presented in (6-9) above show that Erdem has fully developed IP and CP systems in his Turkish grammar.

We next provide a brief overview of the syntactic framework and theoretical assumptions adopted in this study. The earliest data examined in this study come from the development of VP and negation. Therefore, our discussion in the next section is mainly concerned with the syntactic properties of English and Turkish clause structure.

4.2 Syntactic properties of English and Turkish

This section presents basic facts about clause structure along the lines of Chomsky's Minimalist program (Chomsky 1993), first for English, and then for the relevant aspects of Turkish.

4.2.1 Clause structure in English

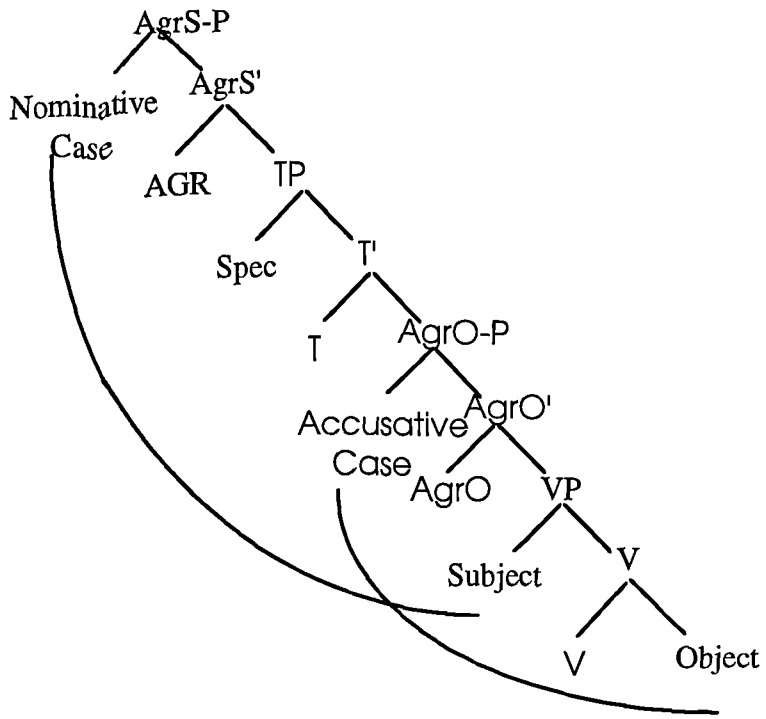
The underlying word order in English is SVO. Consider the sentences in (10).

(10) a. John reads a book every night.

b. You know that John reads a book every night.

Assuming that the structure of a phrase is determined by X-Bar theory which defines the relationship between heads and complements, all projections in English are head-initial. The basic clause structure in English is illustrated in (11).

(11)



Under Minimalism, lexical elements are inserted from the lexicon fully inflected and inflectional heads are assumed to be a collection of abstract morphological and syntactic features. With respect to these abstract features, it is assumed that inflectional heads have two sets: verbal features and nominal features. Verbal features check the corresponding inflectional properties of verbs, such as agreement, and nominal features check relevant features on nouns such as case, number and gender. Features are assumed to be either weak or strong varying across languages.

As the tree in (11) shows, both subjects and objects are assumed to start off internal to the VP. In contrast to earlier work (e.g. Chomsky 1981), structural Case is now viewed solely as a relationship between the head and its specifier, and the notion of case assignment is replaced by feature checking. Under this account, then, both subjects and objects should raise and check their Case features in a Spec-Head relationship with the relevant head, where relevant heads are Agreement heads. Weak features do not have to be checked until LF, whereas strong features are visible at PF and need to be checked before Spell-Out.

Similarly, if verbal features are weak, then the verb does not have to raise until LF. If they are strong, the verb must raise overtly to check its features.

With regard to verb movement in English, the assumption is that only auxiliaries *be* and *have* and modal verbs raise before Spell-Out. English main verbs, however, do not move until LF, as the relevant features are assumed to be weak. In English, evidence for the analysis that *have* and *be* undergo overt movement comes from the distribution of negatives, adverbs and quantifiers.

(12) a. They have **not** gone to the store yet.
b. They are **not** leaving today.
c. Mary has **probably** left the country.
d. Mary is **probably** working with a new partner.

(13) a. The children have **all** enjoyed the picnic.
b. The children are **all** buying ice cream.

(14) a. *They want **not** go to the cinema.
b. *Mary saw probably her brother.
c. *The children like **all** ice cream.

The examples in (12-13) show that the negative element *not*, the adverb *probably* and the quantifier *all* are positioned after *have* and *be*. This is something which does not occur with English main verbs, as shown in (14). Under the assumption that *have* and *be* originate within VP and raise past the negative marker, the adverb and the quantifier before Spell-Out, these facts provide support for a head-movement analysis of the auxiliaries in English. We now turn to syntactic properties of verbs and negation in Turkish.

4.2.2 Clause structure in Turkish

4.2.2.1 VP in Turkish:

Turkish is standardly classified as a head-final language with an SOV word order, both in main clauses and embedded clauses. Consider the following examples.

(15) a. Esin şiir-i **sev-er-Ø.**
Esin poetry-acc **like-pres-Ø**
'Esin likes poetry'

b. (Siz) Esin-in şiiri sev-diğ-ni **bil-iyor-sunuz.**
(You) Esin-gen poetry **like-gerund-acc** **know-pres-2sg**
'You know that Esin likes poetry'

Examples (15a-b) show that both the main-clause verb and the embedded verb appear at the end of the clause. They also exemplify the highly agglutinative character of Turkish morphology. The verb in the root clause, *bil-iyor-sunuz* 'know', consists of the root plus the morphemes *-iyor* and *-sunuz,* referring to present tense and 2sg agreement, respectively. The verb and the inflectional suffixes display a strict order in that no other morpheme can intervene between the verb and the subsequent suffixes. Consider the following ungrammatical example in (16), in which the order of the agreement morpheme *-sunuz* and the present tense suffix *-iyor* is reversed.

(16) *(Siz) Esin-in şiir-i **sev-diğ-ni** bil-**sunuz-iyor.**
Esin-gen poetry-acc like-gerund-acc know-**2sg-pres**

Most instances of subordinate clauses in Turkish differ from those found in English-type languages. While clausal complements do not generally have an overt lexical complementiser, they have the external syntax of DP occurring with case marking. For example, (15b) shows that the embedded verb *sev-diğ-ni* is

inflected with the accusative marker *ni*. Certain verbs in Turkish allow sentential complements of the type observed with ECM verbs in English, where the subject of the embedded clause is case-marked by the higher verb. Consider the following examples.

(17) a. Esin [Nilay'in gel-digi-]-ni san-iyor.
Esin Nilay-gen come-gerund-acc think-pres-Ø
'Esin thinks that Nilay came'

b. Esin [Nilay-i gel-di] san-iyor.
Esin Nilay-acc come-past think-pres-Ø
'Esin thinks Nilay came'

It should also be noted that Turkish has relatively free word order in which constituents can undergo scrambling.[4] Some examples are given in (18).

(18) a. Esin çiçek-ler-i Nilay-a ver-di.
'Esin gave the flowers to Nilay'

b. Esin Nilay'a çiçekleri verdi.

c. Çiçekleri Nilay'a Esin verdi.

d. Çiçekleri Esin Nilay'a verdi.

e. Nilay'a çiçekleri Esin verdi.

f. Nilay'a Esin çiçekleri verdi.

g. Esin verdi çiçekleri Nilay'a.

h. Esin verdi çiçekleri Nilay'a.

i. Çiçekleri verdi Esin Nilay'a.

j. Nilay'a verdi Esin çiçekleri.

However, as can be seen in the following examples not all elements can freely move. Non-specific DPs and wh-phrases cannot occur in postverbal position.

[4] See Kural (1992) for an analysis of scrambling in Turkish where constituents can adjoin to AgrP.

(19) a. Esin Nilay-a bir hediye al-mış.

'Esin Nilay-dat a present buy-past-Ø.

'Esin bought a present for Nilay'

b. *Esin Nilay'a almış **bir hediye**.

c. Esin Nilay-a ne al-mış?

Esin Nilay-dat what buy-past-Ø.

'What did Esin buy for Nilay?'

d. *Esin Nilay'a almış **ne**?

e. Esin kime bir hediye almış?

f. *Esin bir hediye almış **kime**?

In a similar vein, wh-phrases must occur preverbally in multiple wh-questions as well.

(20) a. Kim kim-e ne almış?

who who-dat what buy-past-Ø

'Who bought what to whom?'

b. Kim neyi kime almış?

c. *Kim almış kime ne?

d. *Kim almış ne kime?

For Kural (1992), it is not obvious whether or not Turkish is a wh-*in-situ* language since it is not clear if it is the wh-phrase that moves from its base position or the other constituents. Overall, the facts in (19-20) show that non-specific DPs and wh-phrases cannot move to postverbal position, but rather must occur in the immediate preverbal position.

4.2.2.2 Negation in Turkish

In traditional terms, Turkish has three negative elements: *-mA,* the negative morpheme, *değil* 'not' and *yok* 'not-existent'. The morpheme *-mA*, appears on the

stem of the lexical verb. That is, the verb is immediately followed by the negative morpheme *-mA*, as shown in (21).

(21) (Biz) dün toplantıya katıl-**ma**-dı-k.
(We) yesterday meeting attend-**neg**-past-1pl
'We did not attend the meeting yesterday'

(21) is a well-formed sentence where the negative morpheme *-mA* occurs to the right of the verb, preceding the tense and the agreement morpheme. The other negation elements *değil* 'not' and *yok* 'not-existent' differ from *-mA* in that they do not appear as suffixes on the verb. They are found with the negative counterparts of nominals/adjectivals and existential sentences. Consider the examples in (22).

(22) a. (Siz) bir yazar **değil-di-niz.**
You a writer **not-past-2sg**
'You were not a writer'

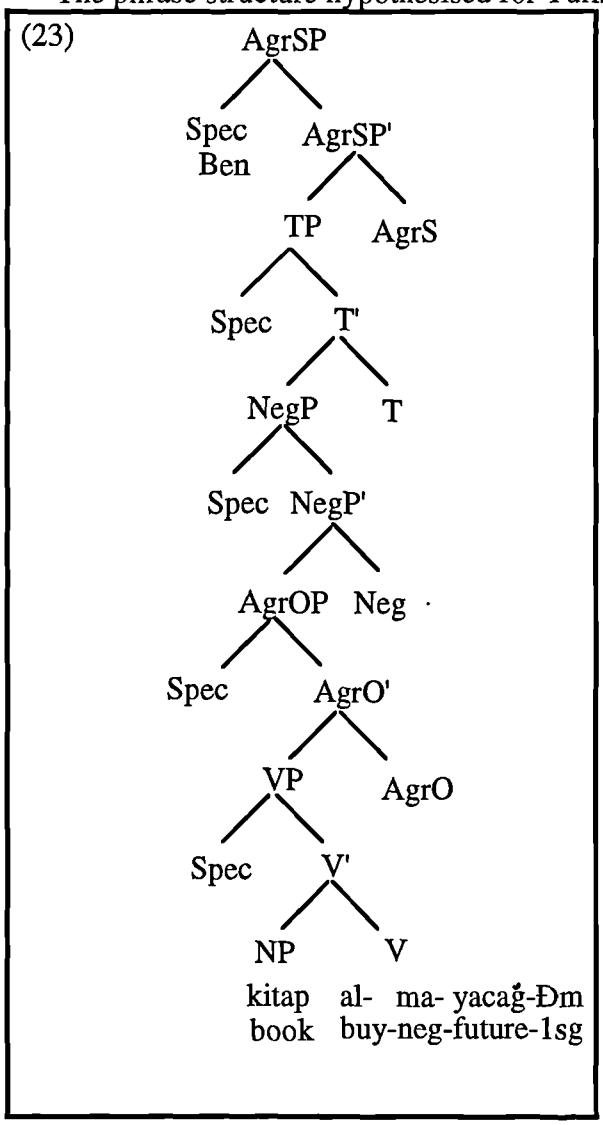
b. O-nun arabası mavi **değil-di.**
s/he-gen car blue **not-past**
'Her/his car was not blue'

c. (Ben) dün siz-i ara-dı-m ama ev-de **yok-tu-nuz.**
(I) yesterday you-acc call-past-1sg but house-dat **not exist-past-2sg**
'I called you yesterday but you were not home'

As shown in (22) similar to *-mA değil* and *yok* inflect for tense and agreement, suggesting that they have verbal properties. Under the assumption that NegP is a functional projection (Pollock 1989; Zanuttini 1989 and others), I assume that the negative morpheme *-mA* in Turkish is a head projecting a Negative Phrase (NegP). The precise analysis of the two negative elements *değil* and *yok*, however, remains unclear.

The phrase structure hypothesised for Turkish is given in (23).

(23)



Assuming the tree structure in (23), the verb *al-ma-yacağ-ım*, inserted as a complete verbal complex, moves rightward to AgrS (string vacuously). It first raises into AgrO, then to Neg, to the T and finally to AgrS (Kural 1993).

(24) (Ben) kitap al-ma-yacağ-ım.
I book buy-neg-future-1sg
'I will not buy books'

As can be seen the verb *buy* in (24) is inflected for tense and agreement. The agreement paradigm in Turkish has 5 distinct forms, as shown in the following examples.

(Ben) oku-yor-**um**	(I) read-present-**1sg**	'I am reading
(Sen) oku-yor-**sun**	(You) read-present-**2sg**	'You are reading'
(O) oku-yor-Ø	(S/he) read-present-Ø	'S/he is reading'
(Biz) oku-yor-**uz**	(We) read-present-**1pl**	'We are reading'
(Siz) oku-yor-**sunuz**	(You) read-present-**2pl**	'You are reading'
(Onlar) oku-yor-(**lar**)	(They) read-present-(**3pl**)	'They are reading'

Following Chomsky (1993) I assume inflectional heads might have strong or weak features. While inflectional features are assumed to be weak in English, with the verb remaining in VP and feature checking occurring at LF, Turkish has strong V-features that are checked via verb movement and N-features (i.e. Case features) which need to be checked before Spell-Out. Crucially, however, I assume that inflectional heads in the tree do not correspond to overt morphological morphemes.

Summarising so far, while English is a head-initial language with an SVO word order, Turkish is head-final with an SOV order and has rich agreement morphology. With respect to the properties of negation in Turkish, I discussed three negative elements: -mA, *değil* and *yok* and noted that although *degil* and *yok* differ from the negative morpheme -mA, they both inflect for tense and agreement.

Keeping these theoretical aspects of English and Turkish morphosyntax in mind, I now turn to Erdem's earliest data on the development of VP and negation.

4.3 Erdem's earliest L2 data

This section examines the word order of constituents of VP. I present the data both qualitatively with examples and quantitatively in the form of charts and graphs.

4.3.1 The development of VP

For the purposes of this section, utterances which contain a verb and at least one other VP-internal constituent (other than the subject) such as nominal objects are examined. Verbal utterances are divided into two groups: XV vs. VX. The utterance is classified as XV when the verb is preceded by other VP-material (e.g. a direct object), as exemplified in (25).

(25) a. Would you like to outside ball playing.[5] (S 7, 6 May '94)

b. I something eating. (S 8, 20 May '94)

c. Television watching. (S 8)

d. Investigator: What are you playing?

Erdem: Something playing # dinosaur playing. (S 8)

In (25a), the verb *playing* is in clause-final position. The order of the elements *outside* and *ball* reflects the Turkish word order. Likewise, in (25b), the direct object precedes the verb, displaying an SOV word order. In examples (25c-d), the verb again appears at the end of the clause.

The verbal utterance is classified as VX if it precedes all of the material in the VP (other than the subject), as in (26a-d).

(26) a. You eating apple. (S 9, 5 June '94)

b. My toys go to Turkey. (S 9)

c. My dad is driving the car. (S 10, 13 June '94)

d. I'm going my new school. (S 10)

Examples (26a-d) clearly show that the verb is placed before the VP-internal material. The formulas used in order to calculate the percentages of XV and VX utterances are given in (27a) and (27b), respectively.

[5] *Would you like to* in these early samples is not analysed.

(27) a. XV

XV + VX

b. VX

XV+VX

Let us now examine the data from the early stages of Erdem's interlanguage. Appendix A-1 presents the total number and percentage of XV and VX utterances up to Sample 22 (22 Nov '94). The earliest verbal constructions with an object/ adverbial[6] are XV and they first appear in Sample 3 (23 Mar '94). The earliest verbs, mostly occurring with *-ing* are consistently in clause-final position, as shown in the following examples.

(28) a. Investigator: Are they playing?
Erdem: Yes # **ball playing.**

b. Investigator: Shall we play with your toys?
Erdem: Yes, **toys play.** (S 3, 23 Mar '94)

c. Investigator: Where are we going now?
Erdem: **Newcastle going.** (S 5, 11 Apr '94)

Up until Sample 6 (22 Apr '97), there are no instances of VX. In the following two samples, Sample 7 (6 May '94) and Sample 8 (20 May '94), the XV pattern still dominates. More examples are given in (29).

(29) a. Would you like to ball playing? (S 7, 6 May '94)

b. Something playing # dinosaur playing. (S 8, 20 May '94)

c. This cartoon # this cartoon television looking. (S 8)
'We watched this cartoon, didn't we?'

In sum, during the first 8 samples, of the 23 verbal utterances, 21 have the XV pattern, which shows that 91.30% of the early verbal utterances are XV.

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[6] Sample 5 contains one instance of a verb followed by an adverb.

Context: Erdem is on the swing.
Erdem: Fast push. (S 5, 11 Apr '94)

Beginning with Sample 9 (5 June '94), there is a dramatic change in Erdem's language development, where the VX pattern clearly starts to dominate. The first appearance of VX is in Sample 6 (22 Apr '94), but by Sample 9 (5 June '94), the VX order is consistently used. In Sample 9 (5 June '94), all of the 21 utterances exhibit a VX order. Some examples are given in (30).

(30) a. You eating apple. (S 9, 5 June '94)
b. My daddy always playing me. (S 9)
c. My toys go to Turkey. (S 9)
d. I am talking very very fast. (S 9)
e. Big man is playing toys. (S 9)

As Appendix A-1 shows, of the 42 sentences in Sample 10 (13 June '94), only 4 are XV (9.52%). A similar result occurs in Sample 11 (17 June '94), in which only 4 examples of XV utterances are found, compared to the 25 examples of VX, some of which are given in (31).

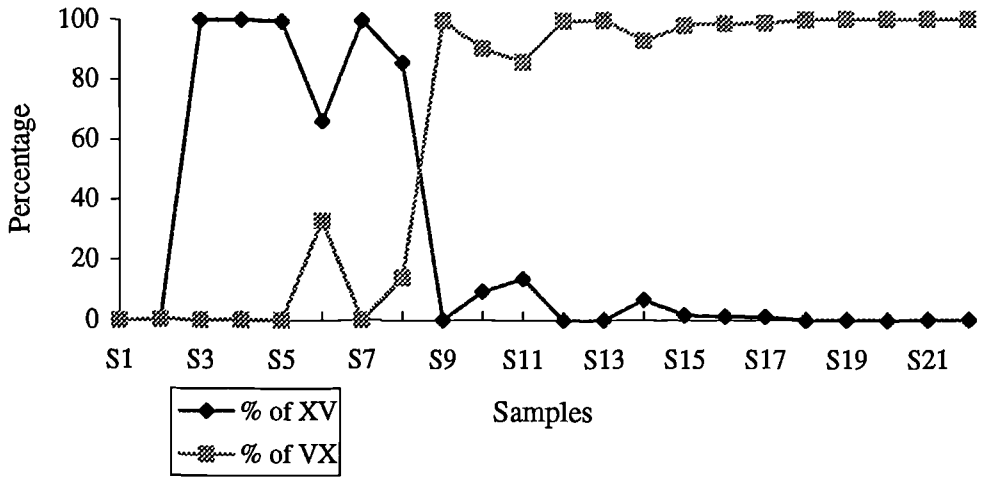
(31) a. Going this way. (S 10, 13 June '94)
b. My mum is go to the shopping. (S 10)
c. This is eating you [//] this lion eating you. (S 10)
d. I am watching the television. (S 11, 17 June '94)
e. I'm drink the milk. (S 11)

In Sample 12 (9 Aug '94), the XV order essentially disappears, only occurring once in each sample from 14 to 17 out of 244 examples, as shown in the following examples.

(32) a. And something eat. (S 14, 30 Aug '94)
b. And outside play. (S 15, 16 Sep '94)
c. He didn't **fast** go. (S 16, 4 Oct '94)
d. Another go. (S 17, 12 Oct '94)

Figure 4.1 shows the percentage of XV vs. VX utterances. Note the high proportion of XV utterances, close to 100% of the time, until Sample 8 (20 May '94). As there are no utterances meeting our criterion of verb plus VP-material before Sample 3 (23 Mar '94), Samples 1-2 are not included in Figure 4.1.

Figure 4.1 Percentage of XV vs. VX utterances



In sum, Erdem's early utterances with a verb are consistently XV. In the first 8 samples, the object or other verbal material precedes the verb in 21 out of 23 (91.30%) cases. From Sample 9 (5 June '94) onwards, however, Erdem's verbal utterances are VX.

We next consider the development of negation in Erdem's L2 English in the same period.

4.3.2 The development of Negation

4.3.2.1 Verbal negation

In this section, we first discuss negated verbal utterances and then move onto the development of nominal negation. We deal with utterances which have either a Verb+NEG (V+NEG) or a NEG+Verb (NEG+V) order. Examination of the early use of negation in verbal contexts displays a V+NEG pattern. The number

and percentage of utterances with V+NEG vs. NEG+V are given in Appendix A-2. First consider the following examples.

(33) Context: Watching cartoons on TV.

a. Investigator: Oh it's finished. Let's play.
Erdem: **Finish no.** (S 1, 9 Mar '94)

b. Investigator: Shall we play hide and seek?
Erdem: **Play no.** (S 2, 17 Mar '94)

c. Investigator: Look, here is a colouring book.
Let's colour this piggy.
Erdem: **Colour no.** (S 3, 23 Mar '94)

In the first three samples, Erdem produced four negated verbs. In all four, the verb precedes the negative element *no*. It is important to point out that there was no pause before *no*. We assume that these utterances are indications of the first stage in which the L1 pattern is utilised. Unfortunately, no other verbal negation occurs until Sample 9 (5 June '94). Starting in Sample 9 (5 June '94), Erdem employs the target-like order of verbal negation, namely, NEG+V. Some examples from this second stage are given in (34).

(34) a. Not die. (S 9, 5 June '94)
b. I don't like this. (S 9)
c. I don't like it my this home. (S 9)
d. I don't eat it this. (S 10, 13 June '94)
e. I'm not eating. (S 10)
f. I don't want to get off the bike. (S 11, 17 June '94)
g. He is not go nursery. (S 12, 9 Aug '94)

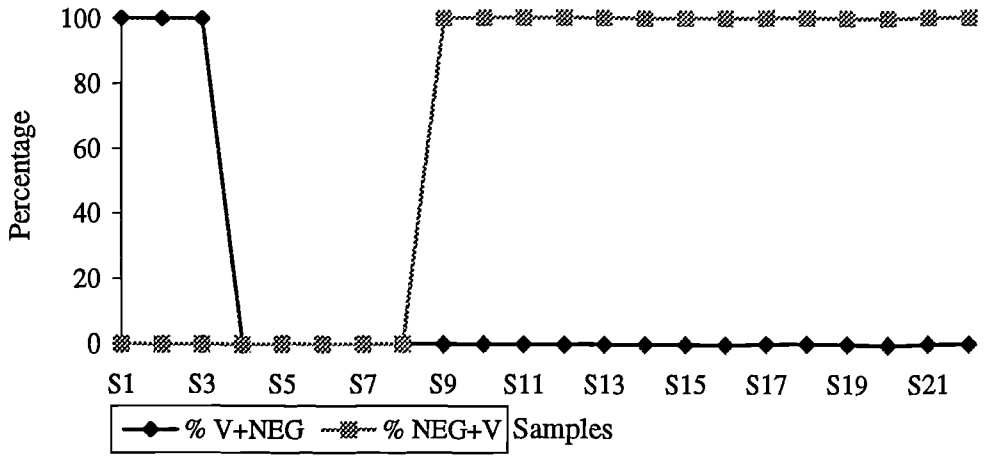
In Sample 12 (9 Aug '94), of the 4 negated verbs, 1 has the V+NEG pattern. It is worth pointing out that Sample 12 immediately follows Erdem's return from a

five-week holiday in Turkey. Again, in the V+NEG utterance, negation shows up as *no*. This is illustrated in (35).

(35) Context: Erdem was in the garden, playing with his friends.
Investigator: What did you play with your friends?
Erdem: **Play no.** (S 12, 9 Aug '94)

Figure 4.2 shows the percentage of V+NEG vs. NEG+V in Erdem's early L2 English.

Figure 4.2 Percentage of V+NEG vs. NEG+V



After the initial stage of post-verbal negation, interesting developments occur in negated utterances containing copula *be*, auxiliary *be*, modal *can* and thematic verbs. We observe two essential findings in Erdem's data. The finding is concerned with the placement of negation with respect to the verb *be* (either as a copula or an auxiliary) and the modal *can*. Apart from one instance of a non-target form,[7] there are **no** utterances in which negation precedes copula *be*, auxiliary *be* or *can*.[8] As in the target grammar, *not* appears immediately after *be* or *can*.

(36) a. This is not my hat. (S 10, 13 June '94)
b. I'm not eating. (S 10)

[7] Not it's crying. (S 21, 15 Nov '94)
[8] *Can* was the first modal verb to appear in Erdem's English (see Chapter 5).

c. It is not crying. (S 11, 17 June '97)

d. I am not go school now. (S 12, 9 Aug '94)

e. But cats can't do it like that. (S 16, 4 Oct '94)

f. I can't turn my head. (S 17, 12 Oct '94)

The second finding deals with the placement of negation in relation to lexical verbs. The data show that apart from the first stage where V+NEG occurs, negated thematic verbs with the NEG+V order are first produced at Sample 9 (5 June '94), from which point on Erdem always places negation before the lexical verb (except once in Sample 12 (9 Aug '94)—see (35). Some examples are given in (37).

(37) a. I don't like it my this home. (S 9, 5 June '94)

b. I don't eat it this. (S 10, 13 June '94)

c. Please please # I don't want to get off the bike. (S 11, 17 June '94)

d. I not eat corn flakes. (S 13, 23 Aug '94)

e. I not remember who put it there. (S 15, 16 Sep '94)

f. We not watch. (S 15)

g. He not go there. (S 18, 20 Oct '94)

A related issue concerns the use of *do*-support. The first instances of *do*-support appear in Sample 9 (5 June '94) and the S-(*do*-support)-NEG-V order is consistently produced afterwards, as in (38)

(38) a. I don't like it you mummy. (S 9, 5 June '94)

b. I don't eat it this. (S 10, 13 June '94)

c. Don't push to me. (imperative) (S 11, 17 June '94)

d. Don't look at here. (imperative) (S 12, 9 Aug '94)

e. I not eat corn flakes. (S 13, 23 Aug '94)

f. You not look at me. (S 13)

g. But my mummy said he not like that. (S 13)

h. I don't want. (S 14, 30 Aug '94))

i. No # I not break. (S 14)

Table 4.2 shows the number of NEG+Lexical verbs with utterances containing or lacking *do*-support, after the V+NEG order has been displaced, i.e. starting at Sample 9 (5 June '94).

Table 4.2 Number of NEG+Lexical verbs (with/without do-support)

Sample	Recording Date	with do-support		without do-support		Total
S 1-8	9 Mar-20 May 1994	0	0%	0	0%	0
S 9	5 June 1994	3	75%	1	25%	4
S 10	13 June 1994	2	67%	1	33%	3
S 11	17 June 1994	3	100%	0	0%	3
S 12	9 Aug 1994	3	75%	1	25%	4
S 13	23 Aug 1994	9	56%	7	44%	16
S 14	30 Aug 1994	1	33%	2	67%	3
S 15	16 Sep 1994	14	58%	10	42%	24
S 16	4 Oct 1994	23	92%	2	8%	25
S 17	12 Oct 1994	24	100%	0	0%	24
S 18	20 Oct 1994	25	93%	2	7%	27
S 19	1 Nov 1994	16	100%	0	0%	16
S 20	8 Nov 1994	25	96%	1	4%	26
S 21	15 Nov 1994	18	100%	0	0%	18
S 22	22 Nov 1994	18	95%	1	5%	19

As can be seen in Table 4.2, despite the fact that *do*-support is missing to a certain extent, in particular in Sample 13 (23 Aug '94) and Sample 15 (16 Sep '94), where the proportion of utterances without *do*-support is high (44%) and (42%), respectively, the placement of the negative element *not* with respect to the lexical verb is always correct in Erdem's interlanguage.

As there are virtually no errors in the placement of *not* with respect to copula *be*, auxiliary *be*, *can* and lexical verbs, these data clearly show that Erdem knows that auxiliary verbs and modals in English behave differently from lexical verbs.

In sum, although there are few negated verbal utterances in the first 8 samples, we think that the findings are suggestive. Consistent with the properties of negation in Turkish, Erdem starts off with the post-verbal V+NEG order. After

Sample 9 (5 June '94), verbal negation is consistently in line with the NEG+V pattern.

4.3.2.2 Nominal negation

In section 4.2.2.2, we pointed out that of the three negative elements in Turkish, the negative morpheme *-mA* is attached to the verb, preceding tense and agreement morphemes. The other two, *değil* 'not' and *yok* 'not existent', used with the negative counterparts of nominals/adjectivals and existential sentences, also inflect for tense and agreement (see 22a-c). This suggests that nominal negation in Turkish has verbal properties. Although the number of negated verbal utterances is rather low in Erdem's first stage, we have seen that he initially used utterances such as *finish no* or *play no*. Given the apparent influence of Turkish on Erdem's early negated verbal utterances, we suggest that it is appropriate to look at Erdem's nominal negations to see whether similar transfer effects occur at the nominal level.

As in verbal negation, negated nominals are divided into two sub-types, N+NEG and NEG+N. The number and percentage of N+NEG and NEG+N are presented in Appendix A-3.

There are three negated nominals in the first sample, all of which involve nominals followed by the negative element *no*. Consider the following examples.

(39) Investigator : Is this a cat?

a. Erdem: **Cat no.** (S 1, 9 Mar '94)

Investigator: Is that a pig?

b. Erdem: **Pig no.** (S 1, 9 Mar '94)

Investigator: Is it a duck?

c. Erdem: **Duck no**, dog dog. (S 1, 9 Mar '94)

(39a-c) show that the negative element *no* is positioned after the nominals *cat, pig, duck*. It is again important to point out that there was no pause before *no*.

The second sample is also characterised by the N+NEG pattern, as illustrated in the following examples.

(40) a. Context: The boy who broke his toy the other day comes to play with him again.

Erdem: **Home no # home no.** (S 2, 17 Mar '94)

'Erdem is not home'

b. Investigator: Can you see any birds on the tree?

Erdem: No # **bird no.** (S 2)

As Appendix A-3 shows, in Samples 1 through 6 (9 Mar '94–22 Apr '94), Erdem consistently uses the N+NEG pattern. Of the 9 instances of negation in Sample 6 (22 Apr '94), 8 have the N+NEG pattern. Some examples are given in (41).

(41) a. Erdem: **Cat no** # look # look. (S 6, 22 Apr '94)

Investigator: But # there is a cat in the picture.

b. Erdem: **Cat no.** (S 6)

Investigator: Are there any ducks?

c. Erdem: **Ducks no.** (S 6)

Mother: Dog degil, çocugum.

Dog not, son

'It is not a dog'

d. Erdem: **Dogs no.** (S 6, 22 Apr '94)

(41a-c) present examples of existential constructions where negation occurs in clause-final position. (41d) explicitly shows that Erdem translates his mother's Turkish sentence into English.

The data up to now indicate that, in the first stage of Erdem's interlanguage, the order N+NEG clearly dominates and this is compatible with the negation pattern in Turkish. In Samples 1-6 (9 Mar '94–22 Apr '94), there are 19 negated

nominals in total, and 17 (i.e., 89.47%) are N+NEG. The two instances of NEG+N are shown in (42).

(42) a. Investigator: Is this your pen # Erdem?
Erdem: No my pen. (S 5, 11 Apr '94)

b. Investigator: Why don't you go to the nursery this week?
Erdem: No nursery. (S 6, 22 Apr '94)

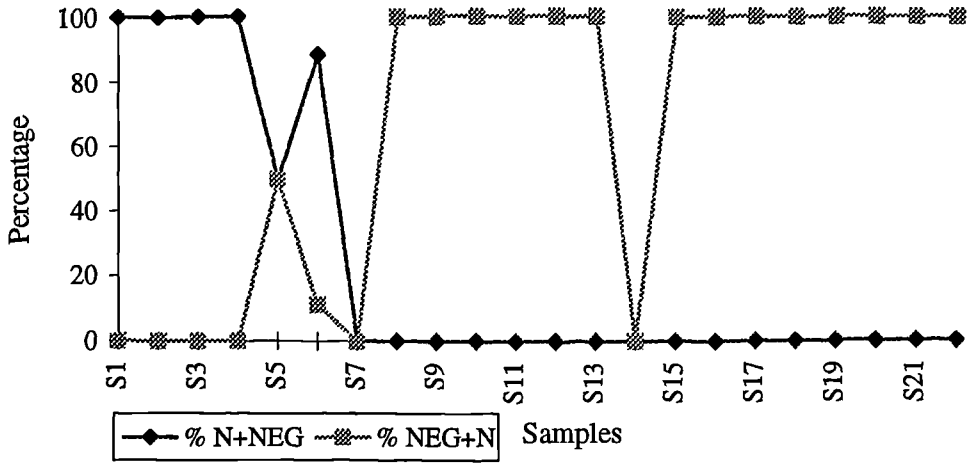
The second stage starts with Sample 8 (20 May '94),[9] where we find a dramatic change in the frequency of negated utterances which have a NEG+N order. In fact, the examples from here on involve only the NEG+N pattern. All of the 10 negated nominals in Sample 8 (20 May '94) and Sample 9 (5 June '94) have *not* to the left of the noun, as shown in (43).

(43) a. Not colouring book. (S 8, 20 May '94)
b. Not my mum # not my dad. (S 9)
c. Not elephant. (S 12, 9 Aug '94)
d Not animal. (S 12)

Figure 4.3 shows the incidence of N+NEG vs. NEG+N in Samples 1 through 22 (9 Mar '94–22 Nov '94). In the first 4 samples the percentage of N+NEG pattern is 100% and decreases to 89.89% in Sample 6 (22 Apr '94). As is evident from Figure 4.3, a dramatic drop occurs in Sample 8 (20 May '94) (recall that at Sample 7, there were no negated nominals) and the N+NEG order stabilizes thereafter.

[9] Note that there were no negation utterances at all in Sample 7 (6 May '94)

Figure 4.3 Percentage of N+NEG vs. NEG+N



In sum, our findings show that all of Erdem's earliest negated utterances are either post-verbal or post-nominal. As we shall see, this result is entirely different from what is found in child L1 English. In addition, we observe two more differences between child L1 English and Erdem's L2 English. Recall from Chapter 2 that English-speaking children produce negative initial utterances (e.g. Klima & Bellugi 1966; Hyams 1986, 1992; Pierce 1992; Radford 1990). Consider the following well-known examples in child English.

(44) a. Not the sun shining.

b. No Fraser drink all tea.

c. No I see truck. (Hyams, 1992: 378)

Pierce (1992) reports that 90% (9/10) of Eve's early negatives at ages 1;8 to 1;9 have sentence-initial *no*. Likewise, Nina's negatives (from Suppes, Smith & Léveillé 1973) has 100% (6/6) initial negation at ages 1;11 to 2;1.

In Erdem's L2 English, however, we find only a few of instances of negative-initial utterances in his multi-word utterances. The following is the exhaustive list from the whole corpus. Note that they occur considerably later than the NEG-X patterns become dominant.

(45) a. Not I joking. (S 15, 16 Sep '94)

b. Not I put it. (S 15,)

c. Not I got two bicycles. (S 15,)

d. Not I make. (S 16, 4 Oct '94)

e. Not it's crying. (S 21, 15 Nov '94)

Of the 212 negated verbal utterances between Samples 9 and 22 (5 June '94–22 Nov '94), only 5 (2.36%) has *not* in pre-subject position.

In addition, as Pierce (1992) observes, many negative sentences produced in early L1 English contain null subjects. Some examples are given in (46).[10]

(46) a. No ride a bike.

b. No going away.

c. Not have coffee.

d. Not giving papa this one. (Pierce, 1992: 55)

Unlike L1 English, however, Erdem does not produce negatives with missing subjects. Once he starts producing preverbal negation, we find overt subjects in his verbal negative utterances, as shown in the following examples.

(47) a. I don't eat it this. (S 10, 13 June '94)

b. I don't want to get off the bike. (S 11, 17 June '94)

c. I not eat corn flakes. (S 13, 23 Aug '94)

d. I not cut melon. (S 15, 16 Sep '94)

In sum, we find that Erdem's early negation differs from child L1 English in several ways. First, negated utterances initially have the consistent post-verbal, post-nominal pattern. Second, there are only a few negative-initial utterances in his data. Third, in contrast to child L1 English, his negative sentences mostly contain overt subjects. We now turn the analysis of the data described up to this point.

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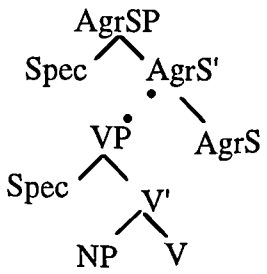
[10] Pierce (1992) reports that of the earliest negatives produced by Nina at ages 1;11 to 2;1, 87.5% (42/48) have missing subjects. Similarly, in Eve's early negatives at ages 1;8 to 1;9, 40% (6/15) have missing subjects (Pierce, 1992: 56).

4.4 Analysis

4.4.1 VP

The analysis starts with the discussion of the data concerning verb placement. The data from the first stage show that Erdem initially hypothesises an OV (XV) word order. We assume the following structure in (48) for Erdem's early representation of English.

(48)



We propose that Erdem transferred the word order in the VP from Turkish i.e. the headedness of VP. This conclusion is similar to that of Vainikka and Young-Scholten's (e.g. 1994) analysis of Turkish adults acquiring German as a second language, where they found that the OV word order transfers to German.

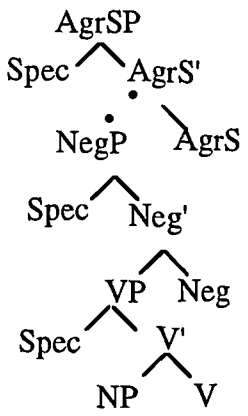
In Stage 2, starting around Sample 7/8 (6 May '94–20 May '94), the object (or other verbal material) consistently follows the verb. We propose that at this stage the headedness parameter for VP has changed from its L1 value to the value of English. This accounts for the consistent use of the (S)VO order in the second stage.

4.4.2 Negation

As noted earlier, in Stage 1 the distribution of negated utterances indicates that the negative element *no* is consistently positioned after the noun and the verb (N+NEG; V+NEG). In order to explain why negation occurs in post-nominal and post-verbal position, we again assume that the headedness parameter is relevant. Assuming that NegP is a functional projection, in the first stage until Sample 7 (6

May '94), NegP is head-final. In other words, we assume that Erdem initially transfers the headedness of NegP from Turkish. Thus, the structure hypothesised is given in (49).

(49)



At Stage 2, nouns follow the negative elements *no* and *not* and lexical verbs come after *not*. We propose that similar to the change in the headedness of the VP around Sample 7/8 (6 May '94 / 20 May '94), NegP switches to head-initial. Recall also that in this second stage, negation for lexical and auxiliary/modal verbs has always the target-like order,[11] that is, there are no utterances in which *not* is placed incorrectly with respect to lexical and auxiliary/modal verbs. The orders we find at this stage are SVO, S*be*NegVO and S(*do*)NegVO. In light of this fact, it is reasonable to propose that the headedness of AgrP/TP switches to the head-initial English value around the same time, otherwise one would expect to find verb-final clauses irrespective of whether or not VP switches to head-initial (see Schwartz 1996). Importantly, we find the first use of *do*-support in Sample 9 (5 June '94). Recall from Table 4.2 that despite some instances of missing *do*, from Sample 9 (5 June '94) onwards, *do*-support is consistently produced, though not always. Following Schwartz (1987), we propose that with the acquisition of *do*-support, verb movement is delearned.

[11] Except one instance of post-verbal negation at Sample 12 (9 Aug '94) with *no*, see (35).

Next I will discuss Erdem's early data with respect to recent proposals on the extent of L1 influence. Of the three hypotheses discussed in Chapter 3, here I will concentrate on Vainikka & Young-Scholten's Minimal Trees hypothesis and Schwartz & Sprouse's Full Transfer/Full Access hypothesis. Implications for Eubank's Weak Parametric Transfer (Valueless Features) hypothesis will be dealt with in Chapter 5.

4.5 Discussion

According to V&Y-S (1994, 1996a, 1996b), L2 learners transfer the word order in the VP from their L1, but they have only bare VPs, without any higher functional projections. On the assumption that NegP is a functional projection, the consistent occurrence of X+NEG in Erdem's earliest negation utterances seems to necessitate the transfer of at least one functional projection, namely, NegP (Haznedar 1995, 1997). Our analysis of Erdem's early negation data thus provides counter evidence for V&Y-S 's Minimal Trees hypothesis.

Moreover, Minimal Trees claims that in both L1 and L2 acquisition, functional projections are built gradually. However, Erdem's early use of X+NEG is, as discussed previously, distinct from the development of L1 English. This difference thus constitutes another piece of evidence against Minimal Trees, since this hypothesis has no way to account for the L1-L2 dissimilarity in the development of negation.

We argue that while Minimal Trees can account for the consistent OV order found in Erdem's first stage, it cannot account for the negation facts discussed in this study. This is because NegP is itself a functional projection, and as such, according to V&Y, there should be no effects of transfer regarding negation. We conclude that transfer cannot be limited to lexical projections.

Recall that under Full Transfer/Full Access (Schwartz & Sprouse 1994, 1996), apart from the phonetic matrices of lexical/morphological items, the entire L1 grammar transfers into the L2 initial state. In terms of empirical coverage, the

two halves of Full Transfer/Full Access (FT/FA) appear to best explain our findings in Erdem's early L2 English: data from the first stage on the development of VP and negation is captured by Full Transfer, and those of the second stage—via parameter resetting—are explained by Full Access. Moreover, FT/FA is not subject to the empirical mispredictions of Minimal Trees, as in the case of consistent X-NEG in Erdem's L2 English.

4.6 Conclusion

The data discussed in this chapter directly suggest that Erdem transfers the headedness of VP and NegP from his first language, Turkish. Later, he has reset the correct value of the headedness parameter for both VP and NegP as well as other functional projections, as argued earlier. Importantly, the subject of this study is a child learner of English. As in the case of the acquisition of German by Turkish/Korean adult learners in V&Y-S's study, these results show that Erdem's interlanguage is also influenced by previous knowledge of another language, Turkish, that is, L1 influence occurs in both adult and child L2 acquisition.

This result is also significant with respect to the issue of ultimate attainment in L2 acquisition. There is a general consensus that child L2 learners are more likely than adult L2 learners to end up being closer to native-like (Felix 1985, 1991; Johnson & Newport 1989; Krashen, Scarcella & Long 1982). Hence, some researchers adopt the view that the child L2 learner acquires language in exactly the same way as the child L1 learner. However, based on the clear transfer effects reported in Erdem's L2 English, we suggest that it would be a mistake to ignore the fact that the child L2 learner has knowledge of a first language. Put differently, the child L2 learner approaches the acquisition of a second language with the previous instantiation of UG principles. Our findings in this chapter suggest that the well-known differences between adult and child L2 acquisition cannot simply be due to the L2 child, but not the L2 adult, constructing a grammar in exactly the same fashion as the L1 child. Similar to adult L2

acquisition, child L2 acquisition, even very young child L2 acquisition, is different from the L1 linguistic development in that transfer occurs.

With respect to the extent of L1 influence I have furthermore argued that Erdem's early data on negation provide evidence for FT/FA and against Minimal Trees; however, in this chapter I have not looked explicitly at the actual development of functional categories such as IP and CP. This will be the focus of the following chapters. Chapter 5 starts with the acquisition of IP.

CHAPTER 5

FUNCTIONAL CATEGORIES IN CHILD L2 ACQUISITION

THE ACQUISITION OF THE IP SYSTEM

5.0 Introduction

The aim of this chapter is to address the status of the functional category IP in Erdem's early L2 English. I first provide background on theoretical issues concerning functional categories in L1 and L2 acquisition.

Similar to the debate in L1 acquisition, recent work in L2 acquisition also addresses the question of whether functional categories are present or absent in early stages of interlanguage development. There are two major opposing trends on the status of functional categories in early L2 acquisition. As discussed in previous chapters, for Vainikka & Young-Scholten (V&Y-S) (1994, 1996a, 1996b) only lexical categories and their projections are present in early L2 acquisition, but not functional categories. For others, both lexical and functional categories are available in adult and child L2 acquisition (e.g. Epstein, Flynn & Martohardjono 1996; Eubank 1993/94, 1996; Grondin 1992; Grondin & White 1996; Lakshmanan 1993/94; Lakshmanan & Selinker 1994; Schwartz & Sprouse 1994, 1996; White 1996).

In this study I, too, would like to address the question of functional categories in L2 acquisition by examining Erdem's spontaneous data. I focus in particular on V&Y-S's claims. It should be noted that this study examines the acquisition of the INFL[1] system and the CP system in Erdem's English. Erdem's data on the development of the determiner system have not been coded for analysis and therefore will not be discussed in this dissertation.

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[1] For ease of exposition, INFL is not split into various heads in this chapter; however, our discussion can be extended to the split-INFL hypothesis of Pollock (1989) in which the clause structure involves functional categories such as AgrP and TP.

This chapter is organised as follows: Section 5.1 presents some theoretical issues relating to the functional category IP in English. Section 5.2 discusses work dealing with the acquisition of IP in L1 English. Section 5.3 presents recent studies on functional categories in child L2 English. In Section 5.4, we provide a description of the observed facts related to IP in Erdem's interlanguage, focussing on the development of the verb *be*, modal verbs, 3sg *-s*, past tense forms, overt subjects and nominative pronouns. In Section 5.5, we discuss the analysis of the data with special reference to V&Y-S's Minimal Trees hypothesis as well as to Eubank's Weak Transfer (Valueless features) hypothesis. Finally, in Section 5.6, we close with a summary.

5.1 Theoretical background

We start with the internal structure of IP in English. Consider the following sentences.

(1) a. I'm happy that [he is coming tomorrow].
    b. I'm glad that [he could go with her].
    c. I'm happy for [him to come].

In (1a), the embedded clause contains a subject, *he*, an auxiliary *is*, and a VP *coming tomorrow*; in (1b), the embedded clause contains a subject, *he*, a modal verb *could*, and a VP, *go with her*; in (1c), the subject of the clause, *him*, is followed by an infinitival particle *to*. It appears that there is a structural parallelism among the three clauses in that the same position is occupied by different elements; *to* fulfills the same position in infinitival clauses that the modal *could* and the auxiliary *be* do in finite clauses. This position is known as INFL (e.g. Chomsky 1986b). In addition to modals, auxiliaries and infinitival *to*, INFL is also assumed to contain tense and agreement features associated with the verb.

As discussed in Chapter 4, following Chomsky (1993), we assume that constituents move in order to check their features through a Spec-head

relationship with an appropriate functional head such as AgrS, AgrO, T. We also assume that English lexical verbs do not raise until LF, as they are assumed to have weak features. Auxiliaries *have* and *be*, however, move out of VP, checking all the relevant Tense and Agreement features before Spell-Out (see Section 4.2.1 in Chapter 4).

One important question which arises from this analysis is how lexical verbs in English which do not raise to INFL overtly obtain verbal inflections such as 3sg -*s* and past tense -*ed*. As mentioned previously, on Chomsky's account verbs are fully inflected in the lexicon and then inserted into syntax; they raise to check their inflectional features.[2] Recent studies on morphology (e.g. Aronoff 1994; Beard 1987, 1988, 1993; Halle & Marantz 1993) also address the question of how an inflectional affix adjoins to a lexical item. According to Beard's (1987, 1988) Separation Hypothesis, "inflectional and derivational functions are separated from affixation and other morphological processes" (Beard, 1988: 4). What this means is that the features associated with an affix are distinct from the phonological realisation of that affix. There is a distinction between feature assignment and post-syntactic phonological realisation of these features as individual affixes. On this account, UG specifies morpho-syntactic features, but not language-specific phonological forms of the affixes. We will return to this issue later while discussing the development of inflectional morphology in Erdem's L2 English.

I now move onto a review of studies dealing with the acquisition of IP in child L1 English and child L2 English, and then examine in detail Erdem's acquisition of the IP-related elements.

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[2] Note that Chomsky's strictly lexicalist position departs from previous analyses of verb movement (e.g. Pollock 1989), where tense and agreement features on INFL were assumed to be realised as overt morphological affixes. The assumption was that in French-type languages the verb raises to pick up the relevant tense and agreement affixes. In languages such as English, on the other hand, inflectional morphemes lower onto the verb, which later raises at LF.

5.2 The acquisition of IP in child L1 English

How young children acquire elements related to inflectional heads has long been addressed within the L1 acquisition literature. In early studies (e.g. Brown 1973), it was claimed that English-speaking children pass through a "Telegraphic" stage during which grammatical morphemes such as 3sg *-s* and past tense *-ed* are not initially produced. This observation was taken as evidence for the view that early child grammars do not have structural categories and relations which define the adult grammar. Rather, it was proposed that the system underlying the child's earliest utterances is semantically-based (e.g. Bowerman 1973; Maratsos 1982). According to proponents of semantically-based grammars, young children make use of semantic categories such as *agent, action,* which are linearly ordered with respect to each other. In English, for example, agent comes before action, action comes before object. A sentence such as *mummy read book* is analysed as having semantic categories of *agent, action* and *object* without any structural relations among the elements.[3] Thus, these early accounts maintained that early child grammar is not characterised by a syntactic system. What this means is that child grammar is qualitatively different from adult grammar, which is characterised by abstract syntactic categories and principles.

In more recent studies, somewhat similar claims have been made for early child language within a UG model (e.g. Guilfoyle & Noonan 1992; Lebeaux 1988; Radford 1990). According to Radford's (1990) "Small Clause" hypothesis, the fundamental property of early child English (around the ages of 20-24 months) is the lack of functional categories of any kind. In Radford's view, early grammars are entirely lexical in nature and functional categories DP, IP and CP mature later during the course of acquisition. In support of his claim that there is no INFL system in early grammar, Radford presents data from child English. First, he observes that children's utterances with infinitival complements of verbs

[3] See Hyams (1986) for criticisms of semantically-based grammars in early child language.

such as *want* do not contain the infinitival marker *to*, as shown in the following examples.

(2) a. Want [VP dolly [V talk]].

b. Want [VP lady [V open it]]. (Radford, 1990: 140)

For Radford, while the adult form of the complements in (2) requires an IP headed by an INFL element *to*, the child uses a simple VP.

Second, Radford argues that early child grammars lack modal verbs. Under the assumption that modals are base-generated in INFL, he hypothesises that if early child grammars do not have INFL, one should expect modals not to occur at this lexical stage.[4] Some examples are given in (3).

(3) a. Hayley read that.

b. Baby Laura eat that. (Radford, 1990: 142)

The third type of evidence for the lack of an INFL system is concerned with the absence of auxiliaries such as *be* and *do*. Consider the following examples.

(4) a. Wayne *not* eating it.

b. Tina *not* have it. (Radford, 1990: 152)

Radford argues that a similar negation pattern is found in adult small clauses, as shown in (5), and again draws a parallelism between small clauses and early child grammars.

(5) a. I can imagine [SC the officials *not dealing* with the problem]

b. I found [SC her attitude *not nice*]

[4] Radford also notes that evidence from elicited data, through repetition or imitation of adult utterances, shows that young children systematically drop modal verbs, as in (i).

(i) a. Adult: Mr Miller will try.
Child: *Miller try.* (Ervin-Tripp 1964, cited in Radford 1990)
b. Adult: I can see a cow.
Child: *See cow.* (Brown & Fraser 1963, cited in Radford 1990)

Assuming that INFL carries tense and agreement features, Radford takes the absence of verbs inflected with 3sg *-s* or past tense morphology as evidence for the lack of INFL. Some examples are given in (6).

(6) a. Adult: What did you draw?
Child: Hayley *draw* boat. (Radford, 1990: 149)

b. Adult: What does the pig say?
Child: Pig *say* oink. (Radford, 1990: 150)

According to Radford's analysis, the child's utterance *Pig say oink* in (6b), for example, has the structure of VP, as shown in (7a), while the adult English projects an IP for the same utterance, as in (7b).

(7) a. [VP [NP Pig] [V say] oink]
b. [IP [DP The pig] [I *e*] [VP [V says] oink]]

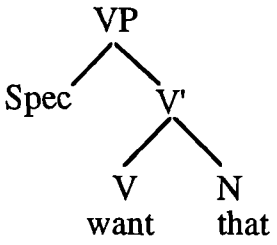
To sum up so far, according to Radford's hypothesis, early child clauses are different in nature from adult clauses. The absence of auxiliaries, modal verbs, verb inflections and infinitival *to* is taken as evidence that children first go through a lexical stage in which the morphosyntax of INFL has not been acquired, and thus functional categories are not present in early child grammars.

As INFL-related features play an important role in determining the grammar of a variety of other phenomena such as the distribution of subjects and nominative case assignment, Radford's analysis makes further predictions for early child grammar. It is well known that certain obligatory constituents of the adult grammar are sometimes absent in early child speech. In English, for example, young children go through a period in which they consistently drop the subject (e.g. Hyams 1986). Some examples are given in (8).

(8) a. No play matches.
b. Play my toys.
c. Want that. (Hyams, 1986: 67)

What is crucial is that young English-speaking children use null subjects in contexts where adults require an overt nominative subject. In early work, Radford suggests two analyses for null subjects at his lexical stage: (i) missing arguments might simply be empty NPs with no functional constraints and their reference is pragmatically determined; (ii) missing arguments might remain *implicit* in the sense that their theta-roles are lexically saturated, not syntactically and thus, they are not projected into the syntax. In more recent work, following Rizzi (1994), Radford (1995) argues that null subjects in children's clauses are "null constants." In his analysis, the clause *want that* in (8c), for example, is a VP, with the null constant occupying the specifier of VP, as in (9).[5]

(9)



Radford's VP analysis also makes predictions for overt subjects with respect to Case assignment in early grammar. For him, while in adult English the subject has to move into the specifier of IP in order to receive Case, in child grammar it remains *in situ* in the specifier of VP. What this means is that Case assignment is not operative in early grammar and young children are expected to produce non-nominative subjects in subject position, which in English can only be seen in pronouns.

Along the lines of the Weak Continuity hypothesis, a similar proposal is made by Vainikka (1993/94). Vainikka also argues that case errors on subject pronouns result from differences in adult and child grammars with respect to the architecture of the clause. In her view, early child grammars lack inflectional categories such as AgrP or TP, and therefore are not able to assign nominative Case. Indeed, research on L1 acquisition has shown that English-speaking

[5] Note that according to Rizzi (1994), a null constant can occupy a root specifier position, where it can be discourse identified.

children make subject pronoun errors, producing non-nominative subjects in addition to nominative subjects (e.g. Pensalfini 1995; Powers 1994; Radford 1995; Rispoli 1994; Schütze & Wexler 1996a, 1996b; Vainikka 1993/94). The following examples cited in Vainikka (1993/94) show the incorrect use of non-nominative subject pronouns in child English.

(10) a. My see that. Adam see that. (Adam, 2;3)
b. My play bulldozer, hmm? (Adam, 2;3)
c. My need her. (Nina, 1;11)
d. My make red table, (Nina, 2;0)
e. Me wearing curtain. (Naomi, 2;1)
f. Me love boat. (Naomi, 2;3) (Vainikka, 1993/94: 268)

As studied by Vainikka (1993/94) in detail, some English-speaking children produce a significant number of non-nominative subjects. For example, at ages (1;11-2;1) (Files 1-6), 86.21% (50/58) of Nina's (Suppes 1973) first person singular subjects are *my* rather than *I*.

In a discussion of the rate of pronoun errors in early child English, Pensalfini (1995), however, points out that not all children initially make case errors. He observes that the children who make pronouns case errors relatively frequently do not make many overall. In other words, it is not the case that children consistently produce accusative or genitive pronouns in all nominative subject positions.

In Rispoli's view (1994), pronoun case errors in the speech of young English-speaking children are related to the morphological markedness of the adult grammar. What he argues is that nominative forms such as *I* and *she* in adult English are irregular in the sense that *I* does not have the stem *-m*, as in *me* and *my*, and similarly *she* does not have the third singular stem *h*, as in *her*.

According to Rispoli, then, due to morphological irregularity, young children initially produce *me* where an adult form would require *I*.[6]

In a comparative study on the development of the case system in early Dutch and English, Powers (1995) reports that Dutch-speaking children do not produce anywhere near the proportion of non-nominative subjects as English-speaking children do.

The crucial finding in all these studies is that although not all English-speaking children make pronoun errors at the same rate, young English-speaking children do produce non-nominative subjects.

In contrast to Radford's Small Clause hypothesis and Vainikka's Weak Continuity hypothesis, however, other researchers have argued that child English provides evidence for functional projections in early stages of syntactic development (e.g. Déprez & Pierce 1993, 1994; Hyams 1992, 1994; Pierce 1989, 1992).

Déprez & Pierce (1993) specifically examine sentence-initial and sentence-medial negated utterances discussed in early studies on child L1 acquisition of English (e.g. Klima & Bellugi 1966). Déprez & Pierce (D&P) account for the early use of sentence-initial negatives such as *No Mommy doing. David turn* (D&P, 1993: 34) by making use of the VP-internal subject hypothesis.[7] Under this analysis, early child grammars, rather than using Spec-head agreement, initially utilise another option of Case assignment, namely, Case assignment under government by INFL. According to D&P, if INFL is present in the early grammar of the child as well as the option to assign nominative case under

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[6] As Pensalfini correctly points out, however, such a theory predicts that there will be no errors with *he* and *they*, since they both have regular forms such as *him* and *his* vs. *them* and *their*. However, Pensalfini found that Eve (Brown 1973) used *he* for *him* about one third of the time, and *he* for the possessive *his* 80% of the time.

[7] Adopting a number proposals in the syntactic literature, Déprez & Pierce assume that negation has its own projection NegP, which is assumed to be part of the inflectional system occurring between IP and VP (e.g. Laka 1989; Pollock 1989). They also adopt a particular model of grammar, namely, the VP-internal subject hypothesis (e.g. Kitagawa 1986; Koopman & Sportiche 1991), that is, subjects are generated internal to the VP at D-structure. Under this analysis, normally subjects must raise to the specifier of IP where nominative case assignment takes place via Spec-head agreement.

government to the VP-internal subject, the child might go through a stage in which the subject is not raised. In other words, there might be a stage in early grammar in which Neg occurs sentence-initially as a result of the subject remaining in the VP-internal position.

Hyams (1992, 1994) also challenges Radford's hypothesis that early grammars lack functional categories. For Hyams, the Small Clause hypothesis faces both empirical and theoretical problems. With respect to Radford's claim that early child grammars are entirely lexical and therefore differ from adult grammars, Hyams first raises the issue of learnability, that is, if functional categories are initially missing, what would be the mechanisms responsible for the transition to an adult-like syntactically-based grammar which has functional categories? In other words, one must explain how functional categories are acquired. For Radford, functional categories emerge on the basis of a maturational process. However, if it is true that functional categories mature, then this should be observed crosslinguistically.

Hyams also points out that much of the evidence Radford adduces is based on data from child English.[8] An investigation of functional categories in other languages such as German and Italian provides evidence for knowledge of functional categories, Hyams claims. Inflectional processes such as subject-verb agreement and Case assignment, as well as syntactic processes of verb movement are among the phenomena that Hyams examines. She emphasises the importance of crosslinguistic acquisition studies while trying to characterise early child grammar. It should also be noted that Radford's analysis is entirely based on examples extracted from corpora. A quantitative analysis of the data is not presented. Hence, one does not know to what extent the examples are representative or systematic.

The studies discussed in this section offer different analyses of early child grammar. While Radford claims that functional projections are missing and

[8] With the exception of Platzack's (1990) work on the acquisition of Swedish.

mature later, others take the position that functional categories are part of the grammar at the onset of acquisition. These analyses have implications for the issue of continuity vs. maturational accounts of language acquisition and in fact are related to L2 acquisition, as all L2 learners, unlike L1 children, already have instantiations of another linguistic system. For example, if it is the case that functional projections are present in early L2 grammars, this might have consequences for maturational accounts of language acquisition, such as Radford's hypothesis, because his analysis holds that functional categories are missing in early grammars.

Hence, in the next section, I discuss the question of whether functional categories are present or absent in early L2 grammars. Restricting our discussion to English, I review two recent studies on the acquisition of IP in child L2 English.

5.3 The acquisition of IP in child L2 English

Lakshmanan (1993/94) examines the acquisition of English by a 4 1/2-year-old Spanish child, Marta (data from Cancino, Rosansky & Schumann 1974). The longitudinal data were collected approximately every other week over a period of 8 months and consisted of 15 samples. At the onset of the study, the learner had been in the USA for nearly a month attending an English-only nursery school.

One piece of evidence for the presence of IP is utterances with copula *be*, which is the first type of verb to appear in the earliest samples.

(11) a. Is Hymie. [= That's Hymie] (S 1)

b. My teacher .... is Christine. (S 1)

c. This dress is here. (S 2)

d. This is Big Bird. (S 2)

e. Is black. (S 2) (Lakshmanan, 1993/94: 58)

Under the assumption that INFL has Tense and Agreement features which need to be picked up by the finite verb, Lakshmanan assumes that the copula originates in the VP and moves up to INFL in order to get inflectional features.

Further evidence for IP concerns the use of the auxiliary *be*, as in (12).

(12) a. Mother is cooking supper. (S 2)

b. Where is the baby sleeping? (S 2) (Lakshmanan, 1993/94: 59)

Lakshmanan also presents data for the early existence of negation and inversion in questions. To illustrate this point, consider the following examples in which the negative element *no* is always placed after *is*.

(13) a. Is no come, snow. (S 6)

b. It's no ready. (S 7)

c. Somebody is not coming in. (S 8) (Lakshmanan, 1993/94: 59-60)

Lakshmanan assumes that negation has its own projection situated between IP and VP as in the adult grammar. The L2 data indicate that the negative element always comes after the copula/auxiliary and the modal *can*. Lakshmanan concludes that the position these verbal elements appear in must be INFL.

One should note, however, that Lakshmanan does not provide specific details regarding the use of the verb *be* and negation. One would want to know to what extent such early occurrences of copula *be*, for instance, are analysed. Based on data from a Japanese child learner of English, Uguisu, Hakuta (1974a) reports that many of her early utterances consist of a *This is a* - - - - pattern, and that they are therefore prefabricated forms. It should also be noted that although Marta had no formal instruction in English, Lakshmanan (1991) reports that Marta had contact with English speakers at school and at a summer camp prior to coming to the USA. It is thus not clear how long Marta had been exposed to English at

school or at the camp before the study began. Thus, we do not know to what extent the examples given in (11-13) are the earliest instances.[9]

Another area Lakshmanan examines in Marta's data is concerned with the presence of utterances with the preposition *for*. As can be seen in the following examples, these constructions lack a lexical verb.

(14) a. Context: Picture of boy eating cookies

This is the boy for the cookies. (S 2)

b. Context: Picture of girl giving a baby doll a bottle

This is the girl for the baby. (S 2) (Lakshmanan, 1993/94: 63)

In her analysis of these utterances which lack main verbs, Lakshmanan proposes that the preposition *for* preceding the NP object acts as a case assigner. Under the assumption of the Case Filter (Chomsky, 1986b), which requires that every overt NP have case, Lakshmanan argues that the preposition *for* assigns Case to the NP complement. In (14a) for example, the DP *the cookies* is taken as the complement of an empty (implicit) verb such as *eat*. The preposition *for*, like the infinitival particle *to* in adult grammar, is claimed to be in INFL.[10] Lakshmanan argues that due to Case considerations, the object of the implicit verb moves to a position where it can be assigned Case by *for*. Under her analysis, then, although thematic verbs are missing in the early stages of this

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[9] Although Lakshmanan (1991) does not articulate it explicitly, in my view this fact reappears in the analysis of null subjects in Marta's data. Lakshmanan finds that in Sample 1 "subjects are null 64% of the time (There is one case of *she/they*" (Lakshmanan, 1991: 397). On the same page in a footnote, she states that "note that Sample 1 may be either the beginning or the end of a null-subject stage". If it is the case that Sample 1 is the end of the null-subject stage, the examples given in (11-13) cannot represent the earliest utterances, which suggests that Marta's previous exposure to English had already had effects.

[10] Lakshmanan points out that the use of *for* in *to* contexts is evident from the examples given in (i).

(i) a. Going for eat. (S 3)
'He's going to eat it'

b. Come here for see the crocodiles. (S 9)
'Come here to see the crocodiles' (Lakshmanan, 1993/94: 69/70)

child's L2 English data, the Case Filter is in full operation, and relevant to the concerns here, that INFL exists in the early grammar.

In sum, on the basis of the consistent use of copula *be*, auxiliary *be* and negated utterances, as well as her analysis of *for* in utterances with no main verbs, Lakshmanan argues for the presence of the functional category IP in early child L2 acquisition of English. Her conclusion is that early stages of L2 acquisition provide evidence for non-lexical projections, such as IP and related mechanisms such as case assignment.

Another recent study on the acquisition of functional categories in child L2 English is discussed in Gavruseva & Lardiere (1996). The data from an 8-year-old Russian child, Dasha, are examined for the availability of functional projections in early L2 acquisition. Unlike Marta in Lakshmanan's study, Dasha had no exposure to English before coming to the USA. The spontaneous production data covering a period of 6 months were collected ten times, nearly a month after Dasha's arrival.

Gavruseva & Lardiere's analysis specifically addresses V&Y-S's structure-building approach to L2 acquisition (i.e. implicational stages of VP-IP-CP). As we will discuss in the next chapter, they hypothesise that if V&Y-S's analysis is on the right track, one would not expect to find CP-related elements before the acquisition of IP-related elements in the data. With respect to production of IP elements in Dasha's L2 English, Gavruseva and Lardiere examine obligatory contexts for the use of agreement, auxiliaries, modals and past tense forms. In Files (4-7), for example, while agreement marking in obligatory contexts is 22.73% (5/22), the production of auxiliaries and modals is 13.76% (15/109) and past tense is 48.53% (33/68). In the same files, all yes/no questions and wh-questions contain inverted auxiliaries or the modal *can* 100% of the time. With respect to the suppliance of pronominal subjects, on the other hand, Gavruseva & Lardiere find only three instances of non-nominative subjects, one in each of the first three files. The number of nominative subjects within the same three files,

however, is 107. As discussed earlier, this finding is different from what is reported for L1 English, where early production data show a much higher proportion of subjects with non-nominative case marking (e.g. Vainikka 1993/94). Assuming that nominative case marking is related to AgrP, Gavruseva & Lardiere argue that features associated with IP related projections must be available to Dasha from her L1 Russian.

In sum, both Lakshmanan's study and Gavruseva & Lardiere's study suggest that functional categories are present in early child L2 English.

Our aim in this chapter is also to investigate IP in Erdem's L2 acquisition. We first examine the development of the verb *be* both as a copula and an auxiliary and then the data on the development of modal verbs. We then discuss the acquisition of verbal morphology: 3sg *-s* and regular and irregular past tense forms. Next, we consider the distribution of overt subjects as well as pronominal subjects in Erdem's early L2 grammar. Finally, we will discuss our findings in terms of the Minimal Trees hypothesis. Our analysis will also have implications for Eubank's Weak Parametric Transfer (Valueless Features) hypothesis.

5.4 IP-related elements in Erdem's L2 English

This section is divided into three sub-sections. First, we discuss utterances with the verb *be* (either as a copula or an auxiliary) and modal verbs. Second, we investigate the emergence of verb inflection based on data from 3sg *-s* and regular/irregular past tense forms. Third, we discuss overt subjects and nominative pronouns in Erdem's data. In regard to the use of *be* both as a main verb (copula *be*) and as an auxiliary (auxiliary *be*), we assume that in both cases *be* is related to INFL, and therefore the distinction between them is not a point of concern in this study.

5.4.1 Copula *be*

The copula *be* is among the first verbs to appear in Erdem's earliest samples. Many of the early utterances are of the type *It's a....*, *This is a....*, as in (15).

(15) a. It's a pig. (S 4, 4 Apr '94)

b. This is my flower. (S 5, 11 Apr '94)

c. This is my mum shoes. (S 5)

d. It's a ball? (S 6, 22 Apr '94)

We cannot, however, rule out the possibility that some of these utterances are unanalysed forms. Although the contextual information shows that some of them are used correctly while describing a picture or playing a hiding game, presumably accounting for the frequent use of such utterances in the early recordings, it appears difficult to argue that the verb *be* in (16) is analysed as a copula in these early instances.

(16) a. Context: Looking at the pictures in a book

Investigator: Is the cat sleeping?

Erdem: No.

Investigator: What is it doing? # what is the cat doing?

Erdem: It is a playing. (S 6, 22 Apr '94)

b. Investigator: What are these?

Erdem: It's a banana. (S 6, 22 Apr '94)

c. Erdem: Look # it's a cat. (S 6, 22 Apr '94)

Erdem: It's a I don't know. (S 6, 22 Apr '94)

d. Context: Erdem is eating yogurt.

Investigator: Erdem # tell me what you are doing now?

e. Erdem: It is a yogurt yum yum. (S 6, 22 Apr '94)

f. Erdem: It's a rain. (S 7, 6 May '94)

Investigator: What?

Erdem: Look # rain # rain rain.

Investigator: Oh yeah # it is raining.

g. Investigator: Which one do you want to paint?

Erdem: This is picture. (S 7, 6 May '94)

Therefore, in the first seven samples, utterances beginning with *It is/This is* are not included in my counts. Such utterances are counted as analysed when Erdem used copula *be* with subjects other than *it* or *this*, as in *me is finish* (S 8, 20 May '94), *are you ready* (S 8, 20 May '94), *mummy is very funny* (S 9, 5 Jun '94). The list of unanalysed utterances with *it* and *this* in Samples 6 and 7 is given in Appendix B-1.

With respect to the counting procedure, I examined each sample for the suppliance or non-suppliance of copula *be*. The first obligatory contexts for copula *be* occur in Sample 5 (11 Apr '94), but each time Erdem fails to produce it.

(17) a. Investigator: Where is your dad now?
Erdem: My dad school. (S 5, 11 Apr 94)

b. Investigator: Where is Jenny now?
Erdem: Jenny house. (S 5)

c. Investigator: Do you have friends in Turkey?
Erdem: My friends Turkey. (S 5)
Erdem: My one friends Newcastle.

d. Investigator: How many English friends do you have? (S 5)
Erdem: English friends ten # my dad my friends.

As shown in Appendix B-1, utterances beginning with *it* and *this* in Samples 6 and 7 are counted as unanalysed forms. From Sample 8 (20 May '94) onwards, however, there are high occurrences of copula *be* in obligatory contexts. Consider the following examples.

(18) a. Erdem: Where is 'karpuz'?[=Turkish] (S 8, 20 May '94)
English: Where is watermelon?

b. Investigator: Where is your colouring book?

Erdem: This is not colouring book. (S 8)

c. Erdem: This is a pig. (S 9, 5 June '94)

d. Erdem: This is big lion # this is my lion # this my big lion.

e. Mummy is very funny. (S 9)

f. My daddy is school. (S 10, 13 June '94)

g. My new house is Turkey. (S 10)

h. Playground is very good. (S 10)

i. I'm not hungry. (S 10)

j. It's very cold, isn't it? (S 11, 17 June '94)

k. I am very sure. (S 12, 9 Aug '94)

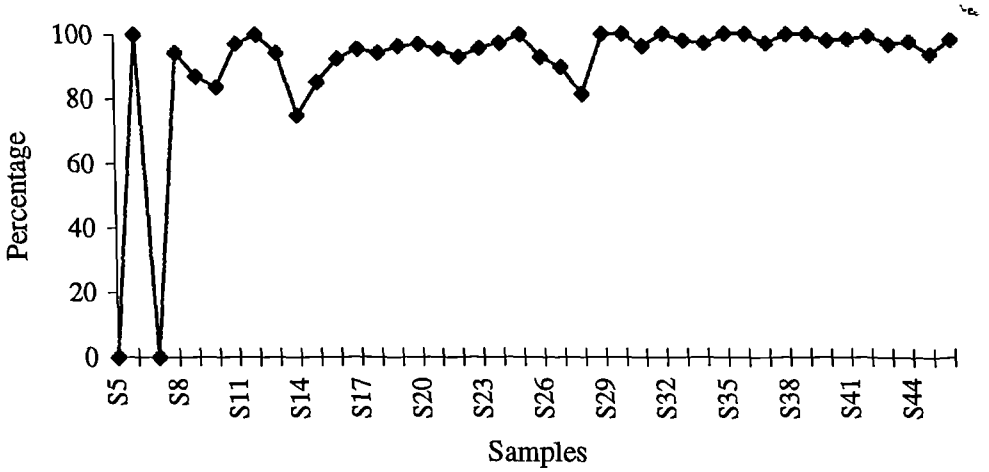
l. He is home. (S 13, 23 Aug '94)

m My leg is very strong. (S 14, 30 Aug '94)

n. I'm faster than the tiger. (S 15, 16 Sep '94)

Figure 5.1 presents the development of the Copula *be* in Samples 5-46.

Figure 5.1 Percentage of the Copula be in Samples 5-46



Appendix B-2 presents the total number and percentage of utterances with copula *be* as well as its omission. Beginning with Sample 8 (20 May '94) in particular, Erdem consistently produces sentences with the copula and its rate is rather high.

In Samples 9 and 10 (5 June '94–13 June '94), for example, of the 60 copula contexts, 51 have the copula *be*, 85%. Similarly, in Sample 11 (17 June '94) there are 37 copula contexts and only one utterance lacks the copula *be*, the rate of *be* is over 95%.

It should be noted that despite the appropriate production of the copula *be*, some instances of missing copula are found in later samples. Some occur with full DPs, some with *this*. This is shown in the following examples.

(19) a. Investigator: Where is Jenny now? Do you know where she is?

Erdem: <Jenny Jenny> [//] Jenny now house.

b. Investigator: Where is your dad now? # Where is Murat?

Erdem: <Murat> [/] Murat school. (S 7, 6 May '94)

c. Investigator: Oh # what a lovely thing it is! it's a very big lion.

Erdem: This my lion. (S 10, 13 June '94)

d. Context: Erdem is pretending to be a lion

Investigator: What are you doing? Are you eating me?

Erdem: This lion very dangerous. (S 10)

e. Investigator: Who is Umit?

Erdem: My # my one friend Umit. (S 10)

f. Investigator: What's your friend doing now?

Erdem: This not my friend. (S 11, 17 June '94)

g. Erdem: But he don't know where basket. (S 18, 20 Oct '94)

Investigator: Sorry # what did you say?

h. Erdem: But he don't know where is the basket. (S 18)

We also observe that in general early instances of the copula *be* occur with *is*, although there are some instances with *are* and *am* as well.

(20) a. My hat is broken. (S 9, 5 June '94)

b. Mummy is very funny. (S 9)

c. Nursery is not English. (S 10, 13 June '94)

d. Ümit house is Newcastle. (S 10)

e. I'm not tired. (S 10, 13 June '94)

f. Are you ready? (S 11, 17 June '94)

g. This is toilet. (S 12, 9 Aug '94)

h. Yes # it's room. (S 12)

i. I am very sure. (S 12)

As discussed in Chapter 2, early work on L1 acquisition of English showed that copula *be* is acquired late (e.g. Bellugi 1967; Brown, Fraser & Bellugi 1964; Brown 1973; Hyams 1986). Recall that in Brown's (1973) morpheme order studies, where 90% correct use in 3 consecutive samples is the criterion, the ranking of uncontractible copula is 7, and the ranking of contractible copula is 13. These findings are replicated in de Villiers & de Villiers' (1973) cross-sectional study, where the ranking for uncontractible copula is 12, and for contractible copula 8.5.

In the case of child L2 acquisition, on the other hand, studies suggest that the copula is acquired early (e.g. Cancino *et al.* 1974; Dulay & Burt 1974a; Hakuta 1975; Lakshmanan 1993/94; Tiphine 1983). The high incidence of the copula *be* in Erdem's early utterances is thus compatible with the other child L2 studies reported in the literature. As discussed previously, Lakshmanan (1993/94) takes the early use of the verb *be* by a Spanish child, Marta, as evidence for IP in child L2 acquisition (data from Cancino, Rosansky & Schumann 1974). We will return to this issue in the discussion section.

5.4.2 Auxiliary *be*

We also observe that most of Erdem's earliest utterances with verbs are restricted to the present progressive,[13] perhaps partly due to the nature of the context. In order to examine the development of auxiliary *be*, I looked at the occurrence of *be* in obligatory contexts. Appendix B-3 presents the total number and percentage of the suppliance or non-suppliance of auxiliary *be*.

The first obligatory context for auxiliary *be* occurs in Sample 3 (23 Mar '94).

(21) Context: Looking at the children playing in the garden
Investigator: Look at those boys Erdem. What are they doing? Are they playing?
Erdem: Yes # ball playing. (S 3, 23 Mar '94)

In Sample 4 (4 Apr '94), we find the earliest instance of auxiliary *be* with an uncontracted form, as illustrated in (22).

(22) I am painting. (S 4, 4 Apr '94)

Of the 4 obligatory contexts for auxiliary *be* in Sample 5 (11 Apr '94), 2 have a missing auxiliary. Examples from Sample 5 (11 Apr '94) are given in (23).

(23) Investigator: What are you doing now?
Erdem: Erdem is flying # superman is flying # two flying.
Investigator: Where are we going now?
Erdem: Newcastle going. (S 5, 11 Apr '94)

As can be seen in Appendix B-3, we find occasional instances of auxiliary *be* up until Sample 9 (5 June '94). From Sample 9 (5 June 94) onwards, the suppliance of the auxiliary suddenly increases. In Samples 10 and 11 (13 June '94–17 June '94), of the 47 contexts, 35 (74.47%) have auxiliary *be*.

(24) a. My dad is driving the car. (S 10, 13 June '94)

---

[13] Brown (1973), de Villiers & de Villiers (1973) and Kuczaj (1978b) report that the progressive inflection *-ing* is the first verbal inflection found in early English.

b. I'm something eating. (S 10, 13 June '94)

c. Car is going here. (S 10)

d. This is eating you # this lion eating you. (S 10)

e. I am going Newcastle # OK? (S 10)

f. I am going to my infant school. (S 10)

g. I'm going this way. (S 11, 17 June '94)

h. I am coming the here. (S 11)

Yet, there is variation in the production of the auxiliary *be* in Samples 13 through 22 (23 Aug '94–22 Nov '94). A missing auxiliary occurs at an average of 65% during these 10 samples. Some examples of the missing auxiliary *be* are given in (25).

(25) a. He just saying I am saying. (S 13, 23 Aug '94)

b. But I not doing # not I'm # I'm not doing that. (S 13)

c. I going my new house. (S 14, 30 Aug '94)

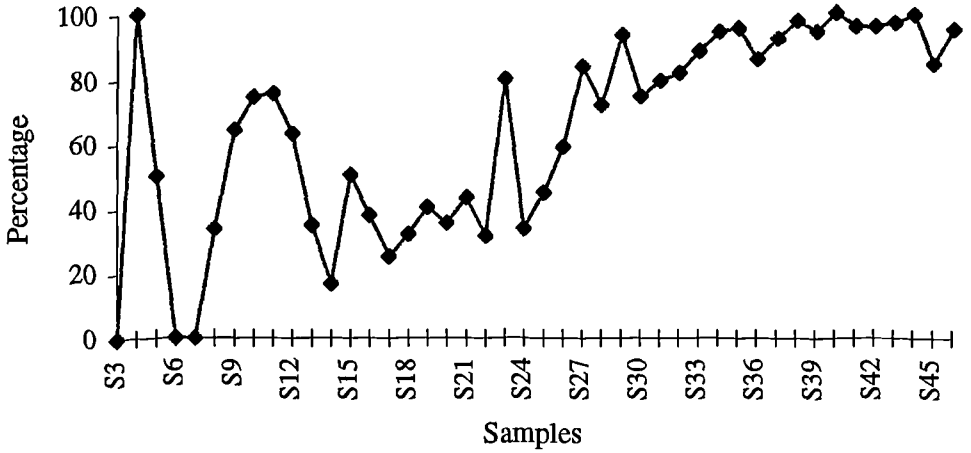
d. He is crying and we crying. (S 16, 4 Oct '94)

e. She playing the balloon. (S 18, 20 Oct '94)

f. I tell you what I doing. (S 20, 8 Nov '94)

Figure 5.2 shows the development of auxiliary *be* in Samples 3-46. Before Sample 3 (17 Mar '94), obligatory contexts for auxiliary *be* do not occur, and therefore Samples 1-2 are not included in Figure 5.2.

Figure 5.2 Percentage of Auxiliary be in Samples 3-46



With respect to the distribution of auxiliary *be*, examples from early samples show that Erdem produces both contracted and uncontracted forms. Perhaps if we only had evidence for the contracted form of the auxiliary *be*, it would not be plausible to argue that the auxiliary *be* functioned as an auxiliary in Erdem's interlanguage. The examples in (26) show the contracted and uncontracted forms of *be* in the same sample, Sample 11 (17 June '94).

(26) a. I am watching the television # television. (S 11, 17 June '94)

b. I'm going to park. (S 11)

c. It's not raining. (S 11)

d. It's raining. (S 11)

e. It is not crying. (S 11)

f. This is sleeping. (S 11)

Summarising the uses of *be*, we find that it is among the first verbs that appeared in Erdem's L2 English. Despite omission errors, as discussed in Chapter 4, apart from one instance (*Not it's crying* S 21, 15 Nov '94, Chapter 4 fn 7), there are virtually no instances where it is placed incorrectly in negated utterances, which is an issue I will return to in the discussion.

5.4.3 Modal verbs

The use of modal verbs is another source of information about the category INFL. In comparison to the very early production of copula and auxiliary *be,* the first instances of modals appear at Sample 15 (16 Sep '94) when Erdem started an infant school in September 1994. As in L1 acquisition of English (Bellugi 1967; Bloom 1970), at the beginning, the use of modals is mainly restricted to *can.* That is, *can* emerges prior to all other modals. Some of Erdem's early modal constructions are given in (27).

(27) a. You can get it because it is good. (S 15, 16 Sep '94)

b. I don't know # I can't remember. (S 15)

c. He can fly # you can do it like that. (S 16, 4 Oct '94)

d. But cats can't do it like that. (S 16)

e. I can't turn my head. (S 17, 12 Oct '94)

f. I can't # I know I can't do it. (S 17)

g. Can I eat another one biscuits? (S 18, 20 Oct '94)

h. No # he can't go here. (S 18)

i. Can you go fastly? This is very good. (S 18)

A closer look at the examples in (27) reveals that the production of the modal *can* is not restricted to a particular clause type. It is used in both declaratives and interrogatives. One can say that *can* is correctly analysed in Erdem's interlanguage by Sample 16 (4 Oct '94). Indeed, *can* in his L2 grammar behaves exactly as it does in the adult grammar of English. Once it is produced, it is always used in the correct syntactic position.

We should note, however, that there are some erroneous examples in regard to modals. First, similar to the use of *be*, sometimes the modal verb has been omitted.

(28) a. Investigator: Get off the bike, we'll go this way.
Erdem: No # we go this way and this way. (S 11, 17 June '94)

b. Context: Talking about which school he will start in September, a nursery or an infant school.
Erdem: I say you I go big school. (S 13, 23 Aug '94)

c. Erdem: You go now # I show you. (S 15, 16 Sep '94)
Investigator: Is it going to be a dog? (S 17, 12 Oct '94)
Erdem: No # I colour it. (S 17)
Investigator: Will you colour this?

d. Investigator: Look # the traffic lights are red # do you think this little girl should wait or cross the street?)
Erdem: He cross the street. (S 18, 20 Oct '94)

Second, there are some instances where the modal verb has been replaced by other elements, in particular by *didn't*, as in the following examples.

(29) a. Investigator: Why do you not want to go to Turkey?
Erdem: But we didn't go now. (S 16, 4 Oct '94)
Investigator: Why can't you go now? (S 16)

b. Investigator: Oh # are they animals? (S 20, 8 Nov '94)
Erdem: Yes # it is animals. (S 20)
Mother: If you touch them you +/ (S 20)
Erdem: You die # so you didn't touch them. (S 20)
Investigator: Of course you shouldn't. (S 20)

c. Investigator: What are they? Are they stars? (S 20)
Erdem: Yes # you didn't touch them. (S 20)
Investigator: What? (S 20, 8 Nov '94)
Erdem: You didn't touch them. (S 20, 8 Nov '94)

Investigator: You mean you shouldn't touch the stars. (S 20)

Third, Erdem also produces the modal *must* with the infinitive marker *to* in affirmative sentences (i.e. Apart from one instance of *she mustn't* (S 18, 20 Oct '94) there are no instances of *must* in negated utterances)

(30) a. You must to put in there. (S 16, 4 Oct '94)
b. You must to do it like that. (S 16)
c. You must to look at this. (S 16)
c. But you must to stick it here. (S 17, 12 Oct '94)
d. I think you must to go now. (S 17)
e. I must to get this. (S 18, 20 Oct '94)
f. I must to get nine. (S 18)
g. Yes you must to stand up. (S 19, 1 Nov '94)
h. No # we must do it like that. (S 20, 8 Nov '94)

Presumably, Erdem treats *must* on par with the semi-auxiliary *have to,* which has roughly the same meaning, despite its different verbal properties, i.e. *have* in *have to* inflects for past and 3sg present tense. It should be pointed out that some of the utterances with *must to* are produced either after my utterances or Erdem's own utterances involving *have to*, as shown in the following examples.

(31) a. Erdem: We *have to* fly. (S 16, 4 Oct '94)
b. Erdem: I *must to* go. (S 16)
c. Investigator: Let's first talk # you don't *have to* write anything.
Erdem: I know. (S 21, 15 Nov '94)
Investigator: Do you know what you should do here? You'*ve got to* find the treasure. But now # we are here # this is the starting point. Let's say this is me # this is you #
Erdem: But we *must to* go there there. (S 21, 15 Nov '94)

One should note, however, that although Erdem produces *must* with *to* in main verb contexts for a fairly long time he does not do so with *be*. Consider the following examples.

(32) a. It must be very large. (S 17, 12 Oct '94)

b. Yes # it must be big kitchen. (S 24, 8 Dec '94)

c. They must be something but I don't know what they are. (S 31, 14 Feb '95)

d. I can't. I must be too little. (S 32, 22 Feb '95)

e. It must be you. (S 33, 1 Mar '95)

f. But I can't see other postman pat. It must be somewhere. (S 33)

g. He was little than my big friend. He must be a ten. (S 36, 24 Mar '95)

As is known, one property which distinguishes modal verbs from main verbs in English is the lack of morphological inflection on modals, as shown in (33).

(33) a. *Mary is canning do.

b. *Mary cans go.

c. *Mary canned go.

In a detailed study of the acquisition of auxiliaries in English, Stromswold (1990) argues that children are conservative in the acquisition of auxiliaries and that they do not produce overregularised auxiliaries (see also Miller & Ervin, 1964; Maratsos, 1982; Pinker 1984). Our study also shows that Erdem distinguishes among various types of auxiliaries and does not misanalyse modals as main verbs. If he had not distinguished modal auxiliaries from nonmodal auxiliaries, for example, we might have expected to find modals inflected with the 3sg *-s*. That is, we would expect to see errors such as **she cans/coulds/musts buy a bunch of flowers*. In the whole corpus, we find no such errors. The following two are the only instances where a non-target like form is used with the modal *can*.

(34) a. Erdem: But he can't he can't drove # he can't go+

(S 21, 15 Nov '94)

Investigator: You mean Tom cannot drive? Why do you think so?

Erdem: Because it's little boy.

Erdem: This is little boy [= pointing to the girl]

b. Erdem: He can't drove a car. (S 21, 15 Nov '94)

c. Erdem: He can't drive a car. (S 21)

Of the above examples, (34a) shows that Erdem uses the past form of the lexical verb *drove* in a modal construction. However, in the same conversation he corrects himself and produces the correct form *drive*. Similarly, he never uses the progressive *-ing* inflection with a modal (i.e., **canning*, **coulding*, **musting*, etc), neither does he overgeneralise past tense to modals (i.e., **canned*, **coulded*, **musted*). All in all, Erdem essentially makes no inflectional errors with the modal verb *can*.

One might wonder whether other modal auxiliaries, such as *could*, *will*, *shall*, which appear later, show all of the properties associated with the modal *can*. Even though initially they are not produced as frequently as *can*, we observe a similar pattern. Consider the examples in (35) which show the use of various modal verbs in declarative and interrogative sentences.

(35) a. I don't know how she could drive because she is too little.

(S 30, 4 Feb '95)

b. Could you get this? (S 33, 1 Mar '95)

c. Do you know what the green one could do? (S 34, 8 Mar '95)

d. Will you take this? (S 28, 20 Jan '94)

e. Don't put mine mine because it will fall down again. (S 31, 14 Feb '95)

f. If you do it like this it will not go up. (S 34, 8 Mar '95)

g. Shall we do the master Don? I am really good at it. (S 34)

Appendix B-4 presents modal verbs in Samples 1 through 46 (9 Mar '94–24 Aug '95). At Sample 26 (5 Jan '95), two new modal verbs, *could* and *will* appear. Other modal verbs *shall* and *would* are produced in later recordings.

(36) a. You could see my own. (S 26, 5 Jan '95)

b. This will got to go London. (S 26)

c. If you press this button # this button this will go. (S 29, 26 Jan '95)

d. The ship is carrying this. Hey you could put them. (S 33, 1 Mar '95)

e. You could do this bit more big like that. (S 33)

f. I got a idea # could you get this? (S 33)

g. My daddy look for it but she couldn't find it. (S 38, 22 Apr '95)

h. If you put this in there it will work # that's why I put that in. (S 31, 14 Feb '95)

i. Would you get this? It's mine. (S 24, 8 Dec '94)

j. Do you mean if you don't pull this # it wouldn't jump. (S 34, 8 Mar '95)

k. Shall we take it off? It's a sticker. Where shall I stick it? (S 42, 2 June '95)

In sum, the data presented in this last section show that despite some errors such as *must to*, there is morphological and syntactic evidence for the correct use of modal verbs in Erdem's speech. It should be noted, however, that there is a delay of several weeks to several months before a range of modal verbs are learned. This delay, I believe, is the result of lexical learning, as it would naturally take Erdem time to learn the individual member of the modal verb class. The crucial finding, however, is that Erdem makes neither inflectional errors nor placement errors with modal verbs.

We now turn our attention to the development of inflectional morphology, first focussing on the use of 3sg *-s* and then on past tense forms.

5.4.4 Subject-verb agreement (3sg *-s*)

As discussed in Section 5.1, the head of INFL projections contains tense and agreement features. In this section, I present Erdem's data in relation to morphological markings of agreement and tense on the verb. I start with 3sg *-s*, i.e. agreement marking.

- **Method**

In regard to the counting procedure on subject-verb agreement, I should point out an important restriction. In English, overt marking for agreement is realised on the copula *be*, auxiliaries *be*, *do* and *have*[14] and 3sg *-s*. As we have seen thus far, however, in Erdem's interlanguage, auxiliary and copula *be* as well as auxiliary *do* (Chapter 4) appear fairly early. This, as we shall see, contrasts with main verb tense and agreement inflection. Following Phillips (1995), I assume that missing auxiliaries may not equate with missing main verb inflection; therefore no utterances that require an auxiliary are included in my counts in this section. Overall, the following are excluded: (i) utterances with auxiliaries *be/do/have*, (ii) yes/no questions, wh-questions[15] and negated utterances, and (iii) formulaic utterances and repetitions. With respect to the use of 3sg *-s*, we look at the form of the verb in obligatory contexts. The formula used to calculate the percentage of verbs inflected with 3sg *-s* is as follows:

(37)
$$\frac{X}{X+Y}$$

X is the number of verbs inflected with 3sg *-s* in obligatory contexts

Y is the number of cases where 3sg *-s* is obligatory, but not produced

Consider the following examples.

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[14] The development of the auxiliary *have* is not examined in this study, as we have few instances of it in Erdem's speech during the period under discussion. See Fletcher (1981) on the late acquisition of auxiliary *have* in L1 English.

[15] Subject wh-questions are included in the analysis since they do not require verb movement to C or *do*-insertion (e.g. *Who want bread?* (S 27, 13 Jan '95)).

(38) a. Dinosaur **turn back** and **drink** water. (S 25, 29 Dec '94)

b. Fred goes back and he **look** at the window. (S 25)

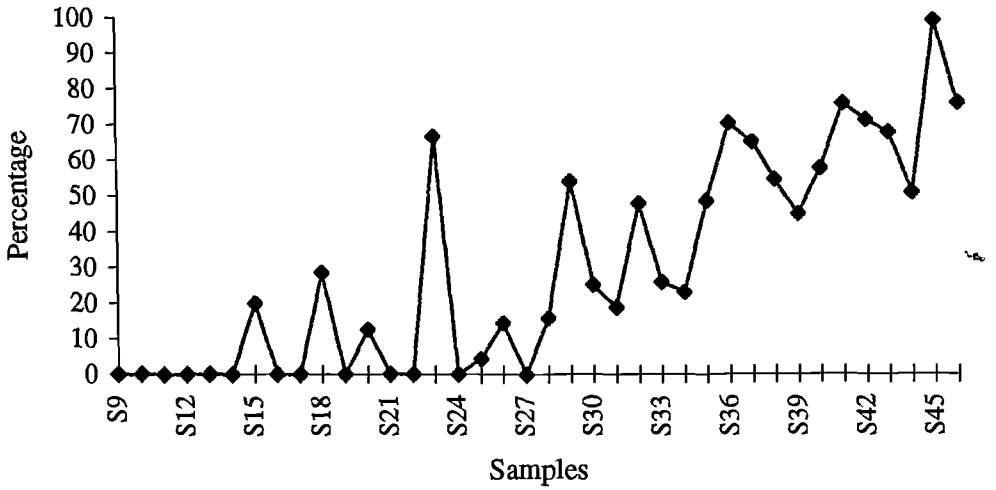
c. Lion **touch** the dinosaur and he **turn off** the television. (S 26, 5 Jan '95)

d. She **say** I don't want you to hold me. (S 28, 20 Jan '94)

The examples in (38) show that Erdem fails to inflect the verbs *turn back, drink, look, touch, turn off* and *say* with 3sg *-s*, and thus they are analysed as uninflected forms.

The first obligatory context for 3sg *-s* occurs in Sample 9 (5 June '94), but Erdem fails to provide the inflected form of the verb. Up until Sample 15 (16 Sep '94), he does not produce any verbs inflected with 3sg *-s*. Figure 5.3 shows the proportion of 3sg *-s* in obligatory contexts in Samples 9-46.

Figure 5.3 Percentage of inflected 3sg -s in Samples 9-46



Appendix B-5 presents the total number of inflected vs. uninflected verbs in 3sg *-s* contexts. As noted earlier, 3sg *-s* is not produced until Sample 15 (16 Sep '94)[16] and the frequency of 3sg *-s* does not seem to increase during the next several recordings. In Samples 15 through 22 (16 Sep 94–22 Nov '94), there is

[16] This is the first sample after Erdem started an infant school in September, 1994. (The first modal, *can*, is also first produced in Sample 15; see section 5.4.3).

not much evidence for the productive use of the inflected verb. We find only a few utterances with 3sg *-s*, some of which are illustrated in (39).

(39) a. I don't know he eats. (S 15, 16 Sep '94)

b. This you press # he runs. (S 20, 8 Nov '94)

As can be seen from Appendix B-5, it is only after Sample 28 (20 Jan '95) that Erdem produces 3sg *-s* relatively frequently. In Sample 29 (26 Jan '95), for instance, there are 13 (54.17%) utterances which contain 3sg *-s*, as opposed to 11 (45.83%) where the agreement marker is not provided. This is not to say, however, that the number or percentage of verbs inflected with 3sg *-s* rapidly increases. On the contrary, the rate of suppliance of the 3sg *-s* rises gradually. In Samples 29 through 35 (26 Jan '95–16 Mar '95), we find 108 (33.13%) utterances with 3sg *-s*, while the number of instances in which the subject-verb agreement is missing is 218 (66.87%). Between Samples 36 through 39 (24 Mar '94–1 May 95), the use of 3sg *-s* increases noticeably, inflection occurring 61.98% (119/192) of the time. It is only after Sample 40 (19 May 95) that the number of instances with 3sg *-s* is always higher than that of instances where the 3sg *-s* is not provided.

One additional observation in the use of 3sg *-s* is related to the types of verbs found in the corpus. We find that apart from some verbs that occur only once either in the inflected form or in the uninflected form, most of the verbs are used optionally with or without 3sg *-s*. The data do not indicate that only certain types of verbs were used with inflection and certain types always remained uninflected. An account related to the semantics of the verb may not be valid. For example, it is not the case that only transitive verbs are inflected, while intransitive verbs lack inflection. The lists given in Appendix B-6 show the breakdowns by verb for inflection and uninflection in 3sg *-s* contexts.

It is also important to note that although the 3sg *-s* has been omitted in many utterances, it has almost always been used correctly. There are 437 instances of

3sg *-s* in Erdem's data in Samples 15 through 46 (16 Sep 94–29 Aug 95). Of these 437, I found only 12 subject-verb agreement errors. These errors are of the same type, namely, 3sg *-s* is used with third person plural subjects.[17] The exhaustive list of subject-verb agreement errors is given in (40).

(40) a. This two fits and this fits. (S 33, 1 Mar '95)

b. The dogs dogs wants to catch him. (S 35, 16 Mar '95)

c. The cats comes goes with him. (S 35, 16 Mar '95)

d. The frogs always scares the ducks. (S 37, 13 Apr '95)

e. They doesn't stick in here. (S 37)

f. Ships hasn't got any xxx. (S 37)

g. I think they has too many. (S 39, 1 May '95)

h. George and Arnie always fights. (S 42, 2 June '95)

i. And then they marries. (S 43, 9 June '95)

j. They eats you. (S 43, 9 June '95)

k. Little ones doesn't break. (S 46, 24 Aug '95)

l. All of these has to go in there. (S 46)

Moreover, there is little evidence that Erdem produces the wrong form of the inflection, adding 3sg *-s* to the verb in the past tense, for instance. There are only four instances of such an error, all with irregular past tense verbs.

(41) a. If it stucks the car's wheel # # car can't go. (S 33, 1 Mar '95)

b. They throw it and it's brokes. (S 40, 19 May '95)

c. She saws a house. (S 43, 9 June '95)

d. He fells in he fells down but Sonic the hedgehog doesn't. (S 46, 24 Aug '95)

[17] Based on data from a German child, Poeppel & Wexler (1993) also found that agreement morphology was used correctly and that only a few errors (7/231, 3%) occurred with plural subjects.

Apart from the 12 errors with third person plural subjects in (40a-l) and the 4 examples with the past tense form in (41a-d), the data from Erdem indicate that when the 3sg *-s* is present, it is not used randomly. Table 5.1 shows the number and the percentage of agreement errors in Erdem's corpus.

Table 5.1 Errors 3sg *-s*

	correct		incorrect	
Samples 15-46	421/437	96.34%	16/437	3.66%

The overall conclusion one can draw from these results is that although Erdem produces both inflected and uninflected forms seemingly interchangeably, he knows that *-s* is a third person singular agreement marker. He does not use it randomly.[18]

We now turn to the development of past tense forms.

5.4.5 Tense marking

This section examines the use of regular and irregular past tense forms. First, we look at the distribution of irregular past tense forms.

5.4.5.1 Irregular past tense

Similar to the counting procedure utilised for 3sg *-s*, for each sample, we examine the form of the verb in obligatory past contexts.

(42) $\frac{X}{X+Y}$

X is the number of irregular verbs produced in obligatory past tense contexts.

Y is the number of cases where an irregular verb form in an obligatory context is not produced.

[18] See Phillips (1995) for a similar view that L1 children's errors of inflection are mainly omission rather than substitution. Citing work from Clashen & Penke (1992) on German and Guasti (1994) on Italian, Phillips argues that when children start using agreement morphology, they almost always use the agreement morphemes appropriate to the argument they agree with.

The first obligatory context for irregular forms occurs in Sample 10 (13 Jun '94), and in 5 out of 5 cases Erdem fails to produce the irregular form of the verb.

(43) a. Investigator: Which games did you play today?
Erdem: hmm # # car car.
b. Investigator: What else?
Erdem: And go to outside # outside playing and always play.
(S 10, 13 Jun 94)

c. Investigator: OK # good # where did you learn this?
Investigator: Did you do it in the nursery?
Erdem: No # I am do it Turkey. (S 10, 13 June '94)

Appendix B-7 presents the number and percentage of irregular past tense verbs in obligatory past contexts. While the first obligatory past tense context for an irregular verb occurs in Sample 10 (13 June '94), the earliest appearance of irregular past forms (4/16) is found in Sample 13 (23 Aug '94).

(44) a. Mummy said no # because # # little teddy it bedtime.
(S 13, 23 Aug '94)
b. We did it here. (S 13)

Up until Sample 20 (8 Nov '94), Erdem produces very few utterances with the irregular past. Of the 81 contexts, we find only 7 (8.64%) instances of the irregular past form. In the remaining 74 utterances (91.36%), the base form of the verb is produced, as the following examples illustrate.

(45) a. Investigator: What else did you do there?
Erdem: And go playground. (S 12, 9 Aug '94)

b. Investigator: I still don't understand how you ate the melon.
Erdem: I just eat one bit. (S 15, 16 Sep '94)

c. Investigator: Did you buy it or?

Erdem: I buy # not just me, my dad and my mummy.

(S 16, 4 Oct '94)

Investigator: Why didn't you take some more?

d. Erdem: I get it in my school # this two book. (S 18, 20 Oct '94)

After Sample 20 (8 Nov '94), although the irregular past forms are still not productive, their incidence increases gradually. Comparing the percentages of irregular past vs. missing irregular past in Samples 20 through 27 (8 Nov '94–13 Jan '95), we find 30 (26.55%) cases of irregular past in comparison to 83 (73.45%) instances where an irregular form is absent. In the following samples, the percentage of irregular past tense forms continues to gradually increase. A total of 80 instances of irregular past forms (41.03%) are attested in Samples 36 through 40 (24 Mar '95–19 May '94), as opposed to 115 occurrences of missing irregular past (58.97%). Some utterances from these samples are given in (46).

(46) a. He made a window. (S 36, 24 Mar '95)

b. I left it in Turkey and my daddy is going to bring it. (S 37, 16 Mar '95)

c. I see I saw a crab banging. (S 38, 22 Apr '95)

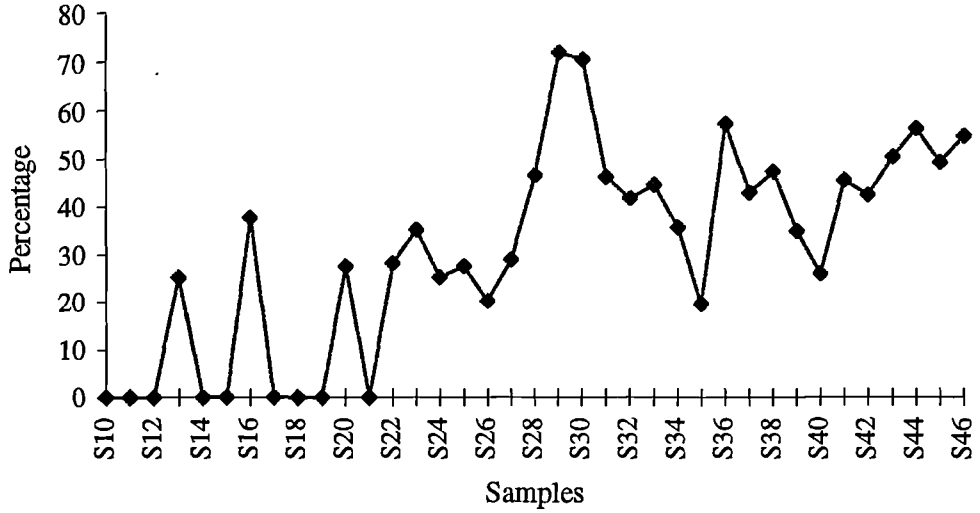
d. I lost that ball. (S 39, 1 May '95)

e. He come in home he broke my robot. (S 39)

f. We made a big house. (S 40, 19 May '95)

Figure 5.4 shows the percentage of the irregular past in Samples 10-46.

Figure 5.4 Percentage of irregular past in Samples 10-46



What we find is that similar to the development of 3sg *-s*, the use of past irregular forms is also gradual. Unlike 3sg *-s*, however, irregular past tense verbs have various lexical forms. Following Hakuta (1975) and Lakshmanan (1994), I assume that Erdem has to learn each form individually, due to the lexical variation of irregular verbs. Appendix B-8 shows the breakdown of individual irregular verb in past contexts, sample by sample.

We return to overgeneralisation errors with irregular verbs after examining the development of regular past tense forms.

5.4.5.2 Regular past tense *-ed*

We now turn to the production of the past tense form of regular verbs in Erdem's data. The method used to calculate the percentage of the past tense regular form is similar to the one used in the previous cases. The corpus is examined for the presence or absence of overt past tense marking in obligatory past contexts. If overt tense marking is supplied, the verb is counted as inflected. Some examples are given in the following sentences.

(47) a. Oh no # he just died. (S 15, 16 Sep '94)

b. So she stopped and she get on the cow. (S 35, 16 Mar '95)

c. His mummy wanted to go. (S 36, 24 Mar '95)

d. Some boys helped him. (S 37, 16 Mar '95)

e. She stopped working there now. (S 38, 22 Apr '95)

If *-ed* is missing, the utterance is considered to be uninflected, as in (48).

(48) a. Investigator: Did you talk to the doctor?
Erdem: No # my dad talk # my mummy talk to.
(S 13, 23 Aug '94)

b. Investigator: A boy in your class painted this?
Erdem: No not my school # he colour it this. (S 18, 20 Oct '94)

c. Investigator: Did you like the party on Sunday?
Erdem: I like the party # I like party. (S 23, 29 Nov '94)

d. Investigator: What did she say?
Erdem: She didn't say anything. She just cough.
(S 28, 20 Jan '94)

e. Erdem: I was in school and my mummy pick me.
(S 31, 14 Feb '95)

Figure 5.5 presents the distribution of verbs inflected with regular past *-ed*. Although the first obligatory context for *-ed* occurs in Sample 8 (20 May '94), no verbs inflected with the regular past *-ed* are produced until Sample 15 (16 Sep '94).

Figure 5.5 Percentage of regular past in Samples 8-46

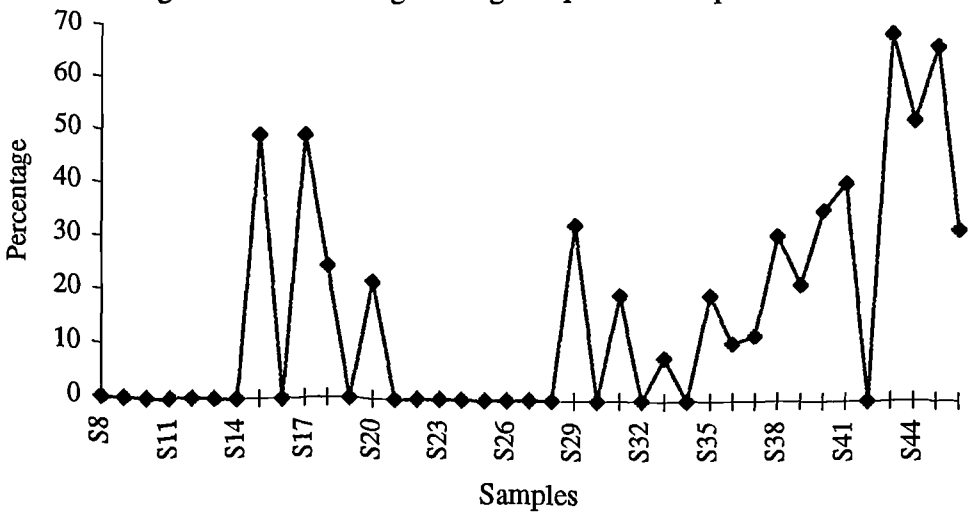


Figure 5.5 is somewhat misleading, because the 50% at Samples 15 and 17 (16 Sep '94–12 Oct '94) are both 1/2. Up to and including Sample 37 (13 Apr '94), a total of 12 (9.92%) regular past forms are produced out of 121 obligatory contexts.

What we observe is that Erdem produces correct irregular past tense forms such as *did* (S 13), *said* (S 13) and *bought* (S 16) before using regular past tense forms such as *died* (S 15), *played* (S 18), *painted* (S 18).[19] In addition, as Appendix B-9 shows, regular past inflection *-ed* is supplied in fewer obligatory contexts, compared to irregular past forms. Up until the last sample (Sample 46, 24 Aug '94) considered in this study, there is a total of only 69 instances (out of 269, 25.65%) in which the verb is correctly inflected with the regular past *-ed,* as opposed to 369 cases of irregular past forms (out of 909, 40.59%). Appendix B-10 presents the breakdown of regular verbs in past contexts, sample by sample.

We should note, however, that the percentage of both regular and irregular past inflection is lower than that of 3sg *-s* agreement inflection. With regard to 3sg *-s* and past tense, a significant change occurs by Sample 41 (26 May '95). Table 5.2 presents the numbers and percentages of 3sg *-s*, regular and irregular past in Samples 41 through 46 (26 May '95–24 Aug '95). As can be seen, the

[19] See Brown (1973), Cazden (1968), Ervin-Tripp (1964), Kuczaj (1977) for similar observations in L1 acquisition of English.

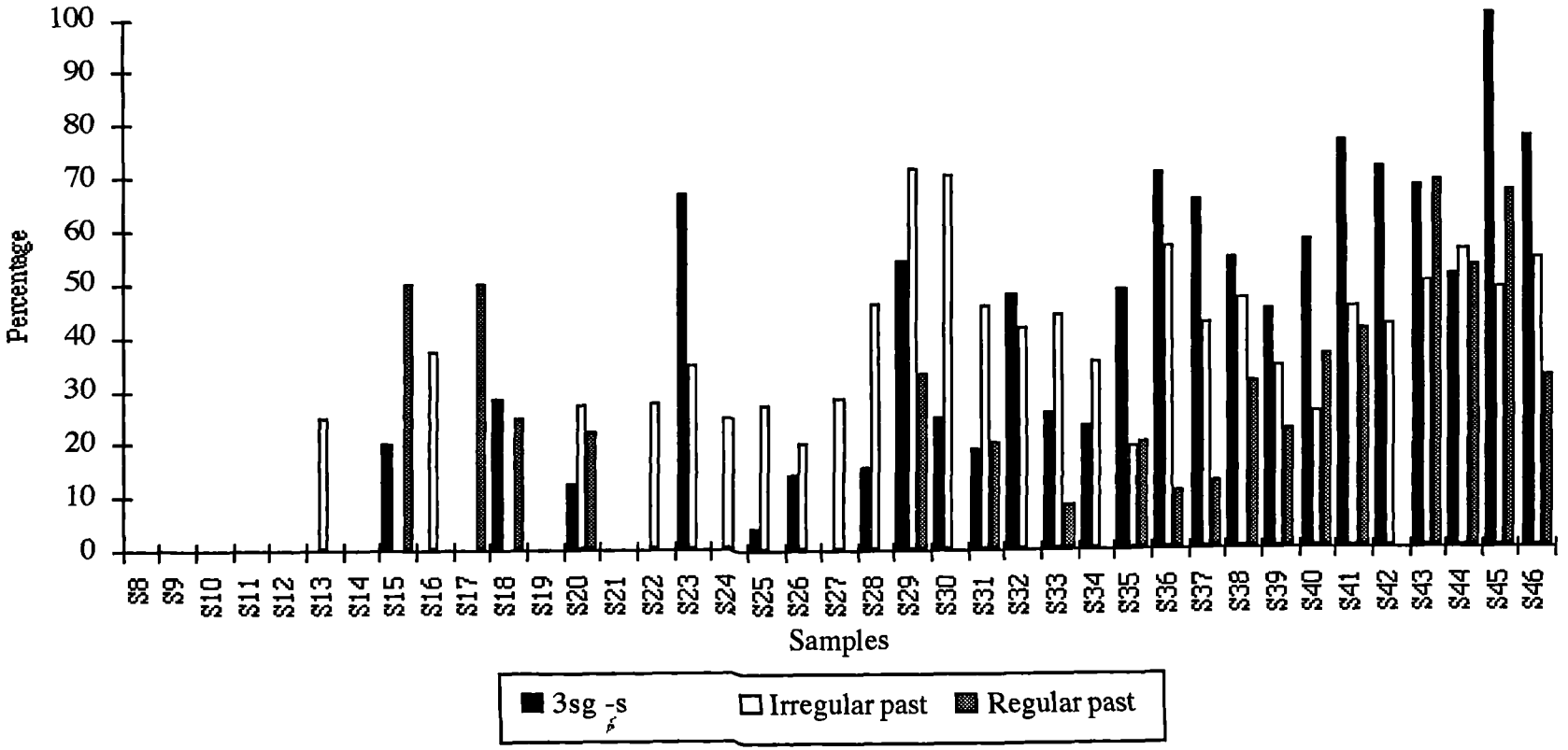
proportion of 3sg *-s* is higher than that of irregular past forms, and the proportion of irregular forms is in turn higher than that of regular past forms.

Table 5.2 Verbal Inflection in Samples 41-46

	3sg *-s*	Irregular past	Regular past
Inflected	185 **71.71%**	179 **51.44%**	43 **43%**
Uninflected	73 28.29%	169 48.56%	57 57%

Figure 5.6 compares the distribution of 3sg *-s* and past tense forms until Sample 46.

Figure 5.6 Comparison of % suppliance of 3sg -s, irregular past and regular past -ed



As can be seen in Figure 5.6, 3sg *-s* develops faster than irregular and regular forms. For a particular example of this, examine the last sample, Sample 46 (24 Aug '95). As the numbers in Appendices B-5, B-7, and B-9 show, Erdem supplies 3sg *-s* in 76.64% of obligatory contexts, past irregular 54.27% of the time, and past regular in only 32.56% of obligatory contexts.

Another observation about the use of past tense forms in Erdem's interlanguage concerns overgeneralisation errors. As is known, past tense overgeneralisation is among the most cited types of grammatical error in child English (e.g. Brown 1973; Brown & Bellugi 1964; Kuczaj 1977). Most verb stems in English are inflected with the suffix *-ed* to form past tense forms such as *talked, listened, jumped, washed,* etc. Irregular verbs, on the other hand, have various ways of forming past forms, such as substitution of a different form (*go-went, buy-bought*) or no change (*hit-hit, put-put*). During the course of development, L1 English-speaking children overregularise the regular pattern to irregular verbs, producing forms such as *buyed, goed, maked,* etc. It should be noted, however, that overregularisation errors such as *buyed* appear to be less frequent than the earlier literature might have led us to think. In a detailed analysis of overregularisation errors in child English, Marcus, Pinker, Ullman, Hollander, Rosen & Xu (1992)[20] showed that overregularisation of *-ed* occurred with only a small percentage of children's irregular verbs (2.5%). In other words, overregularisation errors are rather rare.

In Erdem's English, there are also some instances of overregularised past tense verb forms. As can be seen in Appendix B-9, the first overregularised verb, *waked,* is found in Sample 38 (22 Apr '95). We find some more overregularised forms in subsequent samples. Consider the following examples.

(49) a. I **waked** up, then I watch television and close it. (S 38, 22 Apr '95)

b. She **bringed** me some new clothes. (S 40, 19 May '95)

[20] Marcus *et al.* (1992) analyse 11,521 irregular past tense utterances in the spontaneous speech of 83 children.

c. Daddy open the window and the window **breaked**. (S 40)

d. They said hi to him and they **speaked**. (S 43, 9 June '95)

e. Yes he **runned** again, and he saw a giraffe. (S 43)

f. And then the giraffe turn back and she **goed** back to the zoo. (S 43)

g. **I knowed** it before. (S 43)

h. No I just **thinked**. That was my idea. It was a idea. (S 44, 23 June '95)

i. He **breaked** his house. (S 46, 24 Aug '95)

As in L1 English, some occurrences of overgeneralisation errors occur after Erdem produced the correct irregular forms. Regular forms such as *breaked* and *bringed,* for example, appear after the correct occurrences of *brought* and *broke.*[21] Consider the following sentences.

(50) a. My daddy **brought** a toy. (S 31, 14 Feb '95)

b. We **brought** some books. (S 34, 8 Mar '95)

c. She **bringed** me some new clothes. (S 40, 19 May '95)

d. I **broke** it. (S 27, 13 Jan '95)

e. Because it was not working, that's why I **broke** it. (S 32, 22 Feb '95)

f. Daddy open the window and the window **breaked**. (S 40, 19 May '95)

g. He **breaked** his house. (S 46, 24 Aug '95)

Of the 57 occurrences of past tense *-ed* between Samples 38 (22 Apr '95) and 46 (24 Aug '95), 14 (24.56%) are overregularisations of irregular verbs. However, it is not known at this point what the proportion of overregularisation is in Erdem's following samples, although I know that overregularised verbs such as *gived* and *buyed* were used in the following 25 untranscribed cassettes.

To sum up the data on verb inflection, what we observe is that it is not the case that 3sg *-s* and past tense forms appear at the earliest point in Erdem's speech, and they are almost always in the minority for a long period of time.

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[21] Kuczaj (1977, 1978a) found that in addition to overregularized forms *eated* and *goed,* children also produce forms such as *wented, ated, thoughted.*

While the suppliance of these forms follows a gradual pattern, it appears that 3sg *-s* develops faster than both regular and irregular forms.

In addition to examining these verbal elements in regard to INFL, we should also address the status of subjects in Erdem's data. Recall from Section 5.1 that in addition to verbal features, inflectional heads also have nominal features which refer to features on nouns such as case, number and gender. Following Chomsky (1993), I assume that subjects (as well as objects) should raise and check their Case features via Spec-head agreement with an inflectional head; therefore, the presence of subjects in Erdem's English should also tell us something about IP. Hence in the next section I examine Erdem's data on the distribution of overt subjects.

5.4.6 Overt Subjects

The types of subjects in Erdem's data are divided into two classes: overt subjects (lexical subjects+pronominal subjects) and null subjects. This chapter examines the development of overt subjects. The distribution of null subjects will be addressed in Chapter 6.

The number of obligatory contexts for subjects in the first several recordings is rather low. In Sample 4 (4 Apr '94), for example, there are only two contexts and Erdem produces an overt subject in each. This is shown in (51).

(51) a. I am painting. (S 4, 4 Apr '94)

b. I like straw # straw # strawberry.

In order to give an idea of the contexts for subjects, Appendix B 11 presents the first recorded transcript Sample 4 (4 Apr '94). It should be noted that 5 instances of *this one* produced in Sample 4 are unanalysed forms, as Erdem picked up the form after my own utterance. Likewise, 3 instances of *I don't know* are not included in the analysis of overt subjects in early samples, as Erdem's mother told him to say *I don't know* whenever he did not understand.

In Sample 5 (11 Apr '94), of the 10 obligatory contexts, 9 have overt subjects. Some examples are given in (52).

(52) a. You sleep. (S 5, 11 Apr '94)

b. Erdem is flying # superman is flying # two flying. (S 5, 11 Apr '94)

c. Investigator: Where is your dad now?

Erdem: My dad school. (S 5)

As Appendix B-12 shows, starting in Sample 8 (20 May '94) the number of overt subjects increases rapidly. In Sample 9, for example, of the 50 contexts, 47 (94%) have overt subjects. Some examples are given in (53).

(53) a. What are you doing?

b. Big man is playing # playing # big man is playing toys.

c. My hat is broken # my hat is broken # ooops ooops look.

d. I like this.

e. My toys go to Turkey.

f. <Mummy is> [//] mummy is very funny.

g. <Jenny is playing now here> [/] Jenny is playing now here.

h. I like swim water.

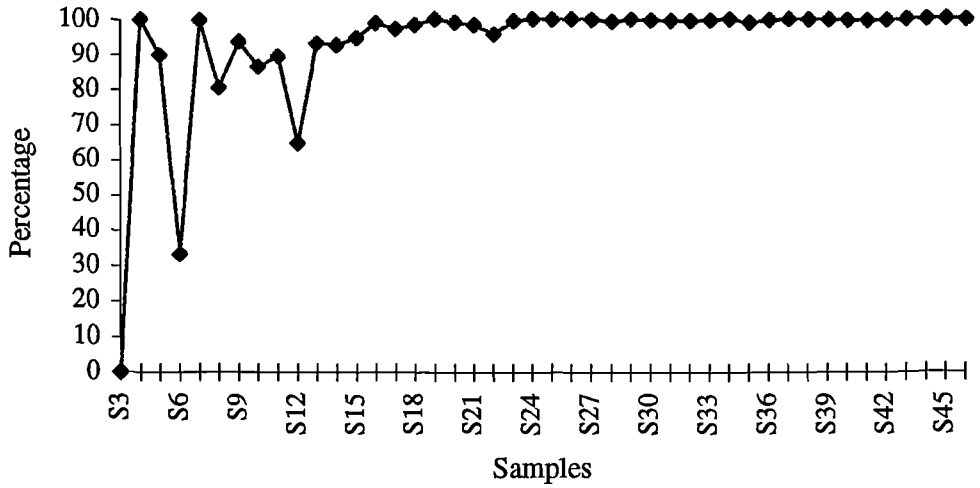
i. My daddy always playing me.

j. Yes # I like hamburgers. (S 9, 5 June '94)

In subsequent recordings, we consistently find large numbers of overt subjects in the data. Appendix B-12 shows the breakdown of null vs. overt subjects found in Erdem's utterances until Sample 46 (24 Aug '95).

Figure 5.7 shows the the percentage of overt subjects in Erdem's English.

Figure 5.7 Overt subjects in Samples 3-46



These findings suggest that at a very early point Erdem has acquired the knowledge that English is not a pro-drop language.

5.4.7 Nominative subject pronouns

On the assumption that nominative case checking is associated with INFL features, the realisation of Case on pronominal subjects in Erdem's data will also be relevant to our discussion. Let us now examine the use of pronominal subjects in Erdem's data. Appendix B-13 presents the distribution of pronominal subjects in Erdem's data. *I* and *you* are the first and the most frequently produced nominative pronouns in the corpus. Some examples are given in (54).

(54) a. I am painting. (S 4, 4 Apr '94)

b. I like straw # straw # strawberry. (S 4)

c. You sleep. (S 5, 22 Apr '94)

d. Are you ready? (S 8, 20 May '94)

e. Hello # What you doing here? (S 8)

f. I something eating. (S 8)

g. I don't like it my this home. (S 9, 5 June '94)

h. I know way. (S 10, 13 June '94)

i. I'm going to nursery school. (S 10)

The third singular pronouns are also used extensively, although they appear a little later than *I* and *you.*

(55) a. No # he is not go nursery. (S 12, 9 Aug '94)

b. He is sitting. (S 13, 23 Aug '94)

c. He just saying I am saying. (S 13)

d. He is home. (S 13)

e. But my mummy said he not like that. (S 13)

(55e) shows that Erdem uses the third person masculine pronoun *he* instead of *she,* and this is quite common in his speech.[22] Importantly, however, Erdem does not appear to make case errors. In Section 5.2, I have noted that despite differing rates of errors, English-speaking children produce a considerable number of non-nominative subjects. In Erdem's interlanguage, however, I found that almost all of the pronominal subjects are nominative. There are only 3 examples in the whole corpus in which the pronominal subject is incorrectly realised in the accusative Case, as shown in (56).[23]

(56) a. Investigator: You've finished. (S 8, 20 May '94)
Erdem: Me is finish.

b. Investigator: It's a very big and fat spider (S 9, 5 June '94)
Erdem: This is not # me big # me very very.

c. Investigator: You're going to break that bicycle. (S 14, 30 Aug '94)
Erdem: No # me not break this is bicycle.

As can be seen in Appendix B-11, there is a total of 6596 nominative pronouns in nominative contexts. Excluding the second person *you*, as it is both

[22] I will not address these errors in this study, as at the time of writing this dissertation no counts had been done for such errors.

[23] I do not include in my counts examples of subjects with accusative Case which are in fact possible in English, as shown in the following example.

(i) Erdem: You and me do it this. (S18, 20 Jan '95)

the nominative and non-nominative form, there are 5160 opportunities for Erdem to have made a case error on a subject pronoun and he does not. Thus, Erdem's error rate is extremely small: 3/5163 (0.06%). This finding is strikingly different from the L1 acquisition facts mentioned earlier. I will return to Erdem's pronominal subjects in the discussion section.

- **Summary**

What I have shown so far is that copula *be* and auxiliary *be* appear early and are used in correct syntactic contexts in their earliest occurrences. Regarding the use of modal verbs, 3sg *-s* and past tense morphology, however, we observe that the development starts later and is rather gradual. While the use of copula *be* is productive by Sample 10 (13 June '94), usually over 90%, 3sg *-s* first appears at Sample 15 (16 Sep '94). It is only by Sample 41 (26 May '95), ten months later, that the percentage of verbs inflected with the 3sg *-s* reaches 70%. Similarly, regular or irregular past tense morphology on verbs is absent for a long period of time, even more protracted than *-s*. With respect to overt subjects, we observe that Erdem has acquired very early that English is not a pro-drop language. Finally, we have seen that Erdem's pronominal subjects are almost exclusively nominative.

I next discuss these data in light of the theoretical proposals presented earlier. Our discussion will have implications for Vainikka and Young-Scholten's (V&Y-S) Minimal Trees hypothesis. Under the Weak Continuity Hypothesis adopted by V&Y-S, overt production of lexical elements or inflections associated with functional categories is necessary in order to attribute to the learner the existence of that category in his/her grammar. In other words, absence of functional elements is taken as evidence for the absence of functional categories. With respect to the acquisition of IP/AgrP, they claim that at a stage where subject-verb

agreement paradigms[24] are not acquired, "there is no INFL or (AGR) position for base-generating agreement suffixes" (1994: 281).

5.5 Discussion

I start with V&Y-S's premise that missing functional elements suggest missing functional categories. In Sections 5.4.4, 5.4.5 and 5.4.6, I have presented Erdem's data on the use of 3sg *-s* and past tense forms and showed that the development of inflectional morphology is rather gradual. Past tense *-ed,* for example, is first produced in Sample 15 (16 Sep '94). The rate of suppliance, however, is extremely low in subsequent recordings. In Samples 20 through 28 (8 Nov '94–20 Jan '95), for example, only 4.88% of the verbs (2/41) are inflected with *-ed.* Between Samples 35 (16 Mar '95) and 41 (26 May '95), the proportion of *-ed* is around 27.59%, showing a gradual developmental pattern. A similar picture is observed with the suppliance of 3sg *-s* and irregular past tense forms.

If we adopted V&Y-S's analysis, we would have to conclude that since Erdem does not produce tense or agreement markings in his very early L2, INFL is missing. However, tense and agreement markings on verbs are not the only elements associated with IP. Evidence for the presence of an INFL category in Erdem's grammar can come from other sources: (i) the use of copula *be*, auxiliary *be* and modal verbs; (ii) the movement of syntactic elements to INFL or to the Specifier of IP. In what follows, I will discuss Erdem's early L2 grammar in terms of these INFL-related elements other than overt tense or agreement markings on verbs.

To begin, let us consider Erdem's data on the use of copula *be*, auxiliary *be* and modal verbs. With respect to copula *be*, Appendix B-2 shows that the majority of utterances (1/9) up to and including Sample 7 (6 May '94) lacks

[24] According to V&Y-S's criterion, the L2 learners are considered to have acquired the German agreement paradigm when they use agreement suffixes over 60% of the time, producing at least two correct instances of four different agreement suffixes (V&Y-S, 1994: 279).

copula *be*. Starting in Sample 8 (20 May '94), however, the percentage of utterances with the copula *be* is virtually always over 90%.

Auxiliary *be* is also among the first verbs to appear in Erdem's early data, first occurring in Sample 4 (4 Apr '94). The rate of suppliance, however, varies and is much lower than that of the copula *be*. Although auxiliary *be* is produced around 71% of the time in Samples 9 through 12, its proportion lowers to 35% between Samples 13 through 22. The fact, however, is that Erdem shows evidence of using auxiliary *be* correctly, although not necessarily producing it consistently. That is, whenever he produced the auxiliary *be*, he used it in correct syntactic environments, an important finding which we will discuss next.

In English, one piece of evidence for verb raising (auxiliary/modal) is the placement of the verb with respect to negation. If the verb moves to I, then it should precede the negation element *not*. Recall from Chapter 4 that we almost find no errors in terms of the position of the auxiliary *be* in negated utterances.[25] In other words, *not* is always correctly positioned after the auxiliary *be*. Consider the following examples.

(57) a. I'm not eating. (S 10, 13 June '94)

b. It's not raining. (S 11, 17 June '94)

c. No # it is not crying. (S 11)

b. He is not go nursery. (S 12, 9 Aug '94)

c. I am not go school now. (S 12)

d. I'm not colouring. (S 13, 23 Aug '94)

The fact that *be* is always positioned correctly before the negative *not* suggests that it must be situated in an IP projection; therefore, INFL must be available in Erdem's L2 grammar. An interesting consequence of this analysis is that it enables us to provide an account of the lack of null subjects in Erdem's negatives. Recall from Chapter 4 that unlike L1 acquisition of English, there are

[25] Note one exception in Sample 21 (15 Nov '94) (Not it's crying). See also Chapter 4 fn. 7.

no instances of negative null subjects in the data. This suggests that the subject has to raise past negation to a higher projection. In other words, the lack of null subjects shows that IP is projected. By contrast, if the subject is not raised, one would predict to find post-negative subjects. As I have discussed, however, Erdem's post-negative subjects are rather low, 2.36% (5/212).

With respect to the occurrences of omission errors with auxiliary *be*, one should in fact note that in some cases auxiliary *be* is optionally used even in the same utterance. Some examples are given in (58).

(58) a. He just saying I am saying. (S 13, 23 Aug '94)

b. But I not doing # not I'm # I'm not doing that. (S 13)

c. He is crying and we crying. (S 16, 4 Oct '94)

It is plausible to argue that the omission of the auxiliary *be* in some utterances does not reflect a deficit in Erdem's syntactic knowledge, especially when one considers the fact that the data discussed in this study mainly come from spontaneous production data. Grondin & White (1996) argue that if an L2 learner shows evidence of using a category, although not using it consistently, it suggests that the category in question is available to the learner and that other factors might be responsible for its inconsistent production.[26] On similar grounds, I would suggest that the absence of auxiliary *be* in some of Erdem's utterances does not suggest a syntactic deficit in his grammar, given the fact that he makes no syntactic errors in verb raising.

As for the modal verbs, we find that Erdem first used a modal construction in Sample 15 (16 September '94), when he started infant school. It is obvious that the first production of the modal verbs appears rather late as compared to the verb *be*, both as a copula and an auxiliary. Section 5.4.3 shows that *can* appears significantly earlier than the rest of the modals. I do not think that the lack of certain types of modal verbs in Erdem's interlanguage is problematic. First, in

[26] For similar views, see also Meisel, Clashen & Pienemann (1981), Valian (1991) and White (1992).

order to acquire a particular modal verb, the learner has to hear it. If the learner has never heard the modal *might* at the point s/he starts using *can*, then it is not reasonable to expect the learner to use both *can* and *might* at the same time. It is normal that it took Erdem some time to learn individual members of the modal verb class.

Importantly, it appears that Erdem applied what he knew about the use of modal *can* to other modal verbs. If he did not, we would expect to find errors. Suppose that Erdem has learned that in English the verb *can* belongs to the category auxiliary modal. It follows that if he hears a sentence like *she can sing a song*, then he can infer that not only *can* but also all other members of the modal verbs can have the same syntactic distribution both in declaratives and interrogatives. I think that this account provides a reasonable explanation for lack of inflection or movement errors in Erdem's modal verbs.

In sum, at stages where certain INFL elements such as copula *be* and auxiliary *be* are present and positioned correctly in terms of the negative element *not*, others like 3sg *-s*, past tense forms and modals do not appear in Erdem's English. Appendix B-14 shows additional calculations for copula/auxiliary *be* vs. 3sg *-s* contexts in Erdem's data. From Sample 8 (20 May '94) on we find high percentage of copula/auxiliary be, while 3sg *-s* is yet to appear. In Sample 10 (13 june '94), for example, of the 60 instances of copula/auxiliary *be,* 48 (80%) have *be*. In Sample 15 (16 Sep '94) where we find the first instance of 3sg *-s* (1/4), the proportion of *be* utterances is 75.68% (28/37). What this suggests is that contra V&Y-S, the lack of some functional elements should not be taken as evidence for the absence of the functional category in question (see Hyams 1994 for similar views for L1 acquisition). Adopting V&Y-S's (1994) 60% criterion for the acquisition of German agreement paradigm would lead us to conclude that the INFL or AGR position did not exist in Erdem's L2 grammar until the agreement morpheme 3sg *-s* reached 60%. However, we find morphological and syntactic evidence from other INFL elements prior to the acquisition of 3sg *-s*.

In fact, if we adopted V&Y-S's hypothesis, we would face a conceptual dilemma: Given the fact that Erdem's early grammar shows evidence for the early use of copula *be*, auxiliary *be* and the correct placement of negation, we have argued that the functional category IP is present. However, with respect to V&Y-S's criterion, the gradual development of inflectional morphology (i.e. 3sg -s, past tense morphology) entails that IP should not be present in Erdem's early grammar until much later. It does not seem to be plausible to say that IP is both present and not present at the same time.

The findings in this study also have implications for Eubank's (1993/94, 1996) Weak Parametric Transfer hypothesis. As discussed in Chapter 3, this hypothesis subscribes to the idea that the morphological paradigm of verbs determines the strength of inflection; [+/–] strong inflection, in turn, determines presence or absence of verb raising. English has the [–strong] value and hence does not have verb raising. In Eubank's view, the [–strong] value of inflection in English results when 3sg *-s* or tense morphology is acquired.

Erdem's interlanguage data reveal that he knows that English does not have verb movement long before his consistent production of 3sg *-s* or past tense morphology. As discussed in Chapter 4, the correct placement of negation occurs at Sample 9 (5 June '94); however, up to this point main verbs only occur in their **uninflected** forms, and in fact, as we have seen, the development of verb inflection is extremely gradual (see also Haznedar & Schwartz 1997). This result shows that Erdem acquires target-like verb placement (lack of verb raising) by Sample 9 (5 June '94), well before the regular use of inflection. Thus, acquisition of morphological agreement or tense cannot possibly be the determinant of lack of verb raising in Erdem's interlanguage English.

Moreover, on the assumption that it is not agreement affixes which reside in INFL-related functional projections, but agreement features, these findings also provide evidence for recent work on morphology (e.g. Beard 1987, 1993; Halle & Marantz 1993), namely, the Separation hypothesis. As an L2 learner, Erdem had

already acquired abstract agreement features in his L1. When it comes to the phonetic forms of affixes associated with agreement features in English, these are language-particular properties of English that Erdem has to learn. Therefore with regard to Vainikka & Young-Scholten's claims, I would argue that the delay in the production of 3sg *-s* cannot be because Erdem does not project the functional category IP/AgrSP. Similarly, given the distinction between inflectional features and their phonological forms, contra Eubank, one would not expect inflectional morphemes to transfer from the L1 into the L2.

Another piece of evidence for the presence of IP in Erdem's grammar comes from the use of overt subjects. Assuming that subjects must move to check their nominal features by Spec-head agreement, the presence of subjects in the L2 data should also have implications. In Section 5.4.6, I have discussed Erdem's earliest data on the distribution of overt subjects and noted that despite occurrences of null subjects in the very first recordings, after Sample 8 (20 May '94), the rate of overt subjects is high, usually over 85-90%.[27] The high incidence of overt subjects in the early data suggests at an early point Erdem realised that unlike Turkish English is not a pro-drop language. On the assumption that features under I are checked through subject raising, the consistent use of overt subjects shows that Erdem has knowledge of INFL.

Closely related to the occurrences of overt subjects in Erdem's early grammar is the consistent use of nominative subjects. First recall that on V&Y-S's account, L2 grammars lack IP in early stages, and therefore are not able to check nominative case features (Vainikka 1993/94). That is, non-nominative subjects are expected to occur, at least optionally. As we have seen, however, this prediction is not borne out in this study, since non-nominative case errors are close to zero in Erdem's interlanguage. We only find three isolated examples of incorrect non-nominative pronouns in subject position in the entire data-base.

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[27] One exception is Sample 12 (9 Aug '94) in which the percentage of overt subjects is 65%. As mentioned previously, this was the first sample after Erdem had a summer holiday in Turkey.

To provide an account for the consistent use of nominative pronouns, we follow the idea of Gavruseva & Lardiere (1996). As discussed in Section 5.3, acquisition data from an 8-year-old Russian child reveal that she hardly produces any non-nominative subjects. They attribute the use of nominative subjects to the mechanism transferred from the L1. We also propose that Erdem transfers from Turkish the mechanism for nominative case on subjects into his interlanguage. What this means is that assuming that the specifier position of IP (i.e. Spec of AgrSP) is responsible for Case checking, the presence of nominative pronouns in Erdem's grammar requires INFL. Otherwise, the systematic use of nominative pronouns in Erdem's L2 English would be left unexplained. In line with Schwartz and Sprouse's Full Transfer/Full Access (FT/FA) hypothesis, this-transfer based analysis of pronominal subjects is also compatible with my analysis of negation data in the sense that not only lexical categories but also functional categories transfer into the initial representation of the L2 grammar (Chapter 4, see also Haznedar 1997).

5.6 Conclusion

In this chapter, I have discussed the following properties of Erdem's data:

- Early utterances with copula *be* and auxiliary *be*.
- No instances of distributional errors involving copula *be*, auxiliary *be* and modals.
- The gradual development of modal verbs, 3sg *-s* and past tense forms.
- Early use of overt subjects.
- The high incidence of nominative subject pronouns.

With respect to IP-related elements, we have first noted that utterances with copula *be* and auxiliary *be* appear very early on. Further evidence in regard to IP in Erdem's "early" interlanguage is provided by the occurrence of negative sentences. We have shown that while Erdem lacks some functional items such as

the 3sg *-s* in his early L2 grammar, during the same period there is evidence for the use of other INFL-related elements as well as syntactic operations which require functional elements, such as auxiliary/modal raising in negative constructions and subject raising. If we had followed the assumptions of the Minimal Trees hypothesis, we would have been forced to argue that Erdem only projected VP until morphological forms such as 3sg *-s* and past tense forms were acquired. However, as we have shown, while Erdem omits morphological affixes for a long time, he consistently provides evidence for the use of the verb *be*, auxiliaries and negation, suggesting that INFL-related functional categories are operative in his early L2 grammar.

As another means of investigating the status of an inflectional system, we have examined overt subjects as well as pronominal subjects, as they provide us with evidence for the Case checking system. What we find is that subjects stop being dropped at a very early stage and that there is robust evidence for the use of only nominative pronouns. If there was no Case checking system in Erdem's early L2 English, one would expect him to make case errors, which he definitely doesn't. In order to account for the near perfect use of nominative case on pronominal subjects in Erdem's data, we have argued that Erdem transfered the nominative case mechanism from his L1, which entails the existence of IP.

The evidence presented in this chapter suggests that contrary to V&Y-S's hypothesis, IP is present in the interlanguage grammar of Erdem's earliest utterances. We conclude that the lack of agreement or past tense morphology, especially in the early stages, does not provide compelling evidence for us to conclude that INFL is absent in Erdem's L2 grammar.

In Chapter 6 we will examine INFL-related elements from a different angle, focussing on the issue of Optional Infinitives/Root Infinitives which has its roots in maturational accounts of language acquisition. It has been shown crosslinguistically that children acquiring non-pro-drop languages pass through a stage during which they consistently produce both finite and non-finite verbs in

main clauses. We would like to discuss whether or not a similar stage exists in Erdem's L2 English.

CHAPTER 6

OPTIONAL INFINITIVES IN CHILD L2 ACQUISITION

6.0 Introduction

Research on L1 acquisition has shown that children around the age of two know much about the syntax of their language, in particular, the phenomenon of verb movement. In an analysis of French data, Pierce (1989, 1992) observes that the negative element *pas* is correctly positioned either to the right of finite verbs or the left of nonfinite verbs, as shown in (1).

(1) a. Ça tourne pas.
This turns not (Pierce, 1992: 65)

b. Pas rouler en vélo.
Not roll on bike (Pierce, 1992: 65)

In (1a), the finite verb *tourne* moves past negation *pas*, whereas the infinitival verb *rouler* does not raise. Pierce argues that at an early stage the French child knows the distinction between finite and nonfinite verbs and hence the properties of head movement.

Similarly, on the basis of data from a German-speaking child, Andreas, Poeppel and Wexler (1993) also observe that finite verbs are systematically placed in V2 position, while nonfinite verbs consistently appear in clause-final position.[1]

(2) a. Ich **hab** ein dossen Ball.
I have a big ball (Poeppel & Wexler, 1993:5)

[1] See Jordens (1990) for similar findings on the acquisition of verb placement in Dutch: finite verbs rarely occur in clause-final position nor nonfinite verbs in first or second position.

b. Du das **haben**.

You that have (Poeppel & Wexler, 1993:6)

What is crucial here is that the finite and nonfinite verbs occur in different distributional contexts: finite verbs systematically move to positions in which they occur in the adult language, and nonfinite verbs appear in clause-final positions. These findings are important because they show that young children do not use verbs randomly in different verb positions, but know the distribution of finite and nonfinite verbs and the facts about head movement.

These results are taken as evidence that young children make use of an adult-like underlying grammar. However, analyses of child data from various languages also indicate that certain aspects of the child grammar do not seem to mirror those of the adult grammar.

Over the past few years research on first language acquisition (L1A) has shown that crosslinguistically young children acquiring non-null subject languages go through a period in which they consistently produce both finite and nonfinite verbs in main clause declaratives, while the adult grammar requires a finite form (e.g. Boser, Lust, Santelmann & Whitman 1992; Bromberg & Wexler 1995; Crisma 1992; Haegeman 1995; Hoekstra & Hyams 1996; Jonas 1995; Jordens 1990; Krämer 1993; Phillips 1995; Poeppel & Wexler 1993; Rizzi 1993/94, 1994; Roeper & Rohrbacher 1994; Sano & Hyams 1994; Schütze & Wexler 1996a, 1996b; Weverink 1989; Wexler 1994). Some examples are given in (3).

(3) a. Papa schoen wass**en**

Daddy shoes wash-**inf** (Dutch, Weverink 1989)

b. Pas mang**er** la poupée$_{subj}$

Not eat-**inf** the doll (French, Pierce 1992)

c. Thorsten Ball haben

Thorsten ball have-**inf** (German, Poeppel & Wexler 1993)

This phenomenon is known as Optional Infinitives (OI, Wexler 1994) or Root Infinitives (RI, Rizzi 1993/94, 1994). The purpose of this chapter is to examine such infinitive-like verb forms in Erdem's L2 English.

The chapter is organised as follows. Section 6.1 discusses the phenomenon of Optional Infinitives (OIs) / Root Infinitives (RIs) in L1 acquisition. In Section 6.2, we present a discussion of recent studies dealing with the relation between finiteness and null/overt subjects in the OI/RI stage. Section 6.3 discusses three recent approaches to OIs/RIs: Wexler's Deficit in T hypothesis (Wexler 1994), Hoekstra & Hyams' Underspecification of NumP hypothesis (1995) and Rizzi's Truncation hypothesis (1993/94, 1994). Section 6.4 reviews a recent study on OIs/RIs in child L2 acquisition. Section 6.5 presents Erdem's data. Specifically, we investigate the properties of verbal morphology and the realisation of subjects in child L2 English. We then look at the Case of pronominal subjects occurred with uninflected verbs. In Section 6.6, we address issues related to maturational accounts of L1 acquisition and conclude with a summary of our analysis.

6.1 Optional Infinitives/Root Infinitives in L1 acquisition

It should be pointed out from the outset that although OI/RIs are found in certain child languages (Wexler 1994), they do not occur universally. In Romance pro-drop languages, for instance, the rate of OIs/RIs is rather low (e.g. Italian (Guasti 1994; Schaeffer 1990), Spanish (Grinstead 1994) and Catalan (Torrens 1995). We should also note that the use of OIs/RIs in non-pro-drop languages declines gradually over time (e.g. Phillips 1995). In other words, it is not the case that at a specific point in development OIs/RIs disappear suddenly, but rather young children emerge from the OI/RI stage gradually.

One important aspect of the OI/RI stage is that it relates the use of finite/nonfinite verb forms to other properties of early grammar such as the option

of omitting subjects in root sentences, the relation between the finiteness of the verb and wh-questions and between finiteness and negation. In this chapter I discuss the relation between finiteness and null subjects in OIs/RIs.

6.2 [+/–] Finiteness and overt/null subjects in OIs/RIs

Based on data from Dutch, Flemish and German, Krämer (1993) argues that early null subjects mostly appear in OI/RI clauses. Krämer examines acquisition data from three children: Maarten, learning Flemish, age 1;11, Thomas, learning Dutch, age 2;3-2;8 and Andreas, learning German, age 2;1. What she argues is that there is a relationship between the distribution of null subjects and finiteness. Table 6.1 shows that only 11% of Maarten's OIs/RIs occur with a subject, while 75% of the finite verbs appear with a subject.

Table 6.1 Krämer (1993: 199, adapted from her Table 1)

Finiteness and null subjects Maarten 1;11:4 - 1;11:15				
	infinitive		finite	
overt subject	11/100	**11%**	69/92	**75%**
null subject	89/100	89%	23/92	25%

Similarly, Table 6.2 shows that while the percentage of finite verbs with subjects in Thomas'[2] speech is over 70%, he, too, produces fewer overt subjects with OIs/RIs, with an average of 8%.

Table 6.2 Krämer (1993: 200, adapted from her Table 3)

Finiteness and null subjects Thomas 2;3 - 2;8				
	infinitive		finite	
overt subject	21/267	**7.87%**	431/596	**72.32%**
null subject	246/267	92.13%	165/596	27.68%

These data show that the majority of overt subjects are used in finite contexts, while null subjects mainly occur with non-finite verbs. It should be noted that for the analysis of OIs/RIs with overt subjects, Krämer (1993) argues that they have a modal interpretation in which the modal is not overtly realised.

[2] Note that Thomas is much older than Maarten.

A similar analysis is proposed by Boser *et al.* (1992) according to which children's OIs/RIs are in fact finite CPs, where C is filled by a null auxiliary. The null auxiliary is assumed to be licensed by sharing phi features with the subject via Spec-head agreement. Haegeman (1995) points out, however, that Boser *et al.*'s analysis would predict subject wh-questions in OIs/RIs. Under the assumption that the child's grammar has the full clause structure, a wh-phrase in subject interrogatives could fill the Spec of CP. Poeppel and Wexler (1993) also argue against the proposal that young children drop modals in matrix infinitive sentences. For them, Boser *et al.* would predict that the child should also be able to drop the auxiliary when an object or an adverb is moved to Spec of CP. So, the prediction is that the orders such as Object Subject Verb[-finite] and Adverb Subject (Object) Verb[-finite] should occur in early Dutch and German grammar. In an analysis of data from a German-speaking child, Andreas, Poeppel and Wexler find no instances where the object or the adverb is in first position and the verb in final position. Another problem in Boser *et al.*'s analysis has been noted by Phillips (1995). In Boser *et al*'s account, null auxiliaries in child root infinitives are licensed by an overt agreeing specifier. Phillips argues that one would expect to find more overt subjects in OIs/RIs than finite clauses, which is obviously not the case, since most of the overt subjects are produced in finite contexts.

In an analysis of early German data, (Andreas, data from Wagner 1985 on CHILDES), Poeppel & Wexler (1993) also observe the differing rates of null subjects in finite and nonfinite clauses. Under standard assumptions, the V2 phenomenon in German requires that the finite verb move to the second position and a maximal projection to first position (e.g. den Besten 1983). Poeppel & Wexler (P&W) find that of the 197 finite sentences, 180 have overt subjects (91.37).[3] With respect to nonfinite verb-final clauses, however, they find 35%

[3] Poeppel & Wexler also note that in all 17 cases of null subjects in the 197 sentences with finite verbs, the subject is omitted from the first position.

null subjects. Differing rates of Andreas's null subjects in finite and nonfinite clauses is summarised in Table 6.3.

Table 6.3 Poeppel & Wexler (1993:15, compiled from Table 7 & 8)

Finiteness and null subjects Andreas 2;1				
	infinitive		finite	
overt subject	24/37	64.86%	180/197	91.37%
null subject	13/37	**35.34%**	17/197	**8.63%**

Haegeman (1995) also contrasts the distribution of subjects occurring in finite clauses with those in OIs/RIs in the Dutch data of Hein. She observes that the proportion of overt subjects with finite forms is consistently higher than the proportion of overt subjects with infinitival forms: 68% of finite clauses have overt subjects, as opposed to 15% of OIs/RIs.

In contrast to the clear interaction between finiteness and null subjects found in those languages, data from declarative sentences in child English, however, reveal that English-speaking children appear to use null subjects both in finite and nonfinite clauses. That is, it is not the case that null subjects are likely to occur only in untensed sentences and overt subjects only in tensed sentences. Phillips' (1995) analysis of data from the Brown corpus shows that null subjects with uninflected and inflected forms in Eve's speech occur at a similar rate, 10.96% with uninflected verbs, 9.30% with inflected verbs, as shown in Table 6.4. Interestingly, Adam even seems to use more null subjects in finite contexts with a rate of 30.09%, as opposed to 19.42% null subjects with uninflected verbs. This is shown in Table 6.5.

Table 6.4 Phillips (1995: 353 adapted from Table 18a)

Finiteness and null subjects			Eve 1;6 - 2;3	
	uninflected		inflected	
overt subject	138/155	89.04%	78/86	90.69%
null subject	17/155	**10.96%**	8/86	**9.30%**

Table 6.5 Phillips (1995: 353 adapted from Table 18b)

Finiteness and null subjects			Adam 2;3 - 3;0	
	uninflected		inflected	
overt subject	195/242	80.57%	79/113	69.91%
null subject	47/242	**19.42%**	34/113	**30.09%**

According to Phillips's (1995) analysis, the link between [+/-] inflection and [+/-] overt subject is in fact related to verb raising: In languages without verb raising, e.g. English, no correlation is predicted, unlike in languages which do have verb raising. Hence, in English, null subjects should distribute more or less evenly between finite and nonfinite contexts, according to Phillips.

The data discussed in Sano & Hyams (1994) also clearly show that English-speaking children produce null subjects with the inflected form of main verbs,[4] as in (4).

(4) a. Goed that way. (Eve 2;2)

b. Dropped a rubber band. (Adam 2;6) (Sano & Hyams 1994: 550)

Tables 6.6 and 6.7, adapted from Sano & Hyams (1994), show that the proportion of null subjects with verbs inflected with *-ed* in Adam's speech is 56.5% (13/23), and with 3sg *-s*, it is 25.8% (16/62). Even though the rate of null subjects with inflected verbs in Eve's data is somewhat lower, null subjects still exist to a certain degree: 10% with 3sg *-s*, 22.5% with past tense *-ed*.

[4] Assuming that inflected forms entail that I (AGR) features are specified, Sano & Hyams predict that null subjects should not appear with the inflected forms of the copula verb *be*. Data from Adam, Eve (Brown 1973) and Nina (Suppes 1973) indicate that in most cases children do not use null subjects with *am /is /are*. While null subjects occur with main verbs, the proportion of null subjects in sentences with the copula *be* is in fact very low, 0% in Eve's speech, 11.4% in Adam's speech and 4% in Nina's speech.
Sano and Hyams also predict that the English-speaking child should not produce null subjects with modals, since modals are assumed to be finite and appear in I. For them, it is the underspecification of INFL features which gives rise to null subjects. With modal verbs, as the INFL features are already specified, null subjects are not expected to occur. Indeed, Sano and Hyams do not find modals occurring with null subjects.

Table 6.6 Sano & Hyams (1994: 550 adapted from Table 4)

Proportion of null subjects with verbs inflected with *-ed*				
Child	File	Age		%
Eve	1-20	1;6 - 2;3	9/40	**22.5%**
Adam	1-20	2;3 - 3;0	13/23	**56.5%**

Table 6.7 Sano & Hyams (1994:551 adapted from Table 6)

Proportion of null subjects with verbs inflected with -3sg *-s*				
Child	File	Age		%
Eve	1-20	1;6 - 2;3	5/50	**10%**
Adam	1-20	2;3 - 3;0	16/62	**25.8%**

Our discussion so far shows that there are clear differences between English and Germanic child data. It should be noted, however, that there is, in fact, disagreement in regard to where null subjects occur. In contrast to Phillips (1995) and to Sano & Hyams (1994), Schütze & Wexler (1996b) claim that null subjects in English are more frequent with nonfinite than with finite main verbs. In Table 6.8, we combine Schütze & Wexler's (1996b) Tables 25 and 27 for Naomi's (Sachs 1983) data in 3sg contexts. It shows that the rate of null subjects with nonfinite verbs is 43%, while the proportion of null subjects with finite verbs is around 15%.

Table 6.8 Schütze & Wexler (1996b compiled from their Tables 25 and 27)

Finiteness and null subjects	Naomi (Sachs 1983)					
	nonfinite		present		past	
pronominal subjects	29/51	57%	38/44	86%	98/117	84%
null subjects.	22/51	**43%**	6/44	**14%**	19/117	**16%**

To sum up so far, it has been observed that children go through a period in which they produce both finite and nonfinite verbs in a variety of languages and in non-null subject languages, they omit subjects. While in Germanic languages children tend to drop subjects in non-finite contexts, in English null subjects appear to occur both in finite and non-finite contexts (cf. Phillips (1995 and Schütze & Wexler 1996b).

Various hypotheses have been proposed for the use of nonfinite verbs in root clauses and all have different proposals for the occurrence of null subjects in

OIs/RIs. Our aim in the next section is to discuss how recent hypotheses address the issue of OIs/RIs and its relation to null subjects in early grammar.

6.3 Three hypotheses of OIs/RIs in L1 acquisition

In this section, we examine three recent analyses of OIs/RIs which have received considerable attention in the literature. These are Wexler's Deficit in T hypothesis, Hoekstra & Hyams's Underspecification of NumP hypothesis and Rizzi's Truncation hypothesis.

6.3.1 Deficit in T (e.g. Bromberg & Wexler 1995; Wexler 1994)

In Wexler's (1994) view, the child's grammar differs from the adult grammar in that nonfinite verbs are permitted in root clauses. He proposes that the young child may fail to consistently distinguish between past and non-past features, which results in the possibility of producing uninflected forms. In other words, what is missing from young children's grammar in nonfinite utterances, according to Wexler, is either the entire Tense (T) projection or the features related to T. Hence, in English,[5] for example, young children produce nonfinite forms, as in (5).

(5) a. John drink milk.
    b. John not drink milk.
    c. John drinking milk.

(5a) is ruled out in adult English because the 3sg present tense morpheme *-s* is not used; (5b) is ungrammatical as *do*-support is not provided; and in (5c) the auxiliary *be* is omitted.

With regard to the occurrence of null subjects in nonfinite contexts, Wexler, assumes that the motivation for the relationship between null subjects vs.

[5] Note that all of the Romance and Germanic languages discussed in Wexler (1994) have a nonfinite inflection attached to the verb stem, such as *-er, -re, -ir* in French and *-en* in German. In English, however, there is not a specific infinitival ending. According to Wexler's analysis, English-speaking children at optional infinitive stage produce infinitival forms, not verb stems.

nonfinite verbs is based on the standard assumption that nonfinite verbs in adult grammars license null subjects. In English control sentences, for example, the empty subject PRO is licensed by the infinitival Tense. Consider the following examples in (6).

(6) a. John promises [e to go].

b. *John promises [e goes].

(6b) is ungrammatical because the empty category *e* cannot be licensed by the finite Tense of the embedded sentence, even though this is an option available in null subject languages. In Wexler's view, if one looks at the existence of null subjects in main clause declaratives from this perspective, it might be plausible to assume that nonfinite tense licenses null subjects. With respect to null subjects that occur with finite verbs, Wexler assumes that they are licensed by Topic drop. For him, it is a grammatical option for a child at the OI/RI stage to produce null subjects, due to the deficiency in the child's syntactic representation.

In sum, the main thrust of Wexler's hypothesis is that young children do not know values of TENSE. In what sense TENSE is missing is not clear, however. As Wexler points out himself, it is an open question whether it is the TENSE projection or simply a TENSE feature missing form the young child's grammar. On his account (1994; see also Bromberg & Wexler 1995), the end of the OI/RI stage is caused by the maturation of T or T-related features.

6.3.2 The underspecification of NumP (Hoekstra & Hyams 1995)

Hoekstra & Hyams (1995) also examine OIs/RIs and argue for a unified account of three properties in early child grammar. For them, the phenomena of OIs/RIs, null subjects and the absence of determiners are all related. First, they point out that in each case while some functional heads associated with finiteness, subjects and determiners are obligatory in the adult grammar, they are optional in early child language. Second, all three heads are somehow related to discourse:

Finiteness refers to events or states denoted by the verb at a time in relation to the time of discourse. Definite determiners refer to discourse referents, and subject pronouns may be deictic. Third, these properties of early child language appear to co-occur during development. In other words, there is a developmental proximity of these optional elements in early grammar.

For H&H, the crucial observation is that the proportion of OI/RI clauses produced by children acquiring languages with rich morphology is lower[6] than what is found in Germanic languages. They observe that the rate of OIs/RIs in Romance pro-drop language is around 6%, while the OI/RI effect in Germanic languages and French range from 26% to 78% (e.g. Pierce 1992; Weverink 1989). According to Hoekstra & Hyams (H&H), inflectional paradigms can be differentiated with respect to which values of heads are represented in the morphosyntax of a particular language. Examining the inflectional paradigm of the finite verb in Dutch, for example, H&H note that there are only three extensions of the morphosyntactic marking, Ø, *-t* and *-en*, as shown in (7).

(7) *spreken* "speak"

Ik spreek-**Ø**	Wij spreke**n**
Jij spreek**t**	Jullie spreke**n**
Hij/zij/het spreek**t**	Zij spreke**n**

As shown in (7), there is no person distinction in the plural, thus, *-en* marks only Number. H&H assume that if first person is unmarked, the morpheme *-t* occurring with second and third person singular marks singular Number, rather than Person.[7]

[6] See Sano & Hyams (1994) and Phillips (1995).

[7] Following Kayne (1989), Hoekstra & Hyams also argue that English has similar properties; first person singular in English is unmarked, 3sg *-s* marks singular number, rather than person, and plural is marked by the bare form.

H&H observe that in Romance pro-drop languages such as Italian, on the other hand, verbs mark for Person distinctions both in the singular and in the plural, as shown in (8).

(8) *mangiare* "eat"

Io mang**io**	Noi mang**iamo**
Tu mang**i**	Voi mang**iate**
Lui/lei mang**ia**	Loro mang**iano**

H&H argue that OIs/RIs occur in the speech of children acquiring languages such as Dutch which has obligatory Number specification. For them, due to the underspecification of the functional head Number in early grammar, children do not have adult-like finiteness, overt subjects and definite determiners.

On H&H's account, as these optional elements in child grammar all have a pragmatic function, their optionality in early grammar is an effect of pragmatic principles. They also invoke maturation as the reason RIs cease; however, contrary to Wexler who argues that it is maturation of syntax-related elements which determines the end of this stage, for H&H the maturation refers solely to a principle of pragmatics.

6.3.3 Truncation (Haegeman 1995; Rizzi 1993/94, 1994)

With respect to the phenomena that unlike adult grammars[8] children allow non-finite root clauses, Rizzi (1993/94) proposes that some properties of the

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[8] Note that for Rizzi although adult grammars do not particularly use main clause infinitives as in (ia), they do allow them under certain circumstances. Consider the following examples from (Rizzi 1993/94).

(i) a. *Giocare al pallone (Declarative)
To play (at) football

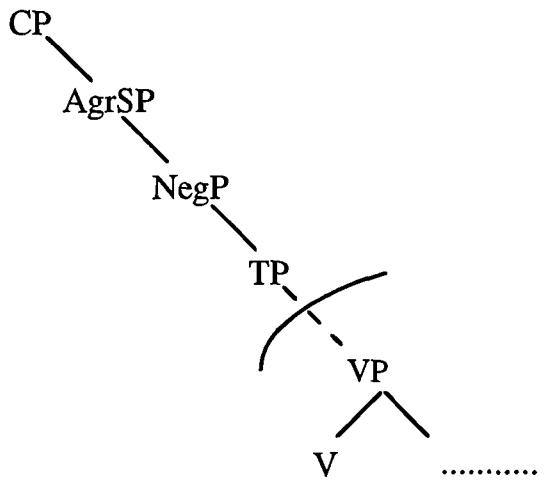
b. Che cosa dire in questi casi? (Question)
'what to say in these cases?'

c. Partire immediatamente! (Jussive)
'leave immediately' (Rizzi, 1993/94: 375)

According to Rizzi (1993/94), the examples in (ib-c) have a restricted use: a particular form of questions in (ib) and a jussive interpretation in (ic). Following Pollock (1989), Rizzi (1993/94)

OIs/RIs can be attributed to the absence of some of the layers of projections in phrase structure. According to Rizzi, while the adult grammar has the full CP structure, child grammars have the possibility of not projecting the full clause structure but can truncate it at a point below CP. For Rizzi, root infinitives occur when the child projects as far as VP, AgrOP or TP. This is shown in (9).

(9)



In other words, the child grammar might differ from the adult grammar in that the full clause structure is not always projected and children's trees may be truncated from the top of the tree. It is important to note that Rizzi's truncation model is dependent on structural hierarchy: If a certain projection is not projected in the tree, then all projections dominating this category is missing. In (9), for example, if TP is absent from the child grammar, CP, AgrSP and NegP are not projected either. Let us examine how null subjects in the OI/RI stage are explained under Rizzi's theory.

In Rizzi's (1994) account, the null subject phenomenon in child language is different from the one in adult pro-drop languages, as there are significant differences in the distribution of null subjects in child language and adult pro-

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argues that every sentence picks out a specific point in time that it refers to (a temporal reference). In finite clauses, the value of the tense variable is fixed by the overt finite morphology. Main clause infinitives such as (ia), however, are in general not allowed because their tense variable would remain unbound, leading to a violation of Full Interpretation at LF. As for the main clause infinitives exemplified in (ib-c), Rizzi argues that these constructions differ from declaratives in the sense that they have some kind of an operator, which in a sense is the case for questions. One possibility is according to him is that these operators might bind the tense variable unselectively.

drop languages. Rizzi argues that similar to Diary Drop or Topic Drop in adult languages the child null subject is a null constant which can only occur in the specifier of the root clause. Similar to other null elements in grammar, the null constant must not violate the identification requirement, and it is identified by a discourse-related operator.

For Rizzi, then, when the child fails to project a subject position, null subjects are expected to occur. Rizzi's theory makes further predictions about the OI/RI stage, some of which are summarised in (10).

(10) a. OIs/RIs should not occur in wh-questions, as they involve movement of a wh-phrase to Spec of CP, that is, if CP is projected, tense cannot be omitted.

b. Similarly, null subjects are not expected to occur in wh-questions.[9]

c. In a similar vein, negated OIs/RIs should not occur, as Neg projection is higher than some inflectional projections. In other words, negation entails the presence of inflection.[10]

- **Summary**

We have seen various hypotheses proposed for the use of nonfinite verbs in root clauses and all have different proposals for the existence of null subjects as well. In Wexler's view (1994, Bromberg & Wexler 1995), OIs lack either the entire Tense (T) projection or the features related to T. Null subjects in OIs are licensed by the infinitive verb, while null subjects in finite clauses are Topic Drop. According to Hoekstra & Hyams (1995) the functional head Number can

[9] Contrary to Rizzi's theory of truncation, Roeper and Rohrbacher's (1994) analysis of data from the Brown (1973) corpus shows that null subjects do occur in wh-questions in child English. Some examples are given in (i).

(i) a. Where go?
b. What looking for?
c. Why working?
d. What think? (Roeper&Rohrbacher, 1994: 10)

See also Bromberg and Wexler (1995) for arguments against Rizzi's theory of Truncation, with regard to null subjects and wh-questions in early child English.

[10] In an analysis of child L1 French, Levow (1995) argues that contra Rizzi, negated OIs/RIs occur in early French.

be underspecified, giving rise to both RIs and null subjects (*inter alia*). For Rizzi (1993/94, 1994), RIs are due to non-operation of the principle which requires that the root of the sentence be CP, and null subjects (his null constant) are licensed by being in the specifier of the root. Phillips disagrees with the others about the existence of OIs and relates the appearance of infinitives ultimately to verb raising in languages which have it. For Phillips, all null subjects in English are an instance of Topic Drop.

We have also noted that Rizzi's theory makes a number predictions and attempts to account for certain properties of early child grammar with clausal truncation. Several recent studies explored OIs/RIs and Rizzi's truncation hypothesis on L1 acquisition (e.g. English (Bromberg & Wexler 1995), Dutch (Haegeman 1995), French (Levow 1995). In child L2 acquisition, however, the phenomenon of OIs/RIs is a new research area. One recent study I wish to discuss before moving onto Erdem's L2 English is Prévost's (1997) work on child L2 French. In light of the fact that this chapter also addresses the issue of OIs/RIs in Erdem's data, first a discussion of Prévost's study will be presented.

6.4 Optional Infinitives/Root Infinitives in child L2 acquisition

Adopting Rizzi's truncation hypothesis, Prévost argues for the existence of an OI/RI stage in child L2 acquisition. Prévost's study purports to find evidence both against the Minimal Trees hypothesis and the Full Transfer/Full Access hypothesis. He examines longitudinal production data covering 18 months from two English-speaking child learners of French, Gregg and Kenny (data from Lightbown 1977).[11] On the assumption that Rizzi's root principle may not be operational in child L2 acquisition, Prévost makes the following generalisations: (i) absence of auxiliaries, modals, subject clitics, wh-questions and embedded

[11] Grondin (1992) presents detailed background information on the two subjects. At the onset of the study, Kenny was 4;9, Gregg was 4;5, and were both attending a bilingual nursery school. Data from the nursery program, however, yielded very few uttrances in French. Both children were then enrolled in a French kindergarden, and were later transferred to a regular French class. Gregg's data consist of 13 samples, Kenny's 20 samples.

clauses in OI/RI contexts, as they require that a TP or categories above TP be projected; (ii) absence of DP subjects in OI/RI contexts, as Case Filter is assumed to be operative in early grammars; (iii) occurrence of null subjects, as under Rizzi's proposal they can be discourse-identified; (iv) presence of negative OIs/RIs.

Prévost first discusses data on the development of auxiliaries and modals and finds that consistent with his prediction, none of them occur in an OI/RI environment. Similarly, subject clitics are generally found in finite contexts. In Kenny's data, of the 164 subject clitics, 161 (98.2%) occur in finite contexts, and in Gregg's data the percentage of subject clitics in finite contexts is again high, 96.9% (401/414). Some examples are given in (11).

(11) a. Elle est là.
She be-3sg there
b. J'veux un jaune.
I want-1sg a yellow (Prévost, 1997: 458)

Another piece of evidence for Prévost's analysis comes from the distribution of DP subjects, which in general appear with finite verbs. While Gregg never produces DP subjects in OI/RI contexts, Kenny uses OI/RI DP subjects only 5.08% of the time (6/118).

With regard to null subjects, on the other hand, Prévost observes that a large proportion of OI/RI clauses had null subjects. While Kenny's 29.9% (23/77) of OI/RI clauses have missing subjects, 52.5% (31/59) of Gregg's OI/RI clauses are without subjects. Consider the following examples.

(12) a. Manger les oreilles.
Eat-INF the ears
b. Jouer de hockey.
Play-INF of Hockey (Prévost, 1997: 460)

The examination of wh-questions and embedded questions also reveals that they virtually always appear in finite contexts, which, according to Prévost, follow from Rizzi's truncation hypothesis. For both children, the proportion of non-finite verbs produced in a CP environment is less that 10%. With respect to negative OIs/RIs, however, Prévost observes that for Kenny, the percentage of negative utterances was roughly the same in finite and nonfinite contexts (over 20%). Gregg's OI/RI negatives were around 10%. Recall that as shown in (9), under Rizzi's clause structure the Neg projection is higher than other inflectional material, and therefore, negatives are not expected to occur in OIs/RIs. It appears that data from Kenny provide conflicting evidence that negative non-finite utterances occur in similar proportions to negated finite utterances. To account for these data, following Zanuttini (1991), Prévost assumes that TP is over NegP, and truncation can occur at NegP.

For Prévost, the crucial issue is to explain the existence of OI/RI clauses in L2 grammars. In this regard, he argues that the data from these two child L2 learners of French support neither Minimal Trees, as functional categories exist in these L2 data, nor Full Transfer/Full Access, as, he argues, the root principle does not appear to be operational, which would be expected to be transfered from the L1. Prévost's analysis has important theoretical implications. First, if it is the case that child L2 learners go through an OI/RI stage, one might expect to find evidence for a similar stage in Erdem's L2 English too. Second, on the assumption that child L1 learners produce OI/RIs[12] , if a similar phenomenon is observed in child L2 acquisition, whatever the explanations are for OIs/RIs, maturational accounts of language acquisition will become irrelevant.

Having schematised these proposals for OIs/RIs in L1 acquisition and Prévost's analysis on child L2 acquisition, I now turn to Erdem's L2 data.

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[12] See Phillips (1995) for arguments that children's root infinitive clauses contain all elements of an adult finite clause (Phillips, 1995: 346).

6.5 Erdem's L2 English

As discussed in the previous chapters, it is generally assumed that the processes involved in early child L2 acquisition are similar, if not equivalent to L1 acquisition; if so, then one might expect the picture of L2 acquisition to replicate that of L1 acquisition. Our aim in this section is to investigate whether there is a phase in Erdem's L2 acquisition which mirrors the OI phase of L1 acquisition, that is, whether there is a phase, in which inflection is "optional" and if there is, whether there is any link between the form of the verb and the occurrence of null subjects.

We first start with the development of verb inflection and then turn to the discussion of null vs. overt subjects.

6.5.1 Inflected and uninflected verbs in Erdem's English

Recall from Chapter 5 that although in English overt marking for tense and agreement is realised on the copula *be*, auxiliaries *be*, *do* and *have*, 3sg *-s*, past tense form of the verbs and modals, our discussion on verb inflection was restricted to the use of tense and agreement inflections on main verbs. Given the fact that utterances with auxiliaries *be/do* and copula *be* appear in Erdem's interlanguage at a fairly early stage in contrast to main verb inflection, following Phillips (1995), I assumed that missing auxiliaries may not equate with missing inflection on main verbs. Hence the examination of inflection in this chapter is also restricted to 3sg *-s*, and regular and irregular past tense forms. While in Chapter 5 I examined the development of each verbal inflection individually, here I collapse all three.

The formula used to calculate the percentage of inflected verbs is as follows.

(13) $\frac{X}{X+Y}$

X is the number of inflected verbs in obligatory main verb contexts, and Y is the number of cases where inflection is obligatory, but not supplied.

For each sample, utterances are counted as inflected if they contain a verb with overt inflection: 3sg *-s*, regular and irregular past tense forms; they are considered uninflected if overt inflection is missing in an obligatory context. Consider the following examples given in (14), which are analysed as uninflected verbs.

(14) a. Erdem: She just **like** me. (S 30, 4 Feb '95)

b. Erdem: I was in school and my mummy **pick** me. (S 31, 14 Feb '95)

c. Investigator: Where did you get this? (S 33, 1 Mar '95)

Erdem: We **buy** buy that. My daddy and me **buy** it.

In (14a) Erdem failed to inflect the verb *like* with 3sg *-s* where it is required. In (14b and c), the verbs *pick* and *buy* are not inflected for past tense. Verbs such as these are therefore considered uninflected forms.

The following types of utterances are excluded: (i) Formulaic utterances and repetitions. (ii) Utterances with auxiliaries *be/do/have* and copula *be*. (iii) Yes/no questions, wh-questions[13] and negated utterances, as they all require auxiliaries.

One important observation in Erdem's data is that similar to the L1 child; in regard to a particular verb, he sometimes produces inflection and sometimes doesn't. The pairs in (15-20), taken from the same files, highlight this point.

(15) a. It **go** very fast. I show you this. (S 23, 29 Nov '94)

b. I do this and he goes. (S 23, 29 Nov '94)

(16) a. She **want** to make a window. (S 36, 24 Mar '95)

b. She **wants** to eat this lemon I think. (S 36)

[13] I included subject wh-questions in the analysis as they do not require verb movement to C and auxiliary insertion (e.g., bread bread who want bread? Sample 27)

(17) a. She only **like** boiled eggs. (S 42, 2 June '95)

b. My daddy **likes** the world. (S 42)

(18) a. I find this car. (S 23, 29 Nov '94)

b. I **found** that car. (S 23)

(19) a. She just **said** please please don't make noise. (S 28, 20 Jan '95)

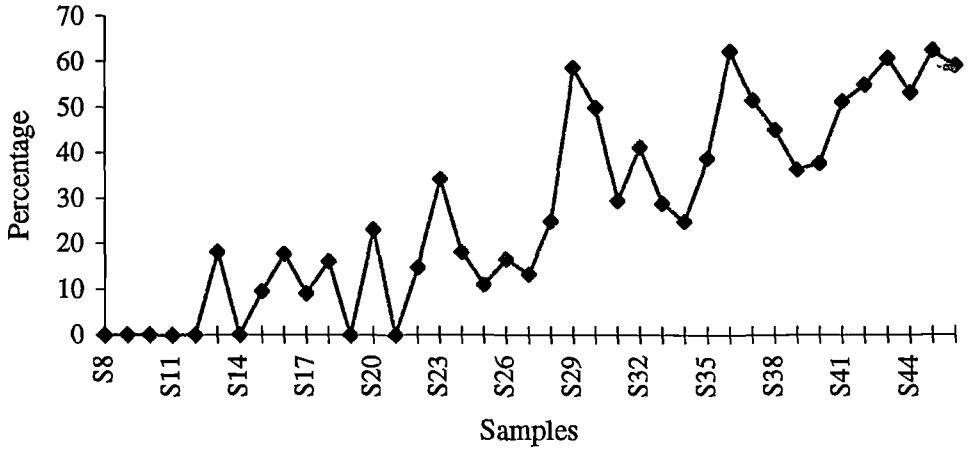
b. I want my mummy to hold me she **say**. (S 28)

(20) a. We **look** at many fishes and there was one of these and it was too big. (S 41, 26 May '95)

b. They **looked** everywhere and at last they found the baby. (S 41)

Figure 6.1 presents the proportion of inflected verbs in Erdem's interlanguage. Before Sample 8 (20 May '94), obligatory contexts for inflected verbs (with 3sg -*s* or past tense) do not occur, and therefore Samples 1-7 are not included in Figure 6.1.

Figure 6.1 Inflection in obligatory main verb contexts



The raw numbers and percentages presented in Appendix C-1 show that at the beginning the incidence of uninflected verb forms is high, as opposed to few occurrences of inflected verbs. The earliest appearance of inflected verbs are found in Sample 13 (23 Aug '94), all of which are in past irregular form. Up until

and including Sample 18 (20 Oct '94), of the 126 verbs which need to be inflected, only 14 are, i.e. inflection is missing around 88.89% of the time. In Samples 19-28 (1 Nov '94–20 Jan '95), the number of inflected verbs increases, reaching 25% by Sample 28.

Starting with Sample 29 (26 Jan '95), Erdem seems to use relatively large numbers of inflected verbs. In Samples 29 and 30 (26 Jan '95–4 Feb '95), the percentage of inflected verbs is even slightly higher than the uninflected ones, 58.54% / 50% inflected forms, as opposed to 41.46% / 50% uninflected forms. However, the use of uninflected forms still dominates for a fairly long time, the percentage of inflected forms rises to 38.68% by Sample 35 (16 Mar '95). It is only starting at Sample 41 (26 May '95) that there are always more inflected than uninflected forms, with an average of 56% inflected in this last time period.

In sum, these data indicate that inflected and uninflected verb forms consistently alternate, as in child L1 English, over an extended period of time (from Sample 13 (23 Aug '94 to Sample 46 24 Aug '95). There is a gradual development in the use of verbal inflectional morphology, similar to what is reported for L1 acquisition of English (e.g. Phillips 1995).

I next discuss the distribution of null versus overt subjects. As discussed earlier, much recent work has suggested that there is a relationship between null subjects and OIs/RIs: null subjects tend to occur in OI/RI contexts. Our aim is to find out whether or not a similar relationship between null subjects and verb inflection exists in Erdem's L2 English.

6.5.2 Null vs. overt subjects

6.5.2.1 Null Subjects in all contexts

It is important to note that in considering null subjects in Erdem's data I first examine null subjects in all contexts, including auxiliary contexts. I then look at the distribution of null subjects only in 3sg *-s* and past tense contexts, as our

discussion on the development of verbal inflection up to this point focusses only on 3sg *-s* and past tense forms.

Let us first examine the earliest data on null subjects in declaratives, yes/no questions and wh-questions; excluded from the counts are imperatives as well as instances of null subjects which are in fact possible in English, as in (21).

(21) a. Investigator: OK # What is Ali doing here? (S 20, 8 Nov '94)
Erdem: Looking you.
b. Investigator: What are they doing here? (S 21, 15 Nov '94)
Erdem: Eating something.

- **Method**

The formula used to calculate the percentage of null subjects is as follows.

(22) $\frac{X}{X+Y}$

X is the number of null subjects in all obligatory contexts.

Y is the number of cases where overt subjects i.e. pronominal and lexical subjects, are provided.

Appendix C-2[14] shows the breakdown of null vs. overt subjects found in Erdem's utterances until Sample 46 (24 Aug '95). The first context for a subject occurs in Sample 3 (23 Mar '94). There are two of them, and in both the subject is null.

(23) a. Context: Looking at the children playing in the garden
Investigator: Look at those boys Erdem. What are they doing?
Are they playing?
Erdem: Yes # ball playing. (S 3, 23 Mar '94)
b. Erdem: Toys play. (S 3)

[14] Appendix B-12 in Chapter 5 is repeated here as Appendix C-2.

As can be seen in Appendix C-2, Sample 4 (4 Apr '94) has only two contexts, and the subject is overt. Although we find more overt subjects than null subjects in Sample 5 (11 Apr '94), the percentage of null subjects in Sample 6 (22 Apr '94) is higher than that of overt subjects. Sample 8 (20 May '94), however, is the last recording where we find a relatively high percentage of null subjects (19.23%, 5/26). Some representative examples of null subjects in these early samples are given in (24).

(24) a. Investigator: Where are we going now? (S 5, 11 Apr '94)
Erdem: Newcastle going.

b. Investigator: What are these little kids doing outside?
Erdem: Ball # ball playing . (S 6, 22 Apr '94)

c. Investigator: What are you playing # Erdem?
Erdem: Toy playing. (S 6, 22 Apr '94)

d. Context: Holding a 'Fred Flinstone' toy
Investigator: Erdem # is that your friend? (S 8, 20 May '94)
Context: Talking to his mother
Erdem: bun-un çizgi filmi-ni izle-mis-tik ya?
'this cartoon watch-reported past-past-1pl-Q marker'
English: 'We watched this cartoon didn't we?'
Context: turning to the investigator
Erdem: <this cartoon> [/] this cartoon # television looking.

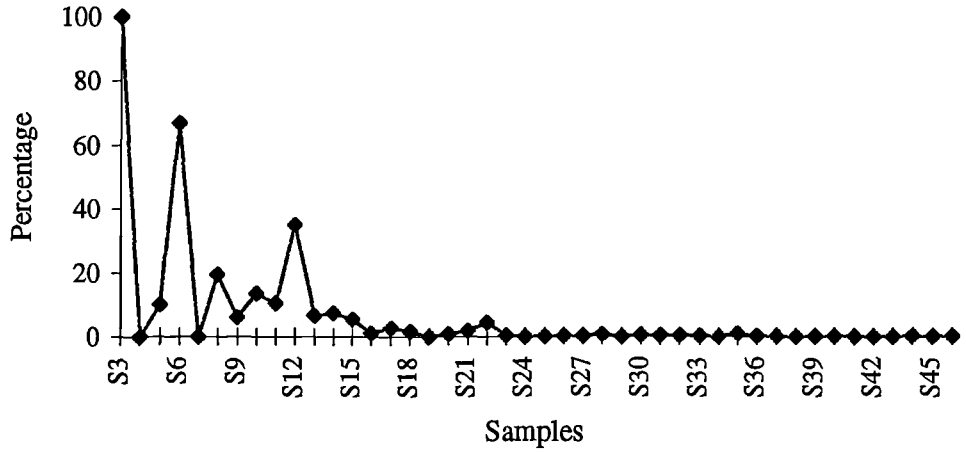
e. Investigator: What are you playing? (S 8, 20 May '94)
Erdem: Something playing # dinosaur playing.

As we mentioned, however, after Sample 8 (20 May '94) the percentage of null subjects is low. In Samples 10 and 11 (13 June '94–17 June '94), for instance, of the 158 instances, 139 (87.97%) have overt subjects, compared to 19

(12.03%) null subjects. The proportion of null subjects appears to increase in Sample 12 (9 Aug '94, 35%), which is the first recording after Erdem had his summer holiday in Turkey in the summer of 1994. From Sample 12 onwards, however, we find very few null subjects in Erdem's data.

Figure 6.2 shows the dramatic drop in the percentage of null subjects in Erdem's English.

Figure 6.2 Null subjects in Samples 3-46



What we observe is that there are null subjects in the earliest recordings, which is compatible with Erdem's L1 Turkish. Overall, however, null subjects in general constitute only a small portion of the data, suggesting that Erdem has acquired very early that English is not a pro-drop language.

Recall that with respect to the development of verb inflection, we only examined utterances with or without 3sg *-s* and past tense forms, excluding auxiliary contexts. In order to compare the development of 3sg *-s* and past tense forms with the demise of null subjects, we next examine only null vs. overt subjects in 3sg *-s* and past tense contexts.

6.5.2.2 Null subjects in main verb contexts

Each utterance containing a null subject or an overt subject is classified in terms of whether it is produced in an inflected context (i.e., with a verb which has

overt tense or agreement morphology such as past tense inflection or 3sg *-s*) or in an uninflected context in which tense or agreement morphology is missing, while an adult form would require an inflected form. Some examples are given in (25).

(25) Investigator: What did you do in the nursery today?
Which games did you play?
Erdem: **Go** to outside # Outside playing. (S 10, 13 June '94)

(26) Context: Talking about his long holiday in Turkey in the summer of 1994
Investigator: What else did you do there?
Erdem: **Go** playground. (S 12, 9 Aug '94)

(27) Investigator: What did you do in the playground ?
a. Erdem: **Play**. (S 12)
b. Erdem: **Swimming**. (S 12)
c. Erdem: **Finish** and **coming** here. (S 12)
Investigator: Where did you see your grandma?
d. Erdem: **See** grandmummy. (S 12)

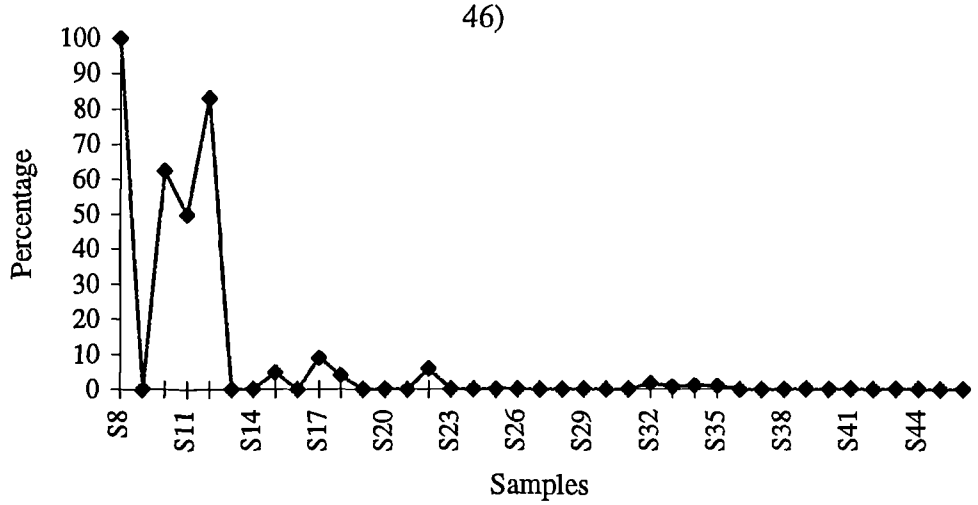
As in the previous case, overt subjects in this section also refer to both pronominal and lexical subjects with inflected and uninflected verbs (see Appendix C-3). Consider the following examples.

(28) a. < My lion > [//]# **my lion** want. (S 11, 17 June '94)
b. But **my mummy** said he not like that. (S 13, 23 Aug '94)
c. I don't know **he** eats. (S 15, 16 Sep '94)
d. **I** bought it. (S 16, 4 Oct '94)
e. Because **he** always *say* dirty thing # he say. (S 19, 1 Nov '94)
f. Yes **we** *did* another day. (S 20, 8 Nov '94)
g. It's time to get up *said* **the cock** # that's the cock. (S 20)
h. Oh **I** fell the water # I joking. (S 20)

The following types of utterances are not included in the counts: (i) imperatives; (ii) repetitions and formulaic expressions such as, *I don't know*; (iii) utterances with auxiliaries *be/do/have* and copula *be*; (iv) yes/no questions, wh-questions and negated utterances.

Figure 6.3 shows the percentage of null subjects in utterances containing inflected and uninflected verbs.

Figure 6.3 Null subjects in main verb contexts (Samples 8-46)



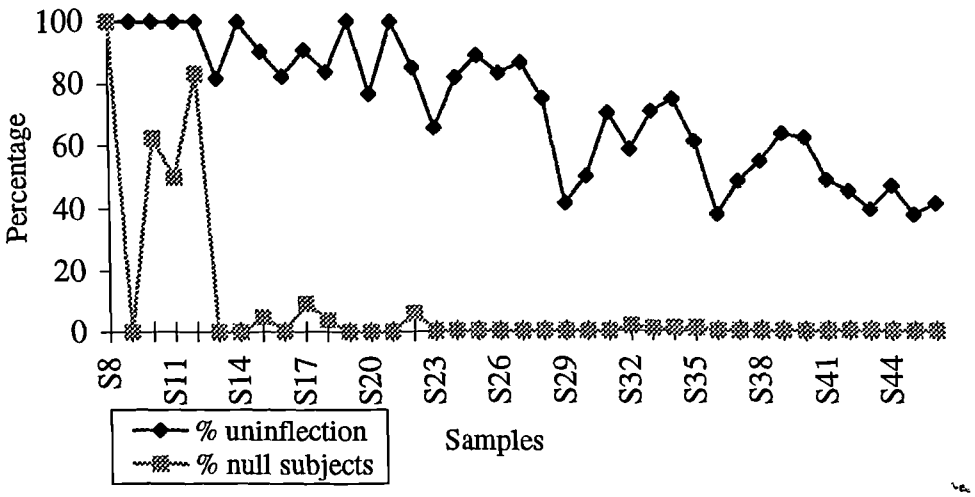
The first appearance of a null subject with either an uninflected or an inflected verb occurs in Sample 8 (20 May '94), and hence Figure 6.3 does not include Samples 1-7. There are 2 such contexts, both with an uninflected verb. In Samples 8 through 12 (20 May '94–9 Aug '94), of the 29 uninflected verb contexts, 20 have null subjects (68.96). Sample 12 is the last sample in which the percentage of null subjects is high (83.33%). Sample 13 (23 Aug '94) marks the sharp drop in the percentage of null subjects, with 0%. From this point on, we find very few examples of null subjects. Between Sample 13 and Sample 18 (23 Aug '94–20 Oct '94), for example, there are only 3 null subjects as opposed to 94 overt subjects. Raw numbers are given in Appendix C-3. It should be noted that the analysis of null subjects in main verb contexts makes it look as though the rate of null subjects is much high for a longer period in Erdem's English. Recall from Section 6.5.2.1 which discusses null subjects in all contexts that from Sample 8

(20 May '94) onwards, null subjects are rather low, the only exception being Sample 12 (9 Aug '94).

Comparing the demise of null subjects with the emergence of verb inflection, we find that by the time Erdem stops producing null subjects the proportion of inflection on verbs is still low, around 18%.

The demise of null subjects vs. the decline of uninflected verbs in main-verb contexts is presented in Figure 6.4. It shows that the percentage of null subjects drops drastically at Sample 13 (23 Aug '94) and it remains very low afterwards, while the percentage of uninflected verbs is still high, 82%.

Figure 6.4 Uninflection vs. null subjects in obligatory main-verb contexts (Samples 8-46)



To sum up so far, it does not seem to be the case that the regular use of inflection appears to be playing a role in the disappearance of null subjects. After some fluctuation, the percentage of null subjects sharply decreases at Sample 13 (23 Aug '94) and quickly stabilises. The frequent use of inflected forms, however, starts after Sample 22 (22 Nov '94) and gradually increases, while uninflected forms still persist until Sample 46 (24 Aug '95) (41%). Hence, our analysis shows a dissociation between the two phenomena. There is not a developmental relation between the regular use of verb inflection and the disappearance of null subjects. This result is reminiscent of the earlier findings on child L2 acquisition of English. In an investigation of the null subject phenomenon based on the assumptions of the Morphological Uniformity

Principle (MUP),[16] Lakshmanan (1991, 1994) and partly Hilles (1991) also argue that a relation between the development of verbal morphology and the use of null subjects is not attested. Bo th Hilles and Lakshmanan attempt to determine whether or not there is a relationship between null subjects and verb inflection as predicted by MUP. Hilles (1991) investigates the acquisition of English by six Spanish learners of English: two children (Cheo and Marta), two adolescents (Juan and Jorge), and two adults (Alberto and Dolores) from the Cancino *et al.* (1978) study. She hypothesises that if these L2 learners, whose L1 is a [+uniform] language, have access to UG, the correlation between the use of pronominal subjects and inflection found in L1 acquisition (Hyams & Jaeggli 1988) should also be evidenced in L2 acquisition. Regarding data from the two children (Cheo and Marta) and one of the adolescents (Juan), Hilles argues that the acquisition of pronominal subjects and inflection are correlated. For Hilles, as these three learners follow an acquisition pattern similar to L1 learners, L2 acquisition falls within the constraints of UG. As for the other adolescent (Jorge) and the two adult learners (Alberto and Dolores), Hilles argues that the correlation between pronominal subjects and inflection which should follow from the MUP does not exist. Hilles concludes that in the case of these three learners, there is no evidence of UG's operation.

In a similar vein, Lakshmanan (1991) examines data from three children: Marta, (data from Cancino *et al.* 1978), Muriel, a French speaker (from Gerbault 1978), and Uguisu, a Japanese learner of English (from Hakuta 1975). Lakshmanan argues that there is no convincing evidence for the existence of a relationship between the use of verb inflection and null subjects. She observes that despite the sudden fall in null subjects in Marta's interlanguage, verb inflection is not supplied for a fairly long time. Null subjects in Muriel's

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[16] The Morphological Uniformity Principle (MUP) holds that only languages which have uniform paradigms allow null subjects. A uniform paradigm refers to a paradigm where either all verb forms are morphologically inflected, or none, as in Spanish and Chinese, respectively. Languages such as English, on the other hand, are assumed to have [-uniform] paradigms, as some forms are inflected, others not (e.g. Jaeggli & Safir 1987; Jaeggli & Hyams 1988). In addition to the notion of morphological uniformity, MUP also has an identification requirement. In morphologically rich languages such as Italian and Turkish, the identity of the null subject is recoverable via agreement morphology on the verb. In languages with no inflectional morphology such as Chinese, on the other hand, the identity of null arguments is recovered through a (null) topic (Huang 1984). The idea is that an empty category can be bound by an argument in the discourse rather than in the sentence. This is known as discourse identification.

interlanguage also show a low percentage. The rate of inflection during the same period is rather low, suggesting that the predictions of MUP are not supported in Muriel's data either. The data from Uguisu show that although Japanese is a pro-drop language, there are no instances of null subjects in Uguisu's interlanguage. Verb inflections, however, are rarely produced, and according to Hakuta (1975), they were acquired after Sample 30. Under MUP, one would expect that Uguisu should have produced verb inflection, as she did not make use of null subjects. In sum, these two studies also present evidence for the lack of correlation between the demise of null subjects and verb inflection.

Turming to Erdem's data, we have seen that there are null subjects early on. However, we should point out at this point another finding which appears to be rather important. This concerns the use of null subjects with inflected verbs. As mentioned earlier, data from L1 English show that in addition to producing null subjects with uninflected verbs, L1 English-speaking children produce null subjects in finite clauses. In Erdem's interlanguage, on the other hand, we find **no** instances of null subjects with the inflected form of the verb. That is, 3sg *-s* or past forms never co-occur with null subjects. This result suggests that Erdem's interlanguage is qualitatively different from what is attested in early child L1 English. Tables 6.9, 6.10 and 6.11 show rates of null subjects at different time periods in Erdem's data. Table 6.9 shows that in Samples 8-12 all null subjects occur with uninflected verbs, while inflected verb forms are yet to appear.

Table 6.9 Verb form and null subjects

Erdem	Files 8-12			
	uninflected		inflected	
overt subject	9/29	31.03%	0/0	0%
null subject	20/29	**68.97%**	0/0	**0%**

Table 6.10 indicates that even after the use of inflected verbs, none of them co-occurs with a null subject.

Table 6.10 Verb form and null subjects

Erdem	Files 13-18			
	uninflected		inflected	
overt subject	80/83	96.39%	14/14	100%
null subject	3/83	**3.61%**	0/14	**0%**

Table 6.11 looks at Samples 8-46 and is perhaps the true comparison to L1 acquisition of English, because by Sample 46 40% of the verbs are still uninflected. Hence there continues to be alternation between inflected and uninflected forms, and null subjects occur at a rate of only 2.37% overall.

Table 6.11 Verb form and null subjects: Total

Erdem	Samples 8-46			
	uninflected		inflected	
overt subject	1193/1222	97.63%	875/875	100%
null subject	29/1222	**2.37%**	0/875	**0%**

So far, we have seen that null subjects drop out long before uninflected forms do. Moreover, and importantly, Erdem never produces null subjects with the inflected form of the verb, and this is quite distinct from what the L1 acquisition data show. We now turn to a discussion of pronominal subjects in the OI/RI stage.

6.5.3 Pronominal subjects in OIs/RIs

Recall from Chapter 5 that even though not all English-speaking children make pronoun errors at the same rate, case errors on subject pronouns do occur in English. Schütze & Wexler (1996a) argue that children's case errors have a highly systematic distribution. For them, the distribution of these errors is consistent with the OI/RI stage. What they claim is that all non-nominative subjects occur with OIs. In Table 6.12, we present data on Nina's (Suppes 1973) 3rd person singular subject pronouns, only in contexts with main verbs. What we find is that Nina has 40% non-nominative pronouns in nonfinite contexts and 18.75% in finite contexts.

Table 6.12 Schütze & Wexler (1996a: 674 adapted from Table 6)

Finiteness and Case of Nina's 3sg subject pronouns				
	nonfinite		finite	
Nominative subjects *he+she*	90/150	60%	26/32	81.25%
Non-nominative subj *him+her*	60/150	**40%**	6/32	**18.75%**

Similarly, in Table 6.13, we present Peter's data (Bloom 1970) on first person singular subjects both in main verb and auxiliary contexts.

Table 6.13 Schütze & Wexler (1996a: 675 adapted from their Table 8)

Finiteness and Case of Peter's 1sg subject pronouns				
	nonfinite		finite	
Nominative subjects *I*	29/37	78.38%	243/246	98.78%
Non-nominative subj *me+my*	8/37	**21.62%**	3/246	**1.22%**

These data show that Peter's 21.62% non-nominative subjects occur in non-finite contexts. Finally, consider Table 6.14 which shows Sarah's pronoun errors in 3sg feminine subjects. In Sarah's case, the rate of non-nominative subjects pronouns in all verb contexts is 36.84%.

Table 6.14 Schütze & Wexler (1996a: 676 adapted from Table 11)

Finiteness and Case of Sarah's 3sg feminine subject pronouns				
	nonfinite		finite	
Nominative subjects *she*	24/38	63.16%	21/24	87.5%
Non-nominative subj *her*	14/38	**36.84%**	3/24	**12.5%**

What we have tried to show in Tables 6.12, 6.13 and 6.14 is that despite differing rates of errors, English-speaking children produce non-nominative subjects in nonfinite contexts, and this, according to Schütze & Wexler, follows from the OI/RI stage. As discussed in Chapter 5, in Erdem's data, however, we observe that almost all of the pronominal subjects are nominative. The three non-nominative subject pronouns discussed in Chapter 5 are the only ones I found in the whole corpus. They are repeated in (29).[18]

(29) a. Investigator: You've finished. (S 8, 20 May '94)

[18] We do not include in our counting examples of subjects with accusative Case which are in fact possible in English, as shown in the following examples.

Erdem: You and me do it this. (S18)

	Erdem:	Me is finish.	
b.	Investigator:	It's a very big and fat spider.	(S 9, 5 June '94)
	Erdem:	This is not # me big # me very very.	
c.	Investigator:	You're going to break that bicycle.	
	Erdem:	No # me not break this is bicycle.	(S14, 30 Aug '94)

It is clear that this result is also different from what is reported for L1 acquisition of English (Pensalfini 1995; Powers 1994; Rispoli 1994; Schütze & Wexler 1996a; Vainikka 1993/94). In sum, in contrast to L1 English, non-Nominative case errors are extremely rare in Erdem's interlanguage.

6.6 Discussion

We now return to the use of uninflected verb forms in Erdem's interlanguage. What are these uninflected forms? Are they optional infinitives in the sense that Erdem has a deficit in his syntactic knowledge of T, which Wexler and his associates have hypothesised for L1 acquisition? We will argue that the answer is negative. First, recall from Chapter 4 that it is not the case that Erdem lacks knowledge of Tense and verbal inflection in Turkish. So, if he has knowledge of this in his L1, then it cannot be due to transfer that Tense marking is absent in his English. Examples (30-32) show that by the time Erdem starts acquiring English, he has already distinguished past and non-past Tense features in Turkish.

(30)	Investigator:	What sort of games do you play with Jenny?
	Erdem:	I don't know.
	Mother:	Yakalamacılık oynuyorsunuz ya oğlum, onu söyle. # Ama nasıl söyleyeceksin?
	English:	Tell her that you two play hide and seek. # But how can you say this?

Erdem: Ben bil-mi-**yor**-um # sen söyle. (S 6, 22 Apr '94)

I know-neg-**present**-1sg # you tell her.

'I don't know # you tell her'

(31) Investigator: Erdem # you didn't tell your mum what we did in the department today. Why don't you tell her?

Action: Turning to his mother

Erdem: Ama zaten oyna-ma-**dı**-k. (S 10, 13 June '94)

But well play-neg-**past**-1pl

English: 'But we didn't play'

(32) Mother: Kimleri gördün?

English: Who did you see?

Erdem: çok az adam gör-**dü**-m. (S 10, 13 June '94)

Very few people see-**past**-1sg

English: 'I saw only a few people'

The examples in (30-32) show that Erdem uses Turkish bound morphology for past tense (-**dI**) and present tense (-**Iyor**).[19] The examples in (33-34) are perhaps even more revealing, since after the Turkish utterances, Erdem tries to translate them into English.

(33) Context: Holding a 'Fred Flinstone' toy and talking to his mother

Investigator: Erdem # is that your friend?

Erdem: Bun-un çizgi filmi-ni izle-**miş-tik** ya? (S 8, 20 May '94)

This-gen cartoon-acc watch-**reported-past-past**-1pl QM

English: 'We watched this cartoon, didn't we?'

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[19] Note that there are no errors in the order of morphemes in Erdem's verbs, *bil-mi-yor-um, oyna-ma-dı-k, gör-dü-m* in the examples (31-33). Aksu-Koc & Slobin (1985) report that both noun and verb inflections are used productively by Turkish-speaking children by the age of 24 months or earlier. They also emphasise the lack of errors in the order of morphemes in young Turkish-speaking children's speech.

	Context:	Turning to the investigator	
	Erdem:	<This cartoon> [/] this cartoon # **television looking.**	
			(S 8, 20 May '94)
(34)	Investigator:	What did you do today? # How was your day?	
	Mother:	Erdemcigim ne yaptığımızı, babanın yanına gittiğimizi, Nilay'ın geldiğini anlatsana Belma'ya.	
	English:	'Tell Belma what we did today, we went to dad's office, Nilay visited us'	
	Erdem:	We **go** my dad.	(S 13, 23 Aug '94)
	Investigator:	What did you do in daddy's office?	
	Erdem:	<I **drink**> **[//]** I **drink** tea.	(S 13, 23 Aug '94)
	Erdem:	And we **sit** # # and # # and **go.**	(S 13, 23 Aug '94)

The Turkish utterance in (33) indicates that the event denoted by the verb took place in the past. In the English sentence, however, Erdem uses an OV structure with a missing auxiliary *'this cartoon television looking'*. Similarly, in (34) it is obvious that Erdem is referring to an event in the past. At this point the past tense forms of *go, drink, and sit* are not as yet part of Erdem's vocabulary. These are language-particular morphological forms that Erdem has to learn.

What we argue, then, is that Erdem's use of such "infinitive-like" verbs is not indicative of his syntactic representation and does not refer to a syntactic deficit. Similarly, neither Rizzi's Truncation nor Hoekstra and Hyams's model can explain Erdem's interlanguage. In short, there is no OI stage in Erdem's interlanguage. Instead, Erdem simply has a problem with realising the morphological form of finite verbs.

6.7 Conclusion

In this chapter we have investigated whether Erdem's L2 acquisition of English mirrors child L1 acquisition of English, regarding phenomena of OI/RI

phase. We find that similar to English-speaking children, both inflected and uninflected verbs occur in main clauses for a considerable length of time. Unlike in L1 acquisition of English, however, subjects stop being dropped fairly early on, well before the regular use of inflected verbs. Moreover, in contrast to L1 acquisition of English, null subjects do not occur with inflected verbs and subject pronouns are virtually always nominative. These facts show that Erdem's L2 English has different properties from what is found in child L1 English in the OI/RI stage. Thus we argue that these infinitive-like forms in Erdem's data do not reflect OIs/RIs. We argue that the optional use of verb inflection in Erdem's L2 English cannot be due to a deficiency in his syntactic knowledge; rather, Erdem has a difficulty with the morphological form of verbs. Although maturational accounts cannot explain Erdem's data, they are nevertheless compatible with maturational explanations because Erdem's L2 development is different from child L1 development in regard to OIs/RIs.

Our analysis has also important implications for adult L2 acquisition. In Vainikka & Young-Scholten's study, the L2 learners of German produced uninflected form of the verb in the V2 position. Consider the following examples.

(35) a. Ich kauf**en** Brot so turkische Geschäft.
I buy bread so Turkish store
'I buy bread (at a) Turkish store'

b. Wir kauf**en** hier so Kaffee extra.
We buy here so coffee extra
'We buy coffee here extra' V&Y-S, 1994: 274)

These data show that although the verbs in (35) are raised, they are not inflected with the correct morphological affixes, but rather used with the infinitive marker *-en*, that is, inflection is not provided. If our interpretation of Erdem's L2 data is correct i.e. uninflected forms are not OIs/RIs but have missing

inflection, then infinitive-like forms in adult L2 acquisition may simply have missing inflection, too.

Our discussion in Chapter 5 focused on the question of the functional category IP in Erdem's L2 English. However, we have not addressed the status of the functional category CP. Our aim in Chapter 7 is to examine Erdem's data on the development of CP-related elements.

CHAPTER 7

FUNCTIONAL CATEGORIES IN CHILD L2 ACQUISITION

THE ACQUISITION OF THE CP SYSTEM

7.0 Introduction

In Chapter 5, I have addressed the issue of when IP can be said to be present in Erdem's L2 English. My concern in this chapter is the nature of Erdem's interlanguage with respect to CP-related elements.

The organisation of the chapter is as follows. Section 7.1 presents a brief review of the theoretical assumptions underlying the CP system in English. Section 7.2 examines the acquisition of CP in early L1 English. Section 7.3 reviews recent work on CP in child L2 English. In Section 7.4, we examine Erdem's data, where we first describe the observed L2 development, starting with the development of yes/no questions and wh-questions. We then discuss further data on the development of embedded clauses. In Section 7.5, we discuss our findings, focussing again on Vainikka & Young-Scholten's claims for the development of phrase structure in L2 acquisition. Section 7.5 presents a summary of our arguments.

7.1 Theoretical Background

This section examines the range of constituents which can appear in the head and the specifier position of CP. Under standard assumptions (e.g. Bresnan 1970; Chomsky 1973), the head of CP is filled by complementisers such as *for, if, that* and *whether*. Some examples are given (1).

(1) a. He wonders [CP [C *whether*] [she will turn up tomorrow]].

b. He wonders [CP [C *whether*] [to accept the offer]].

c. I am not sure [CP [C *if*] [he knows the truth]].

d. *I am not sure [CP [C if] [to know the truth]].

e. I think [CP [C *that*] [he will sign the contract]].

f. I think [CP [C Ø] [he will resign]].

g. I am so happy [CP [C *for*] [him to succeed]].

h. *I am so happy [CP [C *for*] [he will succeed]].

The types of embedded clauses in (1) are determined by the complementiser. With respect to the syntactic distribution of complementisers, these examples show that *if* and *that* select a finite clause, while *for* selects an infinitival complement and *whether* selects both types of clauses. It should be noted that interrogative complementisers, *whether* and *if* also introduce interrogative clauses.[1] Finite declaratives, on the other hand, are introduced by an optional complementiser *that.*

Another function of the head of CP is concerned with the phenomenon known as *Subject-Auxiliary Inversion,* which plays a central role in question formation in English. As discussed in Chapter 4, non-auxiliary verbs in English do not move before Spell-Out. Auxiliary verbs and modals, on the other hand, do raise, and they appear before the subject in matrix questions. First, consider the following sentences with a modal.

(2) a. She will attend a meeting tomorrow.

b. $[_{CP}\ [_{C'}\text{Will}_i\ [_{IP}\text{she}\ [_{I'}\ e_i\ [_{VP}$ attend a meeting tomorrow?]]]]]

(2b) is a yes/no question, characterised by the inversion of subject and auxiliary. While the modal *will* occupies the head of IP in (2a), it is moved into

[1] See Borer (1989) and Kayne (1991) for arguments with respect to distributional differences among the two interrogative complementisers *whether* and *if.* Along the lines of Chomsky's (1993) checking theory, Nakajima (1996) presents an analysis of distributional differences among *whether, if, that* and null *that.*

the head of CP in (2b). I-to-C movement, which is an example of head-to-head movement, also applies to auxiliaries *have* and *be*, as shown in (3).[2]

(3) a. $[_{CP}\ [_{C'}\text{Have}_i\ [_{IP}\text{you}\ [_{I'}\ e_i\ [_{VP}$ talked with your friend?]]]]]

b. $[_{CP}\ [_{C'}\text{Are}_i[_{IP}\text{you}[_{I'}\ e_i[_{VP}$taking the responsibility for his decision?]]]]]

Another issue related to question formation in English is concerned with the distribution of the auxiliary verb *do*, which has been much discussed over the last 30 years. As main verbs in English do not raise out of VP until LF, in the absence of auxiliary verbs in negatives, for example, the "dummy auxiliary" *do* must be inserted into the sentence, which is assumed to bear inflectional features. Consider the following sentences.

(4) a. She doesn't go on holiday every year. (Obligatory *do*-insertion)

b. They don't know what to do. (Obligatory *do*-insertion)

In English, *do*-insertion is also triggered in non-subject wh-questions and yes/no questions with lexical verbs, as illustrated in (5).[3]

(5) a. Why did you go with her? (Obligatory *do*-insertion)

b. *Why you went with her?

c. Did you go with her? (Obligatory *do*-insertion)

Up to this point, we have briefly examined what elements might appear in the head position of CP. With respect to constituents that fill the specifier of CP, we look at the analysis of wh-questions, as shown in (6).

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[2] One argument in support of I-to-C movement of *have* and *are* in (3a,b) comes from indirect questions. If both overt complementisers and inverted auxiliaries fill the same head position, namely, C, they should not co-occur. Consider the following examples.

(i) a. I wondered [[whether/if] she could ring me back]
b. *I wondered [[whether/if could] she ring me back]

The examples in (i) show that subject-auxiliary inversion is blocked when the embedded clause contains an overt complementiser.

[3] *Do*-insertion also occurs in sentences with emphatic stress, as in 'She *does* go on a holiday every year'.

(6) a. *What* will you do tomorrow?

b. *What* is he planning to discuss at the meeting?

In (6a-b), the auxiliaries *will* and *is* are moved via head-to-head movement. In addition, *what* and *where* end up occupying a position in front of the auxiliaries. Following standard analyses of English wh-questions (e.g. Chomsky 1986b), we assume that the wh-phrase moves from its original position to the specifier of CP and that the auxiliary verb moves from I to C. This is shown in (7).

(7) a. $[_{CP}[_{C'}[_{IP}$ I $[_{I'}$ will $[_{VP}$ buy a book tomorrow]]]]]

b. $[_{CP}$ What$_i$ $[_{C'}$ will$_j$ $[_{IP}$ you $[_{I'}$ e$_j$ $[_{VP}$ buy t$_i$ tomorrow]]]]]

(7b) shows that the wh-phrase *what*, based-generated in the object position of the verb, ends up in [Spec, CP]. In addition to object wh-questions, English also has subject wh-questions, as in (8).

(8) a. Who will win the presidential election?

b. Who do you think will win the presidential election?

It is important to note that there is an asymmetry between root subject and object wh-questions (e.g. Chomsky 1986b; Lasnik & Saito 1984). For some researchers, both subject and object wh-questions undergo movement, while for others root subject wh-questions do not move but remain *in situ*.[4]

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[4] Among others, one important difference between subject and object wh-questions which has received considerable attention in the literature is concerned with the *that-trace* filter (Chomsky & Lasnik 1977). Consider the following examples.

(i) a. Who(m)$_i$ do you think [$_{CP}$ that [$_{IP}$ Jane will meet this afternoon t$_i$]]?
b. Who(m)$_i$ do you think [$_{CP}$ [$_{IP}$ Jane will meet this afternoon t$_i$]]?

The examples in (i) show that long distance object questions are grammatical irrespective of whether or not *that* occurs in the head of the embedded CP. In long distance subject questions, however, the subject cannot be extracted from the embedded CP when there is an overt complementiser appearing in the head of the lower CP. This is shown in the following examples.

(ii) a. Who$_i$ do you think [$_{CP}$ [$_{IP}$ t$_i$ will come this afternoon]]?
b. *Who$_i$ do you think [$_{CP}$ that [$_{IP}$ t$_i$ will come this afternoon]]?

One final area which we will discuss with regard to CP in English concerns infinitival clauses. Chomsky (1980) proposes that infinitival clauses have a non-overt subject, labelled as PRO. Some examples are given (9).

(9) a. She promised Bill [CP [IP PRO to come back]].
b. She wanted [CP [IP PRO to see him]].
c. She persuaded him [CP [IP PRO to come back]].
d. [CP [IP PRO To take legal action]] was not terribly crucial.

Depending on the context, PRO might have different interpretations. In (9a-b), PRO is like an anaphor and refers to the subject *she*, that is, its interpretation is controlled by the main clause subject. In (9c), PRO is controlled by the object *him*. In (9d), however, PRO acts like a pronominal which refers to an arbitrary pronoun. Verbs like *persuade* are known as object control verbs, while those such as *promise* are subject control verbs.

As the following examples in (10) show, a major property of PRO is that it is restricted to the subject position of infinitival clauses.

(10) a. Jane wants to know [CP whether [IP she should buy the book]].
b. *Jane wants to know [CP whether [IP PRO should buy the book]].
c. *PRO wants to know [CP whether [IP she should buy the book]].
d. *Jane wants to know [CP whether [IP John should buy PRO]].
e. Jane is not sure [CP whether [IP PRO to buy the book]].

(10b-c) shows that the non-overt element PRO cannot appear as the subject of a finite clause. The ungrammaticality of (10d) is due to the occurrence of PRO in the object position of *buy*. What one can deduce from these data is that the infinitival subject PRO occurs in ungoverned positions. The hypothesis that PRO must not be governed is referred to in the literature as the PRO theorem (e.g.

For discussion of asymmetries between object and subject wh-movement, see Chomsky (1986b).

Chomsky 1986a).[5] What is important is that in order for PRO to be ungoverned in (10e), for instance, there must be a CP as CP is assumed to be a barrier to outside governors.

- **Summary**

This section has focussed on the properties of CP in adult English, such as subject-auxiliary inversion, wh-movement and the distribution of PRO. It was shown that the derivation of non-root subject wh-questions involves moving a wh-phrase to [Spec, CP] and the verb to the head of CP, the latter also being the case in yes/no questions. We have also illustrated that in English the head of the functional category CP is filled by wh-complementisers or lexical complementisers such as *whether, if, for, that.*

In the next section, we first discuss previous research which has focussed on the development of CP in early L1 English. We also review two recent studies on the acquisition of CP in child L2 English and then present Erdem's data on the development of CP in detail.

7.2 The acquisition of CP in child L1 English

Question-formation has received considerable attention in the L1 acquisition literature. As discussed briefly in Chapter 2, some of the first studies on questions were the longitudinal studies of Brown (1968) and Klima & Bellugi (1966), which suggested a delay in the development of subject-auxiliary inversion in wh-questions. The claim was that at the time children started to produce inverted utterances in yes/no questions, known as Stage C, they failed to invert subject and auxiliary in wh-questions, which resulted in non-inversion errors.

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[5] In addition to licensing PRO in the subject position of infinitival complements, certain verbs such as *want* and *expect* treat subjects of infinitival clauses as their objects. These verbs, known as Exceptional Case-Marking verbs, can govern into an IP and assign case to the subject of the infinitival clause.

(i) a. I expect [IP them to leave early].
b. I want [IP her to take a decision on this matter].

These studies suggest that the development of yes/no questions differs from the development of wh-questions in three respects: (i) auxiliaries are found in yes/no questions earlier than in wh-questions; (ii) inversion becomes productive in yes/no questions prior to in wh-questions; (iii) inversion is productive in affirmative wh-questions before negated wh-questions.

These stages of acquisition were taken to be interesting not only because they refer to different periods in the development of questions, but also because they were proposed as evidence in favor of a particular model of linguistic theory, namely, the transformational analysis of questions. Brown (1968), for example, argued that due to psychological complexity, children in early stages of acquisition may not carry out some of the transformations. With respect to non-inversion errors in wh-questions, he proposed that children might be limited in the number of transformations they use in utterances. For Brown, in Bellugi's Stage C children utilise one transformation, wh-fronting, but not the other transformation, namely, subject-auxiliary inversion.[6]

Other studies on the acquisition of questions, however, have challenged these early studies. On the basis of cross-sectional comprehension and production data from 2;0 - 3;11 year-old children, Ingram & Tyack (1979) attempted to determine whether or not a stage of acquisition exists where children invert subjects and auxiliaries in yes/no questions but not in wh-questions. The subjects in this study were 21 children, divided into groups in terms of their age: group 1, 2;0-2.5; group 2, 2;6-2;11; group 3, 3;0-3;5; group 4, 3;6-3;11.[7]

In order to find the percentage of inversion, two types of questions were examined: (i) questions with inverted auxiliary;[8] (ii) questions without inversion but with subjects such as *where he is*?, *what he is going to do*? (Ingram & Tyack, 1979: 340). Ingram & Tyack also looked at obligatory occurrence of auxiliaries

[6] The productive use of inversion in yes/no questions relative to wh-questions has also been reported in Kuczaj & Brannick (1979).

[7] It should be noted that the data in this study were collected by the parents. The parents were instructed to write down every question the child asked for a period of time until 225 questions were collected.

[8] Ingram & Tyack do not present any examples of questions with inverted auxiliary.

to find out whether inversion occurred only in yes/no questions but not in wh-questions. What they argue is that their findings do not show that the children inverted auxiliaries in yes/no questions but not in wh-questions. Rather, the percentages for inversions were similar in both types of questions, with one exception at Stage 1, where the rate of inversion in wh-questions was higher. Overall, Ingram & Tyack argued that unlike studies reported by Bellugi and her colleagues, no evidence for stage C was found in their cross-sectional study.

Adopting a hypothesis-testing model of language, Erreich (1984) also examined the development of questions in young children. She, too, specifically investigated whether subject-auxiliary inversion appears in yes/no questions prior to wh-questions and whether lack of inversion is a defining property of early wh-questions. The cross-sectional data from 18 children, ranging in age from 2;5 to 3;0, were collected by using a technique which was designed to elicit yes/no and wh-questions. Instructions of the type *ask Anne if she has any sisters* were targeted for yes/no questions and instructions like *ask Anne the reason she likes cats* were meant to elicit wh-questions, as were instructions of the third type *ask Anne where to put the book* (Erreich, 1984: 583).

All questions were categorised into one of four groups: (i) inverted wh-questions, (ii) non-inverted wh-questions, (iii) inverted yes/no questions, (iv) non-inverted yes/no questions. Erreich's main finding is that non-inversion is common in both yes/no questions and wh-questions; while 36% of wh-questions were produced in non-inverted form, the rate of uninverted yes/no questions was 51%. Interestingly, some children produced only non-inverted forms for yes/no questions but used inversion optionally in wh-questions. With respect to the presence of auxiliaries in declaratives and questions, Erreich found that auxiliaries occurred 86% of the time in yes/no questions, 82% in wh-questions and 81% in declaratives. In other words, overall auxiliaries occurred with equal frequency in yes/no questions, wh-questions and declaratives. Finally, with respect to negative questions, it was found for both yes/no and wh-questions that

all of them occurred in non-inverted forms. Erreich argued that these results were not compatible with previous studies which suggested differences in the use of auxiliaries and inversion in affirmative and negative yes/no questions.

On the basis of data from 14 children, Stromswold (1990) also examines inversion errors in child L1 English. She observes that despite individual differences[9] overall, the children inverted 93% of all wh-questions and 93.7% of all yes/no questions. With respect to the developmental trend for inversion, Stromswold reports that 5 of the children had a dip in inversion performance, while 7 children either inverted at a constant rate over time or their inversion improved slightly with age. Overall, however, there was no "statistically significant" difference between inversion rates in yes/no questions and wh-questions.

To summarise this section, we have seen that while some of the early studies suggest that children initially invert in yes/no questions but not in wh-questions, others hold that inversion occurs in both types of questions.

Much current research has also dealt with the development of questions. In this section of the chapter, we will discuss these more recent accounts of questions in early English.

In Chapter 5 we discussed Radford's (1990) hypothesis that early child grammars are entirely lexical and are characterised by the absence of functional categories. Radford extends his hypothesis to the complementiser domain and claims that early child grammar initially lacks a CP system, too. Overall, Radford's aim is to propose a unified account of early child grammar. In this sense, similar to the INFL system, children's clauses are small clauses in that they have no C-system. His hypothesis is based on child English, which we turn to now.

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[9] Three of the children had a higher inversion rate for yes/no questions than wh-questions, six children had similar inversion rates for both types of questions, and four children had higher inversion rates for wh-questions than yes/no questions.

If Radford is right in his proposal that young children indeed lack a CP system, one would not expect to find subject-auxiliary inversion or wh-fronting in questions, as these two phenomena are associated with the head and specifier of CP in the adult grammar. Radford argues that children's early questions have no evidence of auxiliaries being moved to C. (11) shows some of the early questions from a 24-25 month-old child cited in Radford.

(11) a. Chair go?
b. Kitty go?
c. This go?
d. Car go? (Hill 1983, cited in Radford, 1990: 122)

Similarly, if early child English lacks a C-system, one would not expect to find evidence for a *wh*-phrase moved into the specifier of CP. Radford notes that elicited data based on imitation of adult questions show that while adult utterances involve inverted auxiliaries and fronted wh-questions, children typically drop the auxiliary and the wh-word, as shown in (12).

	Adult question	Child question	
(12) a.	Where does daddy go?	Daddy go?	
b.	Where does it go?	Go?	(Radford, 1990: 123)

In addition, spontaneous production data also show a similar pattern, where no preposed auxiliaries and wh-words are attested, as in (13).

(13) a. Mummy doing? (What is mummy doing?)
b. Bow-wow go? (Where did the bow-wow go?)
c. Doing there? (What is he doing there?) (Radford, 1990: 123)

One type of early wh-questions which appears to be used frequently contains examples with initial wh-phrases such as w*hat('s), where*('s), as given in (14).

(14) a. What's that?

b. Who's that?

c. Who that?

d. Where's helicopter?

e. Where helicopter? (Radford, 1990: 125)

On the basis of data containing inappropriate answers to wh-questions, Radford also argues that children at the lexical stage have difficulty in comprehending wh-questions, as shown in (15).

	Adult question	Child answer	
(15) a.	What have you got?	Eh?	
b.	What are they doing with it?	Uhm	
c.	Where is it gone?	Gone.	
d.	What did mummy say?	Mummy.	(Radford, 1990: 130)

Another piece of evidence discussed in Radford is concerned with the lack of complement clauses in young children's speech. According to Radford's analysis, complement clauses produced by children during the period of early multi-word speech (roughly between the ages of 20-24 months) have the structure of [NP XP] which is similar to adult small clauses. The following examples show the [NP PP] pattern.

(16) a. Want [car out].

b. Want [sweet out]. Want [key in]. (Radford, 1990: 121)

There are also complement clauses headed by a nonfinite verb, mostly being used as the complement of the verb *want*, as in (17).

(17) a. Want [lady open it]

b. Want [mummy do] (Radford, 1990: 121)

Radford's main arguments for the claim that early child grammars lack CP can be summarised as follows: (i) no productive use of preposed wh-phrases; (ii) no preposed auxiliaries; (iii) no overt complementisers; (iv) difficulty in parsing questions. Radford concludes that child grammar at an early stage does not have the functional category CP. This conclusion has far reaching consequences, as it means that child English is different in important aspects from adult English. Radford's hypothesis, however, is not without its opponents. Other studies focussing on the status of the functional category CP in early English have come up with different proposals.

Déprez & Pierce (1993) also address the status of CP in child English.[10] As discussed in Chapter 5, Déprez & Pierce (D&P) propose that functional categories such as IP and NegP are utilised in early child grammar. With respect to the projection of CP, however, they argue that the acquisition of V-to-C movement is delayed. Adopting the VP-internal subject hypothesis (e.g. Kitagawa 1986; Koopman & Sportiche 1991), subject-auxiliary inversion in a wh-question such as *what is he doing?* is ambiguous. It might have an analysis in which the auxiliary is moved to Comp, past a raised subject in [Spec, IP], or it could be analysed within IP with the subject in VP-internal position. The two options are shown in (18).

(18) a. [$_{CP}$ What$_j$ [$_C$ is$_i$ [$_{IP}$ he t$_i$ [$_{VP}$ doing t$_j$]]]]

b. [$_{IP}$ What [$_I$ is [$_{VP}$ he doing]]]

In order to substantiate the analysis in (18b), D&P discuss data from various sources. Among them is overregularised inversion errors in declarative sentences (originally reported in Pierce 1989, 1992). Consider the following subject-auxiliary inversion in non-interrogatives.

[10] It should be noted that Déprez & Pierce's analysis is based on not only English child data, but also French, German and Swedish child data.

(19) a. Adult: Naomi, do you want an egg?
Child: No, is it broke. (D&P, 1993: 60)

b. Adult: Hey, Naomi, what's this?
Child: Is it flowers. (D&P, 1993: 60)

Under D&P's analysis, such errors are expected, as the subject fails to raise from its base-generated position within [Spec, VP]. One should note, however, that D&P do not make clear how often children produce subject-auxiliary inversion in declaratives. It might be the case that these errors occur at a very low rate.

The development of questions in child English is also discussed in Hyams (1994). Hyams' analysis is based on early work reported in Klima & Bellugi (1966) which suggested, as we mentioned, that English-speaking children pass through a stage (Stage C), during which they front the wh-word but fail to invert the auxiliary. Hyams points out, however, that children who do not invert in wh-questions at this stage consistently produce yes/no questions with inversion, as shown in (20) and (21).

(20) a. What he can ride in?
b. Which way they should go?
c. Where the other Joe will drive?

(21) a. Does the kitty stand up?
b. Will you help me?
c. Can I have a piece of paper?

(Hyams, 1994: 26-27)

For Hyams, inversion in yes/no questions shows that children are projecting a CP category, to which the inverted auxiliary raises, and therefore CP must be present in children's grammar.

Hyams challenges D&P[11] (1993) who propose that non-inversion in wh-questions is due to unraised subjects. Hyams provides two types of counter

[11] Guilfoyle & Noonan (1992) also adopt the VP-internal subject hypothesis and propose that children who produce inversion in yes/no questions raise the verb to I but leave the subject in its VP-internal position; therefore, inversion in yes/no questions does not show that child grammar projects a CP category.

evidence against their analysis. While she agrees with them in the analysis of early negated utterances (see also Pierce 1989; Lebeaux 1988; Guilfoyle & Noonan 1992), Hyams emphasises that by the time inverted yes/no questions are produced, children are well beyond the VP-internal subject stage. In other words, according to Hyams, while the VP-internal subject hypothesis appears to account for sentence-initial negated utterances at Klima & Bellugi's Stage A, inverted yes/no questions and non-inverted wh-questions, however, occur at a later stage, Stage C. That is, a VP-internal subject hypothesis cannot explain the data from this stage. Hyams also argues that if subjects remain inside VP in inverted yes/no questions, why should it be the case that children do not leave them in [Spec, VP] in wh-questions, thereby deriving inversion in wh-questions.

To summarise this section, while Radford postulates that the CP system is not present in early grammar and matures later, D&P argue that there are some delays in the production of constructions dependent on the presence of CP. Hyams, on the other hand, makes an entirely different claim, arguing for a continuous model which suggests that children's grammars have the same basic form as adult grammars, which includes CP.

In recent studies, L2 researchers have also started to address the question of whether or not the functional category CP is present in the early L2 acquisition (Gavruseva & Lardiere 1996; Grondin 1992, Grondin & White 1996; Lakshmanan & Selinker 1994). Restricting our discussion to child L2 acquisition of English, we next discuss two recent studies: Gavruseva & Lardiere (1996) and Lakshmanan & Selinker (1994).

7.3 The acquisition of CP in child L2 English

Lakshmanan and Selinker (1994) investigate the development of CP in child L2 acquisition of English and claim that C and its maximal projection CP are present early on. They primarily discuss child L2 data from two children: a $4^1/2$-year-old Spanish child, Marta, originally studied by Cancino *et al.* (1978) and a

4-year-old French speaking-child, Muriel, based on Gerbault's (1978) study. Marta's data consist of 15 samples, collected every two weeks and the age range is 4;6 to 5.1. 17 samples of data from Muriel at ages 4;9 to 5;8 cover a period of 11 months.

One type of evidence for CP presented in Lakshmanan & Selinker's (L&S) study is the use of embedded clauses. According to L&S, both children produce tensed embedded declaratives "fairly early" (p. 30). Consider the examples in (22).

(22) a. I think it's for me. (Muriel, S 3)

b. I think I'm finished. (Muriel, S 8)

c. I forgot I need a book. (Marta, S 12)

d. I could pretend I'm a doll. (Marta. S 13) (L&S, 1994: 30)

L&S argue that in Marta's interlanguage tensed declaratives first appear in Sample 3 and are consistently used from Sample 6 onwards. Similarly, Muriel produces embedded declaratives from Sample 7 onwards. However, L&S provide no information in terms of what these samples actually represent. In Chapter 5, I pointed out that with respect to Marta's interlanguage data, it does not seem to be the case that the so-called early samples represent her earliest L2 development, given the fact that she had exposure to English before going to the USA as well as before the study started. In other words, one does not know what Samples 6 or 7 really refer to in this study.

L&S observe for both children that the complementiser, *that,* is never produced overtly. They then argue that these data do not show transfer effects, given the fact that the learners' L1, French and Spanish, require overt complementisers in embedded sentences. It is important to note, however, that at a stage when Marta and Muriel produce examples as in (23), they also produce utterances as in (24).

(23) a. If somebody wants to paint. (Marta, S 10)

b. I don't want to play with you. (Muriel, S 3) (L&S, 1994: 32)

(24) a. What you want I put here? (Marta, S 7)

b. I don't want they go away. (Marta, S 13)

c. I don't want everybody's finished. (Muriel, S 15) (L&S, 1994: 32)

The examples in (24) show that unlike English, the lexical subject of the embedded clause can have the nominative Case, which is consistent with the learners' L1 French and Spanish.

L&S note that although *that* is never overt in tensed embedded declaratives, "other complementisers"*because* and *if* (p. 33), on the other hand, are present. After Samples 8 or 7, both children produce utterances with *if* and *because*. Some examples are given in (25).

(25) a. If we smoke, it's going to be a fire here. (Marta, S 9)

b. I'm going to see if daddy sleep. (Muriel, S 8) (L&S, 1994:33)

Another type of evidence they adduce is the use of infinitival clauses with verbs such as *want*. Although the data are not quantified, L&S observe that utterances with *want,* where the subject of the complement is PRO, appear in Sample 2 in both children's data. Consider the following examples.

(26) a. I want to go with you to the swimming pool. (Marta, S 7)

b. You want to help me? (Muriel, S 3) (L&S, 1994: 32)

As for question formation, L&S argue that auxiliaries are preposed in yes/no questions from the very beginning. In Marta's data, copula and auxiliary *be* are both preposed in Sample 1. In the case of Muriel, the first instance of subject-auxiliary inversion occurs with *can* in Sample 2. L&S also note that preposing of auxiliaries are found in wh-questions, too. What they argue is that preposing of auxiliaries and wh-phrases involves movement to C and to [Spec, CP] position,

respectively, suggesting that CP is available in these children's grammars. They conclude that CP is present from the beginning of child L2 acquisition.

In a recent study, Gavruseva & Lardiere's (1996) analysis of data from an 8-year-old Russian child, Dasha, also focusses on the development of CP in child L2 English. Dasha had no knowledge of English prior to her arrival in the USA. She was interviewed after two months of exposure to English at school. The data from 10 samples cover a period of 6 months. Gavruseva & Lardiere (G&L) specifically examine Vainikka & Young-Scholten's theory of the successive stages of development, that is, VP acquired prior to IP, and IP prior to CP.

G&L argue that from the earliest transcripts, the data provide evidence for the early emergence of CP.

(27) a. Mama know that we go outside. (S 4)[12]

b. I don't know where this little piece. (S 4)

c. And she wrote that I'm her best friend. (S 4)

d. If, if, if you allergic to cats, you allergic to cats. (S 6)

(Gavruseva & Lardiere, 1996: 231)

What they observe is that Dasha produces CP-related elements prior to the "reliable" (p. 230) use of agreement, tense, auxiliaries and modals, which, for Vainikka & Young-Scholten, are required for the learner to project an IP (p. 230). For example, in Files 4 through 6, Dasha uses agreement marking in 17.65% (3/17) of obligatory contexts, auxiliaries and modals in declaratives 35.87% of the time (33/92) and past tense 43.66% (24/55). At the same time in Files 4-6, Dasha inverts auxiliary *do* (8/8) and modal *can* (13/13) in yes/no questions 100% of the time. Similarly, the rate of inversion in wh-questions in the same files is 100%. This result is significant because it shows that the acquisition of CP does not depend on the acquisition of IP. At the same time, the result is also important with respect to Vainikka & Young-Scholten's strict criterion in German L2

[12] Sample 4 represents the third month of the study.

acquisition. As discussed in Chapter 5, it is reasonable to question whether overt production of morphemes associated with a functional category is necessary for one to conclude that the category is acquired. We return to this issue later in the analysis of Erdem's data.

In what follows, I will first describe Erdem's data in terms of the CP-related elements and then discuss my findings in light of Vainikka & Young-Scholten's claims on the development of phrase structure in L2 acquisition.

7.4 CP-related elements in Erdem's L2 English

In this section, we examine the development of questions in Erdem's interlanguage, first focussing on yes/no questions and then wh-questions. We discuss yes/no questions with intonation, copula *be*, auxiliaries *be* and *do* and modal verbs.

7.4.1 Yes/No questions

The first yes/no questions are found in Sample 6 (22 Apr '94). Of the 3 questions, 2 of them are formed by intonation alone.

(28) a. It's a ball? (S 6, 22 Apr '94)

b. It's a television? (S 6)

c. Is this a Henny Penny? (S 6)

Recall from Chapter 5 that early utterances beginning with *This is/It is* ..... in Samples 6 and 7 (See Appendix B-1) have not been included in my counts due to their unanalysed nature. However, while *This is/It is* are unanalysed, the fact is that Erdem is still using intonation in these examples, and therefore they are included in the analysis of questions. In Sample 7 (6 May '94), there are two more instances of intonation questions, as shown in (29).

(29) a. It's a triangle?

b. This is a zero zero? (S 7, 6 May '94)

The fifth intonation question (*ride bicycle?)* is found in Sample 13 (23 Aug '94). In sum, of the 11 yes/no questions produced up until Sample 15 (16 Sep '97), 5 (45.45%) are intonation questions. It should be noted at this point, however, that in the rest of the data we find few occurrences of intonation questions, as shown in Appendix D-1. What is more, given the context, all these intonation questions are seemingly appropriate. Consider the following examples.

(30) a. Investigator: What? What can you see here?
Erdem: I don't know # you know this?
Investigator: You don't know this? (S 18, 20 Oct '94)

b. Erdem: let's do this # Oh no I don't want to do it this.
Erdem: We do it this # What you think?
Erdem: You think ok? You say something. (S 21, 15 Nov '94)

c. Context: Playing with Erdem's small toys (little characters)
Erdem: No # it's like that. They are sitting. The mummy # she is sitting.
Investigator: Where is the brother?
Erdem: This is the brother? (S 33, 1 Mar '95)

d. Investigator: Let's go back to the story again. I read the whole story.
Erdem: No # first write my name in it. Blue pens. They are new. But the pencil is not working.
Erdem: You know how to write my name? (S 36, 24 Mar '95)

In addition to intonation questions up until Sample 15 (16 Sep '94), we find some occurrences of yes/no questions, mainly with copula *be* [13] as in (31).

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[13] There are some examples of yes/no questions with the modal verb *would,* at this early stage.

(i) a. Would you like to playing this # play # this is very good playing. (S 9, 5 June '94)
b. Would you like to eggs? (S 11, 17 June '94)
c. Would you like to go my new house? (S 14, 30 Aug '94)

(31) a. Are you ready? (S 8, 20 May '94)

b. Look # this is a <big big> [/] big hamburger # # # isn't it? (S 10, 13 June '94)

c. It's very cold, isn't it? (S 11, 17 June '94)

d. Oh no # oops # it is dangerous here, isn't it?[14] (S 11)

e. Is it very very big? (S 15, 16 Sep '94)

Appendix D-1 shows that there are more yes/no questions with copula *be* in later samples.

(32) a. Is it one boy holding ball in his hand? (S 26, 5 Jan '95)

b. Are you tired? (S 27, 13 Jan '95)

c. Is it funny? (S 27)

d. Are you very tired? (S 29, 26 Jan '95)

e. Are you a boy? (S 30, 4 Feb '95)

f. Isn't it good? (S 31, 14 Feb '95)

g. Is it there? (S 31)

h. Are you OK? Are you hungry? (S 33, 1 Mar '95)

i. Is the boy in playground? (S 33)

j. Is it a coloring book? (S 36, 24 Mar '95)

k. It's nut, isn't it ? (S 36)

l. Is this a light? (S 36)

m. A silly thing, funny # isn't that funny? (S 36)

However, I do not think that *would* has been analysed as a modal verb at this stage. It only occurs in one context, namely, *would you like to,* while making an offer. There are no cases in which it is used in positive or negative declaratives in the same recordings. Due to its unanalysed nature, it is not included in my counts.

[14] Note that although the number of tag questions is very limited and mainly restricted to copula constructions throughout the corpus, they appear to be used correctly. Examples from later recordings are given in (i).

(i) a. You made me shocking, didn't you? (S 26, 5 Jan '95)
b. Look # it is very funny, isn't it? (S 29, 26 Jan '95)
c. That's very funny # the baby # isn't it? (S 31, 14 Feb '95)
d. Now I need another big one you see. Oh that's big long one, isn't it? (S 31)
e. It's really new, isn't it? (S 34, 8 Mar '95)
f. The mountain bike is so shining, isn't it? (S 35, 16 Mar '95)

n. Is this a house? (S 36)

o. Is this the end? (S 36)

p. Is this a flower? (S 36)

r. Is it hot? (S 37, 13 Apr '95)

s. Is this mine? (S 37)

In addition to the use of copula *be*, auxiliaries such as *be* and *do* and modal verbs are also used in yes/no questions. As mentioned previously, the number of questions increases after Sample 15 (16 Sep '94), when Erdem started an infant school in the fall of 1994.

Let us now examine in detail the development of questions with the auxiliaries *be* and *do* and modals. The earliest instances of yes/no questions with the auxiliary *be* are found in Sample 15 (16 Sep '94), as shown in (33).

(33) a. And I say you # # are you not listen me? (S 15, 16 Sep '94)

b. Are you coming? (S 15)

We find more yes/no questions with the auxiliary *be* in later samples.

(34) a. Are you going to take your books in your holiday? (S 30, 4 Feb '95)

b. Is the boy running in the playground? (S 33, 1 Mar '95)

c. Are you going my home? (S 33)

d. Are you going to stay in my house? (S 33)

e. Are you reading? (S 35, 16 Mar '95)

f. Are you looking at me? (S 35)

As Appendix D-1 shows, in comparison with the relatively infrequent use of yes/no questions with auxiliary *be* (27 instances in the whole corpus), there are large numbers of yes/no questions which contain *do* (216) and modal verbs (189). The first use of auxiliary *do* in Erdem's questions occurs in Sample 16 (4 Oct '94). Some examples are provided in (35).

(35) a. Do you know what I got? (S 16, 4 Oct '94)

b. Do you know what this say? (S 16)

c. Do you know this is? (S 16)

In subsequent recordings, we observe that auxiliary *do* is produced in different contexts: (i) the use of *do*-support with verbs such as *want* and (ii) the correct use of *do*-support in past tense contexts, as shown in (36).

(36) a. Do you want to look at # look at that? (S 17, 12 Oct '94)

b. Do you want to see it? (S 18, 20 Oct '94)

c. Do you want to play this one? (S 20, 8 Nov '94)

d. Do you want dinner? (S 21, 15 Nov '94)

e. Do you want or do you want doing something? (S 21)

f. Did you colour your picture? (S 22, 22 Nov '94)

g. Do you know what say here? (S 22)

h. Did you colour # did you want to colour your picture? (S 22)

i. Do you want my game? Do you want to play this game? (S 23, 29 Nov '94)

Yes/no questions also occur with modal verbs. As discussed in Chapter 5, the early uses of modals are restricted to *can*, which first appears in Sample 15 (16 Sep '94). Starting in Sample 16 (4 Oct '94), Erdem produces *can* in questions as well. Some of the earliest instances are given in (37).

(37) a. Can you say xxx? (S 16, 4 Oct '94)

b Can you push me? not now # push my car. (S 17, 12 Oct '94)

c. Can you help me in that one? (S 17)

d. Can I get another one please? (S 18, 20 Oct '94)

e. Can you draw very good one? (S 18)

f. Can you go fastly? This is very good. (S 18)

g. Can you do it a # I can't do it a dog # can you? (S 19, 1 Nov '94)

h. Can you see this? (S 20, 8 Nov '94)

i. Can you go there because I can't shoot here. (S 20)

j. Can you give my pencil again? (S 21, 15 Nov '94)

k. Can you take this? (S 21)

Similar to declarative contexts, modals other than *can* appear gradually in yes/no questions. Some examples of other types of modals in questions are given in (38).

(38) a. Would you get this? (S 24, 8 Dec '94)

b. Will you take this? (S 28, 20 Jan '95)

c. Could you get this? (S 35, 16 Mar '95)

d. Could you see all of my money? (S 35, 16 Mar '95)

e. Could you put the light on? because I can't really see. (S 35)

f. Could you make a ginger bread man? (S 35)

g. Could you say it? (S 35)

h. Could you put these away? (S 35)

i. Will you bring something? (S 36, 24 Mar '95)

j. Shall we play a game? (S 41, 26 May '95)

k. Shall I read this? (S 42, 2 June '95)

l. Shall I play with the water pistol? (S 42)

m. Shall we play ball in outside? (S 42)

n. Shall we go to get the treasure? (S 43, 9 June '95)

Erdem's data on yes/no questions indicate that it is only auxiliaries, modals and the copula *be* which undergo subject-auxiliary inversion. Erdem never inverts main verbs, i.e. there are no errors of the type in (39), where the thematic verb and the subject are inverted.

(39) a. *Makes daddy a cake?

b. *Reads mummy a book?

We find that yes/no questions are formed correctly from their earliest occurrences. As shown in Appendix D-1, of the 536 yes/no questions in Samples 6-46 (22 Apr '94–24 Aug '94), there are only 22 using intonation alone, 5 of which, as mentioned earlier, are produced in the first 15 recordings. In Table 7.1, we present the rate of intonation questions vs. subject-auxiliary inversion at different time periods in Erdem's data.

Table 7.1 Percentage of inversion vs. intonation in yes/no questions

	Sample	6-14	Sample	15-21	Sample	22-46
intonation	5/11	45.45%	6/58	10.34%	11/467	2.36%
inversion	6/11	54.55%	52/58	89.66%	456/467	97.64%

What we find is that the rate of intonation questions in Samples 1 through 14 is high, occuring at 45.45% of the time but it subsequently drops to 10.34% in Samples 15 and 21. As mentioned previously, most are actually pragmatically appropriate. Note also that the utterances consisting of the unanalysed forms *This is/It's.....* in early samples are counted in this section. Overall, however, the rate of intonation questions is low, suggesting that Erdem quickly acquired subject-auxiliary inversion in English yes/no questions.

- **Summary**

Overall, we find that the number of yes/no questions in the earliest samples is low. In addition to some occurrences of early intonation questions, there are only 11 yes/no questions until Sample 15 (16 Sep '94). However, evidence from the use of *be* (both as a copula and an auxiliary), *do* and modals (primarily *can* at the beginning) in subsequent samples shows that Erdem produces questions in which auxiliairies/modals are used in correct sentence-initial position.

I now turn to Erdem's early wh-questions.

7.4.2 Wh-Questions

I first discuss the earliest and the most frequently used forms of wh-questions, which include *what* and *where*. We start with the former. The following examples in (40) show the first instances of Erdem's wh-questions.

(40) a. What's this? (S 7, 6 May '94)
b. What's four? (S 7)
c. What's this name? (S 7)
d. What's a triangle? (S 7)
e. What's Russian friend? (S 7)

We cannot rule out the possibility that the questions in (40) are formulaic, as all of them start with *what's*. Recall from Chapter 4 that Erdem's utterances with *This is/It's*..... in Samples 6 and 7 appear to be formulaic where the copula *be* is not yet analysed. These earliest wh-questions with *what's* in Sample 7 (6 May '94) are likewise not included in the counts. From Sample 8 (20 May '94) on, however, *what's* varies with *what* which might suggest that it is not morphologically unanalysed. While some of them are still not target-like, examples of the non-formulaic *what* questions with missing auxiliaries are shown in (41).

(41) a. OK # hello # what you doing here? (S 8, 20 May '94)
b. Hello dad # what are you doing? (S 9, 5 June '94)
c. What you doing Belma? (S 10, 13 June '94)
d. What do you want? (S 11, 17 June '94)
e. What you eating? (S 11)
f. What do you want? (S 17, 12 Oct '94)
g. What you doing? (S 19, 1 Nov '94)
h. What you're saying? (S 19)
i. What's that saying? (S 19)

j. What is the number? (S 19)

k. What's this number? (S 22, 22 Nov '94)

l. What did you say? I saying you must to. (S 22)

As can be seen in Appendix D-2, the first wh-questions with *where* are also found in Sample 8 (20 May '94). Of the 2 instances, one occurs with missing copula *be*, the other with the uncontracted form.

(42) a. Where carrots? (S 8, 20 May '94)

b. Where is 'karpuz' [= watermelon in Turkish] (S 8)

We do not find large numbers of *where* questions, although there are more of them as time passes.

(43) a. Where's chocolate biscuits? (S 11, 17 June '94)

b. OK # where is your friend? (S 11)

c. Where is paper? (S 18, 20 Oct '94)

d. Where is eleven? (S 18)

e. Where you say? (S 21, 15 Nov '94)

f. Where is my mummy? (S 21)

Among the other types of wh-phrases in questions are *why*, *who*, *which* and *how*, although there are only few in the early transcripts.

(44) a. Why don't you go home? (S 12, 9 Aug '94)

b. Why do you listen me? (S 15, 16 Sep '94)

c. This is me # this is me this is # # who is it that? (S 16, 4 Oct '94)

d. Which one do you like in this? (S 17, 12 Oct '94)

e. Which colour do you like? (S 18, 20 Oct, '94)

f. Which one do you like? Coffee or milk? (S 21, 15 Nov '94)

g. Which animal has got four knees? (S 26, 5 Jan '95)

h. How can you make another control? (S 24, 8 Dec '94)

i. How do you know it's a telephone? (S 28, 20 Jan '95)

j. How did you that? (S 29, 26 Jan '95)

k. How do you make like this? (S 29)

l. How he can help? (S 30, 4 Feb '95)

In the whole corpus, there are only a few instances of wh-questions with *when* and *whose,* although as we will discuss shortly *when* is used extensively in complement clauses. Some examples are given in (45).

(45) a. When this lives? (S 36, 24 Mar '95)

b. When is the bus coming down? (S 38, 22 Apr, '95)

c. When do you want to make a ginger bread? (S 42, 2 June '95)

d. When are we going to the party? (S 46, 24 Aug '95)

e. When do you eat your breakfast? (S 46)

f. When do you come back home? (S 46)

g. Whose birthday is it? (S 45, 7 July '95)

h. Whose banana is this? Is it mine? (S 46, 24 Aug '95)

We should also note that there are only 6 instances of wh-*in situ* questions in the entire corpus, as shown in (46) (see the last column in Appendix D-2).

(46) a. Investigator: There might be little animals in it # you should be careful.
Erdem: It's not animals # look.
Investigator: OK # take it.
Erdem: Put where? (S 11, 17 June '94)

b. Investigator: let's play something else.
Erdem: Play what? (S 12, 9 Aug '94)

c. Investigator: Of course I do listen to what you say.
Erdem: You say what? (S 15, 16 Sep '94)

d. Erdem: This is # #

Investigator: what?

Erdem: This is what? (S 21, 15 Nov '94)

e. Investigator: Why doesn't Elifcan talk to you?

Erdem: You tell me what? (S 36, 24 Mar '95)

f. Investigator: End of the week.

Erdem: What do you mean? End of what? (S 41, 26 May '95)

Recall from Chapter 4 that Turkish does not allow wh-phrases to occur in postverbal position. One might argue that the absence of early *in situ* wh-questions in Erdem's speech represents a transfer effect.

The total number of wh-questions broken down by type of wh-phrase is given in Appendix D-2. Unsurprisingly, we do not find the same number of questions for each type of wh-phrase. Overall, Erdem asks fewer *who*, *when* and *whose* questions than *what*, *where*, *how*, *which* and *why*.[15] There is a gradual increase in the use of wh-phrases, *what* and *where* being the most common types used. The overall distribution of different types of wh-phrases in all wh-questions until Sample 46 (24 Aug '95) is given in Table 7.2.

Table 7.2. Distribution of wh-phrases in wh-questions

What	187(+5 wh-*in situ*)/388	**49.48%**
Where	64 (+1 wh-*in situ*)/388	16.75%
How	38/388	9.79%
Which	32/388	8.25%
Why	32/388	8.25%
Who	18/388	4.64%
When	8/388	2.06%
Whose	3/388	0.77%

We now discuss the types of errors found in these wh-questions. As discussed earlier in this chapter, it has been reported that L1 English-speaking children make errors of subject-auxiliary inversion and of missing auxiliary (e.g. Klima &

[15] In a study of questions on child L1 English, Stromswold (1990) also reports that children did not ask the same number of questions for each type of wh-phrase. Overall, she finds fewer questions with *when* and *which* than other types of wh-questions.

Bellugi 1966; Stromswold 1990). In Erdem's L2 English, we also find similar errors. One type of error consists of cases in which the auxiliary *be* or *do* is missing, as in (47).

(47) a. OK # hello # what you doing here? (S 8, 20 May '94)
b. What you doing Belma? (S 10, 13 June '94)
b. What you eating? (S 11, 17 June '94)
c. What I get here? (S 20, 8 Nov '94)
d. We do it this # what you think? (S 21, 15 Nov '94)

The second kind of error is concerned with the lack of subject-auxiliary inversion.

(48) a. What you're saying? (S 19, 1 Nov '94)
b. What we are doing again? Again those pictures. (S 26, 5 Jan '95)
c. What we can play? Do you know? (S 29, 26 Jan '95)
d. What you can do? (S 30, 4 Feb '95)

In order to examine both types of errors, we divide all wh-questions into two groups: non-subject wh-questions vs. (root) subject wh-questions, as the latter does not involve subject-auxiliary inversion.[16] First consider some of the subject questions given in (49).

(49) a. Which number suit the pictures? (S 21, 15 Nov '94)
b. Who want bread? (S 27, 13 Jan '95)
c. Which plane goes slowly? (S 29, 26 Jan '95)
d. Which balloon goes the sky? (S 29)
e. Who lives this house? (S 29)
f. Who want this boat in this xxx? (S 31, 14 Feb '95)
g. Who come here? (S 32, 22 Feb '95)

[16] Our discussion here is mainly restricted to root clauses, since Erdem produces few long-distance wh-questions.

h. Which cow could eat the ginger bread man? (S 35, 16 Mar '95)

Appendix D-3 presents the total number of subject vs. non-subject wh-questions. As we can see, of the 382 wh-questions,[17] 357, being non-subject wh-questions, require subject-auxiliary inversion; only 25 are subject wh-questions (6.67%). Appendix D-4 shows the distribution of the 357 instances of non-subject wh-questions in each sample by wh-phrase.

These 357 questions form the basis of Appendix D-5, which looks at questions with missing auxiliary errors. As can be seen from Appendices D-4 and C-5, of the 15 wh-questions in Samples 8 through 11 (20 May '94–17 June '94), 6 (40%) have a missing auxiliary. Missing auxiliary errors in Samples 19 and 23 (1 Nov '94–29 Nov '94) occur at a rate of 25.00%. Of the 44 questions (Appendix D-4), 11 have missing auxiliaries (Appendix D-5). Some examples are given in (50).

(50) a. What you doing? (S 19, 1 Nov '94)

b. What I get here? (S 20, 8 Nov '94)

c. What you think? (S 21, 15 Nov '94)

d. If you say here where where it go now? (S 21, 15 Nov '94)

e. What he say? (S 22, 22 Nov '94)

Appendix D-5 shows that the proportion of these errors gradually decreases, in Samples 24 through 36 (8 Dec '94–24 Mar '95), for instance, there are 154 non-subjects wh-questions (Appendix D-4) and 29 have missing auxiliary errors (18.83%) (Appendix D-5). After Sample 36, we do not find missing auxiliary errors. Overall, however, we find that in earlier samples the rate of missing auxiliary errors is higher than that of subsequent samples.

We now turn to the rate of inversion errors. Inversion errors in non-subject wh-questions are detailed in Appendix D-6. In order to find inversion errors, one needs to subtract missing auxiliary errors from the total number of non-subject

[17] 382 does not include the six instances of wh-*in situ* questions; 5 with *what*, 1 with *where*.

wh-questions (Appendix D-4). In other words, in cases where the auxiliary is missing one cannot look at inversion errors, precisely because the auxiliary is not provided. Therefore, for all instances of inversion errors in Appendix D-6, we first look at each of the cells in Appendix D-4 which shows the number of non-subject wh-questions; then we find out whether the question has a missing auxiliary; if it does, for each cell we subtract the number of missing auxiliary errors, and then calculate the number of inversion errors. In Sample 27, for example, there are 6 instances of wh-questions with *what* but 3 have missing auxiliary, so 3 is subtracted from 6. Of the remaining 3, 1 has an inversion error, as shown in Appendix D-6.

The first instances of inversion errors are found in Samples 19 and 20 (1 Nov '94–8 Nov '94). Of the 19 non-subject wh-questions in these two samples (see Appendix D-4), 2 have missing auxiliary errors (Appendix D-5). In order to find the number of inversion errors we first subtract 2 from 19 (the total number of non-subject wh-questions in these two samples), of the remaining 17, 2 have inversion errors (11.76%) (Appendix D-6). No inversion errors occur between Samples 21 and 25 (15 Nov '94–29 Dec '94). In Samples 26 through 30 (5 Jan '95–4 Feb '95), however, there are 8 (19.51%) inversion errors out of 41 (50–9 = 41) non-subject wh-questions (50, the total number of non-subject wh-questions and 9, the number of missing auxiliary errors) see Appendix D-4 and Appendix D-5). Some examples are given in (51).

(51) a. What we are doing again? Again those pictures. (S 26, 5 Jan '95)

b. What this is? (S 27, 13 Jan '95)

c. What we can play? (S 29, 26 Jan '95)

d. How he can help? (S 30, 4 Feb '95)

e. How we can do this? (S 30)

The percentage of inversion errors between Samples 33 and 35 (1 Mar '95–16 Mar '95) is somewhat higher, occurring 27.27% (9/33) of the time (42, the total

number of non-subject wh-questions (Appendix D-4), 9, the total number of missing auxiliary errors (Appendix D-5). However, in subsequent samples, we find very few instances of inversion errors.

The number of inversion errors with various types of wh-phrases differs due to the fact that not all wh-phrases are produced at the same rate. Erdem fails to invert *what* more than any other wh-phrases. Of the 23 inversion errors in wh-questions, 11 (47.83%) of them involve *what*. Similarly, missing auxiliary errors with *what* predominate. Out of the 46 instances of missing auxiliary (Appendix D-5), 31 have *what* (67.39%).

Overall, however, despite a certain number of inversion errors and missing auxiliaries discussed in this section, it is not the case that Erdem systematically fails to invert subject and auxiliary or consistently fails to produce auxiliaries in questions. In most cases, these errors occurred alongside utterances where there was correct subject-auxiliary inversion and auxiliary use, as shown in (52).

(52) Context: Playing with Erdem's toys

a. What do you do this car now? (S 28, 20 Jan '95)
Hey don't do. Now what you do my this special car? You got to be careful. It can fall down.

b. What do you mean? (S 31, 14 Feb '95)
What cushion mean? (S 31)

c. What he say here? (S 33, 1 Mar '95)
What do you want to do? (S 33)

d. How I know that? (S 33)
How do you do that? (S 33)

Perhaps even more importantly, similar to the observation made by Hyams (1994) for L1 English, at a time Erdem sometimes fails to invert auxiliary in wh-questions, he *does* invert auxiliaries consistently in yes/no questions. As

mentioned previously, the first instance of an inversion error in wh-questions is found in Sample 19 (1 Nov '94). The following yes/no questions in (53) come from earlier samples, exemplifying subject-auxiliary inversion even before inversion errors in wh-questions appear.

(53) a. Are you not listen me? (S 15, 16 Sep '94)
b. Are you coming? (S 15)
c. Is it very very big? (S 15)
d. Do you know what I got? (S 16, 4 Oct '94)
e. Do you know what this say? (S 16)
f. Can you help me in that one? (S 17, 12 Oct '97)
g. Do you want to see it? (S 18, 20 Oct '97)
h. Can I eat this big big big biscuit? (S 18)
i. Can I get another one please? [=biscuits] (S 18)

Let us consider the example in (53a). (53a) shows that auxiliary *be* and the subject *you* both precede the negative *not*. On the assumption that there is a NegP between the VP and the IP, the subject and the verb are both positioned in a higher position. If this is so, the auxiliaries and modals in (53) must be in a higher position. This finding suggests that Erdem's L2 grammar already has a CP projection and syntactic factors do not appear to be responsible for the errors found in Erdem's wh-questions.

7.4.3 Embedded clauses

This section examines the development of embedded clauses in Erdem's L2 English. We first discuss clauses with *because* and *if* as well as with wh-complements. Second, we examine the use of the complementiser *that* and clauses with verbs such as *want*.

Appendix D-7 presents the number of embedded clauses in the corpus. Erdem's first utterance with *because* occurs in Sample 13 (23 Aug '94). From

Sample 15 (16 Sep '94) onwards, there are numerous instances of clauses with *because* and *if* consistently used in subsequent samples, as shown in (54) and (55).

(54) a. **Because** it's bedtime. (S 13, 23 Aug '94)

b. I just eat my hands **because** I not cut. (S 15, 16 Sep '94)

c. You can get it **because** it is good. (S 15)

d. Don't say anything **because** I do it something # # special. (S 17, 12 Oct '94)

e. We didn't get there # # **because** this is very dangerous. (S 19, 1 Nov '94)

f. No I don't want to **because** I always do it this. (S 20, 8 Nov '94)

(55) a. **If** we go there and if we go there # we coming there. (S 15, 16 Sep '94)

b. I don't know **if** I pass it. (S 20, 8 Nov '94)

c. **If** you want to jump # you press this or press this. (S 20)

d. **If** you know this book # you can say something. (S 21, 15 Nov '94)

e. **If** you fall in the water # if you die, it's my turn. (S 23, 29 Nov '94)

f. **If** you don't know, don't try. (S 25, 29 Dec '94)

g. Don't drop all, **if** you drop all, I'm going to tell my mummy. (S 26, 5 Jan '95)

h. **If** you want go in the door, you got to give me this cards. (S 26)

i. I don't know **if** my mummy wash it. Is it dirty? (S 39, 1 May '95)

j. I don't know **if** I can get it out. (S 43, 9 June '95)

Note that Erdem's *if* clauses in (55) include both conditionals and the cases where *if* introduces complements of verbs such as *know*, as in (55b) and (55i-j).

Similar to the other acquisition facts I have discussed up until now, complement clauses with wh-phrases also start after Sample 15 (16 Sep '94). From the earliest occurrences, Erdem's wh-complement clauses occur both in questions and declarative sentences. Some examples are given in (56).

(56) a. Do you know **what** I got? (S 16, 4 Oct '94)

b. Do you know **what** this say? (S 16)

c. Yes # that's **what** I say. (S 16)

d. I don't know **where** is it. (S 16)

e. I don't know **who** is it. (S 16)

f. I can see **which** one apple. (S 17, 12 Oct '94)

g. I tell you **what** I doing # # I tell you in the minute. (S 19, 1 Nov '94)

h. Look **where** I go now. (S 20, 8 Nov '94)

i. I don't know **where** is my mummy. (S 21, 15 Nov '94)

j. I don't know # I don't know **how** to say. (S 22, 22 Nov '94)

I should note at this point that the production of the complementiser *that* is never frequent in Erdem's data.[18] This is shown in (57) by the 5 occurrences of *that* in the whole corpus.[19]

(57) a. Do you remember *that* I show you a one red man? (S 37, 13 Apr '95)

b. She tells the other boys *that* she tell the other she tell the other boys that that she say *that* let's play now outside. (S 37)

c. I don't think *that* I could get xxx. (S 39, 1 May '95)

d. I just bring him a bear book but I didn't know *that* he like bear. (S 44, 23 June '95)

The data in (58) reflect an important property of the English complementiser system: the complementiser *that* is used optionally.

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[18] A similar finding is reported in Bloom, Rispoli, Gartner & Hafitz (1989). In a study on the acquisition of complementation in child L1 English, Bloom et al. examine longitudinal data from four 2 to 3-year old children. They specifically discuss the acquisition of four complement-taking verbs: two epistemic verbs (*think* and *know*) and two perception verbs (*see* and *look*). What they find is that the production of particular complement types mainly depend on the matrix verb. *Think*, for example, appeared with sentential complements, whereas *know* occurred almost exclusively with *wh*-complements. The use of *that* as a complementiser, however, was rare. Of the 179 complement clauses with *think*, only 3 had *that*. For Bloom *et al.*, the rare occurrences of *that* might be related to the fact that as well as being a plurifunctional lexical item, *that* may not be frequent in the input children hear.

[19] We find one instance of *that* in a relative clause construction, as shown in (i).

(i) I was just doing something *that* you don't know. (S 35, 16 Mar '95)

(58) a. You say me go # I'm go home. (S 12, 9 Aug '94)

b. I know it's a big bird. (S 16, 4 Oct '94)

c. I think it's my dad. (S 18, 20 Oct '94)

d. But you say I can't catch it. (S 19, 1 Nov '94)

e. I think you are looking this picture. (S 26, 5 Jan '95)

f. How do you know it's a telephone? (S 28, 20 Jan '95)

g. Where do you think they are going? (S 38, 22 Apr '95)

These examples show that Erdem's analysis of the complementiser *that* is consistent with the properties of English in that it is used optionally.

A final area we consider is infinitival clauses with verbs such as *want.* Infinitival constructions with *want* appear quite early and are consistently present throughout the full time under consideration. Some examples are given in (59).

(59) a. I want to go new playground. (S 10, 13 June '94)

b. No # please please # I don't want to get off the bike. (S 11, 17 June '94)

c. Do you want to go to Ankara? (S 16, 4 Oct '94)

d. I don't want to play that game. (S 17, 12 Oct '94)

e. Do you want to see it? (S 18, 20 Oct '94)

f. I don't want to learn English. (S 19, 1 Nov '94)

g. What? I don't want to say it again # I play this one. (S 22, 22 Nov '94)

h. I want my mummy to hold me she say. (S 28, 20 Jan '95)

i. I want my brother to speak to me. (S 29, 26 Jan '95)

j. I want two of them to be red and two of them to be yellow. (S 36, 24 Mar '95)

The last column in Appendix D-7 presents the number of utterances with the verb *want* in Samples 10-46.[20]

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[20] The number for *want* given in Appendix D-7 does not include the use of *want* with a nominal complement, as in the following examples.

(i) a. I want coca cola. (S 20, 8 Nov '94)
b. I want these chocolate biscuit. (S 23, 29 Nov '94)

7.5 Discussion

In the previous section, I have described the following properties of Erdem's early L2 grammar:

- Yes/no questions, where correct subject-auxiliary inversion predominates.
- Wh-questions, where *what* and *where* appear first.
- The optional use of the complementiser *that.*
- The productive use of embedded clauses on the basis of data from indirect wh-questions, clauses with *if* and *because*, and infinitival clauses embedded under *want.*

Now I would like to discuss these findings with respect to the Minimal Trees hypothesis. I will argue that a number of properties in Erdem's L2 grammar provide evidence for the early representation of a CP system.

Recall that one of the criteria for the existence of CP in the Minimal Trees model is the production of questions. Under this account, L2 learners should produce wh-questions with a fronted wh-phrase or yes/no questions with a fronted auxiliary/modal verb in order to be able to conclude that they have developed a CP. Furthermore, V&Y-S also require the use of embedded clauses with overt complementisers for the CP system and claim that at the VP or the FP/AgrP stage there is no evidence for embedded clauses. On the basis of the absence of overt complementisers and ("productive") questions, they conclude that learners at the VP and FP/AgrP stage have neither acquired the CP projection nor transferred it from their L1.

In Erdem's early recordings, we do not find regular and productive use of questions or overt complementisers. The relatively productive use of the these constructions appear mainly after Sample 15 (16 Sep '94). The question we are faced with is whether or not we should conclude that Erdem has no knowledge of a CP system up until that point.

What has been repeatedly emphasised in V&Y-S's work is the lack of functional categories in early stages. However, in my opinion it is not clear what is meant by "early stages" in V&Y-S's account. It is not known how long a VP stage lasts or how long it takes for an L2 learner to pass on to the IP/AgrP stage. As discussed previously, on the basis of child L2 data, Lakshmanan (1993/94) and Lakshmanan & Selinker (1994) argue for the existence of both IP and CP in early child English. In an attempt to argue against Lakshmanan & Selinker, V&Y-S (1996a) claim that:

> the data fail to show that a CP was present from the start of data collection.... If we look at the evidence for the development of the CP by the two children, as discussed in Lakshmanan and Selinker (1994), we see that they do not produce any embedded clauses during the first two sessions.... **CP is not present from the start of data collection.** (V&Y-S, 1996b: 27, emphasis mine)

Where does this quote leave us? We are left with a puzzle: do we expect Erdem to produce CP-related phenomena such as subject-auxiliary inversion, wh-questions and wh-complementisers in the first recorded session, 4 April 1994. This was the period during which Erdem was basically producing his first multi-word utterances in English. It is obvious that language acquisition proceeds through time. Nobody would expect an L2 learner to start producing, for example, relative clauses or embedded clauses in the first two or three sessions. The learner must necessarily be exposed to input before language acquisition can take place.

Our discussion at the beginning of Section 7.4.2 has shown that early instances of wh-questions were mainly of the types *what's this, what's that*, and therefore, were excluded from the counting, since one might argue that they do not provide clear examples of wh-movement. However, the data from the same earliest recordings indicate that Erdem correctly **interprets** wh-questions and

provides appropriate answers. The correct interpretation of wh-questions might suggest that Erdem understands and processes sentences with a CP. Consider the following examples.

(60) a. Context: Erdem brings a painting book into the room.
Investigator: Which picture do you want to paint?
Erdem: **This one.** (S 4, 4 Apr '94)

Context: Holding an orange pen.
b. Investigator: Which colour do you want?
Erdem: **Red.** (S 4, 4 Apr '94)
Investigator: No # this is not red, this is orange.

c. Investigator: What are you painting now, Erdem?
Comment: He doesn't know the word for 'ear' but he perfectly understands the question.
Erdem: Kulak # kulak. [=Turkish] (S 4, 4 Apr '94)
English: **Ear.**
Investigator: What are these? Are they ears?
Erdem: Ears # yes ears. (S 4, 4 Apr '94)

d. Investigator: Where are we going now?
Comment: He is joking.
Erdem: **Newcastle going.** (S 5, 11 Apr '94)

e. Context: Playing on the playground. He is on the swing.
Investigator: What are you doing now?
Erdem: Erdem **is flying** # superman **is flying**. (S 5, 11 Apr '94)

f. Investigator: Where is your dad now?
Erdem: My dad **school.** (S 5, 11 Apr '94)

g. Context: sitting in a park, a young man passing nearby said hi to Erdem.

Investigator: Who is that man?

Erdem: **Jenny dad.** (S 5, 11 Apr '94)

Comment: Jenny is Erdem's Russian friend.

h. Investigator: How many friends do you have?

Erdem: My friends **ten**. My friends Turkey, my one friends Newcastle. (S 5, 11 Apr '94)

i. Investigator: Which animals can you see in the picture?

Erdem: **Pig.** (S 6, 22 Apr '94)

j. Context: Looking at other animals in the book.

Investigator: What are they?

Erdem: **I don't know.** (S 6, 22 Apr '94)

Investigator: They are chickens.

Erdem: Chickens # yes # one two three four five six seven eight nine # nine chickens.

k. Investigator: That's great # how about these? What are these?

Erdem: **Sheep** # one two three four five six seven eight, nine sheeps. (S 6, 22 Apr '94)

l. Context: Looking through the window, watching rowers on the river.

Investigator: Where do you want to go now?

Erdem: **Nehir.**

English: 'River'

Comment: He doesn't know the word for 'river'

Investigator: What?

	Erdem:	Nehir # I want to go nehir.	(S 10, 13 June '94)
		'I want to walk by the river'	
m.	Investigator:	What do you think these people are doing?	
	Erdem:	**Swimming.**	
	Investigator:	Are you sure?	
	Erdem:	Yes.	(S 10, 13 June '94)

As the examples in (60) show, Erdem's answers to wh-questions with wh-phrases such as *what, where, who, which* and *how* are all appropriate even in the earliest recordings.[21] Erdem had no problems processing utterances which contain a CP. If his grammar did not have a CP projection, perhaps one would expect to find inappropriate answers to these questions. Crucially, these data given in (60) come from the earliest recorded sessions, presumably fulfilling V&Y-S's criterion of early stage. This result is consistent with Grondin & White's (1996) study on the acquisition of French by two English-speaking children, who also provided appropriate answers to wh-questions. As discussed in Section 7.2, Radford argues that children at the lexical stage have difficulty in comprehending wh-questions involving a preposed wh-words. As we have seen, however, Erdem's responses to the wh-questions in the earliest examples are appropriate.

We now move on to discuss certain predictions which follow from V&Y-S's Minimal Trees hypothesis. One prediction is concerned with the acquisition of subject vs. non-subject wh-questions. If one assumes that root subject wh-questions do not require movement, but other types of wh-questions do, V&Y-S should predict that root subject wh-questions would be acquired first, as movement is not possible due to the lack of CP. Appendix D-3 shows the distribution of subject vs. non-subject wh-questions in Erdem's L2 English. Of the 48 wh-questions until Sample 20 (8 Nov '94), none of them are subject wh-

[21] Note that recording started on the second month of the data collection.

questions. Overall, of the 382[22] wh-questions until Sample 46 (24 Aug '95), only 25 (6.67%) are subject wh-questions. Our results do not appear to support the (potential) prediction that subject wh-questions should occur earlier than non-subject wh-questions.

We have also found early uses of infinitival clauses as the complement of the verb *want*. Starting in S 10 (5 June '94), Erdem consistently produced *want* clauses, as in (61).

(61) a. I **want** to play. (S 10, 13 June '94)
b. I **want** to go nehir. (S 10)
c. Yes # I **want** to go to new playground. (S 10)
d. I **want** to fly one. (S 13, 23 Aug '94)
e. I **want** to go river. (S 13)
f. Do you **want** to look at # look at that? (S 17, 12 Oct '94)

Under the assumption that the subject of an infinitival clause is PRO, the analysis of the utterances in (61c-d), for example, is as follows.

(62) a. I want [CP [IP PRO to go to new playground]].
b. I want [CP [IP PRO to fly one]].

These arguments give further support to the view that Erdem's L2 English has a CP system.[23]

Another source of evidence for CP is concerned with the acquisition of complement clauses, which are assumed to require CP. In addition to evidence for syntactic operations such as subject-auxiliary inversion in questions, which roughly starts by Sample 15 (16 Sep '94), we have also shown that complement

[22] Note that 382 does not include the 6 instances of wh *in situ* questions (see Appendix D-2).
[23] We also find that Erdem used *want* as an ECM verb, as in (i), but not until much later.

(i) a. I **want** my mummy to hold me. (S 28, 20 Jan '95)
b. Because my mummy don't **want** me to find where is the biscuit. (S 42, 2 June '95)

clauses with wh-constituents and *because* and *if* were widely produced at a time Erdem was not yet producing certain lexical complementisers, in particular, *that.*

(63) a. Do you know **what** this say? (S 16, 4 Oct '94)

b. No I don't know **where** I go. (S 17, 12 Oct '94)

c. Look # **what** I can do. (S 22, 22 Nov '94)

d. I don't # I don't know **how** I know. (S 22)

e. Call my mum **if** you going. (S 22)

f. Can you go there? **because** I can't shoot here. (S 20, 8 Nov '94)

The presence of overt complementisers certainly provides evidence for a complementiser system. However, the lack of overt complementisers does not mean that Erdem's grammar has no CP system, especially when one considers the fact that the overt complementiser *that* is optional in English. As discussed previously, the absence of the complementiser *that* in Erdem's data is directly in line with the adult English grammar. What this suggests is that the dearth of the complementiser *that* in Erdem's English cannot be attributed simply to the absence of the CP projection, since other CP-elements and complementisers are readily available, as well as the productions of clauses with Ø complementisers, as in (64).

(64) a. I think this boy is crying. (S 21, 15 Nov '94)

b. It say it's very good drink. (S 22, 22 Nov '94)

c. You say I don't ask you some questions but you are asking questions. (S 26, 5 Jan '95)

V&Y-S might argue that Erdem did not produce embedded clauses in the first several recordings. At the beginning of this chapter (Section 7.1), I showed that the types of clauses depend on the properties of complementisers. The delay in the use of embedded clauses might be accounted for by the fact that Erdem first had to acquire individual lexical words for each complementiser. In other words,

the absence of complementisers might be a lexical problem in the sense that he may have simply not yet learned the appropriate lexical items.

Recall that one of the major proposals in the Minimal Trees hypothesis is that L2 learners acquire functional categories through successive developmental stages, namely, VP-IP-CP. Under this account, the acquisition of VP precedes the acquisition of IP; likewise, the acquisition of IP precedes the acquisition of CP. As discussed in Gavruseva & Lardiere (1996), the early emergence of CP prior to IP would provide counter evidence for V&Y-S's theory of the successive development of phrase structure.

Our discussion of inflectional morphology in Chapters 5 and 6 has shown that verbal inflectional elements 3sg *-s* and past tense forms are not produced early on, but rather the development of inflection is gradual. We observe that 3sg *-s*, for instance, is not attested until Sample 15 (16 Sep '94). Even after Sample 15, it is not produced consistently. In contrast, yes/no questions and wh-questions are productively used in particular after Sample 15. Similarly, there are numerous utterances with complementisers such as *because, if* and various kinds of wh-constituents in embedded contexts before the acquisition of verbal inflection. Moreover, some utterances which unambiguously invoke the CP level occur with an uninflected form of the verb. Some examples are illustrated in (65).

(65) a. Do you know what this **say**? (S 16, 4 Oct '94)

b. She **say** I don't want you to hold me. (S 28, 20 Jan '95)

c. That's what she **say**. (S 33, 1 Mar '95)

d. Do you know what my car **do**? (S 34, 8 Mar '95)

e. I think she see robin hood going that way. She want them to go that way. (S 35, 16 Mar '95)

f. I think she **want** to know how we are eating. (S 37, 13 Apr '95)

g. When he is scared of the noise she always **cry**. (S 37)

h. When the baby laughs she **say** something. (S 38, 22 Apr '95)

i. Baby always **cry** when my mummy make the dinner. (S 38)

The examples in (65) show that although 3sg *-s* is not provided, Erdem has knowledge of syntactic operations which involve CP. (65a), for example, is a yes/no question which requires the projection of a CP. Likewise, (65f) shows that Erdem is able to produce a complex CP sentence while the main verb *want* lacks 3sg *-s*.

According to V&Y-S's developmental sequence of VP-IP-CP, one would not expect CP sentences either to occur prior to the use of the 3sg *-s* and past tense or to occur without inflection on the verb. In Erdem's data, however, CP-related elements have been acquired prior to the use of agreement and tense morphemes. These findings show that the absence of inflectional morphology (3sg *-s* or past tense) cannot be attributed to the lack of functional projections.

- **Summary**

As we have seen, arguments for the Minimal Trees hypothesis are typically based on the early absence of morpho-phonological material associated with functional projections. Thus, the absence of auxiliaries, modals, and subject-verb agreement has been taken as evidence for the absence of IP. Similarly, the absence of overt complementisers and questions has been interpreted as evidence for the lack of CP. In Erdem's data, however, evidence for a CP-system comes from various sources: the correct interpretation of wh-questions even in the first recorded sessions and the presence of questions although few in number in initial recordings. We have also noted that a considerable number of embedded sentences occur with *if, because* and various kinds of wh-phrases as well as with the verb *want* in infinitival contexts. Furthermore, the findings in this study do not support Vainikka & Young-Scholten's successive stages of development.

7.6 Conclusion

What I have attempted to show is that empirical considerations lead one to conclude that in contrast to the Minimal Trees model Erdem's early L2 grammar provides evidence for a CP system.

Although the earliest data on his production of questions indicate that question formation becomes productive gradually, I have argued that no one would expect Erdem, or any other language learner, to produce yes/no questions or wh-questions from the very start of data collection, as exposure to language is necessary, of course, and just as obviously, individual lexical items have to be learned and stored in order to be freely accessed in production.

In the case of subordinate clauses, for V&Y-S the strongest evidence for CP would come from embedded clauses with an overt complementiser. Embedded clauses in Erdem's English, however, emerge long before the use of the lexical complementiser *that* and are used consistently in particular after Sample 15 (16 Sep '94). I have suggested that the absence of various complementisers in early recordings stem from the fact that it took Erdem some time to learn these lexical items.

Furthermore, not only is there evidence for the CP system in Erdem's early L2 grammar, but the developmental sequence of VP-IP-CP is also not supported in the data. One cannot overlook the fact that yes/no questions, inverted wh-questions and complement clauses are used consistently at a point in which certain inflectional verbal morphology, i.e. 3sg *-s* and past tense, does not appear to be productive. In contrast to V&Y-S's claim, our data do not show that Erdem has acquired IP-related elements and hence their projections before the acquisition of CP-related elements.

I conclude that V&Y-S' model of the gradual development of functional categories cannot explain the acquisition facts in Erdem's English. Rather, these data suggest that functional categories and their projections are available in Erdem's early interlanguage. My analysis of Erdem's data is compatible with the

previous work on child L2 acquisition reported in Grondin (1992), Grondin & White (1996), Lakshmanan (1993/94) and Lakshmanan & Selinker (1994). These studies also suggest that functional categories are present from the beginning of L2 acquisition.

CHAPTER 8

CONCLUSION

In this study I have examined the acquisition of English syntax by a Turkish-speaking child. My aim has been to provide analyses of the child L2 data in light of the theoretical proposals in L2 acquisition theories. In this final chapter, I would like to review what I consider to be the main findings of this study. I begin by reviewing the empirical findings and then turn to general theoretical issues.

First, I have noted that with recent advances within the Principles and Parameters theory a large body of work focussed on whether or not L2 acquisition was also constrained by UG. Due to the observed differences between L1 and L2 acquisition, some L2 researchers claimed that L2 learners have no access to UG, or perhaps have a limited access in that only L1-related principles and parameters are available (e.g. Bley-Vroman 1989, 1990; Clashen & Muysken 1986, 1989; Schachter 1989, 1990), while others argued that, even though L1 values might make up the initial hypothesis, interlanguages are constrained by UG (e.g. Schwartz 1991, Schwartz 1992; Thomas 1993; White 1985, 1989, 1990). Under this latter view, UG parameters can be reset if L1 and L2 differ with respect to the values they have for some parameters.

What is important is that adopting the view that L2 learners have access to UG does not necessarily mean that L2 acquisition is identical to L1 acquisition. Given the fact that the L2 learners' "initial state" differs from that of L1 learners, one would expect that transfer effects occur. Perhaps the more appropriate question is how and to what extent the learner's L1 has an impact on the development of a second language. On the basis of data from Erdem's earliest utterances, this was the first issue I addressed in this study: the extent of the L1 influence in L2 acquisition.

The examination of the development of the VP and negation in this study shows that:

- The earliest utterances consistently have an XV order until Sample 9.
- Of the 23 verbal utterances in the first 8 samples, 21 (90.91%) have are XV.
- All negated utterances until Sample 6 (22 Apr. '94) have either V+Neg or N+Neg order.
- 17 out of 19 (89.47%) negated nominals in the first 7 samples have the N+NEG pattern. Unfortunately, there are little data on verbal negation in the earliest examples. Of the 4 instances until Sample 9 (5 June '94), all 4 have the V+Neg order however.
- After Sample 9 (5 June '94), the negative element *not* is correctly positioned after the auxiliary/modal or before the lexical verb, as in adult English.
- Unlike L1 English, the rate of negative utterances in pre-subject position is low 2.36 % (5/212) (cf. Pierce 1992).
- All preverbal negation involves overt subjects.

Based on quantitative analysis of Erdem's data on the development of VP and negation, I proposed that:

- The headedness of the VP transfers from the L1 Turkish.
- The headedness of the NegP transfers from the L1 Turkish.

I then discussed these findings in relation to the recent hypotheses proposed for the extent of L1 influence in L2 acquisition, namely Vainikka & Young-Scholten's Minimal Trees hypothesis and Schwartz & Sprouse's Full Transfer/Full Access hypothesis. Vainikka & Young-Scholten claim that only lexical categories are transferred to the earliest stage of L2 acquisition. Assuming that NegP is a functional projection, I have argued that, in contrast to Minimal Trees, not only lexical projections but also functional projections transfer into the L2 initial state. Furthermore, with respect to the acquisition of functional categories,

Minimal Trees predict identical developmental patterns in L1 and L2 acquisition. Erdem's development of negation, however, is distinct from child L1, as XNEG is not attested in the L1 acquisition of English. A theory claiming that functional projections gradually develop in both L1 and L2 acquisition cannot explain this difference. I have concluded that the findings in Erdem's early English can best be explained by the Full Transfer/Full Access hypothesis.

With regard to these findings from Erdem's earliest English data, I would like to comment on what is claimed in early transfer studies. Recall from Chapter 2 that German-English child L2 data in Wode's (1977) study provide evidence for post-verbal negation at Stage 4. This is compatible with the negation pattern in L1, German. On the basis of this finding, Wode argues that language transfer is selective and the learner must attain a level of structural development which evidences a high degree of similarity between L1 and L2. In contrast to Wode, the use of the Turkish pattern both in negatives and VPs in Erdem's earliest English presents counter evidence for the notion of selectivity of transfer in L2 acquisition. It is not the case that Erdem utilised the Turkish pattern when he reached a certain level where there was a degree of similarity between English and Turkish. On the contrary, he produced the XV and N+Neg-V+Neg orders at the very beginning of his L2 development.

Recall also that apart from Wode's study on the development of negation, there was no mention of transfer of negation in early child L2 studies (e.g. Cancino *et al.* 1978; Hakuta 1974; Milon 1974). Dulay and Burt (1974b) in particular emphasise that "...though Milon did not mention the Japanese negation structure, it is different from what his subject produced. Negation in Japanese is a bound morpheme, always attached to the right of the verb stem. Moreover, verbs appear at the end of the sentence" (1974b: 243). It is important to note that despite the small number of V+Neg utterances, Erdem's earliest verbal negation with *finish no, play no, colour no* appears to show that he treated *no* as if it was the negative bound morpheme *-mA* in Turkish. Perhaps it is plausible to argue

that lack of evidence for language transfer with respect to a particular phenomenon does not tell us much about L1 influence, especially if one draws conclusions only on the basis of production data. Elicited data from an earlier stage might have shown different results in Milon's study. This is, in fact, true of the present study as well. The data discussed here are virtually spontaneous production data. Presumably it would have been possible to find more post-verbal negative utterances if the data had been elicited.

In regard to transfer effects on word order, to the best of my knowledge no other study has shown the consistent XV order in early child L2 acquisition. In a recent study, Yamada-Yamamoto (1995) discusses longitudinal data from a Japanese-speaking child, Jun, who also acquired English in a natural setting. Although Yamada-Yamamoto discusses "direct" and "indirect" L1 influence on child L2 acquisition with respect to the OV vs. VO orders, she reports that "Jun sometimes produced the OV sequence in his utterances during the data collection period as a whole (e.g. this ones pull)" (Yamada-Yamamoto, 1995: 183). Of the 4 instances of OV utterances discussed in Yamada-Yamamoto's study, *bananas eat it* and *eating banana* were uttered on the same day. Yamada-Yamamoto stated that "If Jun's acquisition of the VO sequence had been directly influenced by the Japanese OV word order, he should have produced at least more utterances with the OV sequence. In reality, however, he scarcely produced any of these 'deviant' utterances" (Yamada-Yamamoto, 1995: 192). It should be noted, however, that Jun "was regularly exposed to English from 2;1 onwards and was observed from 3;4 to 4;8" (Yamada-Yamamoto, 1995: 5). It is clear that there is a difference in age between Erdem and Jun in terms of the first exposure to English. We have seen in Chapter 4 that Erdem had a good command of Turkish at the onset of this study. By contrast, in Yamada-Yamamoto's study, the acquisition of L1 Japanese and L2 English appears to occur at the same time, at least to a certain extent.

The second issue addressed in this study concerns the acquisition of functional categories IP and CP in Erdem's interlanguage development. Chapter 5 was concerned with the development of IP. We first described the data and then discussed the findings with respect to the Minimal Trees hypothesis.

In regard to INFL-related elements in Erdem's L2 English, we have found that:

- The use of utterances with copula *be* and auxiliary *be* is productive early on, by Sample 10 (13 June '94).
- The early use of modal constructions was mainly restricted to the modal *can*, appearing at Sample 15 (16 Sep. '94), other types being acquired later.
- Auxiliaries and modals are always correctly positioned before *not.*
- As in L1 acquisition, no inflectional errors are found with any of the INFL elements under discussion (i.e., the use of 3sg -s or the progressive inflection *-ing* with modals or auxiliaries).
- There is no evidence for productive use of 3sg *-s* or past tense forms, when other INFL elements such as copula *be* and auxiliary *be* became productive.
- Although there are null subjects early on, after Sample 8 (20 May '94) overt subject dominate.
- Unlike L1 English, virtually all pronominal subjects are nominative.

In terms of evidence for the presence of INFL in Erdem's grammar, first we have emphasised that Erdem consistently produced utterances with copula *be* and auxiliary *be* at an early stage. In addition, we have found that after the first stage in which L1 influence was observed, Erdem placed auxiliaries and modals correctly with respect to *not*[2] suggesting that they are raised to an INFL category. We find no errors in which the auxiliary *be,* for example, is positioned incorrectly in negated utterances. On the assumption that *be* raises to INFL over negation,

[2] With the exception of one utterance in Sample 21 (Chapter 4 fn. 7). Not it's crying. (S 21, 15 Nov '94)

the lack of errors in negated utterances is taken as evidence for the existence of an INFL system in Erdem's early grammar.

The early use of certain IP-related elements has consequences for Vainikka & Young-Scholten's theory of phrase structure in L2 acquisition. Under Minimal Trees, the lack of functional elements would mean missing functional categories. We have shown, however, that while agreement and tense morphology is developing gradually, evidence from other IP-related elements such as copula *be*, auxiliary *be* and negatives suggests that Erdem's early L2 grammar has IP. We argued that adopting Minimal Trees would lead to conceptual problems in that, on the basis of evidence from *be* and negatives IP is present, but at the same time it is absent as Erdem does not produce tense and the agreement morpheme *-s*. We thus conclude that the lack of agreement or tense morphology in the early stages cannot be taken as evidence that INFL is absent in Erdem's grammar, because these are language-particular morphological affixes that need to be learned. This in turn led us to suggest that in line with recent theorizing in morphology (e.g. Beard 1987, 1988; Halle & Marantz 1993) the findings in this study provide evidence for a distinction between morphological features and the post-syntactic phonological realizations of these features as individual affixes.

The findings in this study also have implications for Eubank's Weak Parametric Transfer (Valueless Features) hypothesis, according to which the [–strong] value of inflection in English should result when 3sg *-s* or tense morphology is acquired. I have shown, however, that while the development of inflection is rather gradual, Erdem acquired target-like verb placement by Sample 9 (5 June '94), well before the regular use of inflection. As discussed in Chapters 5 and 6, the rate of inflection even at Sample 46 (24 Aug. '94) is still around 60%.

In addition, the distribution of overt subjects in Erdem's early L2 grammar, starting by Sample 8 (20 May '94) challenges the Minimal Trees hypothesis. On the assumption that subjects raise to the specifier of an INFL category, i.e. the specifier of AgrSP, to check their nominal features, the high percentage of overt

subjects also provides evidence for the presence of an early inflectional system in Erdem's English.

I have also discussed pronominal case errors in Erdem's L2 English. Recall that English-speaking children produce non-nominative pronouns in nominative contexts. For some researchers (e.g. Radford 1995; Vainikka 1993/94), these errors result from differences between adults' and children's clause structure. Children's clauses might lack functional categories such as AgrSP, and therefore will not be able to check nominative case as the relevant functional position for the subject is missing. In Erdem's data, however, we found only three examples of non-nominative pronouns in the subject position, suggesting that Case-checking is operative in his L2 English. Following Gavruseva & Lardiere (1996), we attributed this to the Case-checking mechanism being transferred from the L1, which suggests further evidence for the transfer of functional categories in L2 acquisition. This transfer-based analysis of nominative subjects is also compatible with my proposal that functional projections also transfer into the initial representation of the L2 (Chapter 4, Haznedar 1997). We conclude that these data are not compatible with Vainikka & Young-Scholten's claim that the early L2 development is lexical. By contrast, our findings provide evidence for the presence of an IP in Erdem's early L2 English.

Chapter 6 examined the phenomenon of Optional Infinitives/Root Infinitives in Erdem's data. In particular we have investigated whether or not there is a relationship between the demise of null subjects and the development of verbal inflection. In terms of verbal inflection our discussion was restricted to the development of 3sg -s and past tense forms. The findings are as follows:

- Inflected (3sg *-s*, reg/irreg past) and uninflected verb forms consistently alternate.
- The development of verbal inflectional morphology is gradual (Phillips 1995).
- The use of 3sg *-s* is virtually error free; that is, when it appears, it is correct.

- **No** developmental relation exists between the regular use of verb inflection and the demise of null subjects (Lakshmanan 1991). While null subjects disappear fairly early, the rate of uninflected verbs remains high throughout the entire period.
- There are **no** instances of null subjects with the **inflected** form of the verb.

First, we have noted that there is not a developmental relation between the regular use of verb inflection and the disappearance of null subjects. This result has consequences for Vainikka & Young-Scholten's claim that the acquisition of the agreement paradigm interacts with the setting of the null subject parameter; that is, with the acquisition of the subject-verb agreement paradigm, optional subjects are expected to become obligatory. Note that by the time Erdem stops producing null subjects (by Sample 13, 23 Aug, '94), 3sg *-s* has not even appeared in his interlanguage grammar. Thus it does not appear to be the case that the acquisition of the 3sg *-s* has an impact on the demise of null subjects.

We have also seen that null subjects are never used with the inflected form of the verb and almost all of the pronominal subjects but three are non-nominative at a time when inflected and uninflected forms alternate. These findings show that whatever Erdem is doing is different from what is found in L1 acquisition of English during the Optional Infinitive/Root Infinitive stage. In light of these differences between child L1 English and Erdem's L2 English, we argued that it is not the case that Erdem goes through the same OI/RI stage proposed for the L1 child, rather the late acquisition of verb inflection is a reflection of morphological difficulties rather than syntactic problems Erdem is faced with. The gradual development of verbal morphology is a highly specific property of English. What we argue then is that UG cannot guide the learner in the acquisition of language-particular aspects of English. The present results on the acquisition of verb inflection in Erdem's L2 data are in accord with this proposal. We also argued that this proposal has potential consequences for adult L2 acquisition. If Erdem simply has a problem with realising the morphological form of verbs, then

missing inflection in adult L2 acquisition might stem from the same difficulty, with no ramifications for the L2 acquisition of syntax.

Chapter 7 examined the development of the functional category CP. Similar to Chapter 5, first, the data are described and then the results are discussed in terms of Vainikka & Young-Scholten's claim about the development of phrase structure in L2 acquisition.

We examined the development of yes/no questions, wh-questions and embedded clauses. The findings are as follows:

- Despite some instances, there are no productive uses of yes/no questions, wh-questions, and complement clauses in the very early recordings. However, Erdem had no difficulty in interpreting English wh-questions at the very beginning of data collection.
- The earliest questions include instances of intonation questions: of the 11 questions until Sample 15 (16 Sep '94), 5 (45.46%) are intonation questions.
- Infinitival complements of verbs such as *want* occur early, by Sample 10 (13 June '94), and are used consistently.
- In addition to the increase in the number of questions by Sample 15 (16 Sep. '94), we also find frequent use of complement clauses with *because* and *if* as well as with wh-phrases.
- Two types of errors occur in wh-questions: missing auxiliaries and inversion errors. Initially the rate of missing auxiliary errors is high, occurring at 55% in Samples 19 through 23 (1 Nov '94-29 Nov '94).

I have argued that Erdem's early data provide evidence for the availability of CP. Here is the summary of the arguments. Given Vainikka & Young-Scholten's claim that L2 learners at the lexical stage have no syntactic C-system and thus use neither preposed auxiliaries nor preposed wh-phrases, then one might expect it to be the case that Erdem produces neither yes/no questions nor wh-questions containing initial wh-phrases at an early stage. On a superficial level this indeed

seems to be case. We do not find yes/no questions or wh-questions at the very beginning of the data collection. We have argued, however, that it would not be plausible to expect any L2 learner to produce yes/no questions, wh-questions or embedded clauses from the beginning of the data collection. Furthermore, we observe that even in the earliest recordings, such as Sample 4 (4 Apr '94), Erdem interprets wh-questions correctly, suggesting that his early grammar might have CP.

With respect to yes/no questions, we observed that Erdem never inverted verbs which could result in ungrammatical questions in English. For instance, we find no occurrences in which he inverts thematic verbs with the subject. What this means is that Erdem knows that only auxiliaries, modals and copula *be* alone raise. So the important finding is that the verb and the subject are inverted correctly in yes/no questions.

We then pointed out that Erdem's earliest wh-questions are mainly non-subject wh-questions, the first instances of a subject wh-question appearing in Sample 21 (15 Nov '94). This does not appear to be compatible with the Minimal Trees, as one would expect to find subject wh-questions to occur in the early stages as they are assumed not to involve movement.

In addition, a considerable number of utterances consistently occur with *if, because* and various kinds of wh-phrases in embedded contexts, mainly starting by Sample 15 (16 Sep '94). With respect to the use of *that*, we observe that, in line with the English grammar, it is optionally overt. This finding also challenges the Minimal Trees hypothesis as it relies on overt production of complementisers as a criterion for acquisition of CP.

Finally, we have pointed out an unsupported prediction that follows from Minimal Trees; namely, phrase structure develops successively through a developmental sequence of VP-IP-CP. Recall that under Vainikka & Young-Scholten's analysis, while auxiliaries, modal verbs and verbal agreement morphology are not attested at the bare-VP stage, L2 learners produce them at the

AgrP stage, nearly 90% of the time. However, it is assumed that CP-related elements such as embedded clauses, wh-questions, and inverted yes/no questions are still not available at this stage, as CP is still in the process of emerging. Hence, in this theory the learner is expected not to have acquired CP prior to the acquisition of a lower functional category. Erdem's data, however, show that CP projection is acquired before the overt production of some elements associated with the functional projection IP. In order to substantiate our analysis, we have looked at the development of yes/no questions, wh-questions and complementisers in relation to the development of tense and agreement morphemes. What we find is that questions and embedded clauses which require a CP projection prevail long before some of the IP elements, such as 3sg *-s* and past tense morphology.

- **Final remarks**

In this study, I have discussed both the differences and similarities between child L1 and child L2 acquisition, as well as child L2 and adult L2 acquisition. There are a number of areas where the findings in this study are similar to those reported for L1 acquisition of English: in negatives, auxiliaries and modals are always correctly positioned with respect to the verb, suggesting that there are no movement errors (e.g. Pierce 1992). While modals are acquired gradually, no inflectional errors occur (e.g. Pinker 1984; Stromswold 1990). The development of verb inflection follows a rather gradual pattern (e.g. Phillips 1995). Inflected and uninflected forms alternate (e.g. Phillips 1995; Wexler 1994). There are overgeneralisation errors in past tense forms (e.g. Brown 1973; Kuczaj 1977; Marcus *et al.* 1992). Wh-questions involve missing auxiliary and inversion errors (Klima & Bellugi 1966; Stromswold 1990).

However in other respects Erdem's data are entirely different from child L1 acquisition of English: there are clear transfer effects on the development of VP and negation in early stages. The proportion of pre-subject negation is rather low.

There are no instances of null subjects in negatives. Null subjects disappeared early on. In striking contrast to L1 acquisition of English, non-nominative subjects are extremely rare and null subjects are never used with the inflected form of the verb.

I would argue that these differences should be taken as evidence against the general view that child L2 learners, in contrast to adult L2 learners, approach the learning task in exactly the same fashion as the L1 child. In particular, the analysis of Erdem's data on the development of VP and negation shows that, similar to adult L2 learners, Erdem's L2 initial state is different from that of a child L1 learner and makes use of previous linguistic knowledge. This shows that at least some of the processes underlying child L2 acquisition are similar to those of adult L2 acquisition.

However, the fact that there are differences between child L1 and child L2 acquisition does not imply that the two cognitive processes are fundamentally distinct in nature. Erdem's early grammar is not "correct" from the target grammar perspective, because it makes use of the properties of his L1. What is important, however, is that the ways in which his grammar diverges from target language are constrained by UG. In other words, while his early L2 grammar utilises L1 Turkish, it still falls within the boundaries of what is allowed by UG. Given our hypothesis on L1 influence, Full Transfer/Full Access, it is expected that parameter resetting occurs. As we have seen, Erdem had no difficulties resetting parameters whose values were initially chosen from Turkish. This shows that Erdem's interlanguage grammar is fully definable in terms of principles and parameters of UG.

An immediate question arises in relation to the issue of UG accessibility in adult L2 acquisition. Following Schwartz (1992), and assuming that child L2 acquisition falls within the constraints of UG, similarities between adult and child L2 acquisition will provide a strong argument for a UG-based analysis of adult L2 acquisition. One might argue that the well-known differences between adult

and child L2 acquisition may not simply be due to the L2 child constructing a grammar in an identical way to the L1 child, as there are also similarities between the adult and child L2 acquisition, transfer occurring in both. In this regard, the study of child L2 acquisition has the potential to provide us with a better characterization of both adult and child L2 acquisition.

I would like to conclude that child L2 acquisition is an area of considerable interest which would benefit from further investigation. While the present study makes clear that even a very young child L2 learner makes use of his L1 knowledge, further research with more subjects is necessary to determine with certainty whether and to what extent the findings reported in this case study will be supported. One might wonder about the extent of L1 influence in a reverse situation, namely the acquisition of Turkish by English-speaking children. In addition, comparisons of Erdem's data with those from adult Turkish learners of English might provide us with insights into the extent of L1 influence and access to innate mechanisms in adult L2 acquisition. I am hopeful that future research both in child L2 and adult L2 acquisition will provide detailed results.

In conclusion, given the fact that there is strong evidence for L1 influence in very early child L2 acquisition, future L2 research should continue investigations on the extent of L1 grammar in L2 acquisition.

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APPENDIX A: TABLES FOR CHAPTER 4

Appendix A-1 Number & Percentage of XV vs. VX Utterances						
Sample	RecordingDate	XV	% XV	VX	% VX	Total
S1	9 Mar 1994	0	**0%**	0	0%	0
S2	17 Mar 1994	0	**0%**	0	0%	0
S3	23 Mar 1994	2	**100%**	0	0%	2
S4	4 Apr 1994	1	**100%**	0	0%	1
S5	11 Apr 1994	7	**100%**	0	0%	7
S6	22 Apr 1994	2	**66.70%**	1	33.30%	3
S7	6 May 1994	3	**100%**	0	0%	3
S8	20 May 1994	6	**85.70%**	1	14.30%	7
S9	5 Jun 1994	0	0%	21	100%	21
S10	13 Jun 1994	4	9.52%	38	**90.48%**	42
S11	17 Jun 1994	4	13.79%	25	**86.21%**	29
S12	9 Aug 1994	0	0%	20	**100%**	20
S13	23 Aug 1994	0	0%	57	**100%**	57
S14	30 Aug 1994	1	6.70%	14	**93.30%**	15
S15	16 Sep 1994	1	1.80%	55	**98.20%**	56
S16	4 Oct 1994	1	1.20%	82	**98.80%**	83
S17	12 Oct 1994	1	1.10%	93	**98.90%**	94
S18	20 Oct 1994	0	0%	93	**98.90%**	93
S19	1 Nov 1994	0	0%	69	**100%**	69
S20	8 Nov 1994	0	0%	132	**100%**	132
S21	15 Nov 1994	0	0%	79	**100%**	79
S22	22 Nov 1994	0	0%	83	**100%**	83

Appendix A-2 Number & Percentage of V+NEG vs. NEG+V Utterances						
Sample	RecordingDate	V+NEG	% V+NEG	NEG+V	% NEG+V	Total
S1	9 Mar 1994	1	**100%**	0	0%	1
S2	17 Mar 1994	1	**100%**	0	0%	1
S3	23 Mar 1994	2	**100%**	0	0%	2
S4	4 Apr 1994	0	0%	0	0%	0
S5	11 Apr 1994	0	0%	0	0%	0
S6	22 Apr 1994	0	0%	0	0%	0
S7	6 May 1994	0	0%	0	0%	0
S8	20 May 1994	0	0%	0	0%	0
S9	5 Jun 1994	0	0%	4	**100%**	4
S10	13 Jun 1994	0	0%	3	**100%**	3
S11	17 Jun 1994	0	0%	3	**100%**	3
S12	9 Aug 1994	1	25%	3	**75%**	4
S13	23 Aug 1994	0	0%	16	**100%**	16
S14	30 Aug 1994	0	0%	3	**100%**	3
S15	16 Sep 1994	0	0%	24	**100%**	24
S16	4 Oct 1994	0	0%	25	**100%**	25
S17	12 Oct 1994	0	0%	24	**100%**	24
S18	20 Oct 1994	0	0%	27	**100%**	27
S19	1 Nov 1994	0	0%	16	**100%**	16
S20	8 Nov 1994	0	0%	26	**100%**	26
S21	15 Nov 1994	0	0%	18	**100%**	18
S22	22 Nov 1994	0	0%	19	**100%**	19

Appendix A-3 Number & Percentage of N+NEG vs. NEG+N Utterances						
Sample	RecordingDate	N+NEG	% N+NEG	NEG+N	% NEG+N	Total
S1	9 Mar 1994	3	**100%**	0	0%	3
S2	17 Mar 1994	3	**100%**	0	0%	3
S3	23 Mar 1994	1	**100%**	0	0%	1
S4	4 Apr 1994	1	**100%**	0	0%	1
S5	11 Apr 1994	1	**50%**	1	50%	2
S6	22 Apr 1994	8	**89.90%**	1	11.10%	9
S7	6 May 1994	0	0%	0	0%	0
S8	20 May 1994	0	0%	5	100%	5
S9	5 Jun 1994	0	0%	5	**100%**	5
S10	13 Jun 1994	0	0%	4	**100%**	4
S11	17 Jun 1994	0	0%	1	**100%**	1
S12	9 Aug 1994	0	0%	4	**100%**	4
S13	23 Aug 1994	0	0%	3	**100%**	3
S14	30 Aug 1994	0	0%	0	**0%**	0
S15	16 Sep 1994	0	0%	4	**100%**	4
S16	4 Oct 1994	0	0%	3	**100%**	3
S17	12 Oct 1994	0	0%	6	**100%**	6
S18	20 Oct 1994	0	0%	4	**100%**	4
S19	1 Nov 1994	0	0%	2	**100%**	2
S20	8 Nov 1994	0	0%	1	**100%**	1
S21	15 Nov 1994	0	0%	4	**100%**	4
S22	22 Nov 1994	0	0%	3	**100%**	3

APPENDIX B TABLES FOR CHAPTER 5

APPENDIX B-1

Unanalysed utterances with *It's/It is/This is* in Samples 6 and 7

Sample 6 (22 Apr '94)

Investigator: First you find out what this is # then I will find out what you have in your hand.

Investigator: OK? # what is this?

Erdem: It's a ball?

Investigator: What else do you think it is?

Erdem: It's a television?

Contexts: Looking at the pictures in a book

Investigator: What?

Erdem: Mouse # it's a cat.

Investigator: Is the cat sleeping?

Erdem: No.

Investigator: What is it doing? # what is the cat doing?

Erdem: It is a playing.

Investigator: What are these?

Erdem: It's a banana.

Investigator: What else?

Erdem: It's a car.

Investigator: What colour is this?

Erdem: Pink.

Investigator: That's right.

Erdem: Red.

Erdem: This is a yellow.

Erdem: Red # yellow # red.

Investigator: What's this?

Erdem: <Three three three> [/] three.

Investigator: Three what?

Mother: He is drawing 3.

Investigator: Oh # is this 3?

Erdem: It's a one (1) # < it is a> [//] # it is a six six six.

Context: Erdem is eating yogurt.

Investigator: Erdem # tell me what you are doing now?

Erdem: # It is a yogurt yum yum.

Context: Looking at the animals in the book

Erdem: Look # it's a cat.

Erdem: It's a I don't know.

Investigator: What are they?

Erdem: It's a dinosaur.

Context: He is walking his toy

Erdem: piti piti piti

Investigator: Is it walking?

Erdem: It's a walking.

Investigator: Do you think this is a tiger?

Erdem: No # this is a cat.

Erdem: Mouse # cat.

Sample 7 (6 May '94)

Erdem: This is a playing books.

Investigator: What?

Erdem: It's a playing books.

Investigator: Can you tell me again? # how many bears can you see in the picture?

Erdem: One one # two three four five six seven # seven.

Investigator: Can you tell me the number of the frogs?

Context: looking at numbers

Erdem: This is a seven.

Investigator: Oh # do you know the numbers?

Investigator: Yeah # you know the numbers # good.

Erdem: Seven.

Erdem: It's a rain # look.

Investigator: What?

Erdem: Look # rain # rain rain.

Investigator: Oh yeah # it is raining.

Investigator: Can you see a bird in the picture?

Erdem: One two three four five six seven eight # oh eight.

Investigator: What are they?

Erdem: This is a eight.

Investigator: No # what are they?

Erdem: It's a car # car # look car # teddy bear.

Investigator: Are there five teddy bears in this picture?

Erdem: One two three four five six # six hat.

Investigator: How about cars? # are there +...

Erdem: One two three.

Investigator:	Three what?
Erdem:	Three # this is three.
Investigator:	How many birds can you see?
Erdem:	Birds # one two.
Erdem:	This is 'E'.
Investigator:	How do you know these letters and numbers?
Context:	He starts singing a nursery rhyme
Erdem:	E S A B C D E F G # 8 I J # K.
Investigator:	Oh # there is a little girl there.
Erdem:	Hangisi boyanacak? [=Turkish]
English:	Which one should be painted?
Addressee:	Mother.
Mother:	Hangisini istiyorsan.
English:	Whichever you want?
Erdem:	This is picture.
Erdem:	It's barking.
Erdem:	This is a X.
Investigator:	He knows all the letters in English.

Appendix B-2 Number and Percentage of the Copula *be*						
Sample	Recording Date	copula *be*	missing copula *be*	Total	% *be*	% missing *be*
S 1-4	9 Mar-4 Apr 94	0	0	0	-	-
S 5	11 Apr 1994	0	**5**	5	0.00	100.00
S 6	22 Apr 1994	**1**	0	1	100.00	0.00
S 7	6 May 1994	0	4	4	0.00	100.00
S 8	20 May 1994	17	1	18	94.44	5.56
S 9	5 Jun 1994	20	3	23	86.96	13.04
S 10	13 Jun 1994	31	6	37	83.78	16.22
S 11	17 Jun 1994	36	1	37	97.30	2.70
S 12	9 Aug 1994	16	0	16	100.00	0.00
S 13	23 Aug 1994	17	1	18	94.44	5.56
S 14	30 Aug 1994	6	2	8	75.00	25.00
S 15	16 Sep 1994	23	4	27	85.19	14.81
S 16	4 Oct 1994	36	3	39	92.31	7.69
S 17	12 Oct 1994	21	1	22	95.45	4.55
S 18	20 Oct 1994	48	3	51	94.12	5.88
S 19	1 Nov 1994	25	1	26	96.15	3.85
S 20	8 Nov 1994	60	2	62	96.77	3.23
S 21	15 Nov 1994	41	2	43	95.35	4.65
S 22	22 Nov 1994	39	3	42	92.86	7.14
S 23	29 Nov 1994	44	2	46	95.65	4.35
S 24	8 Dec 1994	38	1	39	97.44	2.56
S 25	29 Dec 1994	29	0	29	100.00	0.00
S 26	5 Jan 1995	51	4	55	92.73	7.27
S 27	13 Jan 1995	35	4	39	89.74	10.26
S 28	20 Jan 1995	22	5	27	81.48	18.52
S 29	26 Jan 1995	65	0	65	100.00	0.00
S 30	4 Feb 1995	64	0	64	100.00	0.00
S 31	14 Feb 1995	177	7	184	96.20	3.80
S 32	22 Feb 1995	108	0	108	100.00	0.00
S 33	1 Mar 1995	129	3	132	97.73	2.27
S 34	8 Mar 1995	94	3	97	96.91	3.09
S 35	16 Mar 1995	55	0	55	100.00	0.00
S 36	24 Mar 1995	98	0	98	100.00	0.00
S 37	13 Apr 1995	99	3	102	97.06	2.94
S 38	22 Apr 1995	59	0	59	100.00	0.00
S 39	1 May 1995	93	0	93	100.00	0.00
S 40	19 May 1995	53	1	54	98.15	1.85
S 41	26 May 1995	72	1	73	98.63	1.37
S 42	2 June 1995	69	0	69	100.00	0.00
S 43	9 June 1995	77	2	79	97.47	2.53
S 44	23 June 1995	65	1	66	98.48	1.52
S 45	7 Jul 1995	47	3	50	94.00	6.00
S 46	24 Aug 1995	216	3	219	98.63	1.37
Total		2296	85	2381	96.43	3.57

Appendix B-3 Number and Percentage of the Auxiliary *be*						
Sample	Recording Date	aux *be*	missing aux *be*	Total	% aux *be*	% missing *be*
S 1-2	9 Mar-17 Mar 94	0	0	0	-	-
S 3	17 Mar 1994	0	**1**	1	0.00	100.00
S 4	4 Apr 1994	**1**	0	1	100.00	0.00
S 5	11 Apr 1994	2	2	4	50.00	50.00
S 6	22 Apr 1994	0	2	2	0.00	100.00
S 7	6 May 1994	0	0	0	-	-
S 8	20 May 1994	3	6	9	33.33	66.67
S 9	5 Jun 1994	7	4	11	63.64	36.36
S 10	13 Jun 1994	17	6	23	73.91	26.09
S 11	17 Jun 1994	18	6	24	75.00	25.00
S 12	9 Aug 1994	5	3	8	62.50	37.50
S 13	23 Aug 1994	9	17	26	34.62	65.38
S 14	30 Aug 1994	1	5	6	16.67	83.33
S 15	16 Sep 1994	5	5	10	50.00	50.00
S 16	4 Oct 1994	12	20	32	37.50	62.50
S 17	12 Oct 1994	5	15	20	25.00	75.00
S 18	20 Oct 1994	7	15	22	31.82	68.18
S 19	1 Nov 1994	8	12	20	40.00	60.00
S 20	8 Nov 1994	12	22	34	35.29	64.71
S 21	15 Nov 1994	12	16	28	42.86	57.14
S 22	22 Nov 1994	13	29	42	30.95	69.05
S 23	29 Nov 1994	23	6	29	79.31	20.69
S 24	8 Dec 1994	5	10	15	33.33	66.67
S 25	29 Dec 1994	4	5	9	44.44	55.56
S 26	5 Jan 1995	27	19	46	58.70	41.30
S 27	13 Jan 1995	40	8	48	83.33	16.67
S 28	20 Jan 1995	15	6	21	71.43	28.57
S 29	26 Jan 1995	40	3	43	93.02	6.98
S 30	4 Feb 1995	20	7	27	74.07	25.93
S 31	14 Feb 1995	64	17	81	79.01	20.99
S 32	22 Feb 1995	35	8	43	81.40	18.60
S 33	1 Mar 1995	74	10	84	88.10	11.90
S 34	8 Mar 1995	30	2	32	93.75	6.25
S 35	16 Mar 1995	39	2	41	95.12	4.88
S 36	24 Mar 1995	42	7	49	85.71	14.29
S 37	13 Apr 1995	34	3	37	91.89	8.11
S 38	22 Apr 1995	41	1	42	97.62	2.38
S 39	1 May 1995	49	3	52	94.23	5.77
S 40	19 May 1995	29	0	29	100.00	0.00
S 41	26 May 1995	22	1	23	95.65	4.35
S 42	2 June 1995	24	1	25	96.00	4.00
S 43	9 June 1995	32	1	33	96.97	3.03
S 44	23 June 1995	35	0	35	100.00	0.00
S 45	7 Jul 1995	11	2	13	84.62	15.38
S 46	24 Aug 1995	118	6	124	95.16	4.84
Total		990	314	1304	75.92	24.08

Appendix B-4 Number of Modal Verbs													
Sample	Recording Date	can/can't		must	would/wouldn't		could/couldn't		will/won't		shall	might	Total
S1-14	9 Mar/30 Aug 94	0	0	0	0	0	0	0	0	0	0	0	0
S 15	16 Sep 1994	1	2	0	0	0	0	0	0	0	0	0	3
S 16	4 Oct 1994	11	4	5	0	0	0	0	0	0	0	0	20
S 17	12 Oct 1994	12	6	4	0	0	0	0	0	0	0	0	22
S 18	20 Oct 1994	22	5	4	0	0	0	0	0	0	0	0	31
S 19	1 Nov 1994	12	5	1	0	0	0	0	0	0	0	0	18
S 20	8 Nov 1994	7	6	4	0	0	0	0	0	0	0	0	17
S 21	15 Nov 1994	13	6	5	0	0	0	0	0	0	0	0	24
S 22	22 Nov 1994	7	3	3	0	0	0	0	0	0	0	0	13
S 23	29 Nov 1994	19	4	2	0	0	0	0	0	0	0	0	25
S 24	8 Dec 1994	15	9	5	1	0	0	0	0	0	0	0	30
S 25	29 Dec 1994	10	7	0	0	0	0	0	0	0	0	0	17
S 26	5 Jan 1995	7	7	0	0	0	1	0	1	0	0	0	16
S 27	13 Jan 1995	11	10	0	0	0	0	0	0	0	0	0	21
S 28	20 Jan 1995	13	3	0	0	0	0	0	1	0	0	0	17
S 29	26 Jan 1995	38	14	0	0	0	0	0	1	0	0	0	53
S 30	4 Feb 1995	37	10	0	0	0	1	0	0	0	0	0	48
S 31	14 Feb 1995	45	12	2	0	0	0	0	11	0	0	0	70
S 32	22 Feb 1995	19	10	1	0	0	0	0	4	0	0	0	34
S 33	1 Mar 1995	43	12	2	0	1	8	0	11	0	0	0	77
S 34	8 Mar 1995	8	14	0	0	3	16	0	7	0	1	0	49
S 35	16 Mar 1995	7	17	0	0	0	23	0	8	1	0	0	56
S 36	24 Mar 1995	4	16	4	0	0	18	0	13	0	0	0	55
S 37	13 Apr 1995	1	16	1	0	0	25	0	9	0	0	0	52
S 38	22 Apr 1995	1	6	0	0	0	7	1	5	0	0	0	20
S 39	1 May 1995	4	5	1	0	1	19	1	12	1	0	0	44
S 40	19 May 1995	7	13	0	0	0	3	3	1	0	0	0	27
S 41	26 May 1995	3	7	0	0	1	1	3	4	0	1	0	20
S 42	2 June 1995	8	9	0	0	0	2	1	4	0	3	0	27
S 43	9 June 1995	11	7	0	0	0	0	2	6	0	4	0	30
S 44	23 June 1995	23	7	0	0	0	0	0	6	2	12	0	50
S 45	7 Jul 1995	2	6	0	0	0	0	0	4	2	1	0	15
S 46	24 Aug 1995	63	26	1	0	0	2	5	45	6	9	2	159
Total		484	286	45	1	6	126	16	153	12	31	2	1162

Appendix B-5 Number and Percentage of Utterances with/without 3sg *-s*						
Sample	Recording Date	inflected 3sg	uninflected 3sg	Tota 1	% inflected 3sg	% uninflected 3sg
S 1-8	9 Mar-20 May 94	0	0	0	-	-
S 9	5 Jun 1994	0	1	1	0.00	100.00
S 10	13 Jun 1994	0	0	0	-	-
S 11	17 Jun 1994	0	2	2	0.00	100.00
S 12	9 Aug 1994	0	0	0	-	-
S 13	23 Aug 1994	0	1	1	0.00	100.00
S 14	30 Aug 1994	0	0	0	-	-
S 15	16 Sep 1994	1	4	5	20.00	80.00
S 16	4 Oct 1994	0	8	8	0.00	100.00
S 17	12 Oct 1994	0	0	0	-	-
S 18	20 Oct 1994	2	5	7	28.57	71.43
S 19	1 Nov 1994	0	8	8	0.00	100.00
S 20	8 Nov 1994	1	7	8	12.50	87.50
S 21	15 Nov 1994	0	5	5	0.00	100.00
S 22	22 Nov 1994	0	8	8	0.00	100.00
S 23	29 Nov 1994	4	2	6	66.67	33.33
S 24	8 Dec 1994	0	2	2	0.00	100.00
S 25	29 Dec 1994	1	22	23	4.35	95.65
S 26	5 Jan 1995	2	12	14	14.29	85.71
S 27	13 Jan 1995	0	6	6	0.00	100.00
S 28	20 Jan 1995	3	16	19	15.79	84.21
S 29	26 Jan 1995	13	11	24	54.17	45.83
S 30	4 Feb 1995	2	6	8	25.00	75.00
S 31	14 Feb 1995	6	26	32	18.75	81.25
S 32	22 Feb 1995	12	13	25	48.00	52.00
S 33	1 Mar 1995	23	66	89	25.84	74.16
S 34	8 Mar 1995	18	60	78	23.08	76.92
S 35	16 Mar 1995	34	36	70	48.57	51.43
S 36	24 Mar 1995	57	24	81	70.37	29.63
S 37	13 Apr 1995	32	17	49	65.31	34.69
S 38	22 Apr 1995	12	10	22	54.55	45.45
S 39	1 May 1995	18	22	40	45.00	55.00
S 40	19 May 1995	11	8	19	57.89	42.11
S 41	26 May 1995	13	4	17	76.47	23.53
S 42	2 June 1995	20	8	28	71.43	28.57
S 43	9 June 1995	34	16	50	68.00	32.00
S 44	23 June 1995	21	20	41	51.22	48.78
S 45	7 Jul 1995	15	0	15	100.00	0.00
S 46	24 Aug 1995	82	25	107	76.64	23.36
Total		437	481	918	47.60	52.40

Appendix B-6

A breakdown of verbs in 3sg *-s* contexts

1. Inflected verbs in 3sg *-s* contexts

- The following list shows that in Samples 15-46 (5 June '94–24 Aug '94) of the 437 verbs inflected with the 3sg *-s*, there are 68 different verbs.

(1)

beat	begin	bring	*brokes
catch	come	cook	crash
cry	drink	drive	drop
eat	fall	*fells	fight
fit	fly	get	give
go	have got	help	hit
hurt	jump	know	laugh
lie	like	live	look
make	marry	mean	meet
move	need	open	play
put	rain	run	*saws
say	scare	sleep	smash
smell	start	stay	stick
stop	*stucks	swim	take
talk	tell	think	throw
tidy	try	turn	wake up
walk	want	work	write

- Of these 68 different verbs in 3sg *-s* contexts, the following 18 verbs occurred only in the inflected form.

(2)

beats	begins	*brokes	*fells
fits	helps	lies	marries
meets	rains	*saws	scares
smashes	smells	speaks	starts
*stucks	tidies		

- Of the 18 inflected verbs for 3sg *-s*, 14 of them were used only once.

(3)				
	beats	*brokes	*fells	lies
	marries	meets	rains	*saws
	scares	smashes	smells	starts
	*stucks	tidies		

2. Uninflected verbs in 3sg *-s* contexts

- As shown in Appendix B-5, in 481 obligatory contexts 3sg *-s* is missing. The following list is a breakdown of the verbs produced without 3sg *-s*.

(4)				
	ask	break	bring	buy
	call	catch	change	clap
	close	come	cook	crash
	cross	cry	die	drink
	drive	drop	eat	fall
	fight	finish	fly	fry
	get	give	go	happen
	hit	hold	hurt	jump
	kick	kill	kiss	know
	laugh	lift	like	live
	look	make	move	open
	paint	play	push	put
	run	say	see	shoot
	shout	show	sit	sleep
	slide	smile	stay	stick
	stop	suit	swim	take
	talk	taste	tell	think
	throw	touch	try	turn
	wait	wake up	walk	want
	wash	watch	wear	work
	write			

- Of the 81 verbs, 33 occurred only in the uninflected form, as shown in the following list. 19 out of the 33 verbs, those underlined in the list, appeared only once.

(5)

ask	break	buy	call
change	clap	close	cross
die	finish	fry	happen
hold	kick	kill	kiss
lift	paint	push	see
shoot	shout	show	sit
slide	smile	suit	taste
touch	wait	wash	watch
wear			

- With respect to the verbs that occurred both in inflected and uninflected forms, we find 48 different verbs, as shown in (6).

(6)

bring	catch	come	cook
crash	cry	drink	drive
drop	eat	fall	fight
fly	get	give	go
hit	hurt	jump	know
laugh	like	live	look
make	move	open	play
put	run	say	sleep
stay	stick	stop	swim
take	talk	tell	think
throw	try	turn	wake up
walk	want	work	write

Appendix B-7 Number and Percentage of Irregular Past Tense						
Sample	Recording Date	inflected irregular	uninflected irregular	Total	% inflected irregular	% uninflected irregular
S 1-9	9 Mar-5 June 1994	0	0	0	-	-
S 10	13 Jun 1994	0	**5**	5	0.00	100.00
S 11	17 Jun 1994	0	1	1	0.00	100.00
S 12	9 Aug 1994	0	7	7	0.00	100.00
S 13	23 Aug 1994	**4**	12	16	25.00	75.00
S 14	30 Aug 1994	0	1	1	0.00	100.00
S 15	16 Sep 1994	0	14	14	0.00	100.00
S 16	4 Oct 1994	3	5	8	37.50	62.50
S 17	12 Oct 1994	0	9	9	0.00	100.00
S 18	20 Oct 1994	0	10	10	0.00	100.00
S 19	1 Nov 1994	0	10	10	0.00	100.00
S 20	8 Nov 1994	6	16	22	27.27	72.73
S 21	15 Nov 1994	0	6	6	0.00	100.00
S 22	22 Nov 1994	5	13	18	27.78	72.22
S 23	29 Nov 1994	8	15	23	34.78	65.22
S 24	8 Dec 1994	4	12	16	25.00	75.00
S 25	29 Dec 1994	3	8	11	27.27	72.73
S 26	5 Jan 1995	2	8	10	20.00	80.00
S 27	13 Jan 1995	2	5	7	28.57	71.43
S 28	20 Jan 1995	6	7	13	46.15	53.85
S 29	26 Jan 1995	10	4	14	71.43	28.57
S 30	4 Feb 1995	7	3	10	70.00	30.00
S 31	14 Feb 1995	11	13	24	45.83	54.17
S 32	22 Feb 1995	12	17	29	41.38	58.62
S 33	1 Mar 1995	15	19	34	44.12	55.88
S 34	8 Mar 1995	6	11	17	35.29	64.71
S 35	16 Mar 1995	6	25	31	19.35	80.65
S 36	24 Mar 1995	21	16	37	56.76	43.24
S 37	13 Apr 1995	17	23	40	42.50	57.50
S 38	22 Apr 1995	15	17	32	46.88	53.13
S 39	1 May 1995	19	36	55	34.55	65.45
S 40	19 May 1995	8	23	31	25.81	74.19
S 41	26 May 1995	19	23	42	45.24	54.76
S 42	2 June 1995	8	11	19	42.11	57.89
S 43	9 June 1995	23	23	46	50.00	50.00
S 44	23 June 1995	19	15	34	55.88	44.12
S 45	7 Jul 1995	21	22	43	48.84	51.16
S 46	24 Aug 1995	89	75	164	54.27	45.73
Total		369	540	909	40.59	59.41

Appendix B-8

A breakdown of irregular verbs in past tense contexts

Uninflected Verbs (irregular past)			Inflected verbs (irregular past)	
Sample	Total	Verb	Total	Verb
Samples 1-9	0		0	
Sample 10	5	come/do (2)[1] /go (2)	0	
Sample 11	1	see	0	
Sample 12	7	come/go/run/say (2) see/swim	0	
Sample 13	12	buy/come/**do**[2] (2)/go (5) run/**say**/sit	4	**did/said** (3)
Sample 14	1	say	0	
Sample 15	14	come/do (2)/eat (2) say (9)	0	
Sample 16	5	**buy**/do/get/make/say	3	**bought**/broke (2)
Sample 17	9	come/do (3)/eat/go (2) say (2)	0	
Sample 18	10	do (6)/find/get (2)/say	0	
Sample 19	10	do (7)/go/say (2)	0	
Sample 20	16	**do** (7)/get (2)/go/**say** shoot (2)/write (3)	6	**did** (3)/fell (2) **said**
Sample 21	6	bring/fall/get/make/say (2)	0	
Sample 22	13	bring (3)/come/**do** (2) drink/eat (2)/say (4)	5	bought/**did** fell (2)/found

[1] The numbers in parentheses refer to tokens.

[2] Verbs that occurred in both inflected and uninflected forms in the same sample are given in bold type.

Sample 23	15	bring/come/**do** (3) draw/**find**/get/go (2) **say** (3)/see (2)	8	**did** (2)/**found** (4) **said** (2)
Sample 24	12	**do** (4)/eat/give (4) go/say (2)	4	**did** (3)/left
Sample 25	8	bring (2)/buy/fall get/say/**tell**/win	3	found/**told**/took
Sample 26	8	come (3)/**say** (4)/see	2	made/**said**
Sample 27	5	do (3)/give (2)	2	broke/told
Sample 28	7	do/**say** (6)	6	bought/broke **said** (4)
Sample 29	4	get/see (2)/tell	10	did/found (2)/lost made/said (5)
Sample 30	3	do/wake/win	7	found/made/said(2) told (3)
Sample 31	13	come/**do**/draw/**find**/get give (2)/**say** (4)/see (2)	11	broke/brought (2) **did** (2)/**found** **said** (3)/told/took
Sample 32	17	buy/come (3)/do/eat (2) fall/get (2)/give/go make (2)/**say** (2)/write	12	broke/found met (2)/**said** (6) sat/told
Sample 33	19	**buy** (2)/**come**/fall/**find** get (3)/give (2)/go (4)/**say** shoot/take (2)/throw	15	**bought/came** **found**/made (3) **said** (8)/wrote
Sample 34	11	buy/draw/drive/eat give/go/**make**/take throw (3)	6	broke (2)/brought **made** (2)/said
Sample 35	25	buy/come/do (2)/eat fall/**find**/get (5)/give (5) run/see (3)/shoot (2) stick/throw	6	**found**/lost/met (3) said

Sample 36 (11)	16	break/buy (2)/get (4) give (3)/go (2)/**say** (2) **see/tell**	21	made (8)/**said** **saw/told**
Sample 37	23	buy/**come** (3)/eat/get (4) give/go (5)/**say** (2) stick/think/throw (2) win/write	17	broke/**came** (3) caught (2)/left made (2)/**said** (7) took
Sample 38	17	catch (2)/come (4)/do/fall get/give/**go** (2)/grow **say/see**/throw (2)	15	had/made (3) **said** (9)/**saw/went**
Sample 39	36	buy (4)/**come** (7) do (2)/eat/get (6) give (3)/go (6)/hold/**say** (2) **see**/shoot (2)/**think**	19	broke (3)/**came** fell/found (2) had (2)/lost made (3)/ **said** (3) **saw** (2)/**thought**
Sample 40	23	bring/buy (2)/**come** (3) **do** (4)/drink (3) fall/get (4)/give/go (2) hear/**make**	8	**came/did** (3) **made** (3)/said
Sample 41	23	bring/fly/get (7)/give **go** (3)/hold/**make** **say** (4)/take/throw (3)	19	came(2)/did/fell found (4)/lost **made** (3)/**said** saw (3)/told/ **went** (2)
Sample 42	11	**do**/eat/get (2)/give/go (3) know/**say**/take	8	**did**/found/had (2) **said** (2)/saw (2)
Sample 43	23	come/get (3)/**go** (6)/hear know/meet (4)/run **say**/speak (4)/tell	23	did/fell (2)/had left/made (2) **said** (11)/saw (3) **went** (2)

Sample 44	15	bring/buy/come/**do** (3) draw (2)/**go** (2)/hold/**say** stand/**tell**/throw	19	**did**/found (3) had (2)/made (3) **said** (7)/saw **told**/**went**
Sample 45	22	come (2)/eat (2)/**find** (2) **go** (11)/give/hold (2) see (2)	21	did/**found**/had (7) made (3)/said (2) **went** (7)
Sample 46	75	bring (2)/buy (10) catch (3)/**come**/**do** (3) drink/drive/eat (8) fall (3)/feed/get/give (18) hold/leave/ring/**see** (3) sing/sit/sleep (3)/stand stick (6)/take (2)/**tell** **think**/win	89	broke/**came**/**did** (4) found (7)/had (7) lost/made (5) said (19)/**saw** (9) stole/**thought** (3) **told** (4)/went (27)

Appendix B-9 Number and Percentage of Regular Past Tense *-ed*						
Sample	Recording Date	inflected regular	uninflected regular	Total	% inflected regular	% uninflected regular
S 1-7	9 Mar-7 May 1994	0	0	0	-	-
S 8	20 May 1994	0	**2**	2	0.00	100.00
S 9	5 Jun 1994	0	0	0	-	-
S 10	13 Jun 1994	0	3	3	0.00	100.00
S 11	17 Jun 1994	0	3	3	0.00	100.00
S 12	9 Aug 1994	0	4	4	0.00	100.00
S 13	23 Aug 1994	0	5	5	0.00	100.00
S 14	30 Aug 1994	0	0	0	-	-
S 15	16 Sep 1994	**1**	1	2	50.00	50.00
S 16	4 Oct 1994	0	1	1	0.00	100.00
S 17	12 Oct 1994	1	1	2	50.00	50.00
S 18	20 Oct 1994	2	6	8	25.00	75.00
S 19	1 Nov 1994	0	3	3	0.00	100.00
S 20	8 Nov 1994	2	7	9	22.22	77.78
S 21	15 Nov 1994	0	6	6	0.00	100.00
S 22	22 Nov 1994	0	8	8	0.00	100.00
S 23	29 Nov 1994	0	6	6	0.00	100.00
S 24	8 Dec 1994	0	4	4	0.00	100.00
S 25	29 Dec 1994	0	2	2	0.00	100.00
S 26	5 Jan 1995	0	0	0	-	-
S 27	13 Jan 1995	0	2	2	0.00	100.00
S 28	20 Jan 1995	0	4	4	0.00	100.00
S 29	26 Jan 1995	1	2	3	33.33	66.67
S 30	4 Feb 1995	0	0	0	-	-
S 31	14 Feb 1995	1	4	5	20.00	80.00
S 32	22 Feb 1995	0	4	4	0.00	100.00
S 33	1 Mar 1995	1	11	12	8.33	91.67
S 34	8 Mar 1995	0	1	1	0.00	100.00
S 35	16 Mar 1995	1	4	5	20.00	80.00
S 36	24 Mar 1995	1	8	9	11.11	88.89
S 37	13 Apr 1995	1	7	8	12.50	87.50
S 38	22 Apr 1995	6	13	19	31.58	68.42
S 39	1 May 1995	4	14	18	22.22	77.78
S 40	19 May 1995	4	7	11	36.36	63.64
S 41	26 May 1995	7	10	17	41.18	58.82
S 42	2 June 1995	0	4	4	0.00	100.00
S 43	9 June 1995	11	5	16	68.75	31.25
S 44	23 June 1995	9	8	17	52.94	47.06
S 45	7 Jul 1995	2	1	3	66.67	33.33
S 46	24 Aug 1995	14	29	43	32.56	67.44
Total		69	200	269	25.65	74.35

Appendix B-10

A breakdown of regular verbs in past tense contexts

Uninflected Verbs (regular past)			Inflected Verbs (regular past)	
Sample	Total	Verb	Total	Verb
Sample 1-7	0		0	
Sample 8	2	look/watch	0	
Sample 9	0		0	
Sample 10	3	play (3)[1]	0	
Sample 11	3	play (3)	0	
Sample 12	4	finish/play (3)	0	
Sample 13	5	play (3)/talk (2)	0	
Samples 14	0		0	
Sample 15	1	play	1	died
Sample 16	1	look	0	
Sample 17	1	colour	1	finished
Sample 18	6	colour (4)/**play**[2] /show	2	painted/**played**
Sample 19	3	look (2)/paint	0	
Sample 20	7	finish (2)/look/pass/play watch (2)	2	died
Sample 21	6	finish/play (5)	0	
Sample 22	8	ask/colour/finish (2) jump (2)/play/wait	0	
Sample 23	6	cry/like (3)/look/show	0	
Sample 24	4	finish (2)/happen/look	0	
Sample 25	2	close/turn	0	
Sample 26	0		0	
Sample 27	2	colour/learn	0	
Sample 28	4	ask (2)/cough/touch	0	
Sample 29	2	finish (2)	1	happened
Sample 30	0		0	
Sample 31	4	**crash**/laugh/pick/play	1	**crashed**
Sample 32	4	die/stop/try/wash	0	

[1] The numbers in parentheses refer to tokens.

[2] Verbs that occurred in both inflected and uninflected forms in the same sample are given in bold type.

Sample 33	11	close/crash (2)/happen/jump (2) look/park/show/watch (2)	1	died
Sample 34	1	talk	0	
Sample 35	4	decide/like/stay/watch	1	stopped
Sample 36	8	ask/crash (2)/like/look (2) press/show	1	wanted
Sample 37	7	decide/finish/kiss show (2)/stop (2)	1	helped
Sample 38	13	close (2)/drop/look **open**/paint/press (2) stay/try (3)/watch	6	jumped/laughed **opened**/stopped waked (2)
Sample 39	14	carry/close/cook/**cry** jump/open (2)/show/splash (2) spoil/stay/turn/wash	4	**cried**/decided dropped/moved
Sample 40	7	change/crash/cry(2) kick learn/open	4	breaked/bringed wanted (2)
Sample 41	10	call/fill/kill/learn lift/**look** (2) open/start/**want**	7	helped (2) **looked** (2) played/**wanted** worked
Sample 42	4	laugh/learn/look/stick	0	
Sample 43	5	play/pull (2)/try/turn	11	blowed/ died dropped/goed knowed/opened runned/speaked(3) wanted
Sample 44	8	call/**climb** like (2)/open **play**/stay (2)	9	**climbed/played** switched/ thinked/turned wanted (4)
Sample 45	1	plant	2	opened/stopped

Sample 46	29	call/climb (2)/colour (2) cook/cry/**jump/kill** look (3)/open (2) pick/**play** (2)/pull (2) taste/touch (4)/**watch** (5)	14	breaked (2) **jumped** (5) **killed** (3) **played** talked **watched** (2)

Appendix B 11

Sample 4 (4 April 1994)

@Begin
@Participants: ERD Erdem Child, MOT Mother, BEL Belma Investigator
@Age of ERD: 4;5
@Sex of ERD: male
@Date: 4-APR-1994 Sample 4
@Situation: at home, playing with Erdem's toys, doing some painting

*BEL: I will turn on my tape recorder.
*BEL: it is going to record everything that we say.
*BEL: ok?
*BEL: tell me what you want to play?
*ERD: wait.
%act: he brings in several painting books.
*BEL: which picture do you want to paint? this one?
*ERD: no # this one.
*BEL: do you want to paint this picture?
*BEL: ok # you can start now.
*BEL: there are lots of pens here.
*ERD: three two one # start.
*BEL: before you start painting tell me what you are going to paint.
*ERD: I am painting.
*BEL: what are you painting now?
%com: no answer
*BEL: we can talk about what this piggy is doing.
*BEL: what is that teddy bear doing?
*ERD: # # # I don't know.
*BEL: I know you know.
*BEL: what's this?
*ERD: (unanalysed) it's a pig.
*ERD: (unanalysed) this one teddy bear.
*ERD: teddy bear.
*BEL: what's the teddy bear doing?
%com: no answer
*BEL: look # there is a little piggy here.
*BEL: and it is going to +/.
*ERD: big # little pig.

*BEL: what?
*ERD: big pig.
*ERD: big.
*BEL: what else?
*ERD: (unanalysed) I don't know.
*BEL: you can talk about the colours that you use.
*BEL: you can talk about this little doggy.
*BEL: you can talk about the kind of ice-cream you like.
*ERD: ice cream # yellow ice cream.
*BEL: yes.
*ERD: bi de banana ice cream var.
%eng: there is also banana ice cream.
*BEL: what?
*ERD: ice cream # yum yum.
*BEL: do you like ice cream?
*ERD: yes.
*ERD: one two three.
*BEL: which colour do you want?
%act: holding an orange pen.
*ERD: red.
*BEL: no # this is not red.
*BEL: this is orange.
*ERD: orange.
*ERD: this one orange. # # # (unanalysed)
*BEL: this teddy bear is selling ice cream.
*BEL: and this little piggy gives some money to the teddy bear.
*BEL: and he gets some ice cream.
*BEL: what sort of ice cream do you think this little piggy wants?
*BEL: what kind of ice cream does it like?
*BEL: is it chocolate ice cream?
*BEL: is it strawberry ice cream?
*BEL: is it chocolate and nut ice cream? # # #
%com: no answer
*BEL: what kind of ice cream do you think this little piggy asks?
*ERD: this one.
*BEL: no # I didn't say what colour.
*BEL: what kind of ice cream?
*BEL: chocolate ice cream # strawberry ice cream?
*BEL: which one?

*ERD: strawberry ice cream.
*BEL: strawberry ice cream ok # you can +/.
*ERD: I like straw # straw # strawberry.
*BEL: ice cream # I like strawberry ice cream too.
*ERD: wait.
*ERD: <strawberry strawberry strawberry> [/] strawberry xxx
*BEL: what are you painting now Erdem?
%exp: he doesn't know the word for 'ear' but he understands the question perfectly
*ERD: kulak # kulak.
%eng: ear
*BEL: what are these?
*BEL: are they ears?
*ERD: ears # yes ears # mouth (pronounced like mouse)
*BEL: can you show me your ears?
*ERD: eyes eyes (pronounced like ice)
*BEL: Erdem # these are my ears.
*BEL: can you show me your ears?
*ERD: these are my [= pronounced as mice] # ears. [=repetition]
*ERD: these are my [= pronounced as mice] # ears.
*BEL: what are you painting now?
%act: he talks to himself.
*ERD: # # # I don't know.
*BEL: are you painting the piggy's ears?
*ERD: no # ears no.
*BEL: are you painting the piggy's ears?
*ERD: no # this one ears.
%act: he starts playing with little marble balls.
*BEL: what are you doing Erdem?
*BEL: are you dividing them into two groups?
*BEL: how many balls do you have?
*ERD: my balls three.
*BEL: are these my balls?
*ERD: here wait.
*BEL: what should I do now?
*BEL: tell me.
*BEL: can I take one?
*BEL: ok # I take one.
*ERD: ok.

*BEL: you should tell me what I am supposed to do.

*BEL: shall I roll it?

*ERD: yes.

*BEL: am I going to hit the others?

*BEL: I'll try.

*BEL: oh # I hit it.

*ERD: no.

*MOT: you hit # but your marble +...

*BEL: Oh # I didn't hit Eren's ball.

*BEL: ok # let's try it again.

*ERD: no.

*ERD: no.

Appendix B-12 Number and Percentage of Null Subjects vs. Overt subjects (Overt Subjects = Lexical+Pronominal Subjects)

Sample	Recording Date	null subjects	overt subjects	Total	% null subjects	% overt subjects
S 1	9 Mar 1994	0	0	0	-	-
S 2	17 Mar 1994	0	0	0	-	-
S 3	23 Mar 1994	2	0	2	100.00	0.00
S 4	4 Apr 1994	0	2	1	0.00	100.00
S 5	11 Apr 1994	1	9	10	10.00	90.00
S 6	22 Apr 1994	2	1	3	66.67	33.33
S 7	6 May 1994	0	3	3	0.00	100.00
S 8	20 May 1994	5	21	26	19.23	80.77
S 9	5 Jun 1994	3	47	50	6.00	94.00
S 10	13 Jun 1994	11	71	82	13.41	86.59
S 11	17 Jun 1994	8	68	76	10.53	89.47
S 12	9 Aug 1994	14	26	40	35.00	65.00
S 13	23 Aug 1994	7	98	105	6.67	93.33
S 14	30 Aug 1994	2	25	27	7.41	92.59
S 15	16 Sep 1994	7	123	130	5.38	94.62
S 16	4 Oct 1994	2	166	168	1.19	98.81
S 17	12 Oct 1994	4	140	144	2.78	97.22
S 18	20 Oct 1994	3	185	188	1.60	98.40
S 19	1 Nov 1994	0	123	123	0.00	100.00
S 20	8 Nov 1994	2	230	232	0.86	99.14
S 21	15 Nov 1994	3	171	174	1.72	98.28
S 22	22 Nov 1994	8	170	178	4.49	95.51
S 23	29 Nov 1994	1	209	210	0.48	99.52
S 24	8 Dec 1994	0	200	200	0.00	100.00
S 25	29 Dec 1994	0	171	171	0.00	100.00
S 26	5 Jan 1995	0	252	252	0.00	100.00
S 27	13 Jan 1995	0	157	157	0.00	100.00
S 28	20 Jan 1995	1	166	167	0.60	99.40
S 29	26 Jan 1995	0	348	348	0.00	100.00
S 30	4 Feb 1995	1	226	227	0.44	99.56
S 31	14 Feb 1995	2	608	610	0.33	99.67
S 32	22 Feb 1995	1	315	316	0.32	99.68
S 33	1 Mar 1995	1	631	632	0.16	99.84
S 34	8 Mar 1995	0	457	457	0.00	100.00
S 35	16 Mar 1995	4	427	431	0.93	99.07
S 36	24 Mar 1995	1	511	512	0.20	99.80
S 37	13 Apr 1995	0	421	421	0.00	100.00
S 38	22 Apr 1995	0	286	286	0.00	100.00
S 39	1 May 1995	0	476	476	0.00	100.00
S 40	19 May 1995	0	227	227	0.00	100.00
S 41	26 May 1995	0	276	276	0.00	100.00
S 42	2 June 1995	0	261	261	0.00	100.00
S 43	9 June 1995	0	341	341	0.00	100.00
S 44	23 June 1995	0	381	381	0.00	100.00
S 45	7 Jul 1995	0	209	209	0.00	100.00
S 46	24 Aug 1995	1	1146	1147	0.09	99.91
Total		97	10381	10478	0.93	99.07

Appendix B-13 Number of Pronominal Subjects (Personal Pronouns)							
Sample	Recording Date	I	you	s/he	we	they	Total
S 1	9 Mar 1994	0	0	0	0	0	0
S 2	17 Mar 1994	0	0	0	0	0	0
S 3	23 Mar 1994	0	0	0	0	0	0
S 4	4 Apr 1994	2	0	0	0	0	2
S 5	11 Apr 1994	0	1	0	0	0	1
S 6	22 Apr 1994	0	0	0	0	0	0
S 7	6 May 1994	0	0	0	0	0	0
S 8	20 May 1994	1	3	0	0	0	4
S 9	5 Jun 1994	10	4	0	0	0	14
S 10	13 Jun 1994	33	2	0	0	0	35
S 11	17 Jun 1994	17	4	0	1	0	22
S 12	9 Aug 1994	8	5	1	0	0	14
S 13	23 Aug 1994	50	9	6	10	0	75
S 14	30 Aug 1994	15	0	1	0	0	16
S 15	16 Sep 1994	65	14	9	10	0	98
S 16	4 Oct 1994	32	26	52	10	0	120
S 17	12 Oct 1994	71	10	6	25	0	112
S 18	20 Oct 1994	76	18	31	1	1	127
S 19	1 Nov 1994	52	20	10	9	0	91
S 20	8 Nov 1994	105	32	17	10	0	164
S 21	15 Nov 1994	53	42	14	13	0	122
S 22	22 Nov 1994	54	28	27	5	1	115
S 23	29 Nov 1994	101	27	27	5	1	161
S 24	8 Dec 1994	89	47	6	14	0	156
S 25	29 Dec 1994	56	45	24	4	0	129
S 26	5 Jan 1995	70	63	8	5	29	175
S 27	13 Jan 1995	56	40	5	0	6	107
S 28	20 Jan 1995	50	22	21	3	0	96
S 29	26 Jan 1995	34	30	16	0	1	81
S 30	4 Feb 1995	59	42	18	14	4	137
S 31	14 Feb 1995	159	52	68	64	22	365
S 32	22 Feb 1995	73	49	35	9	15	181
S 33	1 Mar 1995	133	122	116	15	23	409
S 34	8 Mar 1995	82	56	69	19	35	261
S 35	16 Mar 1995	113	83	114	5	21	336
S 36	24 Mar 1995	93	58	157	17	24	349
S 37	13 Apr 1995	96	44	63	16	34	253
S 38	22 Apr 1995	79	26	50	12	9	176
S 39	1 May 1995	161	68	36	15	15	295
S 40	19 May 1995	68	17	29	10	19	143
S 41	26 May 1995	57	22	35	8	33	155
S 42	2 June 1995	53	22	8	3	7	93
S 43	9 June 1995	74	29	87	21	20	231
S 44	23 June 1995	109	84	51	19	4	267
S 45	7 Jul 1995	71	8	23	13	11	126
S 46	24 Aug 1995	301	162	235	29	55	782
Total		2881	1436	1475	414	390	6596

Appendix B-14 Number and Percentage of copula/auxiliary be and 3sg -s vs. missing copula/auxiliary be and 3sg -s

Sample	*be*	3sg *-s*	Total	*% be*	% 3sg *-s*	missing *be*	missing 3sg *-s*	Total	*% be*	% 3sg *-s*
S 1-3	0	0	0	-	-	1	0	1	100	0
S 4	1	0	1	100	0	0	0	0	-	-
S 5	2	0	2	100	0	7	0	7	100	0
S 6	1	0	1	100	0	2	0	2	100	0
S 7	0	0	0	-	-	4	0	4	100	0
S 8	20	0	20	100	0	7	0	7	100	0
S 9	27	0	27	100	0	7	1	8	88	13
S 10	48	0	48	100	0	12	0	12	100	0
S 11	54	0	54	100	0	7	2	9	78	22
S 12	21	0	21	100	0	3	0	3	100	0
S 13	26	0	26	100	0	18	1	19	95	5
S 14	7	0	7	100	0	7	0	7	100	0
S 15	28	1	29	97	3	9	4	13	69	31
S 16	48	0	48	100	0	23	8	31	74	26
S 17	26	0	26	100	0	16	0	16	100	0
S 18	55	2	57	96	4	18	5	23	78	22
S 19	33	0	33	100	0	13	8	21	62	38
S 20	72	1	73	99	1	24	7	31	77	23
S 21	53	0	53	100	0	18	5	23	78	22
S 22	52	0	52	100	0	32	8	40	80	20
S 23	67	4	71	94	6	8	2	10	80	20
S 24	43	0	43	100	0	11	2	13	85	15
S 25	33	1	34	97	3	5	22	27	19	81
S 26	78	2	80	98	3	23	12	35	66	34
S 27	75	0	75	100	0	12	6	18	67	33
S 28	37	3	40	93	8	11	16	27	41	59
S 29	105	13	118	89	11	3	11	14	21	79
S 30	84	2	86	98	2	7	6	13	54	46
S 31	241	6	247	98	2	24	26	50	48	52
S 32	143	12	155	92	8	8	13	21	38	62
S 33	203	23	226	90	10	13	66	79	16	84
S 34	124	18	142	87	13	5	60	65	8	92
S 35	94	34	128	73	27	2	36	38	5	95
S 36	140	57	197	71	29	7	24	31	23	77
S 37	133	32	165	81	19	6	17	23	26	74
S 38	100	12	112	89	11	1	10	11	9	91
S 39	142	18	160	89	11	3	22	25	12	88
S 40	82	11	93	88	12	1	8	9	11	89
S 41	94	13	107	88	12	2	4	6	33	67
S 42	93	20	113	82	18	1	8	9	11	89
S 43	109	34	143	76	24	3	16	19	16	84
S 44	100	21	121	83	17	1	20	21	5	95
S 45	58	15	73	79	21	5	0	5	100	0
S 46	334	82	416	80	20	9	25	34	26	74
Total	3286	437	3723	88	12	399	481	880	45	55

APPENDIX C: TABLES FOR CHAPTER 6

Appendix C-1 Number and Percentage of Inflected vs. Uninflected Verbs (in past & 3sg -s)						
Sample	Recording Date	Inflected	Uninflected	Total	% of Inflected	% of Uninflected
S 1	9 Mar 1994	0	0	0	-	-
S 2	17 Mar 1994	0	0	0	-	-
S 3	23 Mar 1994	0	0	0	-	-
S 4	4 Apr 1994	0	0	0	-	-
S 5	11 Apr 1994	0	0	0	-	-
S 6	22 Apr 1994	0	0	0	-	-
S 7	6 May 1994	0	0	0	-	-
S 8	20 May 1994	0	2	2	0	100
S 9	5 Jun 1994	0	1	1	0	100
S 10	13 Jun 1994	0	8	8	0	100
S 11	17 Jun 1994	0	6	6	0	100
S 12	9 Aug 1994	0	12	12	0	100
S 13	23 Aug 1994	4	18	22	18.18	81.82
S 14	30 Aug 1994	0	1	1	0	100
S 15	16 Sep 1994	2	19	21	9.52	90.48
S 16	4 Oct 1994	3	14	17	17.65	82.35
S 17	12 Oct 1994	1	10	11	9.09	90.91
S 18	20 Oct 1994	4	21	25	16	84
S 19	1 Nov 1994	0	21	21	0	100
S 20	8 Nov 1994	9	30	39	23.08	76.92
S 21	15 Nov 1994	0	17	17	0	100
S 22	22 Nov 1994	5	29	34	14.71	85.29
S 23	29 Nov 1994	12	23	35	34.29	65.71
S 24	8 Dec 1994	4	18	22	18.18	81.82
S 25	29 Dec 1994	4	32	36	11.11	88.89
S 26	5 Jan 1995	4	20	24	16.67	83.33
S 27	13 Jan 1995	2	13	15	13.33	86.67
S 28	20 Jan 1995	9	27	36	25	75
S 29	26 Jan 1995	24	17	41	58.54	41.46
S 30	4 Feb 1995	9	9	18	50	50
S 31	14 Feb 1995	18	43	61	29.51	70.49
S 32	22 Feb 1995	24	34	58	41.38	58.62
S 33	1 Mar 1995	39	96	135	28.89	71.11
S 34	8 Mar 1995	24	72	96	25	75
S 35	16 Mar 1995	41	65	106	38.68	61.32
S 36	24 Mar 1995	79	48	127	62.2	37.8
S 37	13 Apr 1995	50	47	97	51.55	48.45
S 38	22 Apr 1995	33	40	73	45.21	54.79
S 39	1 May 1995	41	72	113	36.28	63.72
S 40	19 May 1995	23	38	61	37.7	62.3
S 41	26 May 1995	39	37	76	51.32	48.68
S 42	2 June 1995	28	23	51	54.9	45.1
S 43	9 June 1995	68	44	112	60.71	39.29
S 44	23 June 1995	49	43	92	53.26	46.74
S 45	7 Jul 1995	38	23	61	62.3	37.7
S 46	24 Aug 1995	185	129	314	58.92	41.08
Total		875	1222	2097		

Appendix C-2 Number and Percentage of Null Subjects vs. Overt subjects (Overt Subjects = Lexical+Pronominal Subjects)						
Sample	Recording Date	null subjects	overt subjects	Total	% null subjects	% overt subjects
S 1	9 Mar 1994	0	0	0	-	-
S 2	17 Mar 1994	0	0	0	-	-
S 3	23 Mar 1994	2	0	2	100.00	0.00
S 4	4 Apr 1994	0	2	2	0.00	100.00
S 5	11 Apr 1994	1	9	10	10.00	90.00
S 6	22 Apr 1994	2	1	3	66.67	33.33
S 7	6 May 1994	0	3	3	0.00	100.00
S 8	20 May 1994	5	21	26	19.23	80.77
S 9	5 Jun 1994	3	47	50	6.00	94.00
S 10	13 Jun 1994	11	71	82	13.41	86.59
S 11	17 Jun 1994	8	68	76	10.53	89.47
S 12	9 Aug 1994	14	26	40	35.00	65.00
S 13	23 Aug 1994	7	98	105	6.67	93.33
S 14	30 Aug 1994	2	25	27	7.41	92.59
S 15	16 Sep 1994	7	123	130	5.38	94.62
S 16	4 Oct 1994	2	166	168	1.19	98.81
S 17	12 Oct 1994	4	140	144	2.78	97.22
S 18	20 Oct 1994	3	185	188	1.60	98.40
S 19	1 Nov 1994	0	123	123	0.00	100.00
S 20	8 Nov 1994	2	230	232	0.86	99.14
S 21	15 Nov 1994	3	171	174	1.72	98.28
S 22	22 Nov 1994	8	170	178	4.49	95.51
S 23	29 Nov 1994	1	209	210	0.48	99.52
S 24	8 Dec 1994	0	200	200	0.00	100.00
S 25	29 Dec 1994	0	171	171	0.00	100.00
S 26	5 Jan 1995	0	252	252	0.00	100.00
S 27	13 Jan 1995	0	157	157	0.00	100.00
S 28	20 Jan 1995	1	166	167	0.60	99.40
S 29	26 Jan 1995	0	348	348	0.00	100.00
S 30	4 Feb 1995	1	226	227	0.44	99.56
S 31	14 Feb 1995	2	608	610	0.33	99.67
S 32	22 Feb 1995	1	315	316	0.32	99.68
S 33	1 Mar 1995	1	631	632	0.16	99.84
S 34	8 Mar 1995	0	457	457	0.00	100.00
S 35	16 Mar 1995	4	427	431	0.93	99.07
S 36	24 Mar 1995	1	511	512	0.20	99.80
S 37	13 Apr 1995	0	421	421	0.00	100.00
S 38	22 Apr 1995	0	286	286	0.00	100.00
S 39	1 May 1995	0	476	476	0.00	100.00
S 40	19 May 1995	0	227	227	0.00	100.00
S 41	26 May 1995	0	276	276	0.00	100.00
S 42	2 June 1995	0	261	261	0.00	100.00
S 43	9 June 1995	0	341	341	0.00	100.00
S 44	23 June 1995	0	381	381	0.00	100.00
S 45	7 Jul 1995	0	209	209	0.00	100.00
S 46	24 Aug 1995	1	1146	1147	0.09	99.91
Total		97	10381	10478	0.93	99.07

Appendix C-3 Number and Percentage of Overt Subjects vs. Null Subjects (in 3sg -s & Past Tense)						
Sample	Recording Date	overt subjects	null subjects	Total	% overt subjects	% null subjects
S 1-7	9 Mar-6 May 1994	0	0	0	-	-
S 8	20 May 1994	0	2	2	0	100
S 9	5 Jun 1994	1	0	1	100	0
S 10	13 Jun 1994	3	5	8	37.5	62.5
S 11	17 Jun 1994	3	3	6	50	50
S 12	9 Aug 1994	2	10	12	16.67	83.33
S 13	23 Aug 1994	22	0	22	100	0
S 14	30 Aug 1994	1	0	1	100	0
S 15	16 Sep 1994	20	1	21	95.24	4.76
S 16	4 Oct 1994	17	0	17	100	0
S 17	12 Oct 1994	10	1	11	90.91	9.09
S 18	20 Oct 1994	24	1	25	96	4
S 19	1 Nov 1994	21	0	21	100	0
S 20	8 Nov 1994	39	0	39	100	0
S 21	15 Nov 1994	17	0	17	100	0
S 22	22 Nov 1994	32	2	34	94.12	5.88
S 23	29 Nov 1994	35	0	35	100	0
S 24	8 Dec 1994	22	0	22	100	0
S 25	29 Dec 1994	36	0	36	100	0
S 26	5 Jan 1995	24	0	24	100	0
S 27	13 Jan 1995	15	0	15	100	0
S 28	20 Jan 1995	36	0	36	100	0
S 29	26 Jan 1995	41	0	41	100	0
S 30	4 Feb 1995	18	0	18	100	0
S 31	14 Feb 1995	61	0	61	100	0
S 32	22 Feb 1995	57	1	58	98.28	1.72
S 33	1 Mar 1995	134	1	135	99.26	0.74
S 34	8 Mar 1995	95	1	96	98.96	1.04
S 35	16 Mar 1995	105	1	106	99.06	0.94
S 36	24 Mar 1995	127	0	127	100	0
S 37	13 Apr 1995	97	0	97	100	0
S 38	22 Apr 1995	73	0	73	100	0
S 39	1 May 1995	113	0	113	100	0
S 40	19 May 1995	61	0	61	100	0
S 41	26 May 1995	76	0	76	100	0
S 42	2 June 1995	51	0	51	100	0
S 43	9 June 1995	112	0	112	100	0
S 44	23 June 1995	92	0	92	100	0
S 45	7 Jul 1995	61	0	61	100	0
S 46	24 Aug 1995	314	0	314	100	0
Total		2068	29	2097	98.62	1.38

APPENDIX D: TABLES FOR CHAPTER 7

Appendix D-1 Number and Percentage of Yes/No questions								
Sample	Recording Date	aux be	aux do	aux have	copula be	intonation	modal	Total
S 1-5	9 Mar-11 Apr 1994	0	0	0	0	0	0	0
S 6	22 Apr 1994	0	0	0	1	2	0	3
S 7	6 May 1994	0	0	0	0	2	0	2
S 8	20 May 1994	0	0	0	1	0	0	1
S 9	5 Jun 1994	0	0	0	0	0	0	0
S 10	13 Jun 1994	0	0	0	1	0	0	1
S 11	17 Jun 1994	0	0	0	3	0	0	3
S 12	9 Aug 1994	0	0	0	0	0	0	0
S 13	23 Aug 1994	0	0	0	0	1	0	1
S 14	30 Aug 1994	0	0	0	0	0	0	0
S 15	16 Sep 1994	3	0	0	1	2	0	6
S 16	4 Oct 1994	0	5	0	1	0	1	7
S 17	12 Oct 1994	0	1	0	0	0	2	3
S 18	20 Oct 1994	0	1	0	3	1	7	12
S 19	1 Nov 1994	0	0	1	1	0	3	5
S 20	8 Nov 1994	0	5	0	2	1	3	11
S 21	15 Nov 1994	0	6	0	0	2	6	14
S 22	22 Nov 1994	0	3	0	0	0	3	6
S 23	29 Nov 1994	0	4	0	0	0	7	11
S 24	8 Dec 1994	0	3	0	0	1	7	11
S 25	29 Dec 1994	0	1	0	0	0	4	5
S 26	5 Jan 1995	0	12	0	9	0	1	22
S 27	13 Jan 1995	0	5	0	2	0	3	10
S 28	20 Jan 1995	0	6	0	0	0	2	8
S 29	26 Jan 1995	0	15	0	4	0	10	29
S 30	4 Feb 1995	5	6	0	1	0	6	18
S 31	14 Feb 1995	0	8	0	6	0	11	25
S 32	22 Feb 1995	0	7	0	0	0	10	17
S 33	1 Mar 1995	6	14	0	6	2	14	42
S 34	8 Mar 1995	0	20	0	2	0	6	28
S 35	16 Mar 1995	3	12	0	3	1	14	33
S 36	24 Mar 1995	0	22	0	8	2	7	39
S 37	13 Apr 1995	0	7	0	3	0	10	20
S 38	22 Apr 1995	0	6	0	6	0	1	13
S 39	1 May 1995	0	12	0	2	0	1	15
S 40	19 May 1995	0	6	0	1	1	2	10
S 41	26 May 1995	0	2	0	2	1	1	6
S 42	2 June 1995	1	2	0	0	0	9	12
S 43	9 June 1995	0	3	0	2	0	5	10
S 44	23 June 1995	7	8	0	0	2	15	32
S 45	7 Jul 1995	0	0	0	1	0	2	3
S 46	24 Aug 1995	2	14	4	5	1	16	42
Total		27	216	5	77	22	189	536

Appendix D-2 Number of All Wh-Questions in Samples 8-46											
Sample	Recording Date	what	where	how	which	why	who	when	whose	Total	wh-in situ
S 1-7	9 Mar-6 May 94	0	0	0	0	0	0	0	0	0	
S 8	20 May 1994	**3**	**2**	0	0	0	0	0	0	5	
S 9	5 Jun 1994	2	0	0	0	0	0	0	0	2	
S 10	13 Jun 1994	4	0	0	0	0	0	0	0	4	
S 11	17 Jun 1994	2	2	0	0	0	0	0	0	4	where (1)
S 12	9 Aug 1994	2	0	0	0	**2**	0	0	0	4	what (1)
S 13	23 Aug 1994	1	0	0	0	1	0	0	0	2	
S 14	30 Aug 1994	0	0	0	0	0	0	0	0	0	
S 15	16 Sep 1994	0	0	0	0	1	0	0	0	1	what (1)
S 16	4 Oct 1994	4	0	0	0	0	2	0	0	6	
S 17	12 Oct 1994	1	0	0	**1**	0	0	0	0	2	
S 18	20 Oct 1994	1	2	0	1	2	0	0	0	6	
S 19	1 Nov 1994	8	0	0	0	1	0	0	0	9	
S 20	8 Nov 1994	10	0	0	0	0	0	0	0	10	
S 21	15 Nov 1994	1	3	0	2	0	0	0	0	6	what (1)
S 22	22 Nov 1994	13	0	0	0	2	0	0	0	15	
S 23	29 Nov 1994	5	0	0	0	0	0	0	0	5	
S 24	8 Dec 1994	2	0	**2**	0	0	0	0	0	4	
S 25	29 Dec 1994	0	2	1	0	0	0	0	0	3	
S 26	5 Jan 1995	1	3	0	1	0	0	0	0	5	
S 27	13 Jan 1995	6	0	0	0	2	**1**	0	0	9	
S 28	20 Jan 1995	5	0	1	0	0	0	0	0	6	
S 29	26 Jan 1995	13	3	3	5	1	1	0	0	26	
S 30	4 Feb 1995	4	1	2	0	3	0	0	0	10	
S 31	14 Feb 1995	9	5	0	1	0	2	0	0	17	
S 32	22 Feb 1995	5	1	3	0	1	2	0	0	12	
S 33	1 Mar 1995	10	9	5	4	2	1	0	0	31	
S 34	8 Mar 1995	2	4	1	0	0	0	0	0	7	
S 35	16 Mar 1995	4	1	1	3	1	0	0	0	10	
S 36	24 Mar 1995	12	5	5	1	4	0	**1**	0	28	what (1)
S 37	13 Apr 1995	3	1	1	0	1	1	0	0	7	
S 38	22 Apr 1995	19	6	3	0	2	0	1	0	31	
S 39	1 May 1995	4	1	1	0	1	0	0	0	7	
S 40	19 May 1995	0	0	0	0	0	0	0	0	0	
S 41	26 May 1995	2	0	1	2	0	0	0	0	5	what (1)
S 42	2 June 1995	4	1	2	0	0	0	1	0	8	
S 43	9 June 1995	1	3	0	3	1	3	0	0	11	
S 44	23 June 1995	5	1	1	4	0	0	0	0	11	
S 45	7 Jul 1995	1	0	0	0	0	0	0	**1**	2	
S 46	24 Aug 1995	18	8	5	4	4	5	5	2	51	
Total		187	64	38	32	32	18	8	3	382	6

Appendix D-3 Number of Subject vs. Non-subject Wh-Questions						
Sample	Recording Date	non-subj wh-q	subject wh-questions	Total	% non-subj wh-q	% subj wh-q
S 1-7	9 Mar-6 May 1994	0	0	0	-	-
S 8	20 May 1994	5	0	5	100	0.00
S 9	5 Jun 1994	2	0	2	-	-
S 10	13 Jun 1994	4	0	4	100.00	0.00
S 11	17 Jun 1994	4	0	4	100.00	0.00
S 12	9 Aug 1994	4	0	4	100.00	0.00
S 13	23 Aug 1994	2	0	2	100.00	0.00
S 14	30 Aug 1994	0	0	0	-	-
S 15	16 Sep 1994	1	0	1	100.00	0.00
S 16	4 Oct 1994	6	0	6	100.00	0.00
S 17	12 Oct 1994	2	0	2	100.00	0.00
S 18	20 Oct 1994	6	0	6	100.00	0.00
S 19	1 Nov 1994	9	0	9	100.00	0.00
S 20	8 Nov 1994	10	0	10	100.00	0.00
S 21	15 Nov 1994	5	which (1)	6	83.33	16.67
S 22	22 Nov 1994	15	0	15	100.00	0.00
S 23	29 Nov 1994	5	0	5	100.00	0.00
S 24	8 Dec 1994	4	0	4	100.00	0.00
S 25	29 Dec 1994	3	0	3	100.00	0.00
S 26	5 Jan 1995	4	which (1)	5	80.00	20.00
S 27	13 Jan 1995	8	who (1)	9	88.89	11.11
S 28	20 Jan 1995	6	0	6	100.00	0.00
S 29	26 Jan 1995	22	which (3)-who (1)	26	84.62	15.38
S 30	4 Feb 1995	10	0	10	100.00	0.00
S 31	14 Feb 1995	16	who (1)	17	94.12	5.88
S 32	22 Feb 1995	11	who (1)	12	8.33	16.67
S 33	1 Mar 1995	27	which (2)-what (1)-who (1)	31	87.10	12.90
S 34	8 Mar 1995	7	0	7	100.00	0.00
S 35	16 Mar 1995	8	which (2)	10	80.00	20.00
S 36	24 Mar 1995	28	0	28	100.00	0.00
S 37	13 Apr 1995	6	who (1)	7	85.71	14.29
S 38	22 Apr 1995	30	what (1)	31	96.77	3.23
S 39	1 May 1995	7	0	7	100.00	0.00
S 40	19 May 1995	0	0	0	-	-
S 41	26 May 1995	4	which (1)	5	80.00	20.00
S 42	2 June 1995	8	0	8	100.00	0.00
S 43	9 June 1995	9	which (1) - who (1)	11	81.82	18.18
S 44	23 June 1995	8	what (1)- which (2)	11	72.73	27.27
S 45	7 Jul 1995	2	0	2	100.00	0.00
S 46	24 Aug 1995	49	who (1)-which (1)	51	96.08	3.92
Total		357	25	382	93.46	6.54

Appendix D-4 Number of Non-Subject Wh-questions in Samples 8-36										
Sample	Recording Date	what	where	how	which	why	who	when	whose	Total
S 1-7	9 Mar-6 May 94	0	0	0	0	0	0	0	0	0
S 8	20 May 1994	3	2	0	0	0	0	0	0	5
S 9	5 Jun 1994	2	0	0	0	0	0	0	0	2
S 10	13 Jun 1994	4	0	0	0	0	0	0	0	4
S 11	17 Jun 1994	2	2	0	0	0	0	0	0	4
S 12	9 Aug 1994	2	0	0	0	2	0	0	0	4
S 13	23 Aug 1994	1	0	0	0	1	0	0	0	2
S 14	30 Aug 1994	0	0	0	0	0	0	0	0	0
S 15	16 Sep 1994	0	0	0	0	1	0	0	0	1
S 16	4 Oct 1994	4	0	0	0	0	2	0	0	6
S 17	12 Oct 1994	1	0	0	1	0	0	0	0	2
S 18	20 Oct 1994	1	2	0	1	2	0	0	0	6
S 19	1 Nov 1994	8	0	0	0	1	0	0	0	9
S 20	8 Nov 1994	10	0	0	0	0	0	0	0	10
S 21	15 Nov 1994	1	3	0	1	0	0	0	0	5
S 22	22 Nov 1994	13	0	0	0	2	0	0	0	15
S 23	29 Nov 1994	5	0	0	0	0	0	0	0	5
S 24	8 Dec 1994	2	0	2	0	0	0	0	0	4
S 25	29 Dec 1994	0	2	1	0	0	0	0	0	3
S 26	5 Jan 1995	1	3	0	0	0	0	0	0	4
S 27	13 Jan 1995	6	0	0	0	2	0	0	0	8
S 28	20 Jan 1995	5	0	1	0	0	0	0	0	6
S 29	26 Jan 1995	13	3	3	2	1	0	0	0	22
S 30	4 Feb 1995	4	1	2	0	3	0	0	0	10
S 31	14 Feb 1995	9	5	0	1	0	1	0	0	16
S 32	22 Feb 1995	5	1	3	0	1	1	0	0	11
S 33	1 Mar 1995	9	9	5	2	2	0	0	0	27
S 34	8 Mar 1995	2	4	1	0	0	0	0	0	7
S 35	16 Mar 1995	4	1	1	1	1	0	0	0	8
S 36	24 Mar 1995	12	5	5	1	4	0	1	0	28
S 37	13 Apr 1995	3	1	1	0	1	0	0	0	6
S 38	22 Apr 1995	18	6	3	0	2	0	1	0	30
S 39	1 May 1995	4	1	1	0	1	0	0	0	7
S 40	19 May 1995	0	0	0	0	0	0	0	0	0
S 41	26 May 1995	2	0	1	1	0	0	0	0	4
S 42	2 June 1995	4	1	2	0	0	0	1	0	8
S 43	9 June 1995	1	3	0	2	1	2	0	0	9
S 44	23 June 1995	4	1	1	2	0	0	0	0	8
S 45	7 Jul 1995	1	0	0	0	0	0	0	1	2
S 46	24 Aug 1995	18	8	5	3	4	4	5	2	49
	Total	184	64	38	18	32	10	8	3	357

Appendix D-5 Number of Missing Auxiliaries in Non-Subject Wh-Questions									
Sample	Recording Date	what	where	how	which	why	who	when	whose
S 1-7	9 Mar-6 May 94	0	0	0	0	0	0	0	0
S 8	20 May 1994	2/2	1/2	0	0	0	0	0	0
S 9	5 Jun 1994	1/2	0	0	0	0	0	0	0
S 10	13 Jun 1994	1/1	0	0	0	0	0	0	0
S 11	17 Jun 1994	1/2	0	0	0	0	0	0	0
S 12	9 Aug 1994	0	0	0	0	0	0	0	0
S 13	23 Aug 1994	0	0	0	0	0	0	0	0
S 14	30 Aug 1994	0	0	0	0	0	0	0	0
S 15	16 Sep 1994	0	0	0	0	0	0	0	0
S 16	4 Oct 1994	0	0	0	0	0	0	0	0
S 17	12 Oct 1994	0	0	0	0	0	0	0	0
S 18	20 Oct 1994	0	0	0	0	0	0	0	0
S 19	1 Nov 1994	1/8	0	0	0	0	0	0	0
S 20	8 Nov 1994	1/10	0	0	0	0	0	0	0
S 21	15 Nov 1994	1/1	2/3	0	0	0	0	0	0
S 22	22 Nov 1994	5/13	0	0	0	0	0	0	0
S 23	29 Nov 1994	1/5	0	0	0	0	0	0	0
S 24	8 Dec 1994	0	0	0	0	0	0	0	0
S 25	29 Dec 1994	0	0	1/1	0	0	0	0	0
S 26	5 Jan 1995	0	0	0	0	0	0	0	0
S 27	13 Jan 1995	3/6	0	0	0	0	0	0	0
S 28	20 Jan 1995	3/5	0	0	0	0	0	0	0
S 29	26 Jan 1995	2/13	0	0	0	0	0	0	0
S 30	4 Feb 1995	1/4	0	0	0	0	0	0	0
S 31	14 Feb 1995	3/9	2/5	0	0	0	0	0	0
S 32	22 Feb 1995	2/5	1/1	0	0	0	0	0	0
S 33	1 Mar 1995	2/9	3/9	2/5	0	0	0	0	0
S 34	8 Mar 1995	0	0	1/1	0	0	0	0	0
S 35	16 Mar 1995	1/4	0	0	0	0	0	0	0
S 36	24 Mar 1995	0	1/5	0	0	0	0	1/1	0
S 37	13 Apr 1995	0	0	0	0	0	0	0	0
S 38	22 Apr 1995	0	0	0	0	0	0	0	0
S 39	1 May 1995	0	0	0	0	0	0	0	0
S 40	19 May 1995	0	0	0	0	0	0	0	0
S 41	26 May 1995	0	0	0	0	0	0	0	0
S 42	2 June 1995	0	0	0	0	0	0	0	0
S 43	9 June 1995	0	0	0	0	0	0	0	0
S 44	23 June 1995	0	0	0	0	0	0	0	0
S 45	7 Jul 1995	0	0	0	0	0	0	0	0
S 46	24 Aug 1995	0	0	0	0	0	0	0	0
Total		31/184	10/64	4/38	0	0	0	1/8	0

Appendix D-6 Number of Inversion Errors in Non-subject Wh-Questions									
Sample	Recording Date	what	where	how	which	why	when	whose	Total
S 9-18	5 June-20 Oct 94	0	0	0	0	0	0	0	0
S 19	1 Nov 1994	1/7	0	0	0	0	0	0	1
S 20	8 Nov 1994	1/9	0	0	0	0	0	0	1
S 21	15 Nov 1994	0	0	0	0	0	0	0	0
S 22	22 Nov 1994	0	0	0	0	0	0	0	0
S 23	29 Nov 1994	0	0	0	0	0	0	0	0
S 24	8 Dec 1994	0	0	0	0	0	0	0	0
S 25	29 Dec 1994	0	0	0	0	0	0	0	0
S 26	5 Jan 1995	1/1	0	0	0	0	0	0	1
S 27	13 Jan 1995	1/3	0	0	0	0	0	0	1
S 28	20 Jan 1995	0	0	0	0	0	0	0	0
S 29	26 Jan 1995	1/11	0	0	0	0	0	0	1
S 30	4 Feb 1995	1/3	0	2/2	0	2/3	0	0	5
S 31	14 Feb 1995	0	0	0	0	0	0	0	0
S 32	22 Feb 1995	0	0	0	0	0	0	0	0
S 33	1 Mar 1995	1/7	2/6	1/3	1/1	0	0	0	5
S 34	8 Mar 1995	0	1/4	0	0	0	0	0	1
S 35	16 Mar 1995	2/3	0	1/1	0	0	0	0	3
S 36	24 Mar 1995	0	0	0	0	1/4	0	0	1
S 37	13 Apr 1995	0	0	0	0	0	0	0	0
S 38	22 Apr 1995	0	0	0	0	0	0	0	0
S 39	1 May 1995	1/4	0	0	0	0	0	0	1
S 40	19 May 1995	0	0	0	0	0	0	0	0
S 41	26 May 1995	0	0	0	0	0	0	0	0
S 42	2 June 1995	0	0	0	0	0	0	0	0
S 43	9 June 1995	0	0	0	0	0	0	0	0
S 44	23 June 1995	1/4	0	0	1/2	0	0	0	2
S 45	7 Jul 1995	0	0	0	0	0	0	0	0
S 46	24 Aug 1995	0	0	0	0	0	0	0	0
Total		11	3	4	2	3	0	0	23

Appendix D-7 Embedded Clauses												
Sample	Recording Date	because	if	how	what	where	when	which	who	why	Total	want
S 1-9	9 Mar-5 Jun 94	0	0	0	0	0	0	0	0	0	0	0
S 10	13 Jun 1994	0	0	0	0	0	0	0	0	0	0	**5**
S 11	17 Jun 1994	0	0	0	0	0	0	0	0	0	0	1
S12	9 Aug 1994	0	0	0	0	0	0	0	0	0	0	0
S 13	23 Aug 1994	**2**	0	0	0	0	0	0	0	0	2	7
S 14	30 Aug 1994	0	0	0	0	0	0	0	0	0	0	0
S 15	16 Sep 1994	7	**2**	0	0	0	0	0	0	0	9	1
S 16	4 Oct 1994	5	0	0	**4**	**2**	0	0	**1**	0	12	1
S 17	12 Oct 1994	2	0	0	1	2	0	**1**	0	0	6	10
S 18	20 Oct 1994	5	0	0	0	2	0	0	1	0	8	1
S 19	1 Nov 1994	7	0	0	3	0	0	0	0	0	10	6
S 20	8 Nov 1994	10	10	0	6	2	0	0	0	0	28	13
S 21	15 Nov 1994	7	2	0	1	1	0	0	0	0	11	4
S 22	22 Nov 1994	4	2	2	6	0	0	0	0	0	14	3
S 23	29 Nov 1994	0	7	0	0	0	0	0	0	0	7	9
S 24	8 Dec 1994	0	7	1	0	1	0	0	1	0	10	4
S 25	29 Dec 1994	1	5	0	0	3	0	0	0	0	9	5
S 26	5 Jan 1995	0	9	0	0	1	0	0	0	0	10	5
S 27	13 Jan 1995	0	3	0	0	0	0	0	0	0	3	1
S 28	20 Jan 1995	0	7	0	0	1	0	0	0	0	8	9
S 29	26 Jan 1995	0	3	1	0	0	0	0	0	**1**	5	7
S 30	4 Feb 1995	2	1	3	0	1	0	0	0	0	7	2
S 31	14 Feb 1995	0	20	0	2	6	0	1	2	2	33	2
S 32	22 Feb 1995	0	7	3	1	1	0	0	0	2	14	7
S 33	1 Mar 1995	3	33	1	3	1	0	0	0	0	41	6
S 34	8 Mar 1995	1	14	0	0	2	0	0	1	1	19	2
S 35	16 Mar 1995	0	8	2	0	1	0	2	2	0	15	6
S 36	24 Mar 1995	0	7	1	1	0	2	0	1	1	13	10
S 37	13 Apr 1995	0	5	1	0	0	2	2	0	2	12	6
S 38	22 Apr 1995	0	2	0	0	0	11	0	1	0	14	9
S 39	1 May 1995	0	6	4	0	1	16	0	0	1	28	8
S 40	19 May 1995	1	0	0	0	0	0	1	0	0	2	3
S 41	26 May 1995	0	1	1	0	0	0	0	0	0	2	8
S 42	2 June 1995	0	3	0	0	0	1	0	0	0	4	8
S 43	9 June 1995	0	4	0	0	2	7	2	0	2	17	4
S 44	23 June 1995	0	8	4	0	4	12	1	0	2	31	12
S 45	7 Jul 1995	0	0	1	0	0	0	0	0	0	1	4
S 46	24 Aug 1995	0	18	9	0	8	20	3	0	1	59	21
Total		56	194	34	28	42	71	13	10	15	463	210