THE UNIVERSITY OF CALGARY

The Role of Initiation Point in the Distribution of Root Infinitivals in the Acquisition of German

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF ARTS

DEPARTMENT OF LINGUISTICS

CALGARY, ALBERTA

AUGUST, 1997

Abstract

Adult German is a V2 language with an underlying SOV order; finite verbs in matrix clauses appear in second position. The verb must undergo movement out of the VP to land in C^0 . During the early stages of syntactic development, German children use root infinitivals, which are ungrammatical in adult German, and finite forms interchangeably. However, on closer inspection, we see that these forms are treated as syntactically distinct. Finite verb forms consistently move out of the VP and into a functional projection while nonfinite forms never undergo movement. I show that these early distinctions are based on the projection of tense (TP) in clauses containing finite verb forms, not on the presence of agreement (AgrP) as argued by others. I suggest that the apparently random projection of TP in German child grammar is related to the presence or absence of an initiation point in the verb's event structure.

Acknowledgments

Several people were instrumental in helping to complete this thesis and I would like to thank all of them for their time and efforts.

First and foremost, I want to express my sincere appreciation to Dr. Eithne Guilfoyle, my supervisor, for all of her support, understanding and hours of discussion during the last year and a half. Her enthusiasm for and dedication to research in syntax and language acquisition has encouraged and developed my own interest in those fields. In addition, I was supported financially by a SSHRC grant (#410-95-0382) awarded to Dr. Eithne Guilfoyle. I would also like to express my gratitude to the Department of Linguistics at the University of Calgary for providing additional financial support.

I want to thank Dr. John Archibald and Dr. Amanda Pounder for taking the time to serve on my examination committee. As a result of their comments, suggestions and availability for discussion, this thesis has greatly improved. During the time I worked on my thesis, audiences at the University of Calgary and Tilburg University, the Netherlands, also provided valuable input.

Grace Randa and Valerie Baggaley were a constant source of encouragement, both personally and academically. Despite their own busy schedules as graduate students, they read earlier versions of this thesis and provided many helpful remarks. In spite of having little exposure to linguistics, Samantha Thrift showed great patience in editing and proofreading previous drafts of this thesis.

Finally, I want to thank my friends and family for standing by me through the long hours, bad moods, and canceled plans, in addition to the good stuff.

For Minchul Cha (October 22, 1972 - June 22, 1997),

who believed in me.

Table of Contents

List of Tables

Chapter 1
Introduction and Theoretical Assumptions

1.0 Introduction

Syntactic theory requires empirical validation in order to demonstrate its explanatory power. One potential route is to consider a theory's implications for language acquisition, and attempt to confirm these claims by investigating data from children in the early stages of language development. This thesis investigates the models proposed for German syntax, their claims concerning first language acquisition, and applies them to data from early child German. One characteristic of German child language which has proven to be the most difficult to explain is the apparently random distribution of finite verb forms and infinitivals in child utterances. Both types of verbs are used in early child German. Finite verbs undergo movement out of the VP as they would in adult German, while the nonfinite forms remain in the VP.

Two questions must be answered regarding this phenomenon: (i) to which functional position is the verb moving? (ii) is there an underlying motivation for the fact that some verbs are finite and others are infinitival? After discussing the German and Swedish acquisition data, I conclude that only one functional category is present, TP. I argue that verb movement in early child German is to T^0.

The question which we are left with, and the primary issue addressed in this thesis, is what motivates the projection of TP in some utterances, but not others. Guilfoyle (1993, 1996, 1997) argues that in both adult language and language acquisition, the presence or absence of an initiation point in the event structure of a verb may influence whether or not it projects TP. The claims made by this theory are compared with data from early child German; some are supported by the data. Most of the thesis is devoted to investigating the acquisition of non-initiation point verbs (e.g., experiencer verbs, psychological predicates) and modals in German acquisition. A higher proportion of verbs lacking an initiation point in their event structure emerge in their infinitival form as compared to regular verbs. These data are relevant to language acquisition since they indicate children may be paying attention

to event structure in the early stages of linguistic development. This study also lays the groundwork for further research in this area including: (i) the collection of more data from various developmental stages to confirm the trends found in transcripts available on the CHILDES database (MacWhinney and Snow 1990), (ii) explanations for why so few non-initiation point verbs appear in early child German and determine whether or not this is the case in other languages, (iii) the analysis of infinitival forms of regular verbs (i.e., those frequently associated with an initiation point), and (iv) the investigation of the small group of regular verbs which appear in both their finite and infinitival forms, and (v) the development of epistemic modals.

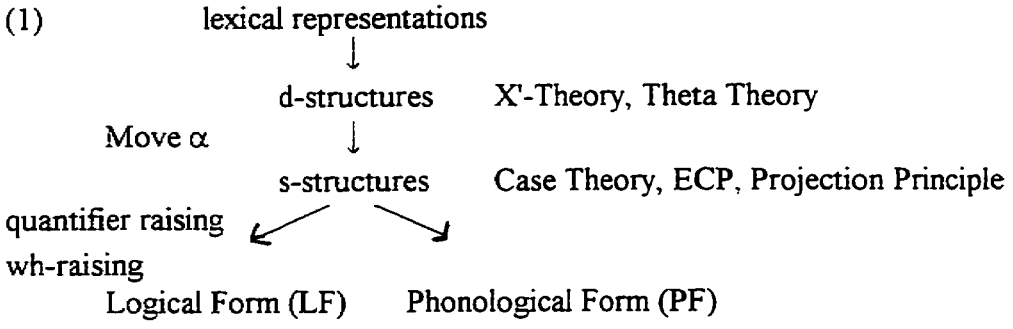
In this chapter, I provide a brief outline of the thesis and the theoretical assumptions which will be applied to the German data. First, the basic theory, Principles and Parameters Theory (§1.1), and its assumptions concerning language acquisition are discussed (§1.1.1). Second, the more specific theoretical mechanisms used throughout the thesis are explained. Grimshaw's Principle of Minimality (Grimshaw 1993), Rohrbacher's Paradigm-Verb Raising Correlate (Rohrbacher 1993, 1994), the bipartite VP (Guilfoyle 1993, Travis 1991) and the thematic and aspectual hierarchies proposed in Grimshaw 1990 each play a significant role in this thesis (§1.2). The role of initiation point in adult Southern Irish is discussed in §1.2.5 because it forms the foundation of the model proposed for early child grammar (Guilfoyle 1993, 1996, 1997). In §1.3, the contents of each chapter are briefly reviewed. Finally, §1.4 considers this chapter and summarizes the main points of each section.

1.1 Outline of the Principles and Parameters Theory

Principles and Parameters Theory (Chomsky 1986) endeavors to restrict the number of possible grammars generated by Universal Grammar. Within this framework, Universal Grammar has a small set of PRINCIPLES, that is, constraints which cannot be violated in any language. Some of these principles are parametrized, making a limited set of choices or PARAMETERS available to a language or language learner. The principles and their respective parameters are organized into subcomponents of the grammar or MODULES. The modules with which we are concerned include: X'-Theory, the Projection Principle, and Theta

Theory.[1] The diagram in (1) demonstrates the overall organization of the grammar within this framework and the placement of various modules within this grammar:

(1)



X'-Theory ensures the uniform projection of syntactic structure while representing the hierarchical nature of the phrasal categories. Each lexical and functional category (V, N, P, Agr, T) heads its own phrasal projection (VP, NP, AgrP, TP), following the rules listed in (2):

(2) XP → Spec; X'
X' → X; YP

The order of the phrasal head and other constituents within the phrase are parametrized, that is, they are determined language-specifically.

To prevent new arguments (and/or theta roles) from being created or deleted between d-structure and s-structure, the Projection Principle states that information present at the lexical level must also be represented in the syntax.[2]

(3) Projection Principle
Lexical information is syntactically represented.
(Chomsky 1986)

Arguments generated at the lexical level may undergo movement, but in order to meet the Projection Principle, they must leave a trace in their original position. Thus, the argument structure projected at the lexical level is preserved at s-structure.

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[1] For an extensive introduction to each of these modules, see Haegeman 1994.

[2] Note that the status of the Projection Principle has changed under the Minimalist Program. I do not consider these alterations as they are not relevant for the issues discussed within this thesis.

Theta Theory deals with the thematic relations between lexical elements and their arguments. These thematic relations or theta roles include: agent, theme, patient, experiencer, goal and others. According to the Theta Criterion, every NP argument in a sentence must be assigned a theta role.

(4) The Theta Criterion

i. Each argument is assigned one and only one theta role.
ii. Each theta role is assigned to one and only one argument.

(Chomsky 1981)

For example, in (5), the verb *give* has three theta roles to discharge:

(5) John gives the book to Mary.

(6) a. *John gives the book.
b. *John gives the book the apple to Mary.

The agent role is assigned to the NP *John*, the theme (or direct object) is the NP *the book*, and finally, the goal (or indirect object) is the PP *to Mary*. When not all three theta roles are assigned, the sentence is ungrammatical (6a); if there are too many arguments, the Theta Criterion is violated and the result is ungrammatical (6b). Recent proposals argue that these thematic relationships are syntactically encoded (Baker 1988, Hale and Keyser 1993); this is referred to as the Uniformity of Theta Assignment Hypothesis.

(7) The Uniformity of Theta Assignment Hypothesis (UTAH):

Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.

(Baker 1988: 46)

Generally, the external argument is assumed to be generated in [Spec, VP] while internal arguments are base-generated in [V', NP] (Koopman and Sportiche 1991, Larson 1988).

LOGICAL FORM is a level of representation, after s-structure, dealing with several logico-semantic notions. This level is required for various types of covert movement (i.e., movement not phonetically expressed), including wh-raising and quantifier raising. For example, *Everyone saw someone* has two quantifiers and depending upon which one raises (i.e., adjoins to IP), the sentence has two different readings. In one interpretation, everyone has met some person but that person is not the same in every case (8a); *everyone* has wide

scope over the proposition because it has undergone raising. The second interpretation is that there is one person whom everyone has met (8b); *someone* has raised and has wide scope over the proposition.

(8) Everyone met someone.
  a. For every x there is some y such that it is the case that x met y.
  b. There is some y, such that for every x, it is the case that x met y.

At s-structure, both readings have an identical structure. To explain the different interpretations, the level of Logical Form (LF) is used, whereby the quantifiers undergo raising after s-structure (Chomsky 1976, May 1977). The LF level is subject to the same syntactic constraints as s-structure and d-structure.

1.1.1 Language Acquisition within Principles and Parameters

A linguistic theory must account for three facts of first language acquisition. First, children acquire whatever language is present in their environment. For example, a Japanese child adopted by French-Canadian parents would learn French as his/her first language, despite his/her Japanese heritage. Second, although a child may not be exposed to negative evidence (i.e., information about ungrammaticality), he/she has a native intuition about what constitutes an ungrammatical sentence versus a grammatical one in his/her native language. Third, a language learner is exposed to a finite portion of the possible utterances in the target language. In spite of this poverty of stimulus, the child is capable of generating an infinite number of utterances in his/her native language, including those never before produced. To explain these phenomena, Chomsky (1965) argues that children must be biologically endowed with a language faculty, or language acquisition device. This faculty, often referred to as Universal Grammar (UG), contains certain principles and other information to assist the child in language acquisition. Thus, the acquisition task is as shown in (9); the child receives the primary linguistic data, analyzes these data according to what is provided by UG and acquires the target language.

(9) primary linguistic data ⟷ Universal Grammar → Target Language

The role of input (or primary linguistic data) in acquisition is to provide the child with data which he/she analyzes, using UG. After analyzing the input, the child constructs a grammar (i.e., system of rules) which he/she applies productively to his/her output. As a result, errors may occur during the acquisition process. One type of error which commonly occurs is overgeneralization where a rule may be applied to elements which are irregular and do not undergo that process. For example, children acquiring English frequently apply the past tense marker *-ed* to verbs which do not take *-ed* in their past tense (e.g., *go* - **goed* instead of *go* - *went*), despite the fact that they never hear those forms in their linguistic environment. Once the child receives more linguistic input, he/she corrects the overgeneralization (or other error) accordingly. In this sense, although input drives the child's acquisition process, his/her output is not always a mirror-image of the linguistic environment.

Within Principles and Parameters theory, the child is assumed to be provided with a set of principles and parameters by UG. The primary goal of acquisition is to determine the settings of each of these parameters. The linguistic input determines the pattern of PARAMETER-SETTING. For example, in X'-Theory (§1.2.1), the child analyzes the linguistic data to determine whether or not a phrasal head appears in initial position or final position. If the head is in initial position in the data, the child sets that particular parameter to head-initial. With both the basic assumptions about the grammar (§1.2.1) and this discussion of the language acquisition task, we can turn to the more specific theoretical assumptions of this thesis.

1.2 Theoretical Assumptions

In this thesis, I make several theoretical assumptions concerning adult syntax and language acquisition. When discussing the literature reviews and acquisition data, I assume the Principle of Minimal Projection as proposed in Grimshaw 1993 (§1.2.1). For the analysis of the German agreement system and the acquisition data, I use Rohrbacher's

Paradigm-Verb Raising Correlate (1993, 1994) (§1.2.2). I assume the bipartite VP as supported in Guilfoyle 1993, Hale and Keyser 1991, 1993, and Travis 1991 for the analysis of adult German syntax. As shown below, the use of two VP shells helps distinguish between true external arguments and internal arguments (§1.2.3). Grimshaw's thematic and aspectual hierarchies (1990) are crucial in explaining the behaviour of different verb types in German. Different classes of experiencer verbs in German are explicated by the varying arrangements of their arguments on the thematic and aspectual hierarchies (§1.2.4). In §1.2.5, I provide a brief summary of the role of initiation point in adult Southern Irish as proposed by Guilfoyle (1993, 1996, 1997). After a brief discussion of these theoretical assumptions, I apply these models when discussing the German data.

1.2.1 Principle of Minimal Projection (Grimshaw 1993)

Grimshaw (1993) proposes that child grammar follows Structural Minimality, a condition also governing adult syntax. STRUCTURAL MINIMALITY states that clauses which do not have overt evidence for a particular functional projection do not have that projection in their underlying structure. Grimshaw's claims (1993) are based on evidence from language-acquisition studies focusing on the development of English auxiliaries (Stromswold 1990 and others) and the development of languages with verb movement (Wexler 1994 and others).[3] Structural Minimality is achieved through applying two principles: MINIMAL PROJECTION and OBLIGATORY HEADS.

(10) *Minimal Projection*: Projections are only legitimate when they are motivated.
Obligatory Heads: Heads of projections must be filled at S-structure.
(Grimshaw 1993: 76)

The principles in (10) result in two separate claims. First, only required projections occur in the adult system, and only fully acquired categories are projected in a child's grammar. Second, in cases where a lower projection is not present at the surface, but a higher projection appears, the lower projection is also expected to be present in the grammar

[3] See Grimshaw 1993 for further discussion of the evidence supporting this principle.

(Grimshaw 1993: 82). Grimshaw's Principle of Minimal Projection makes two significant statements about acquisition: (i) if no overt evidence for a category is present in the data, the child's grammar does not include it, and (ii) the appearance of a higher projection in the child's speech is considered evidence for the presence of a lower projection. Thus, when looking at the data from German acquisition in the following chapters, we assume that only overt evidence of a category will lead to its representation in child grammar.

1.2.2 Rohrbacher's Paradigm Verb-Raising Correlate (1993, 1994)

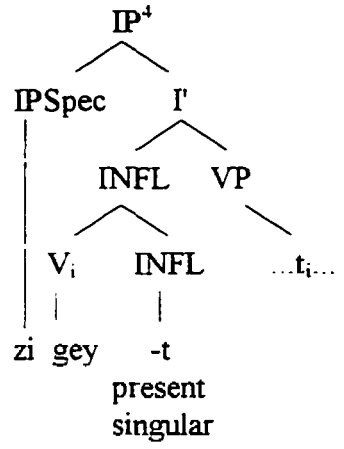
Rohrbacher (1993, 1994) proposes that V-to-Agr raising in the Germanic languages is explicable through the use of the PARADIGM-VERB RAISING CORRELATE.

(11) Paradigm-Verb Raising Correlate

> A language has V to I raising if and only if in at least one number of one tense of the regular verbs, the person features [1st] and [2nd] are both distinctively marked.
>
> (Rohrbacher 1993: Chapter 3, 28)

This correlate states that a language has strong agreement (triggering V-to-Agr raising) when the first and second person markers of subject-verb agreement are distinct. Languages with strong agreement store agreement affixes lexically (i.e., they have their own lexical entries, separate from the verb) (Rohrbacher 1993, 1994). The affixes are base-generated in Agr^0 forcing the verb to move out of the VP and into Agr^0, in order to have subject-verb agreement. The example in (12) is taken from Rohrbacher 1993 and shows the movement of the verb into the head of IP (or AgrP) in a strong agreement language, Yiddish.

(12)



zi geyt 'she leaves' (Yiddish)

(Rohrbacher 1993: Chapter 3, 41)

Languages with weak agreement store agreement affixes with the verbal paradigm and the affixes are generated in V^0 with the verb; no V-to-Agr movement is necessary (Rohrbacher 1993, 1994). Two claims are made concerning the acquisition of agreement in Rohrbacher's framework: (i) children may be sensitive to a possible morphological distinction between first and second person verb morphology in the input, (ii) the acquisition of the first and second person agreement markers which are distinct (in the target language) should result in verb movement to Agr^0; the child now recognizes that agreement heads its own projection. In §2.2.1, we will see that German meets the requirements for a strong agreement language and issues surrounding the acquisition of subject-verb agreement are discussed in §2.3.

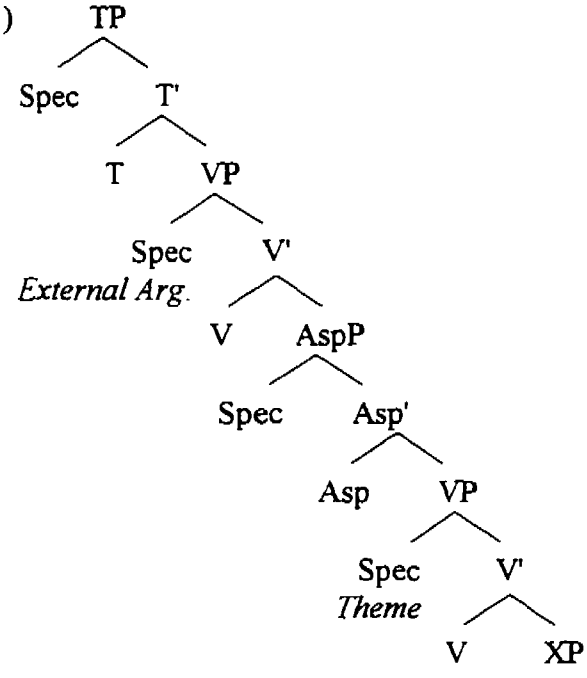
1.2.3 Bipartite VP (Travis 1991, Guilfoyle 1993)

Although the bipartite VP is proposed to account for double object constructions (Larson 1988) and denominal verbs (Hale and Keyser 1991, 1993), this structure also accounts for differences in verbal argument structure (Hale and Keyser 1993). The bipartite VP I apply to the German data is based on Guilfoyle 1993 and Travis 1991. The bipartite VP consists of an inner VP and outer VP (or outer VP shell). In this model, an AspP

[4] Rohrbacher (1993) uses IP here, collapsing both AgrP and TP, for simplicity.

(Aspect Phrase) intervenes between the VPs. The following is a representation of the bipartite VP taken from Travis 1991:[5]

(13)



(Travis 1991: 7,9)

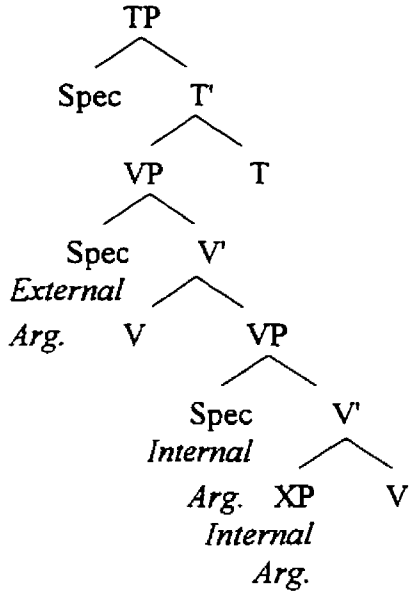
The verb is generated in the lower V^0 and moves up into Asp^0 and the upper V^0. From there, the verb moves into T^0 (and up to a functional category, depending upon the language). Based on evidence from the progressive and non-progressive verb tenses in Owerė Igbo and Austronesian languages, Travis (1991) argues that TP (or the upper AspP) is associated with the starting point of an event and lower AspP is correlated with the completion of an event.[6] Guilfoyle (1993) demonstrates that syntactic distinctions between tensed and root infinitival clauses in Southern Irish are attributable to the presence of an initiation point of an event (i.e., an external argument) (§1.2.5). Notice, in this tree (13), external arguments are generated in the upper VP, [Spec, VP] while the theme (internal argument) is generated in the lower VP (again in [Spec, VP]). Thus, the different relationships between the verb and its external and internal arguments are represented

[5] Travis (1991) refers to TP as AspP in her discussion. The upper AspP is referred to as AspP1 and the lower AspP is referred to as AspP2.

[6] For further literature concerning the role of the completion point or delimitation point in an event, see Ritter and Rosen 1996.

syntactically. This distinction proves useful in explaining the German data. The bipartite VP which I am adopting to account for the German data is shown below:[7,8]

(14)



Therefore, the structure of the German VP and the relationship the verb bears to all of its internal arguments are based on Guilfoyle 1993 and Travis 1991.

1.2.4 Thematic and Aspectual Hierarchies (Grimshaw 1990)

Grimshaw (1990) deals with the representation of argument structure, or A-STRUCTURE. Rather than viewing argument structure as a set of thematic roles, she shows that argument structure has its own internal representation based on the prominence relations which hold between thematic roles, and their placement on the aspectual hierarchy. The aspectual hierarchy is based on the type or duration of the temporal activity represented by the verb (see (17) for an example). When mismatches occur between the thematic and aspectual hierarchies, different syntactic structures emerge among verbs, though they may have identical thematic roles to discharge. The theta role, Agent, is highest in the thematic

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[7] The primary differences between this tree and the one cited in (4) from Travis 1991 are (i) the placement of the verb in head-final position because German is, underlyingly, SOV, and (ii) the missing AspP which is unnecessary in this discussion.

[8] See Suchsland 1993 for other arguments supporting the generation of the German VP as having more than a simple VP structure and consisting of several layers.

hierarchy, followed by Experiencer, Goal/Source/Location and Theme, respectively. The hierarchy is presented in (15) and an example is in (16); both are taken from Grimshaw (1990: 8):

(15) (Agent (Experiencer (Goal/Source/Location (Theme))))

(16) murder (x (y))
Agent Theme[9]

In addition to this thematic hierarchy, each verb has its own aspectual or event structure. The aspectual hierarchy or event structure is broken down into two sub-events. In (17), a particular activity, the first part of the event (the activity), results in the second part of the event (the state).

(17) event
activity state
(Grimshaw 1990: 26)

A causal argument is correlated with the first sub-event because it results in the second sub-event (or state). An argument which takes part in the first sub-event in the event structure is more aspectually prominent than the argument taking part in the second sub-event. The aspectually most prominent argument emerges as the subject. Thus, the prominence relations of a given predicate are predictable from the semantics of the verb.

A sentence with a transitive agentive verb such as *The thief murdered his victims* would be represented as follows (number 1 is the first sub-event and 2 is the second sub-event):

(18) *thief* *victims*
(Agent (Theme))
1 2

With experiencer verbs, similar relations exist. In a sentence with a PSYCHOLOGICAL STATE, such as *He loves his work*, *he* is the experiencer and *his work* is the theme:

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[9] Note that Grimshaw 1990 uses the thematic roles only as labels. They have no further meaning other than to clarify the relationships under discussion.

(19) *Psychological state*
(Exp (Theme))
1 2

(Grimshaw 1990: 28)

In (19), the experiencer is the subject and the theme is in object position. Some experiencer and psychological predicates appear to be problematic because the experiencer occurs in object position while the theme is in subject position: *Thunder frightens/disturbs him* (Grimshaw 1990: 8). Using the thematic and aspectual hierarchies, Grimshaw can account for this discrepancy. This second type of verb is a PSYCHOLOGICAL CAUSATIVE verb where *thunder*, the theme, is causing *him*, the experiencer, to be frightened. According to the aspectual hierarchy, *thunder* is the most prominent argument (i.e., the first sub-event) and therefore, emerges as the subject, despite the fact that the experiencer is more prominent thematically:

(20) *Psychological Causative*
(Exp (Theme))
2 1

(Grimshaw 1990: 28)

Thus, Grimshaw's hierarchy accounts for the distribution and syntactic behaviour of various thematic roles. Her framework is applicable to the German data.

1.2.5 The Role of Initiation Point in Adult Southern Irish (Guilfoyle 1993, 1996, 1997)

The proposals outlined in Guilfoyle 1993, 1996 and 1997 have a significant role to play in this thesis, particularly when looking at the data collected from early child German. In this section, I provide a brief discussion of the role of initiation point in adult Southern Irish and the motivation for applying this model to early child grammars.

Guilfoyle (1993, 1996, 1997) makes three claims concerning the role of initiation point in Southern Irish and other languages. First, Guilfoyle (1993, 1997) argues that in adult Southern Irish and other languages, the outer VP shell of the bipartite VP is not always

included.[10] These arguments are based on the behaviour of root infinitival clauses in adult Southern Irish (which are grammatical in Irish). In the case of transitive verbs which emerge in infinitival clauses, only the object can appear, the lexical subject cannot. However, the lexical subject can be expressed in a tensed or finite clause. The following examples (21-22) demonstrate this characteristic; the relevant clauses are marked with square brackets.[11] In (21), PRO is grammatical whereas in (22) the presence of the lexical subject *sibh* 'you-PL' is ungrammatical.

(21) a. *Ba mhaith liom* [PRO *an doras a phéinteáil*].
COP good with-me the door PTC paint-VN
'I would like to paint the door.'

(Guilfoyle 1993: 6(10))

b. **Ba mhaith liom* [*sibh an doras a phéinteáil*].
COP good with-me you-PL the door PTC paint-VN
'I would like you to paint the door.'

(Guilfoyle 1993: 7(12))

Since external arguments are generated in the outer most VP, the fact that they are ungrammatical indicates that there is no outer VP shell present in the infinitival clause. Thus, the number and types of arguments which can be theta-marked by the verb, when only the inner-most VP (or VNP) is generated, are restricted. Second, the types of arguments which can be external arguments are determined language-specifically. In some languages, such as Southern Irish, the external argument is associated with the initiation point of an event.[12] The initiation point of an event is defined as either (i) the agent or subject which causes the event to take place, or (ii) the temporal starting point of an event. For example, nonagents cannot appear as subjects (i.e., external arguments) in Southern Irish. In psychological predicates, the experiencer is contained within a prepositional phrase.

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[10] See Guilfoyle 1993, 1997 for extensive discussion.

[11] In Irish grammar, the nonfinite form of the verb is known as a *verbal noun* (VN). The VNP in Irish corresponds to the inner most VP in (16). For the purposes of this thesis, German and Irish infinitivals may be considered equivalent.

[12] For discussion on the types of arguments which can appear as external argument in Dutch and German, see Van Voorst 1988 and Kratzer 1994.

(22) a. *Tá eagla orm.*
is fear on-me
'I am afraid.'

b. *Tá ochras orm.*
is hunger on-me
'I am hungry.'

(Guilfoyle 1997: 10 (17))

Finally, in Southern Irish, the generation of a lexical NP in the outer VP shell results in the projection of TP which contains features for checking the NP through spec/head agreement.[13]

As we will see in the following chapter, early child German has root infinitivals, which are ungrammatical in adult German, and tensed verb forms (§2.1.2). Guilfoyle (1996, 1997) argues that the analysis for Southern Irish root infinitivals may be applied to child data, including German. Thus, she provides a possible motivation for the presence of root infinitivals in early child German. This thesis discusses the emergence of verbs which lack an initiation point in early German to determine whether or not they behave like non-initiation point verbs in Southern Irish.

1.3 Outline of the Thesis

As stated above, this chapter provides an introduction to the problems being addressed, the outline of the thesis and the theoretical assumptions used throughout the thesis. The remainder of this section provides a brief overview of the next four chapters.

In Chapter 2, a discussion of adult German syntax, and the major characteristics of early child German is followed by an overview of the literature concerning German child language. Most previous analyses focus on the nature and number of functional categories in child language (Guilfoyle and Noonan 1992, Clahsen et al 1994, Weissenborn 1990) and although each provides a different insight into child language, they are not fully explanatorily

[13] Guilfoyle (1993, 1997) applies the Minimalist framework to the Irish data. Within this model, NPs must check their features through spec/head agreement. The relevant feature in this case is the [+N] feature which must be checked against the lexical NP. The functional head, in which the feature appears, is parametrized. In Irish, [+N] is generated in TP (see Guilfoyle 1993, 1997 for supporting arguments). Therefore, when a lexical NP is generated in the position of the external subject, TP is projected so the NP can check its features. For the purposes of this thesis, it is sufficient to say that TP is projected with verbs having an initiation point (or external argument) and it is not included when the verb lacks an external argument in adult Southern Irish.

adequate. One recent proposal (Ingram and Thompson 1996), attempts to motivate the presence of infinitival forms in certain utterances, but does not account for all of the German acquisition data. Like other researchers (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994), I conclude that German children have access to a single functional projection. Contrary to earlier models, I argue that this projection is TP which seems to be available in certain utterances. However, an explanation for why TP is inconsistently projected is lacking. At this stage, we turn to Guilfoyle 1996, 1997 for a potential solution. Drawing on the presence of root infinitivals in adult Southern Irish, she proposes that verbs lacking an initiation point are more likely to be infinitival in child language. I look at the acquisition of non-initiation point verbs in German to determine the validity of this hypothesis. The data are taken from the CHILDES database (Clahsen 1982, MacWhinney and Snow 1990, Wagner 1985).

Chapter 3 deals with the development of various types of non-initiation point verbs. The types of experiencer verbs (i.e., those that lack an initiation point) occurring in adult German are provided, along with the predictions made by Guilfoyle (1996, 1997) for each group. The emergence of these verbs in child language is explored, and although the data set is small, some predictions of Guilfoyle 1996, 1997 are met. For comparison, data from the other verb types appearing in the transcripts are discussed. We find that children may be treating non-initiation point verbs differently from those verbs which have an initiation point.

Data from the acquisition of modal verbs in German is the focus of Chapter 4. The German modals are relevant due to their semantic properties. These modals may have a root interpretation where the focus of the sentence is on the initiation point of the event under discussion, or an epistemic function where the initiation point is not the focus of the sentence. For the first part of the chapter, the similarities between the syntactic behaviour of the modals in adult German and other verbs are addressed. The acquisition data demonstrate that root modals are the first to emerge and they are always in their finite forms. Guilfoyle 1996, 1997 accommodates the data from the acquisition of modals in German, although the model's predictions cannot be confirmed.

Chapter 5 summarizes each chapter and the data supporting Guilfoyle's analysis 1996, 1997. The implications of the role of initiation point and event structure in acquisition and areas for further research are also discussed.

1.4 Conclusion

The application of the Principle and Parameters Theory and other assumptions to the German data provides the foundation for clear analysis of both the adult target language and the data from acquisition. After discussing the general framework of Principle and Parameters Theory and its proposals for language acquisition, we look at more specific models working within the overall theory. First, the Principle of Minimal Projection states that lexical and functional projections are only included in the grammar when there is overt evidence for their presence (Grimshaw 1993). Thus, when looking at the German child data, a projection is not fully acquired unless there is overt evidence of its presence. In addition, if a higher functional (or lexical) projection is used by the child, this indicates that he/she has access to the lower projections. According to Rohrbacher's Paradigm-Verb Raising Correlate (Rohrbacher 1993, 1994), a child entering the linguistic environment would be well-served with a predisposition to find a possible distinction between first and second person agreement in the verbal paradigm. The acquisition of the first and second person singular markers should result in consistent verb movement in strong agreement languages because the verb is forced to move up into Agr^0. The bipartite VP (Guilfoyle 1993, Travis 1991) and the thematic and aspectual hierarchies (Grimshaw 1990) provide a framework for analyzing the structure of the German verb phrase and the projection of argument structure in German. Finally, the model used to explain the presence of root infinitivals in Southern Irish in Guilfoyle 1993, 1996, 1997 is applied to the German acquisition data. In the following chapter, the characteristics of adult and child German are reviewed along with previous analyses for the presence of root infinitivals and verb movement in early child German.

Chapter 2
Earlier Studies of German Child Language and A New Proposal

2.0 Introduction

The presence of root infinitivals in early child German has been the subject of extensive investigation. In an effort to explain the apparently random presence of nonfinite verb forms, many of these studies focus on the type and number of functional categories present in child grammar. As a result, a large corpus of German acquisition data is available, and these earlier analyses also provide several insights concerning the nature of first language acquisition. This chapter summarizes the general characteristics of German child language, and the various models of child syntax proposed to account for them. Although each theory contributes to our understanding of child language, no fully explanatorily adequate model has surfaced in the literature. After discussing and evaluating previous analyses, I propose that, in certain utterances, the only functional category available is Tense Phrase (TP). The remaining chapters address why, if children have access to it, TP is not consistently projected.

Section 2.1 provides a summary of adult German syntax (§2.1.1) and the major characteristics and patterns observed in early child German (§2.1.2). In the following section (§2.2), I discuss literature pertaining to the functional category debate, which concerns itself with the number and types, of functional projections included in the earliest stages of linguistic development. While some researchers argue that absolutely no functional categories are present (Guilfoyle and Noonan 1992, Radford 1990), others take the opposite stance: children have all the functional categories present in the adult grammar at their disposal (Poeppel and Wexler 1993, Verrips and Weissenborn 1992, Weissenborn 1990). Clahsen's middle ground approach (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994) advocates the inclusion of a single functional projection in child grammar. The advantages and shortcomings of each model are discussed. None of these theories are explanatorily adequate. Ingram and Thompson (1996) propose an explanation for why

certain utterances contain tensed verbs when others do not. They argue that root infinitivals appear wherever the child wants to express a modal verb. Thus, the motivation for tensing a clause is related to the possible presence of an implied modal verb. This explanation cannot adequately account for the acquisition data presented in §2.1.2. In §2.3, the debate on the role of agreement is reviewed, paying particular attention to Rohrbacher 1993, 1994. Crosslinguistic evidence from Swedish acquisition is presented, demonstrating that the movement of the finite verb is not motivated by the presence of agreement (AgrP). Finally, in §2.4, I argue TP is the functional projection present in early child German, and TP is not always included in the utterance, explaining the presence of root infinitivals. I investigate an alternative proposal, concerning the absence of an initiation point (Guilfoyle 1996, 1997), which attempts to provide the underlying motivation for tensed versus nontensed clauses in child speech in the following chapters.

2.1 The German Data

This section provides a brief overview of adult syntax grammar, that is, the target grammar for a child acquiring German as a first language. I also discuss the prevalent patterns and characteristics of German child language before dealing with various analyses of the data.

2.1.1 Adult German Syntax

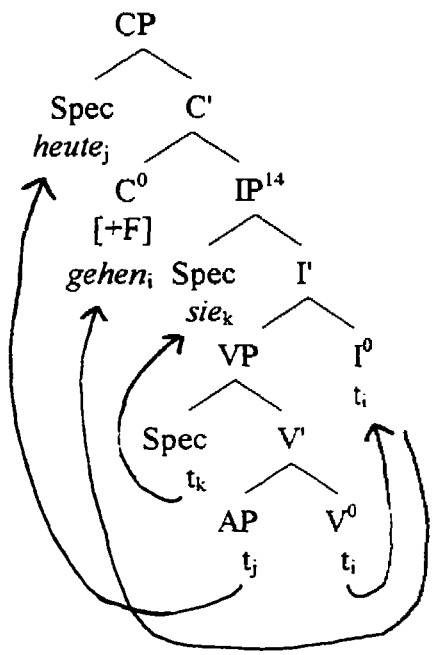
German is a V2 language, that is, the verb must be in second position in all finite matrix clauses, with an underlying SOV order (1). Verbs in subordinate clauses, with a complementizer, appear in final position (2).

(1) *Heute gehen sie ins Kino.*
today go-3P-pl they in-the theater
'Today they are going to the movies.'

(2) *Wir glauben, daß der Lehrer heute nicht hier ist.*
we believe-1P-pl that the teacher today not here be-3P-sg
'We believe that the teacher is not here today.'

I assume Thiersch's DOUBLE-MOVEMENT ANALYSIS (1978) of German matrix clauses which claims that generating a finite German sentence involves two movements: (i) verb movement and (ii) topicalization. Within this framework, verb movement to second position is triggered by the presence of a [+F] (finite) operator generated in C^0 of a finite clause. This operator is lexicalised through the presence of a verb or a complementizer (Holmberg and Platzack 1991). Concurrently, topicalization of a constituent (XP) to [Spec, CP] takes place (Schwartz and Vikner 1996, Thiersch 1978). The following tree demonstrates the movement taking place:

(3)



Heute gehen sie.
today go-3P-pl they
'They are going today.'

[14] I use IP rather than split-INFL (with AgrP and TP) for ease of exposition.

Although the status of the negative marker *nicht* 'not' is controversial (i.e., whether or not it heads its own projection), the consensus is that *nicht* is generated on the leftmost edge of the VP (Clahsen et al 1994, Verrips and Weissenborn 1992). German verbal morphology distinguishes person and number. Under Rohrbacher's Paradigm-Verb Raising Correlate (1993, 1994), German is a strong-agreement language because a distinction is maintained between first and second person (4) (§1.1.2, (11)).

(4) German Verb Paradigm (Indicative Present)

lieben 'to love'

	SG	PL
1ST	*lieb-e*	*lieb-en*
2ND	*lieb- st*	*lieb-t*
3RD	*lieb-t*	*lieb-en*

This implies that German verbs move through agreement (AgrP) on the way to C^0.[15] Null subjects occur in restricted contexts in German (Cardinaletti 1990, Hoeing 1994). If [Spec, CP] is filled, the inclusion of a nonthematic subject (i.e., expletive) is ungrammatical (5b).[16] When [Spec, CP] is not filled, an expletive or pleonastic subject is required (5a). Subjects can be left out in certain discourse-bound contexts (6).

(5) a. *Es wurde gestern in der Kirche gesungen.*
it was yesterday in the church sung
'Yesterday, there was singing in the church.'

b. *Gestern wurde in der Kirche gesungen.*
yesterday was in the church sung
'Yesterday there was singing in the church.'

---

[15] Rohrbacher (1993) argues that V-to-Agr raising is undetectable in German due to the fact that it is an underlying SOV language. However, German meets the requirements for a strong agreement language, as set out by Rohrbacher. Several others have also argued for V-to-Agr movement in German (Clahsen and Penke 1992, Clahsen et al 1994, Weissenborn 1990).

[16] Speas (1993) argues that this is because German agreement is rich enough to identify nonthematic subjects, it lacks phi features which identify thematic subjects (see Jaeggli and Safir 1989 for similar arguments).

(6) Q: *Wir gehen ins Kino, kommst du mit?*
'We are going to the movies, do you want to come?'

A: *Nee, hab' keine Zeit.*
NEG have no time
'No, (I) don't have time.'

The class of German modals includes: *wollen* 'to want', *mögen* 'to like', *sollen* 'should', *können* 'can', and *müssen* 'must'. Although a more extensive discussion of German modals is provided in §4.1, note that they behave, syntactically, in a fashion similar to many main verbs. They have an infinitival form, stack like many other German verbs and appear in second position in the main clause, like main verbs (7). The main differences between modal verbs and regular verbs are: (i) modals have an irregular morphological paradigm, and (ii) most modals may have a root or epistemic interpretation (see §4.1.1 for references and further discussion).

(7) *Er darf unser Auto fahren.*
he may-3P-sg our car drive-INF
'He may drive our car.'

Sie sagte, daß er unser Auto fahren darf.
she say-3P-sg-PST that he our car drive-INF may-3P-sg
'She said that he may drive our car.'

Summarizing, adult German is a V2 language with an underlying SOV order, null subjects are permitted in highly restricted contexts and modal verbs behave, syntactically, like main verbs. The most important characteristics of early child German are discussed in the following section.

2.1.2 Early Child German

Despite the significant amount of variation between and within individual children, several general tendencies are present in the data from early child German. The most widely discussed characteristic is the distinction maintained by German children between tensed and infinitival verb forms.[17]

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[17] The systematic distinction between finite and nonfinite forms has also been found in the development of other V2 languages such as Dutch (Haegeman 1995) and Swedish (Platzack 1990, 1992, Wexler 1994). For further discussion on the acquisition of Swedish see §2.3.1.

Finite forms in child language usually appear in first or second position whereas nonfinite forms occur in final position (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994, Poeppel and Wexler 1993, Rohrbacher and Vainikka 1994, Stenzel 1994, Verrips and Weissenborn 1992, Weissenborn 1990). Most of these root infinitivals are ungrammatical in adult German.[18]

(8) a. *ich tue nich*
I do not
(Mathias 17)
(2;9,7)

(CHILDES database)

b. *ein Loch macht die mone*[19]
a hole makes DET mone
(S 2;1,16)

(Weissenborn 1990: 197)

c. *weil du lafen*
because you sleep
(Simone, Corpus II)
(1;09,2 - 1;10,1)

(Clahsen and Penke 1992: 195)

d. *ein Schal haben*
a shawl have
'(I) have a shawl.'
(Hannah II)
(2;6)

(Clahsen et al 1994)

In both (8a) and (8b), the finite verb forms *tue* 'do' and *macht* 'makes' are in second position, whereas in (8c-d), the nonfinite verbs *schlafen* (*lafen*) 'to sleep' and *haben* 'to have' are in final position. Further evidence of this differential treatment is found in the placement of the sentential negative marker *nicht* 'not'. From the earliest stages, children consistently place the negative marker correctly in relation to the verb, according to whether or not the verb is finite.[20]

(9) a. *nich die Socke ausziehn*
not the socks put-off-INF
(Katrin II)
(2;1 - 2;4)

(Clahsen et al 1994: 417)

b. *bau mex nicht*
build max not
(Simone 1;10,20)

(Verrips and Weissenborn 1992: 292)

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[18] For all of the child data cited within this thesis (including that from the CHILDES database (MacWhinney and Snow 1990), I have copied the glosses and translations exactly as the original author has. Many of the examples do not contain MLU scores, so ages are included instead.

[19] The word *mone* represents a proper name. Weissenborn (Verrips and Weissenborn 1992, Weissenborn 1990) did not capitalize proper nouns in his representation of the data.

[20] Although the placement of the negative marker may not be correct in relation to other elements in the adult grammar, the relevant point under discussion is that *nicht* is placed correctly with respect to the verb in the sentence.

The examples in (9) exemplify the distinction between the infinitival and tensed forms. When the negative marker *nicht* (located on the leftmost edge of the VP) precedes the verb, the verb has not undergone movement outside of the VP; the nonfinite form in (9a) follows this pattern. If *nicht* follows the verb, the verb has moved outside the verb phrase as with the finite verb in (9b). These data indicate that German children are moving finite verbs outside the VP, while nonfinite forms remain in the head, V^0.

German modals are present in early child language, although they appear to be treated somewhat differently than main verbs in child language (10). Modals only occur in their finite forms in early German; their infinitival forms are never used.

(10) a. *will auch ein Ball*
want also a ball
(S; 2;1,12)
(Weissenborn 1990: 200)

b. *kann ich nich*
can I not
(B 26;30)
(Weissenborn 1990: 201)

This suggests that German children appear to be treating modals differently from other verbs.

A high number of grammatical subjects are missing, particularly in nonfinite clauses (Clahsen 1982, Clahsen and Penke 1992, Park 1981, Rohrbacher and Vainikka 1994, Verrips and Weissenborn 1992) (11).

(11) a. *Jauber machen.*
clean make-INF
(Katrin)
(1;5,15)
(Rohrbacher and Vainikka 1994: 13)

b. *kann nich das zumachen.*
can not that close
(J 2;4)
(Clahsen 1990: 379)

Most of these missing subjects are ungrammatical in adult German and cannot be attributable to discourse-bound topic drop (Hamann 1996). Expletives rarely, if ever, occur in child language, so these null subjects are not null expletives.

When wh-questions emerge, the earliest forms are *wo ist* 'where is' and *was ist* 'what is' questions, which may be interpreted as unanalyzed chunks of speech since they are not used productively (i.e., they may occur with any subject and appear to be memorized forms)

(Clahsen et al 1994, Rohrbacher and Vainikka 1994, Verrips and Weissenborn 1992, Weissenborn 1990, Wexler 1994). Examples are provided in (12a-b).

(12) a. *wo is de Kugel?*
where is the ball
'Where is the ball?'
(Simone I)
(1;07,3 - 1;08,3)

(Clahsen et al 1994: 419)

b. *was ist das?*
what is that
'What is that?'
(Simone I/Sabrina I)
(1;8 - 2;0, 1;11)

(Clahsen et al 1994: 420)

No lexical complementizers appear in the child data. The absence of productive wh-questions and lexical complementizers indicates that German children do not have CP.

The acquisition of the second person singular marker *-st*, previously absent, marks a turning point in development (Clahsen 1990, Clahsen and Penke 1992). Before the emergence of *-st*, only the endings for first person (*-e*) or third person (*-t*) are used, or no ending appears on the verb at all (*-Ø*).[21] These endings are not systematically applied to any particular person or subject (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994). After *-st* appears: correct subject-verb agreement emerges, more consistent V2 occurs, and lexical subjects surface. Clahsen (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994) argues that the acquisition of *-st* indicates that the child has access to the full subject-verb agreement paradigm. The importance of the second person marker for German acquisition is also a claim made by Rohrbacher 1993, 1994.

We have seen that, in early child German, a number of syntactic distinctions are made which differ from the adult grammar:

(i) they distinguish between finite and nonfinite verb forms;

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[21] The role of these inflectional markers is the subject of much debate. Clahsen (1986, 1990) argues that *-t* is not used as a third person singular marker because the probability of a third person singular subject occurring with the marker is .25. Poeppel and Wexler (1993) demonstrate, using the same data, that the probability of the *-t* marker occurring with a third person singular subject is almost 1. The statistics of Poeppel and Wexler 1993 are problematic for the argument that children completely lack subject-verb agreement. However, Poeppel and Wexler (1993) state that German children probably only have partial access to verb agreement. Under Grimshaw's Principle of Minimal Projection, only those heads which are absolutely present in the child's grammar are projected. I assume that because, at most, children have partial agreement, they do not yet project AgrP. For further concerns surrounding Poeppel and Wexler 1993, see Ingram and Thompson 1996.

(ii) modals are treated somewhat differently from other verbs that is they are always finite and in first or second position;

(iii) no productive wh-questions or lexical complementizers appear; and,

(iv) the availability of the second person singular marker marks a critical turning point in development.[22]

Based on the data discussed above, children must have at least one functional category above VP since their finite utterances exhibit verb movement as demonstrated by placement of the verb in relation to the negative marker *nicht*. On the other hand, children do not appear to have the full adult structure, for three reasons: (i) they do not always use the functional projection which is available, (ii) there is no evidence that CP is included in their grammar, and (iii) the status of agreement (AgrP) is debatable since not all the agreement markers are present.

2.2 Previous Studies and Analyses: The Functional Category Debate

Several previous studies have investigated the acquisition of German as a first language. Most models attempt to account for the phenomenon of verb movement in early child German, focusing primarily on the presence or absence of functional categories. Guilfoyle and Noonan (1992) and Radford (1990) argue that child language lacks any functional categories at all. At the opposite end of the spectrum, several researchers support the notion that German children have access to the full adult syntactic tree (Poeppel and Wexler 1993, Verrips and Weissenborn 1992, Weissenborn 1990). Clahsen remains the main proponent of the notion that first language learners of German have a single, generic type of functional category (Finite Phrase) (Clahsen and Penke 1992, Clahsen et al 1994). In the following sections, each of these approaches is briefly summarized and their advantages and disadvantages are outlined. Ingram and Thompson (1996) are among the

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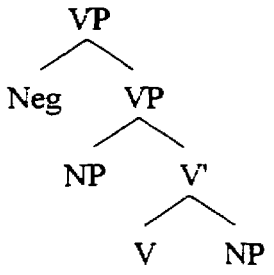
[22] John Archibald (personal communication) points out that *-st* is a phonologically difficult cluster to acquire. When looking at the transcripts from the CHILDES database (MacWhinney and Snow 1990, Wagner 1985), Katrin appears to have the second person singular marker on several verbs. However, the form /st/ varies freely with [s] (in both verbs and other words). Since children are producing a suitable phonetic substitute [s] prior to the emergence of *-st*, I argue that they are not using the second person singular because they have not acquired the morpheme, rather than as a result of its phonological difficulty.

first to address the motivation for why children only project whatever functional categories they have in certain utterances, but not all. Their theory also encounters problems which are considered in section §2.2.4.

2.2.1 No Functional Categories (Guilfoyle and Noonan 1992, Radford 1990)

The models proposed in Radford 1990 and Guilfoyle and Noonan 1992 are based on the assumption that no functional categories are available to children in the earliest stages of acquisition. In this section, I focus primarily on the hypothesis put forth by Guilfoyle and Noonan (1992). Guilfoyle and Noonan argue that children only have access to the Lexical Grammar (i.e., lexical categories) in the initial stages, and not the Functional Grammar (i.e., functional categories). The child enters his/her linguistic environment with a syntactic tree looking like (13), where only the lexical categories, V, N and Neg are present.

(13)



(Guilfoyle and Noonan 1992: 267 (35))

Since all functional categories are absent, including CP and IP, verb movement outside VP will not take place in early child languages. No AgrP is available, hence consistent subject-verb agreement is absent.[23] One significant advantage of this model is that it accounts for the impoverished or limited production of children during the early stages of acquisition. However, as discussed in the preceding section, verb movement is present in early child German. Thus, this proposal is not empirically confirmed by data collected by other researchers.

[23] Guilfoyle and Noonan 1992 refer to IP, however, to remain consistent, I use the AgrP and TP distinction throughout the discussion of earlier approaches.

2.2.2 All Functional Categories Available: The Strong Continuity Hypothesis (Poeppel and Wexler 1993, Verrips and Weissenborn 1992, Weissenborn 1990)

The second major approach assumes that all functional categories present in the adult grammar are available to the child throughout development. This approach is frequently referred to as the STRONG CONTINUITY HYPOTHESIS (Pinker 1996, Verrips and Weissenborn 1992, Weissenborn 1990) or the FULL COMPETENCE HYPOTHESIS (Poeppel and Wexler 1993) because the child's underlying syntactic tree does not change in order to achieve the adult target.[24] The child's grammar includes TP, AgrP and CP.[25] The main support for this model is its ability to explain verb movement in early child German. Verb movement is a result of having the full syntactic tree that is the verb moves out of V^0, through Agr^0 and into C^0, just as it would in adult German.

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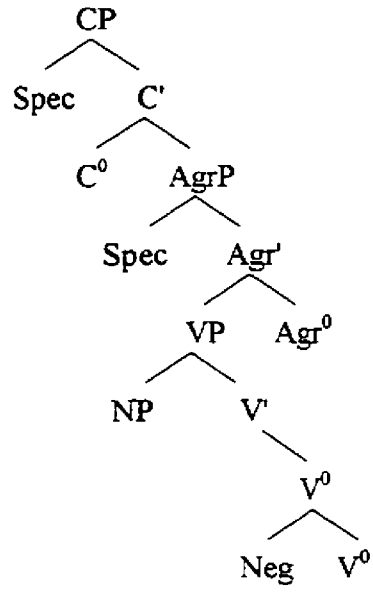
[24] The CONTINUITY ASSUMPTION states that the child's grammar should consist of the same rule types and basic elements as the adult grammar (Pinker 1996: 7). This prevents the postulation of a child grammar which is completely different (i.e., in terms of basic elements and rules) from the adult grammar and is, at some point in development, totally transformed into the adult grammar. For example, current proposals for language development assume that the child enters the linguistic environment with the basic principles of UG which also operate in the adult grammar. A model which does not adhere to the continuity assumption could argue that different principles operate in child grammar. The Strong Continuity Hypothesis states that the syntactic tree the child is provided with (by UG) is identical to the adult syntactic tree. The Weak Continuity Hypothesis states that the child does not necessarily have the adult syntactic tree at his/her disposal but that their grammatical structures conform to the principles of UG operating in adult grammar (see §2.2.3).

[25] AgrP and TP are frequently collapsed into IP in the Strong Continuity Hypothesis proposals. Again, I use AgrP and TP to maintain consistency between approaches.

(14)



The tree presented above (14) is from Verrips and Weissenborn 1992 and Weissenborn 1990. Several claims are made by this model (Verrips and Weissenborn 1992, Weissenborn 1990):

(i) the acquisition of subject-verb agreement is separate from finiteness and verb placement (i.e., verb movement to CP can occur independent of the presence of agreement),

(ii) all verbs, including modals, are base-generated in V^0 and move up through T^0 and Agr^0 into C^0,[26]

(iii) no true null-subject stage exists in early child German (most instances are a result of topic-drop).

Several advantages result from presupposing that German children have all the functional categories at their disposal. First, an explanation is provided for the presence of verb movement in early child language. Since CP is accessible, the child can move his/her verb into C^0. Second, the markers which appear on the finite verb forms (*-t*, *-e*, and *-Ø*) can be attributed to a primitive form of agreement; without any functional categories, the presence

[26] Poeppel and Wexler (1993) depart from Weissenborn's analysis (Verrips and Weissenborn 1992, Weissenborn 1990) on this point. They conclude that the modals present in early child grammar are treated differently from other verbs and warrant an independent investigation of their role in child grammar.

of any type of verbal inflection is difficult to explain. Finally, modals are not a special class under this framework, making the theory more economical than one in which modals are treated exceptionally.[27]

Despite these advantages, the notion that children have the entire adult system at their disposal is problematic. German children are producing ungrammatical sentences; root infinitivals are used in structures where they are illicit in the adult syntax. If a child already has the entire syntactic tree at his/her disposal, why would any root infinitivals appear at all? Why is the presence of subject-verb agreement highly questionable? The child should have both TP, AgrP, and CP available at this stage, so that few, if any, errors should occur.[28] Second, CP is consistently projected with no phonetic content whatsoever as demonstrated by the absence of any productive wh-questions and lexical complementizers; the consistent projection of an empty head and its specifier position violates the Principle of Minimal Projection (§1.2.1). Finally, the null-subject stage is attested crosslinguistically in languages such as Dutch and English (Haegeman 1995, Hyams 1987, Wexler 1994). Within this model, German acquisition is exceptional in lacking a null-subject stage. In addition, Hamann (1996) argues that most null subjects in German child language cannot be attributed to topic-drop. This model, based on the Strong Continuity Hypothesis (Weissenborn 1990) or the Full Competence Hypothesis (Poeppel and Wexler 1993), proves inadequate for explaining the data collected from German children.

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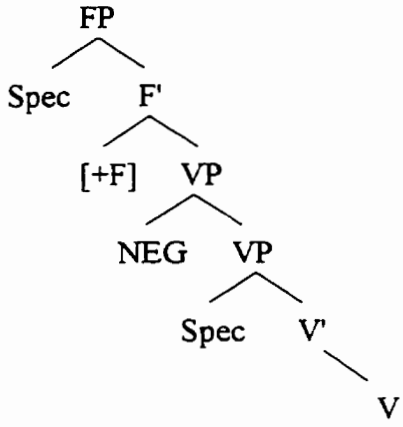
[27] As will be shown in the discussion below (§2.2.3), some models propose that modals are a separate class.

[28] One could argue that children have the full syntactic tree at their disposal but have not acquired the morphology. However, under the Principle of Minimal Projection, only the structures for which there is overt evidence (in the output) are projected in child grammar. The link between agreement morphology and the syntactic projection of AgrP in the Germanic languages is demonstrated in Rohrbacher 1993, 1994 and also supported by Speas 1993, 1996 for other languages. Thus, until there is definitive evidence that the children have access to the full subject-verb agreement paradigm, there is no evidence for the projection of AgrP. If there is no evidence for AgrP, the Strong Continuity Hypothesis cannot be maintained because it includes the presence of AgrP.

2.2.3 A Single Functional Projection: A Weak Continuity Approach (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994)

Clahsen proposes that child grammar adheres to a weakened version of the Strong Continuity Hypothesis as stated in §2.2.2. Basically, Clahsen argues that child grammars can be different from their targets as long as they are possible under Universal Grammar (Clahsen 1990). Using this constraint, Clahsen supports the presence of a single functional projection in child German. The functional projection is FP (Finite Phrase) and this projection generates the [+Finite] operator (similar to that of the adult grammar, §2.1.1).

(15)



(Clahsen and Penke 1992: 210 (12))

The verb moves up into F^0 when it contains the [+F] operator, otherwise it stays in V^0. When the utterance is nonfinite, FP does not have a [+F] operator to trigger movement. Thus, verb movement is explained without relying on the presence of subject-verb agreement. Clahsen also argues that modals, which always appear as finite in child language, are generated in F^0, not in V^0 like other verbs; this accounts for the behaviour of the modal verbs. Since CP is not present, no productive wh-questions or lexical complementizers will appear, as confirmed by the child data. FP is later reanalyzed as CP during acquisition.[29]

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[29] Rizzi (1993/1994) has a similar proposal. He argues that CP is optionally projected in the child grammar, along with all of the lower functional projections (i.e., AgrP and TP). A tensed utterance projects up to CP, explaining the verb movement. Otherwise, in an infinitival utterance, the verb remains in the VP. Many of the criticisms levied against Clahsen (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994) are applicable to Rizzi 1993/1994. First, no motivation for why some verbs are finite and project up to CP

Clahsen's model accounts for several major characteristics of child language but has a number of shortcomings. First, further evidence is required to support the notion that subject-verb agreement is not present. At this stage, it is possible for children to have partial access to the adult subject-verb agreement paradigm, if not full access. Clahsen's model requires the inclusion of a functional category not present in the adult grammar, FP. The learning process is complicated by having a generic-type FP which must be reanalyzed as CP later. No trigger or motivation for this reinterpretation is provided by Clahsen (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994). Preferably, the functional projections present in child German would be identical to those in adult German. Second, as was the case with the No Functional Projection Hypothesis and Strong Continuity Hypothesis, no underlying motivation for why certain verbs are tensed while others are not is forthcoming. While Clahsen's model seems to be the most explanatorily adequate in accounting for verb movement (the absence of any CP structure, and the (possible) lack of agreement in child language), several questions are left unanswered.

2.2.4 The Modal Hypothesis (Ingram and Thompson 1996)

Ingram and Thompson (1996) base their analysis of nonfinite-finite verb tokens in early child German on the Lexical/Semantic Hypothesis and the Modal Hypothesis. The LEXICAL/SEMANTIC HYPOTHESIS states that language learning is lexically oriented and that early multiword utterances can be explained through semantic approaches. The Modal Hypothesis is as follows:

(16) MODAL HYPOTHESIS (revised from P & W [Poeppel and Wexler 1993]): German children in their early stage of acquisition use infinitives as main verbs in sentences that contain a modal interpretation, i.e., that some activity will, can, or should occur.

(Ingram and Thompson 1996: 102 (4))

In adult German, modals co-occur with infinitival forms of the main verbs. In child German, nonfinite forms occur in contexts where a modal would be used because they have become

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while others do not is provided. Second, an explanation for why finite verbs emerge with no or inaccurate agreement, despite the projection of AgrP, is lacking.

semantically associated with the notion of modality. Thus, the difference between infinitivals and finite verbs is primarily lexical, that is, children learn that infinitival forms are associated with modal contexts. Unlike the approaches discussed above, Ingram and Thompson (1996) attempt to find a motivation for the production of both nonfinite and finite utterances. They use three criteria to determine whether or not a context is modal: (i) presence of a modal in the child's utterance, (ii) presence of a modal in parental speech (before or after child's utterance), or (iii) the transcription provides a modal interpretation of the child's utterance. According to Ingram and Thompson 1996, the data collected from four German children (two of which are the subject of my study, Katrin and Nicole) validate the claim that most infinitival utterances express modality. At the same time, a majority of finite utterances do not express modality. This model motivates the production of nonfinite forms by the desire of the child to express a desire or an ability for a particular activity to occur.

However, the data samples I collected contain problematic examples for Ingram and Thompson's hypothesis. First, there are instances where the modal verb occurs with a finite verb, that is, both verbs are finite (17). I found the following examples in the CHILDES database (MacWhinney and Snow 1990, Wagner 1985). These data contradict the notion that modality is encoded directly on a nonfinite verb form.[30]

(17) a. *KAT: *wij ich hab.*
want I have
'I want to have (it).'

*KAT: *noch mehr wij ich hab.*
still more want I have
'I want to have more.'

(Katrin, Age: 1;5,15)

[30] All of the contexts are taken from the CHILDES transcripts exactly as they were transcribed by the original researcher (Clahsen 1982, Wagner 1985).

b. *KAT: *dann wahr.*
can drive
'(It) can drive.'

[% '*das Auto kann fahren*']
'The car can drive.'

(Katrin, Age: 1;5;15)

Second, although children may use nonfinite verbs in response to adult questions which have a modal, does this necessarily entail that the child is expressing modality? Much of this data is based on an adult's interpretation of the child's speech. Such a tool could be useful for children at an early stage of development where few, if any, modals appear (see Nicole's data). However, some of the utterances interpreted as modal may not require a modal. In addition, this model does not account for the systematic syntactic distinction maintained between finite and nonfinite forms. Instead, their production is linked solely to semantic characteristics. The syntactic accounts explain the presence of movement in early child German, whereas the semantic account discussed here does not. Despite the attempt to focus on the underlying factor causing the production of nonfinite forms, the hypothesis does not adequately explain the distribution of finite and nonfinite forms in early child German.

2.3 The Debate on the Role of Agreement

Rohrbacher's Paradigm-Verb Raising Correlate is presented in §1.2.2. When applied to language acquisition, this correlate provides a specific criterion for children to use when determining whether or not their target language has strong agreement. The P-VRC is restated as (18) below:

(18) Paradigm-Verb Raising Correlate (P-VRC)

A language has V-to-I raising if and only if in at least one number of one tense of the regular verbs, the person features [1st] and [2nd] are both distinctively marked.

(Rohrbacher 1993: Chapter 3, 28)

This implies that if a child has agreement and recognizes it as strong agreement, verb movement is present. According to this model, the child will pay particular attention to any possible distinction between first and second person verb morphology. Highly consistent German V2 occurs upon acquisition of second-person agreement, indicating that the second person agreement marker has a significant role to play and this is expected with the P-VRC. However, we lack definitive evidence that German children are not using any agreement at the earliest stages. Verb movement is taking place and since the children are using one of three markers (*-t*, *-e*, *-Ø*), they may have some type of subject-verb agreement. If children do have subject-verb agreement, regardless of the accuracy of its use, there is the possibility that AgrP may be projected in the child's grammar.[31] Further evidence is required to determine whether or not agreement is causing verb movement and for this evidence, we look at the acquisition of Swedish.

2.3.1 Early Child Swedish

Swedish, like German, is a V2 language but it has an underlying SVO order. The developmental data collected from Swedish sheds light on the acquisition of German subject-verb agreement. Holmberg and Platzack (1991) propose that Swedish verb movement is triggered by the presence of a [+F] operator present in C^0, as in German. Topicalization of a constituent, XP, to [Spec, CP] occurs simultaneously. The placement of the negative marker (located on the leftmost edge of the VP), *inte* 'not', indicates whether or not the verb has moved outside the VP or not. In (19b), the finite verb has moved outside of the VP, indicated by the placement of the negative marker *inte*, that is following the main verb *äger* 'own'.

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[31] For further discussion surrounding the debate on what constitutes the threshold for the presence of subject-verb agreement, see Clahsen (Clahsen 1990, Clahsen and Penke 1992) and Weissenborn (Verrips and Weissenborn 1992, Weissenborn 1990). For the purposes of this thesis, I assume that when the *-st* marker appears, there is the chance that AgrP is projected. If AgrP exists, its possible influence on verb movement, etc., must be taken into account when looking at the data.

(19) a. *I dag har det kommit många lingvister hit.*
today have there come many linguists here
'Today there have arrived many linguists.'

(Platzack 1987: 378)

b. *Hund äger jag inte.*
dog own I not
'I don't own a dog.'

(Platzack 1990: 110)

c. *Att han inte gillar lutfisk.*
that he not likes stockfish
'that he doesn't like stockfish'

(Platzack 1990: 110)

Swedish verbal morphology does not distinguish between person and number; verbs are marked only for tense (20).

(20) Swedish Verb Paradigm (Regular)
bit-a 'bite'
INDICATIVE PRESENT

	SG	PL
1ST	*bit-er*	*bit-er*
2ND	*bit-er*	*bit-er*
3RD	*bit-er*	*bit-er*

(Rohrbacher 1993: Chapter 3, 30)

Holmberg and Platzack (1991) argue that since no subject-verb agreement is present, no agreement phrase (AgrP) is included in the adult grammar.[32] Looking at the child Swedish data helps to confirm that German children are not using agreement in the earliest stages.

Swedish children appear to use finite and nonfinite forms randomly (21).

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[32] Speas (1993) proposes an alternate view whereby Swedish does have AgrP, but it is a weak agreement language. She bases its projection on the following characteristics: (i) subject-verb agreement on past participles, (ii) Swedish pronouns reflect both number and gender, and (iii) determiners always agree with nouns in number and gender. She does not address how a language learner would take morphological and syntactic cues from these three sources and transfer them to an independent AgrP projection. Evidence which links the acquisition of pronouns, determiner-noun agreement and past participles with the consistent appearance of lexical subjects and verbal inflection is necessary. I adopt the analysis put forth by Holmberg and Platzack (1991), that is to say Swedish lacks AgrP.

(21) a. *Där är Nalle.*
there be-PRES teddy
(E1)
(1;8 - 1;10)

(Platzack 1990: 118)

b. *Docka låne den.*
doll borrow-PRES it
(E2)
(1;11 - 2;1)

(Platzack 1992: 76)

c. *Inte mamma hjälpa Embla.*
not Mommy help-INF Embla
(E2)
(1;11 - 2;1)

(Platzack 1992: 69)

They also make distinctions identical to those maintained by German children, that is the differential treatment of finite and nonfinite verb forms. Although verb movement is more difficult to detect because the underlying order of Swedish is SVO, two types of evidence from the child data indicate that children are moving finite forms out of the VP and leaving infinitivals in V^0. First, the order Verb-Neg (with finite verb forms), where the negative marker follows the verb, occurs frequently in early child Swedish. In (22a), the infinitival verb *ha* 'have' has not moved out of the VP because the negative marker *inte* precedes it. The appearance of the finite verb to the left of the negative marker *inte* demonstrates that the verb has moved outside of the verb phrase (22b).

(22) a. *Embla inte ha täcket.*
Embla not have-INF the-quilt
(E2)
(1;11 - 2;1)

(Platzack 1992: 69)

b. *Jag vill inte.*
I want not
(E2)
(1;11 - 2;1)

(Platzack 1992: 72)

The second significant piece of evidence indicative of verb movement is the word order (XP)-Verb-Subject, where the verb has moved out of the VP, to the left of the subject (23a-b).

(23) a. *Namn har* *den.*
name have-PRES it
'It has a name.'
(E2)
(1;11 - 2;1)

(Platzack 1992: 69)

b. *Snobben är* *det.*
Snoopy be-PRES it
(E2)
(1;11 -2;1)

(Platzack 1990: 119)

On the basis of the data cited above, Swedish children are distinguishing between finite and nonfinite verb forms as German children do.[33]

2.3.2 The Role of Agreement in Early Child German

In the previous section, we saw Swedish children make a systematic differentiation between finite and nonfinite verbs, similar to those maintained by German children. However, in the case of Swedish acquisition, the adult target language lacks any subject-verb agreement in its regular verbal paradigms. Several researchers argue that agreement is present in early child German and that this is the basis of the distinction between finite and nonfinite forms (Verrips and Weissenborn 1992, Weissenborn 1990). If Swedish children can make this differentiation without agreement, it is reasonable to assume that German children do not require agreement to make the same distinction. I argue that this early distinction relies on the projection of TP (Tense Phrase) at the earliest stages, not on the

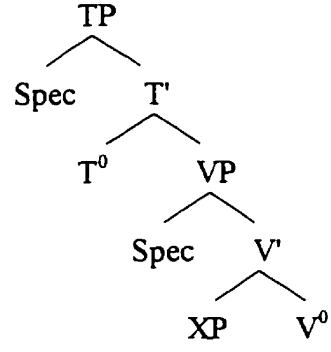
[33] Platzack (1990, 1992) argues that no real distinction is maintained between the finite and nonfinite forms, rather they are lexical variants; the child does not recognize finiteness. On the basis of the data concerning the placement of the negative marker *inte* and the appearance of the verb to the left of the subject, I disagree with his analysis. Instead, I argue that children are making a systematic differentiation at the stages under discussion. Håkansson 1989 cites evidence from earlier studies (Lange and Larsson 1973) finding that negation is incorrectly placed in relation to finite verb, that is before the finite verb, at earlier developmental stages. The analysis of finite and nonfinite forms as lexical variants may explain the earliest patterns of development. However, for the developmental stages presented in this thesis, distinctions are being maintained between finite and nonfinite forms.

projection of AgrP. Acquisition of the second person singular marker indicates access to the full subject-verb agreement paradigm and projection of AgrP.

2.4 The Presence of TP

Following Clahsen's example (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994), I argue that the distinction maintained in child grammar is based on the projection of a single functional category, TP, in the child's grammar. Tensed clauses will include TP while nonfinite clauses lack TP.

(24)



The verb, when it is finite, moves out of V^0 and into T^0 to receive a finiteness marker, either *-t*, *-e* or *-Ø*. Thus, early verb movement is explained.[34] Subjects (generated in [Spec, VP]) are optional in early child German because the projection of VP is already sufficiently motivated by the presence of a verb in V^0 (i.e., the VP projection is justified by the presence of a verb so an external argument is not required to fill [Spec, VP].[35,36] Agreement is

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[34] Note that in some utterances collected from early child German, finite verbs do not always appear in first or second position.

(i) *JUL: *christkind da bringt.*
Christ-child there bring

(Julia, Age 2;4.21 MLU: 2.73)

This is a problem for all of the theories presented here and my model is no exception. One possibility is that TP has an operator (like that proposed in Clahsen (Clahsen 1990, Clahsen et al 1994)) which lacks phonetic content. The finite forms which appear in final position may be in utterances where this operator was not produced. These incorrectly placed finite verbs do not form the majority of finite verb utterances, so I will not discuss them further.

[35] Speas (1993) proposes "Project XP only if XP has content" (Speas 1993: 14). Thus, a projection is legitimate if it has either semantic or phonetic content. Since the projection of VP requires the generation of a verb, it has both semantic and phonetic content.

acquired later and the projection of AgrP is correlated with the emergence of the second person singular marker *-st*.[37] Verbs are forced to move up into Agr^0 to pick up inflection. Lexical subjects appear with consistency at this stage because children have access to the full subject-verb agreement paradigm. Thus, it may be recognized that while German agreement is rich, it lacks the phi features permitting the identification of thematic subjects (cf. note 16).[38] No lexical complementizers or productive wh-questions appear because there is no CP present in the child's grammar. Finally, early child Swedish can be explained using this model. However, an underlying motivation for why TP is projected in some utterances, but not in others, is still lacking. For a potential explanation, we look at the proposals of Guilfoyle (1996, 1997) in the following section.

2.4.1 Motivating Verb Movement in Early Child German

Guilfoyle (1996, 1997) argues that the presence of an initiation point may result in the projection of TP in child utterances. This proposal is based on arguments concerning the structure of root infinitivals in adult Southern Irish (Guilfoyle 1993) (§1.2.5). The presence of tense in Southern Irish is correlated with the movement of verbs out of their base position and into T^0; nonfinite verbs remain in their base position. Psychological predicates and experiencer verbs also lack an initiation point because they have nonagent subjects (i.e., there is no entity which acts as the starting point of the event). The presence of root infinitivals also occurs in the data collected from the acquisition of German (and Swedish). Extending this line of reasoning to the apparently random distribution of finite and nonfinite verbs in child language, Guilfoyle (1996, 1997) suggests that the presence or absence of an initiation point in the event structure of the verb may determine whether or not the verb is

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[36] The question of whether the absence of a subject is a result of the insertion of small *pro* into [Spec, VP], or of the specifier position not being projected at all, is an interesting one. However, to limit the scope of this thesis, I am not dealing with the production of null subjects beyond general discussion.

[37] The markers, *-t*, *-e* and *-Ø*, previously analyzed as finiteness markers, are reinterpreted as agreement. Once recognizing that agreement is strong in his/her given language, the child realizes that these markers are, in fact, referential and are used specifically for certain entities in the environment.

[38] If children use *pro* (see note 36), they start to recognize that German agreement is not rich enough to allow *pro*-drop with thematic subjects and stop using *pro*-drop.

finite. Within this framework, nonfinite verb forms in child language are predicted to be those which lack an initiation point, as in Southern Irish. In the following chapters, I investigate the proportion of nonfinite verb tokens for verbs which lack an initiation point, and compare it to the proportion of nonfinite verb tokens which have an initiation point. Two types of verbs lacking an initiation point are discussed. First, experiencer verbs, such as *love* and *hate*, and other non-initiation point verbs like *live* and *sleep*, are discussed. These types of verbs are shown to have a different underlying syntactic structure from agentive verbs in the adult grammar. The data indicate that a sensitivity to initiation point would be useful in acquisition. The modals make up the second major group of verbs. The epistemic modals (i.e., those not associated with an initiation point) are predicted by Guilfoyle (1996, 1997) to be primarily nonfinite. These issues are dealt with in Chapters 3 and 4.

2.5 Conclusions

This chapter focused on the data collected from German child language and the various models put forth to account for the general characteristics which emerge at the early stages of linguistic development. German is a V2 language with an underlying SOV order. Two of the most important aspects of German child language are: (i) the apparently random interchangeability of finite and nonfinite verb forms, and (ii) the fact that children syntactically distinguish these forms. The majority of earlier studies focus on the type and number of functional categories which would trigger verb movement (i.e., the syntactic distinction between finite and nonfinite forms) in early child German. The approaches range across a wide spectrum: from Guilfoyle and Noonan's model (1992) proposing that children have no functional categories when entering the linguistic environment, to the argument that children are provided with a full syntactic tree by Universal Grammar (Poeppel and Wexler 1993, Verrips and Weissenborn 1992, Weissenborn 1990). Clahsen (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994) takes the middle ground, advocating the notion that children have a single functional projection. Each model has its advantages and disadvantages, but the postulation of a single functional category explains the most data with

the fewest number of problems. A significant, less discussed area is the possible motivation for tensing some clauses but not others. Ingram and Thompson (1996) tackle this issue by arguing that nonfinite verb forms are lexically associated with modals, and therefore, the finite and nonfinite forms are lexical variants distinguished semantically. Several problems were encountered with this framework as well. The child data indicate that at least one functional category is present in child language. The question is: which one? The acquisition data from a language similar to German but lacking in subject-verb agreement (Swedish) indicates German children are most likely not using subject-verb agreement that is they do not have AgrP. I argue, along lines similar to Clahsen's, that TP is the functional projection present in early child German and it is not always projected. The remaining question is: why is TP projected in some utterances but not others? We turn to Guilfoyle 1996, 1997 for a potential solution: non-initiation point verbs may be more likely to emerge as nonfinite. The following chapters apply Guilfoyle's theory to the data and determine its validity.

Chapter 3

The Development of Non-Initiation Point Verbs in Child German[39]

3.0 Introduction

Guilfoyle (1996, 1997) predicts that the presence or absence of an initiation point in the event structure of a verb determines whether or not a child projects TP in a given sentence. In her framework, a verb is less likely to project TP in child grammar if it lacks an initiation point and therefore, it emerges in its nonfinite form. This model attempts to explain the apparently random interchangeability of finite and nonfinite verb forms in child language. Since experiencer and psychological predicates lack an initiation point, children are expected to produce primarily nonfinite forms of these verbs. In this chapter, I discuss experiencer verbs and psychological predicates in adult German, and present evidence that they behave differently from agentive verbs. We then examine child data from the acquisition of all non-initiation point verbs.

When analyzing the experiencer verbs and psychological predicates, I assume the bipartite VP as proposed in Guilfoyle 1993 and Travis 1991 (§1.2.3). The thematic and aspectual hierarchies as proposed by Grimshaw (1990) also have a crucial role in my analysis of the different groups of experiencer verbs in German (§1.2.4).

In section 3.1, I present evidence that German experiencer verbs and psychological predicates, that is, verbs lacking an initiation point, behave differently from agentive verbs. The different groups of non-initiation point verbs, including psychological state verbs, psychological causative verbs and other non-initiation point verbs, are addressed in §3.1.1. Grimshaw's theory and the bipartite VP (Guilfoyle 1993, Travis 1991) are applied to the data in §3.2. The distinction between psychological state and psychological causative verbs is dealt with in §3.3.1. The inability of experiencer verbs to properly passivize is explained in §3.2.3. The presence of syntactic distinctions between non-initiation point verbs and

[39] I would like to thank Elisabeth Römelsberger, Andrea Wilhelm, and Amanda Pounder for their grammaticality judgments on the German sentences in this chapter. Andrea Wilhelm was especially helpful in providing further insights about the German data. Any errors are completely my own.

agentive verbs indicates that a predisposition to be sensitive to these differences would be useful to a child acquiring German. In §3.3, I show that the data collected from child language acquisition demonstrate certain patterns in the treatment of non-initiation point verbs. However, the actual number of non-initiation point verbs present in early child German is very small, making it difficult to generalize broadly (§3.3.1). In addition, the samples collected contain data from several developmental stages. Before making a definitive conclusion or statement, more data are required on non-initiation point verbs in child German. For comparison, all of the other verbs which appear in the transcripts are listed, along with whether or not they appear in their finite forms. Most of these verbs are highly agentive and most appear in their finite forms (at all stages of development). At the end of this chapter, I show that children are using infinitival forms for non-initiation point verbs with more frequency than other verbs.

3.1 Non-Initiation Point Verbs in Adult German

The behaviour of non-initiation point verbs in child language may provide evidence to prove or refute the claims made by Guilfoyle (1996, 1997). In §3.1.1, I examine the behaviour of three different groups of non-initiation point verbs in German, particularly in reference to passivization (Grewendorf 1989, Lenerz 1977): psychological state verbs, psychological causative verbs, and other non-initiation point verbs. The data support the generation of experiencers inside the VP as internal arguments, rather than external arguments.

3.1.1 Passivization in Non-Initiation Point Verbs in German

German experiencer verbs fall into three different classes, according to their syntactic behaviour:

(i) psychological state verbs, for example, *lieben* 'to love', *hassen* 'to hate' and *mögen* 'to like';

(ii) psychological causative verbs, for example *interessieren* 'to interest', *verwundern* 'to surprise', *gefallen* 'to please' and *fehlen* 'to miss, lack'; and,

(iii) other non-initiation point verbs, including *schlafen* 'to sleep' and, *scheinen* 'to shine'.

We see from the data that psychological predicates in German do not have a 'true' external argument. Identical claims have been made for Italian (Belletti and Rizzi 1988) and Dutch (van Voorst 1988). This distinction between non-initiation point and agentive verbs in adult German would make a sensitivity to the presence or absence of an initiation point highly useful to a child acquiring German. Below, I discuss the passivization of regular verbs in German.

3.1.1.1 Passivization in Regular Verbs

The passivization of regular verbs (i.e., verbs which represent an event with an initiation point) in German parallels passivization in other languages. The external argument is suppressed (or absorbed) and the passive verb does not have the ability to assign case to the internal argument (Grewendorf 1989). The internal argument must move into subject position to receive nominative case. Note also that in (1b, 2b) the instrumental or agentive argument may be included within a PP. The following are examples of regular passivization in German.

(1) a. *Der Mann zerstört sein Auto mit einem Hammer.*
the(NOM) man destroys his(ACC) car with a(DAT) hammer
'The man destroys his car with a hammer.'

b. *Sein Auto*$_i$ *wird (mit einem Hammer)* t_i *zerstört.*
his(NOM) car becomes (with a(DAT) hammer) destroyed
'His car is being destroyed with a hammer.'

(2) a. *Der Kriminelle hat den Polizisten geschlagen.*
the(NOM) criminal has the(ACC) policeman hit
'The criminal has hit the policeman.'

b. *Der Polizist*$_i$ *ist (von dem Kriminellen)* t_i *geschlagen worden.*
the(NOM) policeman is (by the(DAT) criminal) hit became
'The policeman is being hit (by the criminal).'

Since passivization involves suppression of the external argument, a true passive is only possible when an external argument is present. Unlike the agentive verbs listed above, psychological predicates in German are unable to undergo passivization, suggesting that they, too, lack an external argument (§3.1.1.2-3.1.1.4).

3.1.1.2 Psychological State Verbs

A group of experiencer verbs in German (or psychological predicates), including *lieben* 'to love', *hassen* 'to hate', and *mögen* 'to like', have a nominative experiencer and an accusative theme, that is, the experiencer appears as the subject and the theme as the object. We therefore adopt the analysis of Grimshaw (1990), where the experiencer is ranked highest on both the aspectual and thematic hierarchies, indicating that these verbs are PSYCHOLOGICAL STATE verbs.

(3) *Psychological state*
(Exp (Theme))
1 2

(Grimshaw 1990: 28)

(4) a. *Das Kind liebt den Hund.*
the(NOM) child loves the(ACC) dog
'The child loves the dog.'

b. *das Kind* *der Hund*
the child the dog
(Exp (Theme))
1 2

The examples above demonstrate the placement of the experiencer and theme on the thematic and aspectual hierarchies. The hierarchy from §1.2.4 (6) is restated as (3) here. As (4) shows, these verbs fit Grimshaw's hierarchy for psychological state verbs.

Although these verbs appear to undergo passivization, it is shown that the "participle" is actually an adjective because the modifier *sehr* 'very' can appear in the structure. If the participles in the following sentences were true verbs, the presence of *sehr*

contrasts directly with the agentive verb in (5). Thus, in each instance, the active, passive, and passive with *sehr* are equally grammatical.

(6) a. *Das Kind liebt seinen Hund.*
the(NOM) child loves his(ACC) dog
'The child loves his dog.'

b. *Der Hund wird geliebt (von dem Kind).*
the(NOM) dog becomes loved (by the(DAT) child)
'The dog is loved.'

c. *Der Hund wird sehr geliebt.*
the(NOM) dog becomes very loved.'
'The dog is very loved.'

(7) a. *Die jungen Leute haben den schrecklichen Mann gehaßt.*
the(NOM) young people have the(ACC) horrible(ACC) man hated
'The young people (have) hated the horrible old man.'

b. *Der schreckliche Mann wurde*
the(NOM) horrible(NOM) man became

(von den jungen Leuten) gehaßt.
(by the(DAT) young people) hated
'The horrible man was hated (by the young people).'

c. *Der schreckliche Mann wurde sehr gehaßt.*
the(NOM) horrible(NOM) man became very hated
'The horrible old man was very hated.'

(8) a. *Dieses Mädchen bewunderte seinen Vater.*
this(NOM) girl admired her(ACC) father
'This girl admired her father.'

b. *Der Vater wurde (von diesem Mädchen) bewundert.*
the(NOM) father became (by this(DAT) girl) admired
'The father was admired.'

c. *Der Vater wurde sehr bewundert.*
the(NOM) father became very admired
'The father was very admired.'

The behaviour of these verbs in passivization supports the notion that the experiencer subjects in (6) to (8) are distinct from the agentive subject cited in (5). In §3.2, I argue that experiencer subjects are not external arguments and thus, do not allow passivization. Since

these verbs are stative (i.e., lack an initiation point), they are expected to emerge as infinitivals in child language.

3.1.1.3 Psychological Causative Verbs

In a second group of experiencer verbs, the experiencer is in object position (i.e., assigned accusative or dative case) and the theme appears in subject position, taking nominative case. Verbs such as *interessieren* 'to interest', *beunruhigen* 'to worry', *verwundern* 'to amaze' and *gefallen* 'to please' are members of this group. I refer to these verbs as psychological causatives.[42] The passivization properties of these verbs indicate that the experiencer is an internal argument.

Grimshaw's hierarchy (1990) allows mismatches between the thematic and aspectual hierarchies (because they function independently), predicting the presence of such verbs in a given language. In such cases, the experiencer is ranked highest on the thematic hierarchy but lower than the theme on the aspectual hierarchy; these verbs are referred to as PSYCHOLOGICAL CAUSATIVES. The thematic and aspectual hierarchies are restated from §1.2.4 (21) as (9). The example in (10) uses an experiencer in accusative case while (11) is an example of the experiencer in dative case.

(9) *Psychological causative*
(Exp (Theme))
2 1

(Grimshaw 1990: 28)

(10) a. *Das Geschenk verwundert meine Schwester.*
the(NOM) gift amazes my(ACC) sister
'The gift amazes my sister.'

b. *meine Schwester das Geschenk*
my sister the gift
(Exp (Theme))
2 1

[42] Belletti and Rizzi (1988) find that Italian experiencer and psychological verbs can be grouped into three classes: the *preoccupare* class (accusative experiencers and nominative themes), the *temere* class (nominative experiencer and accusative theme) and the *piacere* class (dative experiencer and nominative theme). Den Besten (1982) also argues that these verbs be grouped together in a single class. the *preoccupare* class.

(11) a. *Ihre Personlichkeit gefällt mir.*
her(NOM) personality pleases me(DAT)
'Her personality pleases me.'

b. *mir ihre Personlichkeit*
me her personality
(Exp (Theme))
2 1

Although initially they appear to undergo passivization, insertion of the prepositional phrase containing the cause of the experience makes these sentences ungrammatical (13, 14). In addition, these "passive" sentences remain grammatical if *sehr* 'very' is inserted (13b, 14b). This contrasts with agentive verbs which can take the prepositional phrase without affecting grammaticality as was shown in (2b), restated here as (12).

(12) *Der Polizist*$_i$ *ist (von dem Kriminellen)* t_i *geschlagen worden.*
the(NOM) policeman is (by the(DAT) criminal) hit became
'The policeman had been hit by the criminal.'

(13) a. *Das Geschenk verwundert meine Schwester.*
the(NOM) gift amazes my(ACC) sister
'The gift amazes my sister.'

b. *Meine Schwester wird (sehr) verwundert.*
my(NOM) sister becomes (very) amazed
'My sister becomes amazed.'

c. **Meine Schwester wird von dem Geschenk verwundert.*
my(NOM) sister becomes by the(DAT) gift amazed
'My sister is amazed by the gift.'

(14) a. *Dieses Buch interessiert meinen Vater.*
this(NOM) book interests my(ACC) father
'This book interests my father.'

b. *Mein Vater wird (sehr) interessiert.*
my(NOM) father becomes (very) interested
'My father is (very) interested.'

c. **Mein Vater wird von diesem Buch interessiert.*
my(NOM) father becomes by this(DAT) book interested
'My father becomes interested by this book.'

Experiencer verbs taking a dative experiencer argument and nominative theme behave analogously to the other psychological causatives discussed above. This class includes verbs such as *gefallen* 'to please' and *fehlen* 'to miss or lack (somebody or something)'. Like the other psychological causatives, these experiencer verbs cannot undergo passivization:

(15) a. *Ihre Personlichkeit gefällt mir.*
her(NOM) personality pleases me(DAT)
'Her personality pleases me.'

b. **Mir wird gefallen.*
me(DAT) becomes pleased
'I was pleased.'

c. **Mir wird von ihrer Personlichkeit gefallen.*
me(DAT) becomes by her(DAT) personality pleased
'I was pleased with her personality.'

In (15b-c), the experiencer verb *gefallen* 'to please' cannot undergo passivization, with or without the expression of the theme *ihrer Personlichkeit* 'her personality'. The passivization processes which take place with these verbs are explained if the experiencer argument is generated as an internal argument inside the lower VP. These verbs represent a causative relationship and therefore, have an initiation point, so within the framework of Guilfoyle 1996, 1997 they may emerge as finite or nonfinite.

3.1.1.4 Other Non-Initiation Point Verbs

The third group of non-initiation point verbs consists of transitive and intransitive verbs representing an event which lacks an initiation or starting point. These verbs include *sehen* 'to see', *schlafen* 'to sleep' and *wohnen* 'to live'. As we see later, these verbs make up a large group of the non-initiation point verbs occurring in early child German. Unlike their psychological counterparts, transitive non-initiation point verbs may undergo true passivization. Note that the insertion of *sehr* 'very' with the passive of *glauben* 'to believe' is ungrammatical.

(16) a. *Sie glaubten meine Geschichte.*
they believed my story
'They believed my story.'

b. *Meine Geschichte wurde geglaubt.*
my story became believed
'My story was believed.'

c. **Meine Geschichte wurde sehr geglaubt.*
my story became very believed
'My story was very believed.'

As with other intransitive verbs, the intransitive non-initiation point verbs cannot undergo passivization. This is expected because there is no internal argument to become externalized which is part of the passivization process.[43]

(17) a. *Die Frau schläft.*
the woman sleeps
'The woman is sleeping.'

b. **Die Frau wurde geschlafen.*
the woman became slept
'The woman was slept.'

These verbs are also integral to this study because they represent events which lack an initiation point. According to Guilfoyle 1996, 1997, these verbs should emerge as primarily infinitival in the child data.

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[43] Note that these intransitive verbs appear in impersonal passive constructions such as the following (Grewendorf 1989: 21):

(i) *Es wurde geschlafen.*
it became slept
'There was sleeping.'

There is some debate as to whether or not these constructions are true syntactic passives (i.e., there is no internal argument being externalized) or are morphological passives (see Grewendorf 1989 and Jaeggli and Safir 1989 for different interpretations).

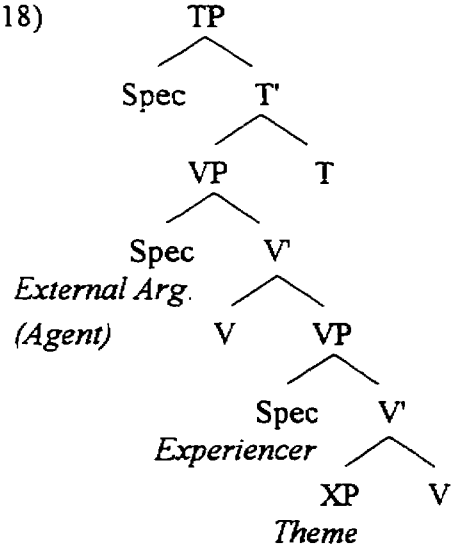
3.2 Analysis of German Experiencer Verbs

The data discussed in §3.1 indicate the argument structure of experiencer verbs must be different from agentive verbs. I argue below that the inability to passivize experiencer verbs of supports the generation of experiencers as internal arguments.

3.2.1 Psychological State Verbs versus Psychological Causatives

The apparent discrepancy between the psychological causatives, (*verwundern* 'to amaze', *interessieren* 'to interest') and the psychological statives, (*lieben* 'to love', *hassen* 'to hate') in German is explicable using Grimshaw's model of thematic and aspectual hierarchies (§1.2.4). This differentiation is a result of the mismatch between the thematic and aspectual hierarchies. The experiencers of psychological causatives are ranked as second in the aspectual hierarchy, but first in the thematic hierarchy. Only arguments highest on the aspectual hierarchy become subjects, so the experiencer does not move up into subject position. Instead, it remains in the VP and receives accusative case from the verb (or dative case). The theme moves into Spec of TP or AgrP to receive nominative case (18). In the case of the psychological state verbs, the experiencer has the highest prominence in both hierarchies and surfaces in subject position.

(18)



The experiencer is generated in Spec of the lower VP, the theme appears as a sister to the verb and finally, the agent or external argument is generated in Spec of the outer VP shell. The following sections apply the tree presented in (18) to the passivization data, demonstrating that the experiencer is an internal argument.

3.2.2 Passivization

The passivization data demonstrate that experiencer verbs do not undergo true passivization (§3.1.1.2-3.1.1.3). The major difference between the agentive verbs, which undergo passivization, and the psychological predicates which cannot, is the fact that experiencer verbs lack an external argument. Passivization, in German, involves the absorption or suppression of the external argument (Grewendorf 1989) and the inability of the verb to assign accusative case. As a result, the internal argument moves into subject position to receive nominative case. Verbs which lack an external argument (e.g., unaccusatives) cannot undergo passivization.[44]

(19) a. *Der alte Mann ist angekommen.*
the(NOM) old man is arrived
'The old man has arrived.'

b. **Der alte Mann wurde angekommen.*
the(NOM) old man became came
'The old man was come.'

(20) a. *Meine Mutter ist eingeschlafen.*
my(NOM) mother is fallen-asleep
'My mother has fallen asleep.'

b. **Meine Mutter wurde eingeschlafen.*
my(NOM) mother became fallen-asleep
'My mother was fallen asleep.'

If no external argument is present, no passivization takes place. If the psychological state and psychological causative verbs cannot undergo true passivization, they are lacking an external argument.[45] Therefore, the experiencer must be an internal argument.

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[44] UNACCUSATIVE or ERGATIVE verbs lack an external argument and have only one internal argument.

[45] Intransitive verbs with an agentive subject also cannot undergo passivization because there is no internal argument to be externalized.

The passivization processes occurring with the psychological verbs indicate that their syntactic structure differs from verbs with an external argument (i.e., agentive verbs). Due to the restrictions on the types of arguments which can appear as external arguments in adult German (and other languages such as Irish (Guilfoyle 1993, 1996, 1997), Dutch (van Voorst 1988) and Italian (Belletti and Rizzi 1988)), a child entering the linguistic environment would be well-served by a sensitivity to these different structures or the presence of an initiation point. The predictions for the presence of the verb types in child language are: (i) psychological state verbs should be nonfinite, (ii) psychological causative verbs can be finite or nonfinite, and (iii) other non-initiation point verbs should be nonfinite. For Guilfoyle's theory to be incorrect, the opposite patterns, or no pattern whatsoever, would emerge in early German. The next section demonstrates that some general patterns and tendencies are observable in the child data.

3.3 The Acquisition of Non-Initiation Point Verbs

According to Guilfoyle 1996, 1997, non-initiation point verbs in child grammar are more likely to emerge in their nonfinite forms because they lack an initiation point. The preceding sections discussed the nature of non-initiation point verbs in adult German. The development of all types of non-initiation point verbs is investigated in the following discussion, as is the applicability of Guilfoyle's model (1996, 1997). The data are taken from transcripts of German child language made available through the CHILDES database (Clahsen 1982, MacWhinney and Snow 1990, Wagner 1985). As the data below show, the patterns indicate that German children are differentiating between regular verbs and non-initiation point verbs, that is, the patterns among non-initiation point verbs are not random.

(i) *Er lacht.*
he laughs
'He laughs.'

(ii) **Er wurde gelacht.*
he became laughed
'He was laughed.'

However, this is different from what is occurring with psychological state and psychological causative verbs. Both of these verb types can have an internal argument (e.g., a theme). Therefore, their inability to passivize cannot be attributed to the absence of an internal argument. If the experiencer were an external argument, there is no reason why these verbs should not undergo true passivization. These verbs cannot undergo true passivization because the experiencer is not an external argument which can be suppressed or absorbed.

Unfortunately, no examples of the psychological state verbs, as described in §3.1.1.2, are present in the samples. From the class of (psychological) causatives the verbs *fehlen* 'to miss, lack', *gehören* 'to belong to' and *schmecken* 'to taste', occur.[46] Other verbs lacking an initiation point which appear in the child data include: *schlafen* 'to sleep', *aufwachen* 'to wake up', *wohnen* 'to live', *warten* 'to wait', *frieren* 'to freeze' and *scheinen* 'to shine', *sehen* 'to see', *brauchen* 'to need', *wissen* 'to know', *heißen* 'to be called', and *glauben* 'to believe'. Some general tendencies in the child data indicate that the non-initiation point verbs and psychological predicates are being treated differently from regular verbs.

3.3.1 The Data

The transcripts of five children from the Clahsen corpus (Clahsen 1982) and Wagner corpus (Wagner 1985) are discussed: Julia, Mathias, Daniel, Katrin and Nicole. Their ages and MLUs are provided below:[47]

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[46] The verb *fehlen* 'to miss' behaves syntactically like a psychological causative (i.e., it takes a nominative theme and dative experiencer). The verbs *schmecken* 'to taste' and *gehören* 'to belong to' are not examples of psychological causatives. These are verbs which could be considered to lack an initiation point because they have experiencer arguments rather than agentive arguments. In German, however, they express a causative relationship. As with the psychological causatives, these verbs have a theme which takes accusative case and the experiencer takes dative case.

(i) *Die Wurst schmeckt mir.*
the(NOM) sausage tastes me(DAT)
'I like the sausage.'

(ii) *Dieses Buch gehört mir.*
this(NOM) book belongs me(DAT)
'This book belongs to me.'

For the classification purposes in this thesis, I will group them with the psychological causatives to demonstrate the patterns of finite and nonfinite tokens in the causative verbs, in comparison to those lacking an initiation point.

[47] MLU stands for MEAN LENGTH OF UTTERANCE or the average number of morphemes present in a child's total speech sample.

TABLE 1 TRANSCRIPTS, AGE, MLU AND TOTAL UTTERANCES

Name	Transcript	Age	MLU	Total Number of Utterances
Nicole	n/a	1;8,15	n/a	**1705**
Katrin	n/a	1;5,15	n/a	**1443**
Julia	21	1;11,21	1.54	78
	22	2;0,21	1.28	71
	23	2;1,14	1.58	86
	24	2;2,21	1.93	121
	25	2;3,21	2.44	124
	26	2;4,21	2.73	170
	27	2;5,28	2.94	135
Subtotal				**785**
Daniel	17	2;9,28	2.35	64
	18	2;10,14	2.26	90
	19	2;11,14	2.94	105
	21	3;0,21	2.98	148
Subtotal				**407**
Mathias	17	2;9,7	2.38	177
	18	2;11,14	2.83	125
Subtotal				**302**
Total				**4641**

In total, I looked at 4641 available utterances from the transcripts of all five children.[48] The transcripts cover several developmental stages as shown by the range of available MLU scores: from 1.28 to 2.98. Such a vast amount of variation in development proves problematic when trying to determine general trends across children. Unfortunately, the largest transcripts, Katrin and Nicole, lacked MLU scores, and are not used, when discussing the developmental patterns of non-initiation point verbs, although the data are discussed in general terms.[49] The number of utterances with verbs is provided below, with the total number of finite and nonfinite verb tokens for each child. Daniel, who has the

[48] This total count excluded all unintelligible utterances (usually indicated with *xxx* in the transcripts).

[49] Ingram and Thompson (1996) have two MLU scores for both Katrin and Nicole. The first (MLU1) was calculated using the CLAN program provided on CHILDES. As these transcripts are not morphologically coded, the CLAN program only counts spaces between words and the scores are not accurate. The second MLU was based on small parts of the transcripts coded into SALT by Ingram and Thompson. Again, these scores are inadequate because they are not based on the entire transcript, but only small portions (235 utterances from Katrin's sample and 129 from Nicole's sample).

highest average MLU (2.63), also had the highest proportion of utterances containing verbs (52.3%). The lowest percentage of utterances with verbs belongs to Nicole (15.1%).

TABLE 2 NUMBER OF UTTERANCES WITH VERBS, VERB TOKENS AND PERCENTAGE OF UTTERANCES WITH VERBS

Name	**Total Number of Utterances**	**Total Verb Tokens** *Finite (%)*[50] *Nonfinite (%)*		**Percentage of Utterances with Verbs**
Daniel	407	**232** *54* *178*	*(23.3)* *(76.7)*	52.3
Mathias	302	**131** *100* *31*	*(76.3)* *(23.7)*	39.4
Katrin	1443	**549** *335* *214*	*(61.0)* *(39.0)*	32.6
Julia	785	**228** *151* *77*	*(66.2)* *(33.8)*	27.8
Nicole	1705	**282** *164* *118*	*(58.2)* *(41.8)*	15.1

Of the 1422 total verb tokens, only 93 examples of non-initiation point verbs were found. The number of non-initiation point verbs in the data samples for each child is small, indicating that these verbs are not the first to be acquired. Since this data set is so small, we need to be cautious when making generalizations about the development of the non-initiation point verbs; only 11% or less of the total verb tokens in each child's data sample are non-initiation point verbs (Table 3). However, the fact that so few non-initiation point verbs occur in early child German is itself an interesting finding.

[50] The percentages (%) of finite and nonfinite verbs are calculated by dividing the number of finite (or nonfinite) tokens by the total number of verb tokens.

TABLE 3 PERCENTAGE AND NUMBER OF NON-INITIATOR VERBS IN EACH SAMPLE

Name	Total Number of Verb Tokens	Number of Non-initiator Verbs (%)[51]
Katrin	549	65 (11.8)
Nicole	282	7 (2.5)
Julia	228	10 (4.4)
Daniel	232	4 (1.7)
Mathias	131	7 (5.3)
Total	**1422**	**93 (6.5)**

The various non-initiation point verbs and psychological predicates which appeared in the child data, the number of finite and nonfinite tokens of each are provided in the following table (Table 4).[52] Words marked with an asterisk (*) fall into the class of (psychological) causative verbs under Grimshaw's hierarchy (1990), that is, the experiencer emerges as an object with accusative or dative case, while the theme appears as the subject, receiving nominative case. Note that the verb *schlafen* 'to sleep', the most frequent non-initiation point verb in all the transcripts, has 17 nonfinite tokens as compared to only 6 finite tokens. The verb *sehen* 'to see', which is the second most frequent verb, appears as a finite verb in 14 tokens and nonfinite in 14 tokens.

[51] The percentage (%) is the number of non-initiation point verbs divided by the total number of verb tokens in the transcripts.

[52] Nonfinite verbs were those ending in *-en* or *-n*. This also acts as the first or third person plural marker. However, I did not want to attribute these endings to subject-verb agreement in children who did not have second person singular agreement, that is AgrP, so I grouped them with the infinitives. There were very few examples where the *-en* marker was paired with a plural subject.

TABLE 4 NON-INITIATION POINT VERBS

Type of Verb	Verb		Number of Nonfinite Tokens	Number of Finite Tokens
Non-initiation Point	*schlafen*	'to sleep'	17	6
	aufwachen	'to wake up'	1	6
	scheinen	'to shine'	Ø	2
	wohnen	'to live'	1	1
	warten	'to wait'	Ø	1
	frieren	'to freeze'	Ø	1
	sehen	'to see'	14	14
	wissen	'to know'	Ø	6
	heißen	'to be called'	Ø	3
	glauben	'to believe'	Ø	2
	brauchen	'to need'	1	4
(Psychological) Causatives	**fehlen*	'to miss'	Ø	1
	**schmecken*	'to taste'	Ø	5
	**gehören*	'to belong to'	1	8
Total			**35**	**60**

Initially, the data appears to contradict the predictions made in Guilfoyle 1996, 1997 because the majority of tokens of non-initiation point verbs are finite, not nonfinite. As I stated above, several stages of linguistic development have been collapsed into this table, disguising any developmental patterns. By investigating the distribution of finite and nonfinite tokens of non-initiation point verbs at various MLU stages, we see that German children may be using the presence or absence of initiation point to project TP (Table 5). Note that the data collected from Katrin and Nicole are not included in this table because no MLU scores are available. The two verbs which express a causative relationship, *fehlen* 'to miss' and *gehören* 'to belong to', both appear in their finite forms only; this behaviour is compatible with Guilfoyle 1996, 1997 because they express a causative relationship in German (i.e., have an initiation point). At all the developmental stages, the number of nonfinite tokens produced by the children outnumber the number of finite tokens, until Daniel 21, the transcript with the highest MLU at 2.98. The only anomalous transcript is

Mathias 17 where all three tokens of non-initiation point verbs are finite.[53] The data show that the number of nonfinite non-initiation point verbs decreases as MLU increases. These general trends indicate that more non-initiation point verb tokens are nonfinite rather than finite; the number of tokens, however, is small. In three of the transcripts I looked at, no examples of non-initiation point verbs appear (Daniel 18, Daniel 17, Julia 25).

TABLE 5 NONFINITE AND FINITE TOKENS OF NON-INITIATION POINT VERBS BY MLU

MLU (Age)	Transcript	Verbs		Nonfinite	Finite
1.58 (2;1,14)	Julia 23	*schlafen*	'to sleep'	2	Ø
2.26 (2;10,14)	Daniel 18	–	–	n/a	n/a
2.35 (2;9,28)	Daniel 17	–	–	n/a	n/a
2.38 (2;9,7)	Mathias 17	*brauchen*	'to need'	Ø	2
		wissen	'to know'	Ø	1
2.44 (2;3,21)	Julia 25	**fehlen*	'to miss'	(Ø)[54]	(1)
2.73 (2;4,21)	Julia 26	*schlafen*	'to sleep'	1	Ø
		sehen	'to see'	2	Ø
		glauben	'to believe'	Ø	2
2.83 (2;11,14)	Mathias 18	*schlafen*	'to sleep'	1	Ø
		sehen	'to see'	1	Ø
		brauchen	'to need'	1	Ø
		wissen	'to know'	Ø	2
2.94 (2;5,28)	Julia 27 &	*sehen*	'to see'	2	Ø
(2;11,14)	Daniel 19	*brauchen*	'to need'	Ø	1
2.98 (3;0,21)	Daniel 21	*schlafen*	'to sleep'	1	Ø
		wissen	'to know'	Ø	1
		**gehören*	'to belong to'	(Ø)	(1)

The data collected from Katrin and Nicole neither confirm nor refute the findings from Table 5 because their transcripts cannot be placed in relation to the other transcripts (i.e., by MLU) (Table 6).

[53] One possible explanation for the finite forms of *brauchen* 'to need' is that it is a modal verb, not a regular verb. In her study on the emergence of German modals, Adamzik (1985) includes *brauchen* with the counts of the other modal verbs and Öhlschlager (1989) cites several references where *(nicht) brauchen* 'to (not) need' is argued to be a modal.

[54] These numbers are in brackets because they are the totals for the causative verbs. They are provided for general information but I am not including them in the overall totals which focus on the proportion of infinitival non-initiation point verb tokens.

TABLE 6 NONFINITE AND FINITE TOKENS OF NON-INITIATION POINT VERBS (NO MLU AVAILABLE)

Transcript	Verbs		Nonfinite	Finite
Nicole	*schlafen*	'to sleep'	Ø	1
	sehen	'to see'	1	4
	heißen	'to be called'	Ø	1
		Total	**1**	**6**
Katrin	*schlafen*	'to sleep'	11	5
	sehen	'to see'	8	10
	brauchen	'to need'	Ø	2
	wissen	'to know'	Ø	2
	wohnen	'to live'	Ø	1
	**gehören*	'to belong to'	(1)	(7)
	heißen	'to be called'	2	Ø
	warten	'to wait'	Ø	1
	**schmecken*	'to taste'	(5)	(Ø)
	scheinen	'to shine'	Ø	2
	frieren	'to freeze'	1	Ø
	aufwachen	'to wake up'	1	6
		Total	**23 (29)**	**29 (36)**

As with the other children, no psychological state verbs appear in the data collected from Nicole and Katrin. Nicole's transcripts contain only one nonfinite token, while in Katrin's transcripts, 23 tokens are nonfinite and 29 are finite. Neither data set confirms Guilfoyle 1996, 1997. One possible reason for higher number of finite tokens in Katrin's transcripts is that she may already have subject-verb agreement. She shows use of the second person marker with several verbs. If she has agreement, she would have progressed past the stage where initiation point is relevant.[55] Thus, the difference in proportion between infinitival tokens of non-initiation point verbs and regular verbs is expected to be much smaller. If

[55] Initiation point may no longer be causing verb movement and finiteness at this stage because when agreement is acquired, AgrP is projected. Thus, the verb will undergo movement and not emerge as infinitival because it moves up into Agr^0 to pick up its inflection. See Clahsen and Penke 1992 for further discussion of the impact that the acquisition of agreement has on verb movement in early child German. To determine whether or not Katrin has agreement, the number of correct uses of agreement endings (i.e., whether or not the second person endings are productive) must be investigated. However, as my thesis does not deal with the acquisition of agreement itself, this is beyond the present discussion.

Katrin does not have subject-verb agreement, her data is problematic for Guilfoyle 1996, 1997. To lend further support to Guilfoyle's hypothesis (1996, 1997), we look at the proportion of infinitival tokens in non-initiation point verbs and compare it to the proportion of nonfinite tokens of regular verbs.[56]

TABLE 7 THE NUMBER OF NONFINITE TOKENS FOR NON-INITIATION POINT VERBS VS. REGULAR VERBS BY MLU

MLU (Age)	Transcript	Non-initiation Point		Regular	
		Total	Nonfinite	Total	Nonfinite
1.58 (2;1,14)	Julia 23	2	2	2	Ø
2.26 (2;10,14)	Daniel 18	n/a	n/a	37	8
2.35 (2;9,28)	Daniel 17	n/a	n/a	36	14
2.38 (2;9,7)	Mathias 17	3	Ø	63	16
2.44 (2;3,21)	Julia 25	n/a	n/a	50	22
2.73 (2;4,21)	Julia 26	5	3	66	23
2.83 (2;11,14)	Mathias 18	5	3	46	12
2.94 (2;5,28) (2;11,14)	Julia 27 & Daniel 19	3	2	105	31
2.98 (3;0,21)	Daniel 21	3	2	75	9

TABLE 8 THE NUMBER OF NONFINITE TOKENS OF NON-INITIATION POINT VERBS VS. INITIATION POINT VERBS (NO MLU AVAILABLE)

Transcript	Non-initiation Point Tokens		Regular Verb Tokens	
	Total	Nonfinite	Total	Nonfinite
Nicole	7	1	272	117
Katrin	52	23	436	190

With the exception of the Mathias 17 and Nicole transcripts, a general trend emerges: the proportion of non-initiation point verbs appearing as infinitival is higher than the proportion of nonfinite tokens of regular verbs.[57] For example, while three out of the five tokens of

[56] I have not included modals in the counts of regular or initiation point verbs because they are discussed in the following chapters. Virtually all of the modal verbs are finite, so, in most cases, they would not affect the overall proportion (because all of them would be finite) if they were included in the regular verb counts.

[57] Both non-initiation point verbs and modals were excluded from the counts of the regular verbs. Modals are discussed in the following chapter. In fact, 98% of the modal verbs are finite, so including them in the counts of regular verbs would increase the proportion of finite verb tokens under discussion.

non-initiation point verbs are nonfinite in Julia 26 (around 60%), only 23 of 66 of the regular verb tokens (around one-third) are nonfinite. In the Mathias 17 and Nicole transcripts, the majority of non-initiation point verbs appear in their finite forms; this is, in fact, similar to the regular verb tokens from their transcripts where the majority of tokens are finite. The data presented in this section indicate that children may be making some type of distinction between verbs having an initiation point and those lacking one.

3.3.2 The Other Verbs: A Comparison

In the preceding section, a comparison was made between non-initiation point verbs and regular verbs. This section takes a brief look at the other verbs which emerge in the early stages of child language. Other patterns, aside from those found with non-initiation point verbs, are present in the German acquisition data. All of the verbs appearing in the children's transcripts are listed in Tables 9-13; the information provided includes the number of verbs with only finite tokens, the number of verbs with only nonfinite tokens, and those which occur in both forms. One of the most obvious characteristics of the verbs presented in the tables is that most are highly agentive or active verbs, indicating that German children acquire these verbs earlier and with more ease. Such a pattern is not unexpected in language development because these verbs represent events or activities that are easy for the child to point out or associate with a word. Second, most tokens of these agentive verbs appear in their finite forms; the verbs which project TP outnumber the nonfinite verb forms (Tables 7, 8). Finally, the number of verbs that occur in both finite and nonfinite forms is restricted.[58]

In Julia's transcripts, finite tokens comprise the highest number of verb tokens (114 tokens) of all regular verb tokens.[59] Fifty-nine tokens emerge in only their nonfinite forms.

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[58] Tables 9 through 13 do not include the modal verbs; their behaviour will be discussed in detail in Chapter 4.

[59] For a breakdown of the number of finite verb tokens occurring with regular verbs at each MLU (and for each transcript), see Tables 7 and 8.

Finally, a small group of verbs, with only 25 tokens, appear as both finite and nonfinite in her transcripts.

TABLE 9 JULIA'S VERB INVENTORY (198 REMAINING TOKENS)

Verbs in [+Finite] 114 tokens		Verbs in [-Finite] 59 tokens		Verbs in [±Finite] 25 tokens	
zusetzen	'to go for s.th.'	*essen*	'to eat'	*sägen*	'to saw'
setzen	'to sit down'	*reintun*	'to put in'	*machen*	'to make, do'
spielen	'to play'	*hüpfen*	'to hop, skip'	*zeigen*	'to show'
umkippen	'to turn over'	*geben*	'to give'	*zumachen*	'to close'
anheben	'to lift up, start'	*springen*	'to jump'	*haben*	'to have'
darauftun	'to put (on it)'	*schlagen*	'to hit'	*umbinden*	'to tie on'
hinsetzen	'to put, seat'	*tragen*	'to carry, take'		
schaffen	'to create'	*aufputzen*	'to clean up'		
runterspringen	'to jump off'	*suchen*	'to look'		
passen	'to fit'	*sitzen*	'to sit'		
reinstecken	'to put in'	*wegtun*	'to put away'		
fehlen	'to miss'	*festmachen*	'to fit, arrange'		
holen	'to get'	*abmachen*	'to take off'		
sein	'to be'	*rauben*	'to steal, kidnap'		
steuern	'to steer'	*runterhüpfen*	'to hop, skip'		
werfen	'to throw'	*malen*	'to draw, paint'		
gucken	'to look'	*anziehen*	'to tighten, dress'		
bringen	'to bring'	*einpacken*	'to pack, wrap'		
laufen	'to run'	*schieben*	'to push'		
finden	'to find'	*anfassen*	'to take hold of'		
mitnehmen	'to take with'	*mitspielen*	'to join in play'		
auskippen	'to empty'				
kleckern	'to spill'				
anhangen	'to hang up'				
nehmen	'to take'				
zugehen	'to approach'				

Daniel has 197 regular verb tokens in his speech sample. Again, as was the case with Julia, finite tokens are in the majority, making up 124 of the total tokens. Verbs appearing only in their nonfinite form appear in 44 tokens Again, as with Julia, only a restricted set of verbs appears in both finite and nonfinite forms, equaling 29 of the regular verb tokens.

TABLE 10 DANIEL'S VERB INVENTORY (REMAINING 197 TOKENS)

Verbs in [+Finite] 124 tokens		Verbs in [-Finite] 44 tokens		Verbs in [±Finite] 29 tokens	
anmachen	'to turn on'	*abmachen*	'to take down'	*ausschütten*	'to rock'
sein	'to be'	*daranbinden*	'to tie in'	*machen*	'to make, do'
stecken	'to put'	*hämmern*	'to hammer'	*haben*	'to have'
rausnehmen	'to take out'	*wiederkommen*	'to return'	*lassen*	'to let, stop'
angeln	'to fish'	*raustun*	'to take out'	*fahren*	'to drive'
gucken	'to look'	*reinmachen*	'to put in'	*essen*	'to eat'
aufmachen	'to open, undo'	*reintun*	'to put in'	*bauen*	'to build'
schaukeln	'to swing, rock'	*kaputt machen*	'to break'		
suchen	'to look'	*schlafen*	'to sleep'		
reinspringen	'to jump in'	*abpellen*	'to peel'		
gehen	'to go'	*landen*	'to land'		
schauen	'to watch'				
absteigen	'to climb down'				
aufessen	'to eat up'				
reintun	'to put in'				
drehen	'to turn, shift'				
reinstecken	'to put in'				
wissen	'to know'				
holen	'to get'				
tauchen	'to dive'				
fallen	'to fall'				
donnern	'to thunder'				
umfallen	'to fall over'				
geben	'to give'				
kommen	'to come'				
fliegen	'to fly'				
laufen	'to run'				
passen	'to fit'				
singen	'to sing'				
anfangen	'to begin'				
picken	'to peck'				

Katrin's transcript is the only one where verb tokens which appear in either finite or nonfinite forms outnumber the verbs which appear only as finite or as nonfinite (188 tokens). Verbs appearing only in their finite forms are make up 172 tokens, while those verbs

emerging only as infinitivals comprise 76 tokens of the total. Since her MLU is not calculated, she may have an MLU higher than the other children under discussion. Again, the different patterns exhibited by Katrin could be due to the presence of agreement. This would explain why she has access to both the finite and nonfinite forms of more verbs.

TABLE 11 KATRIN'S VERB INVENTORY (REMAINING 436 TOKENS)

Verbs in [+Finite] 172 tokens		**Verbs in [-Finite] 76 tokens**		**Verbs in [±Finite] 188 tokens**	
sein	'to be'	*malen*	'to paint, draw'	*schreiben*	'to write'
bekommen	'to get'	*abputzen*	'to wipe, clean'	*essen*	'to eat'
schellen	'to ring'	*aufheben*	'to pick up'	*machen*	'to make, do'
fallen	'to fall'	*knittern*	'to crease'	*gehen*	'to go'
schreien	'to scream'	*anfassen*	'to take hold of'	*trinken*	'to drink'
sitzen	'to sit'	*wegstellen*	'to put away'	*haben*	'to have'
reparieren	'to repair'	*liegen*	'to lie'	*herauskommen*	'to come out'
hilfen	'to help'	*tragen*	'to bring, take'	*reiten*	'to ride'
nehmen	'to take'	*niesen*	'to sneeze'	*schaukeln*	'to swing, rock'
wischen	'to wipe'	*stehen*	'to stand'		
stechen	'to prick'	*weinen*	'to cry'	*holen*	'to get'
laufen	'to run'	*klingeln*	'to ring'	*zumachen*	'to close'
kommen	'to come'	*einsteigen*	'to get in'	*fahren*	'to drive'
bauen	'to build'	*hinfallen*	'to fall in'	*spielen*	'to play
schütteln	'to shake'	*hereintun*	'to put in'	*bringen*	'to bring'
frissen	'to eat'	*begucken*	'to look at'	*gucken*	'to look'
schnuppern	'to sniff'	*aufbauen*	'to set up'	*verstecken*	'to hide'
s. beeilen	'to hurry oneself'	*streicheln*	'to stroke, pet'		
		nuckeln	'to suck'		
lachen	'to laugh'	*suchen*	'to look for'		
behalten	'to keep'	*laufen*	'to run'		
verkleben	'to stick together'	*angucken*	'to look at'		
		schnullen[60]			
hängen	'to hang'	*geben*	'to give'		
tun	'to do, make'	*waschen*	'to wash'		
ausziehen	'to pull out, take hold of'	*aufstellen*	'to set up'		
		raten	'to advise'		

Mathias' transcripts contain 107 tokens of regular verbs, the highest number of which are finite tokens (74). The verbs emerging only as nonfinite tokens make up 19 of the total

[60] I could not find a translation for *schnullen* but the noun *der Schnuller* translates into 'pacifier, soother' (Scholze-Stubenrecht and Sykes 1990).

number of tokens present in his speech sample. Like Daniel and Julia, a relatively small group of verbs and their tokens appear in both finite and nonfinite forms, comprising 14 tokens of the total.

TABLE 12 MATHIAS' VERB INVENTORY (REMAINING 108 TOKENS)

Verbs in [+Finite] 75 tokens		**Verbs in [-Finite] 19 tokens**		**Verbs in [±Finite] 14 tokens**	
hingreifen	'to reach into'	*zumachen*	'to close'	*machen*	'to make, do'
aufmachen	'to open'	*abreißen*	'to tear off'	*haben*	'to have'
tun	'to do, make'	*reinpicken*	'to pick in'	*fahren*	'to drive'
regnen	'to rain'	*ziehen*	'to pull'		
sein	'to be'	*naßmachen*	'to make wet'		
stimmen	'to be right'	*wegtun*	'to put away'		
gehen	'to go'	*geben*	'to give'		
abschneiden	'to cut off'	*vorlesen*	'to read aloud'		
daraufsetzen	'to sit on it'	*reintun*	'to put in'		
rauskommen	'to come out'	*rausholen*	'to get out'		
lesen	'to read'	*fressen*	'to eat'		
festhängen	'to get caught'				
anbinden	'to tie up'				
angeln	'to fish'				
kaputt machen	'to break'				
reiten	'to ride'				
sitzen	'to sit'				
liegen	'to lie (down)'				
schaben	'to scrape, shave'				
drinsitzen	'to be right in it'				
hängen	'to hang'				
kaufen	'to buy'				
sagen	'to say'				
einmachen	'to preserve'				
setzen	'to place, set down'				
kaputt gehen	'to get broken'				
füttern	'to feed'				
zugucken	'to watch'				
werden	'to become, will'				

TABLE 13 NICOLE'S VERB INVENTORY (REMAINING 272 TOKENS)

Verbs in [+Finite] 135 tokens		Verbs in [-Finite] 100 tokens		Verbs in [±Finite] 37 tokens	
halten	'to hold'	*haben*	'to have'	*singen*	'to sing'
kommen	'to come'	*aufstehen*	'to stand up'	*gehen*	'to go'
gucken	'to look'	*anziehen*	'to put on'	*nehmen*	'to take'
sein	'to be'	*abputzen*	'to wipe, clean'	*malen*	'to draw, paint'
hupen	'to sound a horn'	*kitzeln*	'to tickle'	*essen*	'to eat'
		dahingehen	'to pass, go by'	*bleiben*	'to stay'
machen	'to make, do'	*s. drehen*	'to turn, change'		
stecken	'to put'				
schreiben	'to write'	*waschen*	'to wash'		
lesen	'to read'	*geben*	'to give'		
zeigen	'to show'	*hinstellen*	'to put up'		
pieken	'to prick, poke'	*holen*	'to get'		
aufpassen	'to pay attention'				
umkippen	'to turn over'				
sitzen	'to sit'				
reinstecken	'to put in, hide'				
packen	'to pack'				
einstecken	'to put in'				
stinken	'to stink'				
wegmachen	'to put away'				
reiten	'to ride'				
klopfen	'to knock'				
behalten	'to keep'				

Nicole's speech sample included 272 tokens of regular verbs. Of 272 tokens, 135 are tokens of verbs appearing only in their finite forms. Verbs with only nonfinite tokens make up 100 of the regular verb tokens and 37 tokens are verbs which emerge as either finite or nonfinite.

Most verbs appearing in early child German are agentive verbs, as shown in the above tables (Tables 9-13). The data do not provide further support for Guilfoyle 1996, 1997, although they are compatible with the model. In addition, a small group of verbs in the vocabulary of each child alternates between their finite and nonfinite forms. More

research into these groups of alternating verbs may clarify what differentiates them from verbs which do not alternate.

3.3.3 Remaining Issues and Problems

These data shed light on several areas of linguistic development not previously addressed; despite this, many issues and unanswered questions remain. First, the speech samples collected from Katrin and Nicole lack an MLU, preventing their data from being integrated with data from other transcripts. Otherwise, the results from their speech samples could confirm or refute the developmental pattern observed in Table 5, that is, the number of infinitival non-initiation point tokens decreases as MLU increases. Second, some non-initiation point verbs, such as *wissen* 'to know' and *glauben* 'to believe', and *scheinen* 'to shine', never appear in their nonfinite forms. To fully support Guilfoyle's model (1996, 1997), these verbs should initially emerge as nonfinite and later, their finite forms would appear. As well, a significant portion of the data is left unexplained within Guilfoyle's theory. According to the data, the lack of an initiation point does not entail that a verb is going to emerge in its nonfinite form. In Julia 26, Mathias 18, Julia 27, Daniel 19 and Daniel 21, at least a third of the non-initiation point verb tokens are finite (Table 5). Since there are few examples of non-initiation point verbs present in early child German, a thorough investigation of the regular verbs may provide more answers. One possibility is to look at the utterances containing nonfinite forms of regular verbs. Initiation point is frequently linked to an agent or the subject of the sentence, so if the agent (i.e., initiation point) is not included in the utterance, is the verb more likely to appear as an infinitival? In addition, further examination of the verbs which appear in both finite and nonfinite forms is warranted. Most of the regular verbs seem to appear as either tensed or as infinitivals with the exception of a small group of verbs appearing in both forms. An underlying factor may be either allowing the children to use both forms of the same verb or limiting them to use only one form for most of their verbs.[61] Some patterns in the acquisition data lend support

[61] John Archibald (personal communication) suggests that these data may be explicable by investigating processing restrictions. Children may not have the capacity to store both forms of all of the verbs, but

to Guilfoyle 1996 and the role of initiation point in developing grammars. Ultimately, the data presented in this chapter do not provide a definitive answer.

3.4 Conclusion

Adult German syntax makes a distinction between non-initiation point or experiencer verbs and regular verbs, demonstrated by the data presented in §3.2 and §3.3. I conclude that the experiencer argument is an internal argument; the data from adult German show that a sensitivity to the distinction between agentive or active verbs versus non-initiation point verbs would prove highly useful to a child acquiring German as a first language.

Guilfoyle 1996, 1997 predicts the presence or absence of an initiation point in the event structure of a verb determines whether or not TP is included. TP is less likely to be included when the event has an initiation point. Initially, German children appear to use finite and nonfinite verb forms interchangeably (Table 4). The predictions were that psychological state and other non-initiation point verbs would emerge as infinitival while psychological causatives would be either finite or nonfinite. We see from the data that verbs lacking an initiation point in their event structure seem to be nonfinite more frequently (Tables 7, 8). When contrasted with the nonfinite tokens of regular verbs, German children treat the non-initiation point verbs differently, that is, a lower proportion of regular verbs emerge as nonfinite (Tables 7, 8). As the MLU score increases, the number of nonfinite non-initiation point verb tokens decreases, as with regular verbs (Table 5). We also find that the total number of non-initiation point verbs present in child language is small. No psychological state verbs appear in early child German at all. Although certain patterns are present in the non-initiation point verbs, definitive evidence to support Guilfoyle 1996, 1997 is lacking. Whether or not the absence of an initiation point motivates the production of nonfinite verb forms is not conclusively demonstrated. The regular verbs acquired by German children in early linguistic development exhibit several patterns, as well. First, virtually all of these verbs are highly agentive or active verbs. Second, only a restricted

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instead store a small group of alternating forms. However, this is beyond the scope of my thesis, so I do not explore this possibility any further here.

group of verbs for each child alternates between finite and nonfinite forms. The fact that a relatively small number of verbs appear as [±finite] interchangeably indicates that children may not be using the finite/nonfiniteness distinction randomly (contrary to what previous researchers have argued (Poeppel and Wexler 1993)). Although several patterns have been found in the data collected from the CHILDES database (MacWhinney and Snow 1990), further evidence is required, particularly from different MLU stages, to confirm or refute Guilfoyle's proposal (1996, 1997).

Chapter 4

The Acquisition of Modals in Early Child German

4.0 Introduction

The German modals, *können* 'can', *wollen* 'to want', *sollen* 'should', *dürfen* 'may', and others, behave syntactically like main verbs. They have infinitival forms, stack, and undergo verb movement, like many main verbs (Heine 1995, Steele et al 1981). However, they are distinct from main verbs because: (i) they exhibit different morphological behaviour in their verbal paradigms, and (ii) most of them have an EPISTEMIC or ROOT interpretation (Bouma 1973, Heine 1995). Root modals express permission or obligation while epistemic modals indicate probability or possibility (§4.1.2). A third type of modal verb behaves like main verbs and takes an accusative object. Within the framework of Guilfoyle 1996, 1997 (§2.4.1), children will tend to produce verbs in their nonfinite forms when the event lacks an initiation point. The discussion in §4.1 demonstrates that root modals are more likely to be associated with an initiation point whereas epistemic modals are not. Therefore, epistemic modals are predicted to surface as infinitivals. In this chapter, data from early child German are presented, demonstrating that these predictions are neither confirmed or refuted (§4.2); virtually all of the finite modal forms are root modals. There are no utterances in the child data which contain definitive epistemic modals and the prediction that epistemic verbs are nonfinite cannot be tested. Other factors concerning the development of modal verbs in early child German are discussed in §4.3, including the finiteness markers used on the modals and the production of utterances with a modal verb and a main verb.

4.1 Adult German Modals

The syntactic behaviour of the German modals, including verb movement, stacking, past tense formation and their ability to take a bare infinitival complement indicates they are main verbs. However, the modals are distinct from main verbs in German because their inflectional paradigm differs from that of main verbs. In addition, many of them may be

interpreted with either an epistemic or root meaning (Heine 1995). Root modals may have a deontic interpretation or, in a limited number of modals, take an accusative object. Despite the varied interpretations of the modal verbs, children are predicted to treat German modals like other main verbs because they are not syntactically distinct. In other words, under the assumptions of Guilfoyle (1996, 1997), the root modals, which are associated with an initiation point, will be either finite or nonfinite, while epistemic modals, which are not associated with an initiation point, will be infinitival in early child German.

4.1.1 The Syntactic Behaviour of German Modals

There has been debate about whether the modal verbs should be a class unto themselves, separate from other modal elements, or whether they should be classified with adverbs (cf. Buscha 1984). However, due to their striking syntactic similarity to other main verbs in German, I assume (with Bouma 1973 and Heine 1995) that the modals are verbs. The behaviour of German modals, including the verbs in (1), parallels the syntactic characteristics of main verbs in standard adult German. On the basis of the data presented below, concerning inflection and verb movement, I assume that the German modals are generated in V^0, like other German verbs. They undergo movement into C^0 (see §2.1.1 for an explanation of V2 in adult German).[62]

(1)

wollen	'to want'	*sollen*	'should'
dürfen	'may'	*mögen*	'to like/may'
können	'can'	*müssen*	'must'

(Bouma 1973, Dreyer and Schmitt 1985, Heine 1995)

These modal verbs appear in an inflectional paradigm similar to that of the regular main verbs but with two main differences. First, the stem vowel changes and second, the first and third person singular forms are inflectionally unmarked. The present indicative inflectional

[62] In the earlier literature, there was considerable discussion as to whether or not German modals are generated in a distinct head, rather than V^0. Bierwisch (1963) and Steele et al (1981) argue that German modals are generated in AUX while Bouma (1973) supports the generation of modals in the head of the VP. However, as I state above, I assume that the German modals are generated in the VP because of their syntactic traits which I discuss later in this section.

paradigms of the modal verbs, *müssen* 'must' and *sollen* 'should', and a regular main verb, *lieben* 'to love' are provided for comparison in (2-3).

(2)

	müssen 'must-INF'		*sollen* 'should-INF'	
	SG	PL	SG	PL
1ST	*muß*	*müssen*	*soll*	*sollen*
2ND	*mußt*	*müßt*	*sollst*	*sollt*
3RD	*muß*	*müssen*	*soll*	*sollen*

(Dreyer and Schmitt 1985: 94)

(3)

lieben 'to love'		
	SG	PL
1ST	*liebe*	*lieben*
2ND	*liebst*	*liebt*
3RD	*liebt*	*lieben*

As with main verbs, German modal verbs undergo movement to second position. The finite modal always appears in second position of a finite matrix clause, unless a complementizer is present (i.e., C^0 is filled). In this case, the modal remains in its underlying position, sentence-finally (4) ((5) is an example with a main verb)).

(4) a. *Er kann wunderbare Musik spielen.*
he can wonderful-ACC music play-INF
'He can play wonderful music.'

b. *Sie glaubt, daß er wunderbare Musik spielen kann.*
she believes that he wonderful-ACC music play-INF can
'She believes that he can play wonderful music.'

(5) a. *Er spielt wunderbare Musik.*
he plays wonderful music
'He plays wonderful music.'

b. *Sie glaubt, daß er wunderbare Musik spielt.*
she believes that he wonderful music plays
'She believes that he plays wonderful music.'

Modal verbs can also stack like other verbs in German (Heine 1995, Steele et al 1981). For example, in a sentence with more than one verb, the infinitival forms of the modals may occur with the infinitival forms of main verbs in clause or sentence-final position (6).

(6) a. *Weil Fritz kommen wollen konnte...*
because Fritz come-INF want-INF could...
'Because Fritz could (possibly) want to come...'

(Steele et al 1981: 261 (3a))

b. *Daß du fahren können mußt ist verstanden.*
that you drive-INF can-INF must is understood
'That you must be able to drive is understood.'

(Steele et al 1981: 261 (3b))

Like other types of main verbs in German, the modals can take bare infinitival complements; insertion of the marker *zu* 'to' is prohibited (Steele et al 1981) (7). Again, for comparison, an example with a regular main verb is presented in (8).[63]

(7) a. *Ich kann lernen.*
I can learn-INF
'I can learn.'

b. **Ich kann zu lernen.*
I can to learn-INF

(8) *Ich lernte Schach spielen.*
I learned chess play-INF
'I learned to play chess.'

(Steele et al 1981: 271 (19a))

As the data presented in (1-7) show, modals exhibit syntactic behaviour identical to that of many main verbs. They have an infinitival form, undergo verb movement, stack, and take a bare infinitival complement. All of these traits are frequently associated with main verbs (Steele et al 1981, Heine 1995). Modals are distinct from other verbs in German because their inflectional paradigms differ from those of regular main verbs and most of them have an epistemic or root interpretation in a sentence.

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[63] As Steele et al (1981) point out, other verbs in German are grammatical with the *zu* + infinitival complement construction, whereas this is prohibited in the case of the modals. The example below (i) is as acceptable as that in (8):

(i) *Ich lernte Schach zu spielen.*
I learned chess to play-INF
'I learned to play chess.'

The underlying motivation for this distinction is beyond the scope of this thesis, however, it may clarify the differences between modals and non-modals in standard German.

4.1.2 Root (Deontic) versus Epistemic Modals in German

Most modals in standard German have an epistemic or root meaning.[64,65] The contrast between epistemic and root modals is represented at the level of Logical Form (LF). In the case of epistemic modals, the modal verb moves up into CP at LF, so that the modal has scope over the entire sentence or proposition. Root modals do not undergo this movement and remain associated with the specific event being discussed. A third, limited group of modals may act as regular transitive verbs, that is they can assign accusative case to an object; these are the last group of modals to be discussed.

An EPISTEMIC interpretation involves the notion of probability, possibility or the truth value of proposition expressed in the sentence (9a-b) (Palmer 1990).

(9) a. *Er dürfte ziemlich wohlhabend sein.*
he may-PST fairly prosperous be-INF
'He might be fairly prosperous.'
(It is possible that he is fairly prosperous.)

(Askedal 1982: 164)

b. *Sie kann nicht so jung sein.*
she can not so young be-INF
'She cannot be that young.'
(It is not possible that she is that young.)

The prediction for early child German made by Guilfoyle (1996, 1997), is that the epistemic modals, if present, will emerge in their nonfinite forms. They are not associated with an initiation point and therefore, will not project TP. As the following discussion shows, although the data from the acquisition of German cannot provide evidence for these claims, they do not contradict them.

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[64] German grammarians often refer to the epistemic modal as an OBJECTIVE interpretation (i.e., the circumstances which affect the actor in the sentence are external to the actor) whereas the root modal is SUBJECTIVE (i.e., the focus is on the initiator of the event) (Askedal 1982). Instead of using these terms, I use *epistemic* and *root* owing to their prevalence in the generative literature.

[65] The modal *wollen* 'to want' is an exception because it only has a root interpretation, no epistemic reading. However, it is grouped with the other modals on the basis of its syntactic and morphological characteristics.

The ROOT or DEONTIC interpretation of the modals indicates that permission is given, or obligation is imposed, by the speaker (Denison 1995, Palmer 1990). In other words, the focus is placed on the initiator of the event (e.g., whoever is giving permission). In (10a), the focus is on the person giving permission for Fritz to come (i.e., the initiation point of the permission being granted). In example (10b), the focus is on the subject of the sentence, Hannah. Hannah, the agent (or initiation point) of the event of finishing her work, has the obligation to complete her work.

(10) a. *Fritz kann kommen.*
Fritz can come-INF
'Fritz can come'
(Fritz has permission to come.)

b. *Hannah mußte ihre Arbeit fertig machen.*
Hannah must-PST her-ACC work finish make-INF
'Hannah had to finish her work.'
(Hannah had an obligation to finish her work.)

Heine (1995) provides the results of a study he conducted on the initial interpretations of adult native German speakers when given sentences containing modals. Specifically, he tries to determine which modals are most likely to be associated with their root or deontic meanings.[66] The modals *wollen* 'to want', *dürfen* 'may' and *mögen* 'to like' are interpreted as root modals most frequently in several different contexts. When looking at the child data, two of three modals which appear in early German are *wollen* and *dürfen*. Both are strongly associated with root interpretations (Heine 1995). The likelihood that a sentence with a modal verb is going to be interpreted as having an epistemic or root reading may also be affected by several other factors including the tense of the sentence, the presence of a negative marker or the subject (i.e., whether it is first person, second person or third person) (cf. Buscha 1984 and Heine 1995). For example, a modal utterance is more likely to be interpreted as root if the main verb is an action verb or if the subject is in first or second person (Heine 1995: 25-26). In contrast, a sentence containing a modal will be more likely to have an epistemic reading if the main verb is stative or if the subject is in the third person

[66] Heine (1995) uses the term AGENT-ORIENTED to refer to root modals. To maintain consistency throughout this thesis, I use the term *root* where he uses agent-oriented.

(Heine 1995: 25). The following example demonstrates how two readings are possible within a single sentence (Heine 1995: 21). The sentence is stated in (11a) and its epistemic and root interpretations are provided in (11b) and (11c), respectively.

(11) a. *Er muß mindestens 1,80 m sein.*
he must at-least 1.80 meters be-INF
'He must be at least 1.80 meters.'

b. "On the basis of the evidence available, I am led to conclude that he is 1.80 meters tall."

c. "They are looking for a new goalkeeper and he has to be at least 1.80 meters tall."

Example (11b) shows the epistemic interpretation which indicates the probability or possibility that the man under discussion is 1.80 meters tall. This statement focuses on the possibility or probability of the entire proposition that the man is 1.80 meters tall. The root interpretation in (11c) expresses obligation on the part of the person who will become goalkeeper to be at least 1.80 meters tall. This statement focuses on the subject meeting the criterion of being 1.80 meters tall.[67]

A smaller subgroup of modals take two arguments. These modals, including *wollen* 'to want', *können* 'can' and *mögen* 'to like', may take an accusative object and do not require the presence of a second verb.[68,69]

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[67] As predicted by Heine (1995), the epistemic reading of this sentence is more easily achieved, rather than the root interpretation, because the main verb *sein* 'to be' is a stative-type verb and the subject is in the third person.

[68] Steele et al (1981) also point out that the German modal *müssen* 'must' acts like a main verb in certain contexts, that is no second verb is required. However, *müssen* cannot assign accusative case to an object in the example she cites:

(i) *Ich muß nach Hause.*
I must to house
'I must go home.'

Therefore, I will not group it with the other modals that take an accusative object.

[69] Amanda Pounder (personal communication) points out that in the case of the modals *wollen* 'to want' and *können* 'can', a verb is implied whereas with *mögen* 'to like no implied verb is required. In (12) the implied verb is *haben* 'to have' and in (13) the implied verb is *sprechen* 'to speak'. This distinction is an interesting one, though a full discussion of its implications and possible explanations are beyond the scope of this thesis. For purposes of this discussion, I treat these verbs as a single group.

(12) *Sie wollte ein neues Radio.*
she want-PST a new-ACC radio
'She wanted a new radio.'

(13) *Er kann wunderbares Deutsch.*
he can wonderful-ACC German
'He can speak wonderful German.'

(14) *Sie mögen gutes Bier.*
they like good-ACC beer
'They like good beer.'

In each of the examples above, the verbs take accusative objects and do not require a second main verb. Two of the verbs, *wollen* 'to want' and *mögen* 'to like' are used in these contexts to express psychological states (e.g. desire), rather than modality. Utterances containing these verbs, which express emotional states but not the modal interpretation, are predicted to surface as infinitivals in early child language. Like other experiencer verbs or psychological predicates, these verbs lack a definitive initiation point and TP is less likely to be projected (under Guilfoyle 1996, 1997). The verb *können* 'can' in (12) is like a root or deontic modal since it expresses an ability, not probability, possibility, or a psychological state. If *können* appears in similar constructions in child language, it is expected to be finite due to its correlation with an initiation point.

As previously mentioned, most German modals have an epistemic or root interpretation, depending on the context of the sentence; in conjunction with their morphological irregularities, this characteristic distinguishes them from other verbs in German. Epistemic modals are predicted to be nonfinite in child language whereas root modals may be either finite or nonfinite. A subclass of modals, including *wollen* 'to want', *können* 'can' and *mögen* 'to like' do not require the presence of a second verb and take accusative objects. The modals *wollen* and *mögen* are psychological verbs in these cases. Like other verbs lacking an initiation point, they should emerge as infinitival in the acquisition data. *Können* is a root modal in these cases and, as such, is predicted to be finite in child German.

4.2 Modals in Early Child German

As discussed above in §4.1, Guilfoyle (1996, 1997) makes several claims concerning the emergence of modals in early child language. These predictions vary according to the type of modal used. Under this framework, epistemic modals and those modals used as psychological predicates should appear in their nonfinite forms since they lack an initiation point. On the other hand, the root modals may occur in their finite or nonfinite forms to be compatible with Guilfoyle 1996, 1997. Modals appear more frequently in the child data than the non-initiation point verbs. The following table shows the number and percentage of modal verbs found in transcripts of Julia, Mathias, Daniel, Katrin and Nicole.

TABLE 14 PERCENTAGE AND NUMBER OF MODAL VERBS IN EACH SAMPLE

Name	**Total Number of Verb Tokens**	**Number of Modals (%)**[70]
Katrin	549	48 (8.7)
Nicole	282	3 (1.1)
Julia	228	21 (9.2)
Daniel	232	31 (13.3)
Mathias	131	17 (13.0)
Total	**1422**	**120 (8.4)**

In comparison to the non-initiation point verbs in §3.3.1 (Table 3) where 93 tokens were available (or 6.5% of all utterances with verbs), 120 modal tokens occur (or 8.4% of all verb tokens). A restricted number of modals appear in early child German, almost all of which are finite. The vast majority of the modals appearing in these stages are root modals (not epistemic) so under Guilfoyle 1996, 1997 they are expected to emerge as either finite or nonfinite.

4.2.1 The Modals Present in Early German

The acquisition data show that only a restricted set of modal verbs emerge in the earliest stages of grammatical development in German: *können* 'can', *dürfen* 'may', *wollen*

[70] The percentage is the number of modal tokens divided by the total number of verb tokens in the transcripts.

'to want' and *müssen* 'must'. With the exception of Katrin and Nicole, the first appearances of modals were at the following MLU scores:

(i) Julia at 1.93 (*wollen* 'to want'),

(ii) Daniel at 2.26 (*wollen* 'to want', *können* 'can'), and

(iii) Mathias at 2.38 (*können* 'can', *dürfen* 'may').[71]

According to these data, German children begin to use modals when their MLU is around 2.0. The following table breaks down the number of tokens of each modal for each child (and the total for all the children) (Table 15).

[71] For a further breakdown of MLUs and ages for each child, see §3.3.1, Table 1.

TABLE 15 THE FREQUENCY OF EACH MODAL IN THE SAMPLES

Transcript	Number of Occurrences	Total Number of Modals
Total		
können	**54**	**119**
wollen	**37**	**119**
dürfen	**13**	**119**
müssen	**12**	**119**
(sollen	**3**	**119)**
Katrin		
können	17	48
wollen	21	48
dürfen	1	48
müssen	9	48
Daniel		
können	13	31
wollen	7	31
dürfen	6	31
müssen	2	31
(sollen	3	31
Julia		
können	15	21
wollen	5	21
dürfen	Ø	21
müssen	1	21
Mathias		
können	8	16
wollen	2	16
dürfen	6	16
müssen	Ø	16
Nicole		
können	1	3
wollen	2	3
dürfen	Ø	3
müssen	Ø	3

As the above table shows, the modal *können* 'can' appears most frequently in all of the transcripts as well as for each child, by a large number. For all five children combined, *können* makes up 54 of all 119 modal tokens, followed most closely by *wollen* 'to want' which appears 37 times. Unlike *können* and *wollen*, the third most frequent modal, *dürfen* 'may', does not show up in the speech of every child; Julia and Nicole never use *dürfen*.

Finally, *dürfen* is closely followed by *müssen* 'must', although Nicole and Mathias never produce it. The table below shows which modals appeared at various MLU stages for Julia, Daniel and Mathias (Table 16). The modals *können* and *wollen* are among the earliest to appear (Julia 24, Daniel 18, Mathias 17, Julia 25).

TABLE 16 THE NUMBER OF MODAL TOKENS (BY MLU)

MLU (Age)		Transcript	Verbs	Tokens
1.93	(2;2,21)	Julia 24	*wollen*	1
2.26	(2;10,14)	Daniel 18	*können*	1
			wollen	3
2.38	(2;9,7)	Mathias 17	*können*	7
			müssen	4
2.44	(2;3,21)	Julia 25	*können*	2
			wollen	1
2.73	(2;4,21)	Julia 26	*können*	7
			wollen	3
			müssen	1
2.83	(2;11,14)	Mathias 18	*können*	1
			wollen	2
			dürfen	2
2.94	(2;5,28)	Julia 27 &	*können*	16
	(2;11,14)	Daniel 19	*wollen*	2
			dürfen	6
2.98	(3;0,21)	Daniel 21	*können*	3
			wollen	2
			müssen	2
			sollen	3

After investigating which modals are present in early child German, the number of finite versus nonfinite forms must be considered to assess whether or not these early modals are epistemic (or psychological verbs) or if they are root modals (§4.1).

4.2.2 The Presence of Finite Modals and Absence of Nonfinite Modals

Only a small number of modals appear in early child German, including *können* 'can', *dürfen* 'may' and *wollen* 'to want', and according to the claims made by Guilfoyle (1996, 1997), these modals should emerge as infinitival if they are epistemic modals. In this section, the presence of finite root modal verbs is demonstrated. However, infinitival and

epistemic modals are conspicuously absent from the acquisition data. While a high number of modal tokens are finite, only two nonfinite forms out of 119 tokens, appear in the speech of all five children, as shown in the table below.[72]

TABLE 17 FINITE AND NONFINITE MODALS

Transcript	Number of Finite Tokens of Modals	Number of Nonfinite Tokens of Modals
Katrin	47	1
Daniel	30	1
Julia	21	Ø
Mathias	17	Ø
Nicole	3	Ø
Total	**117**	**2**

This behaviour deviates substantially from the traits exhibited by regular and non-initiation point verbs, indicating the modals could be being treated as a separate class by German children. In contrast, 355 tokens of regular verbs are nonfinite and 34 of the non-initiation point verb tokens are infinitival.

TABLE 18 A COMPARISON OF NONFINITE TOKENS IN MODALS, NON-INITIATION POINT VERBS AND REGULAR VERBS

Modal Verbs		Non-initiation Point		Regular Verbs	
Total	**Nonfinite**	**Total**	**Nonfinite**	**Total**	**Nonfinite**
119	2	93	34	1188	442

Virtually all of the modals are in the first or third person singular form (i.e., a bare stem).[73] The following table is a breakdown of the endings used for each modal. Note that all but

[72] The two infinitival modals are in Katrin and Daniel 21's transcripts. Note that Katrin's modal is more likely a first person plural form and is an imitation of her mother's speech. In Daniel's case, the infinitival is a root modal.

(i) *DAN: *i können nich da wasser.*
I can-INF not there water
%cod: *DAN meint, daß er sei nicht ins Wasser gefallen.*
'Daniel means that he didn't fall into the water.'

(ii) *MOT: *wir müssen es suchen.*
'We must look for it.'
*KAT: *müssen juchen.*
must-INF look-INF

one of the tokens of *wollen* 'to want', marked for second person, are part of the phrase *willst du* 'do you want' (in the Katrin transcript, Table 6), which is used with a variety of subjects (i.e., not only with second person). Again, as with the other verbs, I argue (based on Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994) that the acquisition of the second person singular marker indicates that the child has access to the full subject-verb agreement paradigm. This is especially crucial in the development of the modal verbs because, as shown in (2), their inflectional paradigm does not distinguish between third and first person, but does mark second person. The following table demonstrates that German children rarely overgeneralize the verb endings from regular verbs to the modals. The only clear examples of overgeneralization are in the Daniel 19 transcript where he uses *-e* with the *darf* 'may' verb stem, which is ungrammatical in adult German.

TABLE 19 THE DISTRIBUTION OF MODAL ENDINGS (BY VERB)

Modal		***-e***	***-t***	***-st***	**Bare stem**	**Nonfinite (*-n*)**	**Total Tokens**
können	'can'	Ø	1	Ø	52	1	54
wollen	'to want'	Ø	Ø	10	27	Ø	37
dürfen	'may'	3[74]	Ø	Ø	10	Ø	13
müssen	'must'	Ø	5	Ø	6	1	12
sollen[75]	'should'	Ø	Ø	1	2	Ø	3
Total		**3**	**6**	**11**	**97**	**2**	**119**

TABLE 20 THE DISTRIBUTION OF ENDINGS ON MODAL VERBS (BY CHILD)

Name	**Bare Stem**	***-e* Ending**	***-st* Ending**	***-t* Ending**	**Nonfinite (*-n*)**
Katrin	32	Ø	10	6	1
Daniel	25	3	1	Ø	1
Julia	21	Ø	Ø	Ø	Ø
Mathias	17	Ø	Ø	Ø	Ø
Nicole	3	Ø	Ø	Ø	Ø
Total	**96**	**3**	**11**	**6**	**2**

[73] The first and third person singular forms of most of the modals and the bare stem are indistinguishable. See (2) for the inflectional paradigm of the modals.

[74] Note that all of the *darfe*, that is those with an *-e* marker forms were produced by Daniel in one session (Daniel 19).

[75] All tokens of *sollen* 'should' were taken from the Daniel 21 transcript.

The modals that appear in early German are all finite and to determine whether or not Guilfoyle 1996, 1997 is refuted, we look at the types of modals being used by German children. If a high number of tokens are epistemic and they appear as finite, Guilfoyle's predictions (1996, 1997) are not met.

4.2.3 Root versus Epistemic Modals in Child Grammar

The types of modals used by German children, that is, root or epistemic, will validate or refute the claim that the projection of TP is associated with the presence of an initiation point. In the preceding section (§4.2.2), it was shown that all of the tokens of modal verbs were in their finite forms. This section will look at the utterances produced by each of the children, and discuss whether these utterances are epistemic, root, or both.

The table below provides a count of the number of epistemic, root, and undetermined tokens of the modal verbs collected from Julia, Mathias, Daniel, Katrin and Nicole. No tokens were found which could be definitively identified as epistemic, although there were two tokens where the modal might have been epistemic or root.[76,77]

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[76] These data confirm Stephany 1986 which finds that the earliest modals are root, not epistemic.

[77] Note that the distinction between deontic modals and their main verb counterparts (for the verbs *wollen* and *können*) is not maintained in these counts. My primary goal was to demonstrate the complete absence of epistemic modals from early child German, so the deontic modals and main verbs were grouped together.

TABLE 21 THE NUMBER OF EPISTEMIC VERSUS ROOT MODAL TOKENS

Transcript	Total Number of Tokens	Number of Epistemic Tokens	Number of Root Tokens
Total			
können	54	Ø	54
wollen	37	Ø	36, 1 undetermined
dürfen	13	Ø	13
müssen	12	Ø	12
(*sollen*	3	Ø	3
Katrin			
können	17	Ø	17
wollen	21	Ø	20, 1 undetermined
dürfen	1	Ø	1
müssen	9	Ø	9
Daniel			
können	13	Ø	13
wollen	7	Ø	7
dürfen	6	Ø	6
müssen	2	Ø	2
(*sollen*	3	Ø	3
Julia			
können	15	Ø	15
wollen	5	Ø	5
dürfen	Ø	n/a	n/a
müssen	1	Ø	1
Mathias			
können	8	Ø	8
wollen	2	Ø	2
dürfen	6	Ø	6
müssen	Ø	n/a	n/a
Nicole			
können	1	Ø	1
wollen	2	Ø	2
dürfen	Ø	n/a	n/a
müssen	Ø	n/a	n/a

The modal verb *können* 'can' was one of the most frequent in the child data. In all cases, it was used in its root form. There were no tokens which could be interpreted as epistemic. Three examples are provided below (with their respective contexts) (15-17).

(15) *JUL: *ich kann auch.*
I can also
'I can, too.'

%exp: *JUL will auch springen.*
'Julia wants to jump, too.'

(Julia 25, MLU: 2.44)

(16) *DAN: *ein rad reintun.*
a wheel put-in-INF
'Put in a wheel.'

%cod: *Als MAT beide Räder rausnimmt.*
'When Mathias takes both wheels out.'

*DAN: *ein rad kann fahrn.*
a wheel can drive-INF
'A wheel can drive.'

%cod: *Als MAT es wieder reintut.*
'When Mathias puts it in again.'

(Daniel 19, MLU: 2.94)

(17) *KAR: *der kann ganz weit springen ...*
'He can jump very far.'

*MAT: *ich auch kann.*
I also can
'I can, too.'

(Mathias 17, MLU: 2.38)

In the example taken from Julia's transcripts (15), the modal *kann* expresses the fact that Julia is able to jump (and wants to, as well). Daniel's sample token of *kann* also demonstrates that he uses it in the root sense, that is, when the wheels are put back in, driving is able to occur (16). Finally, in (17), Mathias is using *kann* to express his ability to jump very far. Almost all of the *können* tokens express ability of some type. However, there are four examples, three in the Julia corpus and one in the Katrin sample, where

können may take a direct object or act alone as the main verb. An example is provided below (18), where *kann* is used as the main verb:[78]

(18) *JUL: *du kann das so nich besser.*
you can that so not better
'You cannot do that any better.'

%exp: *J: meint, HAR könne es nicht besser als KAR.*
'Julia means that Harald can't do it better than Karin.'

(Julia 26, MLU: 2.73)

(19) *KAT: *dann mit jein.*
can with in
'Can go in with.'

[% *'kann mit herein'; meint das Auto kann mit dem Geschirr in die geöffenete Maschine.*]
'"can go in with"; means that the car can go into the opened machine with the dishes'

(Katrin, Age: 1;5,15)

With the exception of the four possible main verb forms of *können*, the other fifty tokens are root modals, like the examples cited in (15-17).

The modal *wollen* 'to want' was the second most common modal verb in the child transcripts. The behaviour of this modal initially seems problematic for the model proposed by Guilfoyle (1996, 1997). Twelve of the tokens (ten from Katrin, one from Julia and one from Daniel) are main verbs or take a direct object (20, 21). The other twenty five tokens of *wollen* are root and occur in their finite forms (22, 23).

(20) *DAN: *i will wieder passagier.*
I want again passenger
'I want to be a passenger again.'

%cod: *DAN will auf das Schiff.*
'Daniel wants go onto the ship.'

(Daniel 21, MLU: 2.98)

[78] Note that using *können* as the main verb is not ungrammatical, as indicated in the explanation following Julia's utterance. The adult interpretation uses *können* as the main verb, as well.

(21) *JUL: *will a mein tischchen.*
want to my table-DIM
'I want on my table.'

%com: *JUL will an ihren Tisch.*
'Julia wants to go to her table.'

(Julia 25, MLU: 2.44)

In (20) and (21), Daniel and Julia express desire (i.e., to be a passenger on the ship and to be at the table) by using *wollen* as the main verb. However, *wollen*, as a main verb or a root modal, expresses the psychological state of desire, that is, the root interpretation of *wollen* lacks an initiation point.

(22) *KAT: *wi du nich babebt?*
want you not stuck-together

[% '*willst du nicht verklebt sein?*']
'Don't you want to be stuck together?'

(Katrin, Age: 1;5;15)

(23) *DAN: *will jetzt landen.*
want now land-INF
'Want to land now.'

(Daniel 21, MLU: 2.98)

The verb *wollen* is used as a modal expressing desire in (22) and (23) for the main verbs, *verkleben* 'to stick together' and *landen* 'to land'. Under the framework discussed in this thesis, *wollen* 'to want' should appear in its nonfinite form at least some of the time. One possibility is that *wollen* belongs to the group of non-initiation point verbs which never emerge as nonfinite (§3.3.1, Table 4). However, due to the high number of *wollen* tokens versus those of the non-initiation point verbs, another explanation is preferable. One potential explanation for the behaviour of *wollen* is the children are using it as a memorized chunk of speech, rather than as a productive verb. Katrin seems to treat *willst du* 'do you want' as unanalyzed part of speech (§4.2.2, Table 6). To determine whether *wollen* could possibly be a memorized variant, we can examine the degree of variation occurring in the

context of its use. The number of occurrences of *wollen* with different subject types (i.e., first person subject, second person, etc.) are provided in the table below (Table 22).[79]

TABLE 22 THE DISTRIBUTION OF *WOLLEN* WITH DIFFERENT SUBJECTS

Child	First Person	Second Person	Third Person	Undetermined
Mathias	1	Ø	Ø	1
Julia	5	Ø	Ø	Ø
Daniel	3	Ø	Ø	Ø
Katrin	7	(10)[80]	1	3
Nicole	2	Ø	Ø	Ø
Total	**18**	**(10)**	**1**	**4**

The majority of *wollen* tokens occur with a first person subject or context, 18 out of 27 tokens; the children do not seem to associate *wollen* with other subjects or contexts. Thus, the use of *wollen* does not appear to be highly productive in terms of context of its use, an indication it may be a memorized part of speech. Initially, the predictions in Guilfoyle 1996, 1997 appear to encounter problems when dealing with the production of finite tokens of *wollen* 'to want', as it is both a psychological verb and modal verb. However, the preliminary research demonstrates that *wollen* may not be a productive element. Further investigation into this potential explanation is required.

Both *dürfen* 'may' and *müssen* 'must' have virtually the same number of tokens in the samples under discussion, with thirteen and twelve tokens each, respectively. Again, no tokens appear to be used as epistemic modals. The following examples are taken from Mathias and Katrin:

(24) *MAT: *die schere hat Julia.*
the scissors has Julia
'Julia has the scissors.'

[79] Whenever no subject was present in the utterance, the context was used to determine the subject. If the subject was still not obvious, I counted it as undetermined.

[80] Katrin's second person tokens are excluded from the overall total because we are assuming that they are unanalyzed chunks of speech. I have included them here for information only.

*MAT: *darf nich Julia haben.*
may not Julia have-INF
'Julia may not have (the scissors).'

(Mathias 17, MLU: 2.38)

(25) *KAT: *mußt hojn.*
must get-INF

[% '*das Geschirr mußt du holen.*']
'You must get the dishes.'

(Katrin, Age: 1;5,15)

In (24), Daniel uses the verb *dürfen* 'may' to indicate permission (i.e., Julia is not allowed to have the scissors). Katrin expresses the necessity of getting the dishes by using the modal *müssen* (25). The modals *dürfen* and *müssen* follow the patterns set out by *wollen* and *können* by appearing in primarily finite forms and conveying a root meaning.

The modal *sollen* 'should' has only three tokens, all of which appear in the Daniel 21 transcript. The three tokens are in their finite forms and are used with the root interpretation rather than having an epistemic function.

(26) %cod: *als JUL auf einer Flöte bläst.*
'Julia plays a flute.'

%cod: *DAN sieht JUL an.*
'Daniel looks at Julia.'

*DAN: *das sollst du nich laut mach.*
that should you not loud make
'You shouldn't do that loud.'

(Daniel 21, MLU: 2.98)

Daniel uses the root modal *sollen* in (26) to tell Julia that she is not allowed to make loud noise. In early child German, no epistemic modals appear, so the claims of Guilfoyle 1996, 1997 cannot be confirmed.

Several alternatives are possible for explaining why no epistemic modals appear. First, children at these stages of linguistic development might not have developed enough cognitively to discuss the probability or possibility of an event. This would explain the

missing epistemic modals but it does not account for the consistent production of the finite forms of the root modals and virtually no infinitival modals. A second possibility is that few epistemic or infinitival modals appear in the linguistic environment. As a result, the child would not use them. Again, this explanation does not account for why children do not overgeneralize the infinitival forms to root modals. If a child hears other verbs being used in both their finite and nonfinite forms, there is no reason for him/her not to assume that the root modals behave like other verbs. A third possible explanation is that the paucity of epistemic verbs forms is due to the absence of CP. Epistemic modals must move up into CP at LF to have scope over the entire proposition; if there is no CP, the modal verb cannot raise into CP. If this is correct, a rationale for why root modals always appear as tensed is still necessary. Finally, German children may not be treating modals as verbs at all but instead consider them a different element and therefore, no overgeneralization errors occur. However, while accounting for the unique behaviour of the root modals, this does not explain the complete absence of epistemic modals. Within the framework of Guilfoyle 1996, 1997, the consistent tensing of the root modals can be accommodated; since the root modals are more strongly associated with an initiation point, they are more likely to project TP and appear in their finite forms. For comparison, we look at crosslinguistic evidence from English modal acquisition to determine if any parallels exist, despite the different adult target grammars.

4.3 The Acquisition of English Modals

In this section, I discuss the properties differentiating English modals from German modals. Despite these distinctions, the data from English modal acquisition has several patterns which parallel the development of German modals. Any adequate theory will have to account for patterns observed in early child English and German.

4.3.1 Adult English Modals

The class of English modals includes *can*, *could*, *may*, *might*, *shall* and *should*. Unlike regular verbs in English (27b), the modals take no inflection (i.e., third person

singular, *-s*) and they have no infinitival form (27a). This differs from the German modals which have both an inflectional paradigm (although impoverished) and an infinitival form (§4.1.1).

(27) a. can — Infinitive: *to can

	Singular	*Plural*
1P	I can	we can
2P	you can	you can
3P	he can	they can

b. to love — Infinitive: to love

	Singular	*Plural*
1P	I love	we love
2P	you love	you love
3P	she loves	you love

Two or more modals cannot appear in a sentence (28) whereas in German, stacking modal verbs is grammatical.[81] English modal verbs take a plain infinitival complement, that is they do not take infinitival markers with the *to* marker, whereas most English verbs require the presence of *to* in infinitival complements (29a-b).

(28) *I can must travel immediately.
He loved to hike.

(29) a. I may go to the theater tonight.
*I may to go to the theater tonight.

b. *I want go to the theater tonight.
I want to go to the theater tonight.

The modals exhibit what are referred to as the NICE properties, Negation-Inversion-Code-Emphasis; such properties are not associated with main verbs in English. They precede the negative marker *not* and can contract with it (30). Modals undergo inversion in English (31) and act as a substitute for the entire VP in various coordinated structures (32). Modals can also be used for emphasis by a speaker (33).

(30) I must not leave too late. *I leave not too late.
I mustn't leave too late. *I leaven't too late.

(31) Should I call you tonight? *Call I you tonight?

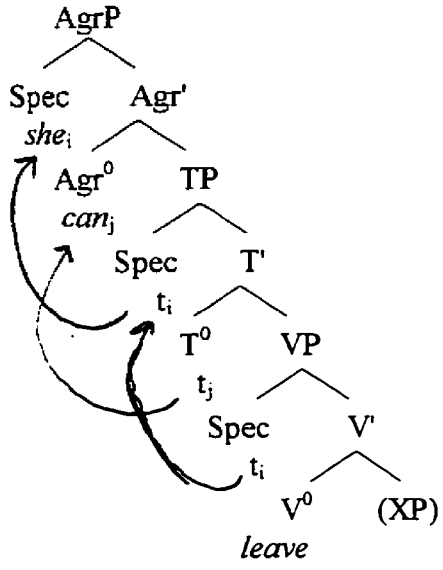
(32) He can come tomorrow and she can, too.
*He comes tomorrow and she comes, too.

[81] There are some dialects of English in the southern United States which do allow certain double modal constructions. However, I am excluding these constructions because they are unique to those dialects. See Denison (1995: 294) for references on double modal construction in English.

(33) I <u>must</u> get on the plane!

Unlike German modals, English modals never assign accusative
the main verb provides the argument structure. In example (3
agent theta role to *I*. Since English modals behave different
(1989) and Roberts (1993) argue that they are generated outsi
head of TP, T^0, rather than in V^0. The structure of the sentence
in (34).

(34)



Modal verbs in English may have an epistemic or root interp
German.[82] Examples of the epistemic (35) and root interpretati

(35) *Epistemic*
(i) We may not get to London this year.
'It is possible that we will not go to London

(ii) He must be caught in traffic.
'It is probable that he has been caught in tra

(36) *Root*
(i) You may see the doctor now.
'Now you are permitted to go in and see the

(ii) He must get the phone number.
'He has an obligation to get the phone numb

[82] Also, like German, English epistemic modals move up into CP at LF w

Although English and German modals appear to be syntactically different elements, the data from the development of English modals demonstrate that modals in both languages follow a similar pattern of acquisition.

4.3.2 The Data from English Acquisition

The acquisition of English modals closely parallels the emergence of German modals with one major difference. Modals do not appear until a later stage in English child speech development: at an MLU of 3.5 (Bellugi 1971), whereas German children begin using modals with an MLU around 2.0 (shown in §4.2). The earliest English modals are root, not epistemic (Goodluck 1991, Stephany 1986); this is similar to what takes place during the development of German modals. English children make very few errors in the morphology of modals. They do not overregularize verbal morphology, such as the past tense marker *-ed* or the progressive marker *-ing* to the modal verbs, although they do with other irregular verbs like *to go* (Pinker 1996). Recall that German children primarily use the bare stem forms, as well (Tables 19, 20). English children also place the modal verbs correctly in relation to the main verb of the sentence (Pinker 1996). For example, children do not generally say **I play wanna* but use the correct order *I wanna play*.[83] Double-tensing or where the modal and main verb are tensed is an error which may occur in English child speech, however, the actual prevalence of these errors is controversial (cf. DeVilliers and DeVilliers 1985, Mayer et al 1978, Pinker 1996, Stromswold 1990). Some instances of double-tensing with modals or auxiliaries also appear in the German speech samples I examined (see (26) for an example).

In order to generate the modals in the correct position, English children must be projecting tense because modals are base-generated in T^0 in adult English (34). These modals co-occur correctly with main verbs, indicating that they are not being generated in

[83] An interesting difference between English and German acquisition is that English children tend to acquire negative auxiliaries and modals such as *can't* and *won't* first (Goodluck 1991, DeVilliers and DeVilliers 1985).

V^0. At the earliest stages of modal acquisition, they are projecting TP. Since TP is associated with an initiation point, the English children use root modals.

Summarizing, the emergence of English modals parallels that of the German modals, despite their absence before an MLU of 3.5 in English. The first English modals to surface are root modals, like their German counterparts, and have very few inflectional errors.

4.4 Conclusion

German modals include the verbs *können* 'can', *dürfen* 'may', *wollen* 'to want', *müssen* 'must' and others. Syntactically, these verbs are almost identical to main verbs in German; they have a full inflectional paradigm, an infinitival form, can stack, and undergo verb movement like other verbs. The major difference distinguishing the modal verbs from main verbs is their irregular morphology. In addition, the modals may have a root or epistemic interpretation. Root interpretations involve permission or obligation while the epistemic function expresses possibility or probability. A limited number of modals (*können* 'can', *mögen* 'may, would like' and *wollen* 'to want, will') can act as true main verbs and assign accusative case to an object. Root modals are strongly associated with the initiator of the event expressed in the sentence whereas the epistemic modals are not. According to Guilfoyle 1996, 1997, root modals can be finite or infinitival because they are associated with an initiation point. Virtually all of the modals have a root interpretation and the vast majority of them occur in their finite forms. The modal *wollen* 'to want' is a psychological predicate, but it appears consistently in its finite form. One explanation for its deviant behaviour is that *will/willst* may be a memorized form; some of the evidence indicates this is a strong possibility. Very few overgeneralization errors occur in the data, that is few modals are incorrectly inflected. Epistemic modals are expected to appear as infinitivals only because they lack an initiation point and will not project tense. No epistemic modals were produced by children at the developmental stages discussed within this thesis, so Guilfoyle's claims (1996, 1997) cannot be confirmed. An investigation of later stages in linguistic development may demonstrate whether or not epistemic modals are nonfinite (although if agreement has already been acquired, the presence of an initiation point may no longer be

relevant). Crosslinguistic evidence from English acquisition indicates that English children also acquire root modals first, despite the fact that they emerge later in development. Since children do not appear to be incorrectly analyzing the English modals as regular verbs, and they only produce the root modals, it is reasonable to assume that the modals are being generated in T^0 (and T^0 is projected when an initiation point is present). Guilfoyle's hypothesis accommodates the data from the acquisition of modals for German and English.

Chapter 5
Conclusions

5.0 Introduction

The implications of various syntactic theories are either refuted or confirmed by comparing their predictions for first language acquisition to actual data collected from young language learners. In this respect, the study of first language acquisition is an invaluable tool in determining the underlying nature of Universal Grammar.

Any theory explaining adult German syntax must allow for certain phenomena which occur in the development of German as a first language. The most studied characteristic of early child German is the apparently random distribution of root infinitivals and finite verb forms in child utterances. Finite verbs are treated differently from their infinitival counterparts; in particular, finite forms undergo movement outside of the verb phrase while infinitivals remain in V^0. Two major questions must be answered when addressing this fact of child language. First, where is the finite verb moving? Presumably to a functional position outside the VP, but to which functional projection? How many projections are at the child's disposal? Second, why do some utterances emerge as finite while others do not? Is there a possible underlying motivation for this differentiation? These are the questions discussed this thesis.

5.1 Theoretical Assumptions

Chapter 1 discussed the theoretical mechanisms assumed for the analysis of the German child data. The basic theoretical assumptions come from the Principles and Parameters Theory. X'-Theory, the Projection Principle, Theta Theory and Binding Theory are relevant to this discussion. The two important theories for language acquisition were the Principle of Minimal Projection (Grimshaw 1993) and the Paradigm-Verb Raising Correlate (Rohrbacher 1993, 1994). The Principle of Minimal Projection states that only fully acquired projections are included in the child's grammar (Grimshaw 1993). The Paradigm-Verb Raising Correlate provides a child entering the linguistic environment with a specific

criterion for deciding whether or not his/her language has strong agreement (i.e., a distinction between first and second person verbal morphology), which entails V-to-Agr raising. This also implies that if a child has acquired subject-verb agreement and it is strong in his/her language, verb movement will occur. Finally, when discussing the adult data, I use the bipartite VP (Travis 1991, Guilfoyle 1993) and the thematic and aspectual hierarchies proposed in Grimshaw 1990. The major claims of Guilfoyle 1993, 1996, 1997 are briefly outlined to demonstrate the role of initiation point in adult grammar, specifically, the importance of an initiation point in Southern Irish.

5.2 Earlier Studies of German Child Language

In Chapter 2, we examined several earlier studies of early child German focusing on the type and number of functional categories available to the child. The approaches range from a completely impoverished grammar, where no functional categories are present (Guilfoyle and Noonan 1992, Radford 1990), to one where the child has the entire complement of functional projections at his/her disposal (Poeppel and Wexler 1993, Verrips and Weissenborn 1992, Weissenborn 1990). The framework advocated by Clahsen (Clahsen 1990, Clahsen and Penke 1992, Clahsen et al 1994), where a single functional category is included in the child's grammar, explains the most data with the fewest number of difficulties. However, further evidence concerning the absence of subject-verb agreement is required, and the generic functional category (FP) proposed by Clahsen is not appealing for several reasons. The acquisition data from Swedish provide further evidence that subject-verb agreement is absent from the grammar of children acquiring German. Swedish children make the same differentiation between finite and nonfinite verbs, that is, finite verbs undergo verb movement outside of the VP, but Swedish lacks any subject-verb agreement morphology. Therefore, Swedish learners are not basing this distinction on the presence of agreement. It follows that German children are also not using agreement to make the same grammatical distinction. I argue that German children project TP, not AgrP, in certain clauses. When they produce root infinitivals, TP is not projected. In addition, subject-verb agreement is acquired when German children begin producing the second person singular

form: a significant turning point in the consistent production of V2. Rohrbacher's Paradigm Verb Raising Correlate, which relies on the distinction between first and second person, provides further validation for the claim that the second person agreement marker is crucial. We have answered the question of which functional category is projected: TP. The issue concerning the possible motivation behind the distribution of finite and infinitival forms remains.

Guilfoyle (1996, 1997) provides a possible solution to the second question addressed in this thesis. Based on the presence of root infinitivals in adult Southern Irish, Guilfoyle (1993) argues that verbs lacking an initiation point (e.g., psychological predicates) do not project TP. Extending this analysis to the root infinitivals of early child German (Guilfoyle 1996), she proposes that verbs which represent an event lacking an initiation point are the ones which do not project TP (i.e., emerge as nonfinite). Two types of verbs in early child German are investigated to determine whether or not this model is valid for child acquisition. Non-initiation point verbs such as experiencer verbs and psychological predicates are included in the study. Modals are also discussed because they have either a root meaning, (i.e., focus on the initiation point of an event) or have an epistemic function where initiation point is irrelevant.

5.3 The Development of Non-Initiation Point Verbs

The data from the acquisition of non-initiation point verbs, including experiencer verbs and psychological predicates, was presented in Chapter 3. After looking at the various types of non-initiation point verbs in German, the predictions were compared with the data from the CHILDES transcripts (Clahsen 1982, MacWhinney and Snow 1990, Wagner 1985) (Tables 5, 6). Several general trends were observed in the child data. First, the total number of non-initiation point verbs appearing in early child German seems to be small. In fact, no psychological state verbs are present in any of the transcripts. The group of (psychological) causatives were predicted to be either finite or nonfinite because the state was caused by an entity. The majority of them were finite; however, this is not problematic for Guilfoyle 1996, 1997. When compared to the regular verbs, a higher number of non-

initiation point verbs emerged as infinitival. Katrin's data were problematic because most of her non-initiation point verbs were finite but there is a strong possibility that she has subject-verb agreement. Therefore, she would no longer rely on initiation point for verb movement. The regular verbs that appear in the child data are highly agentive and active verbs. In addition, more of them appear in their finite forms, at all developmental stages, than the non-initiation point verbs. Finally, only a small group of regular verbs appear in their finite and nonfinite forms for each child. Most regular verbs emerged as either finite or nonfinite only. Although the behaviour exhibited by the non-initiation point verbs does not appear to be random, the model proposed by Guilfoyle (1993, 1996, 1997) has not been conclusively supported by the data collected from non-initiation point verbs.

5.4 The Acquisition of German Modals

The data centering around the development of the modals were dealt with in Chapter 4. Root modals are strongly associated with an initiation point and as such, they are predicted to emerge as either finite or nonfinite. Virtually all of the root modals in the transcripts appear as finite. A significant problem with the root modals is the production of *wollen* 'to want' in only finite forms. The verb *wollen*, in its root interpretation expresses a psychological state of wanting or desire; this is in direct contradiction to the predictions of Guilfoyle 1996, 1997. A possible explanation for this behaviour is that *will/willst* is treated as a memorized form in early child speech, not a productive element. The epistemic modals should occur in their infinitival forms. However, no modals which could be definitively described as epistemic appear in the children's transcripts. Only two examples out of 119 tokens are infinitival, so German children do not seem to be overgeneralizing the infinitival marker (or other markers for person and number) to the modals. For comparison, the acquisition of English modals was briefly discussed. Again, epistemic modals are rare in early child English. Inflectional errors on the modal verbs also do not occur. Root modals are associated with an initiation point in English as well and the root modals always appeared in T^0, that is, they did not occur as main verbs generated in V^0 in early child English. Guilfoyle 1996, 1997 is not definitively supported by the data from the

development of modals; however, this model does accommodate many of the characteristics of modal acquisition.

5.5 Implications and Further Research

The presence of verb movement in early child German is attributable to the projection of TP in finite utterances, not the inclusion of AgrP; the first question concerning the nature and number of functional categories has been answered. Some of the predictions of Guilfoyle 1996, 1997 concerning the non-initiation point verbs and modals have been met. At most of the developmental stages, we find that a higher proportion of non-initiation point verbs seem to be infinitival than their regular verb counterparts. Thus, we have a possible solution to the second question of what motivates the presence of TP in some utterances but not others. The data do not conclusively support Guilfoyle 1996, 1996. Several areas are open to further research: (i) more data from the various developmental stages (and other languages) could be collected to increase the sample size, (ii) an explanation for the small number of non-initiation point verbs, particularly the absence of psychological state verbs, is necessary, (iii) an analysis of the regular verbs which appear in their nonfinite forms could determine if the presence of an external argument plays a role, (iv) an investigation into the restricted class of verbs which appear in their nonfinite and finite forms to explain why only a few verbs do this in child language, and (v) looking at the development of epistemic modals when they do emerge. Although several aspects of the acquisition of verb movement and argument structure have been discussed here, many questions remain unanswered and further research is required.

References

Adamzik, K. 1985. Zum primärsprachlichen Erwerb der deutschen Modalverben. In G. Heintz and P. Schmitter (eds) (1985). *Festschrift für Helmut Gipper zum 65. Geburtstag*, Band I. Baden-Baden: Verlag Valentin Koerner. pp. 15-37.

Askedal, J. O. 1982. Zur semantischen Analyse deutscher Auxiliarkonstruktionen unter dem Aspekt der Unterscheidung von summativer und nicht-summativer Bedeutung. *Deutsch als Fremdsprache: Zeitschrift zur Theorie und Praxis des Deutschunterrichts für Ausländer*, 19(3): 159-167.

Atkinson, Martin. 1992. *Children's syntax: An introduction to Principles and Parameters Theory*. Cambridge, MA: Blackwell.

Baker, M. 1988. *Incorporation: A theory of grammatical function changing*. Chicago: University of Chicago Press.

Belletti, A. and L. Rizzi. 1988. Psych-verbs and theta-theory. *Natural Language and Linguistic Theory*, 6(3): 291-354.

Bellugi, U. 1971. Simplification in children's language. In R. Huxley and E. Ingram (eds) (1971). *Language acquisition: Models and methods*. New York: Academic Press. pp. 95-119.

den Besten, H. 1982. Some remarks on the ergative hypothesis. Unpublished manuscript, University of Amsterdam.

Bierwisch, M. 1963. *Grammatik des Deutschen Verbs*. Studia Grammatica II. Berlin: Akademie Verlag.

Bouma, L. 1973. *The semantics of modal auxiliaries in contemporary German*. The Hague: Mouton.

Buscha, J. 1984. Zur Semantik der Modalverben. *Deutsch als Fremdsprache: Zeitschrift zur Theorie und Praxis des Deutschunterrichts für Ausländer*, 21(4): 212-217.

Cardinaletti, A. 1990. *Es*, pro and sentential arguments in German. *Linguistische Berichte*, 126: 135-165.

Chomsky, N. 1965. *Aspects of the theory of syntax*. Cambridge, MA: The MIT Press.

-----. 1976. Conditions on rules of grammar. *Linguistic Analysis* 2, 303-501.

-----. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

-----. 1986. *Knowledge of language, its nature, origin and use*. New York: Praeger.

-----. 1988. *Language and problems of knowledge: The Managua Lectures*. Cambridge, MA: The MIT Press.

Clahsen, H. 1982. *Spracherwerb in der Kindheit. Eine Untersuchung zur Entwicklung der Syntax bei Kleinkindern*. Tübingen: Gunter Narr Verlag.

-----. 1986. Verb inflections in German child language: acquisition of agreement marking and the functions they encode. *Linguistics*, 26: 79-121.

-----. 1990. Constraints on parameter setting: a grammatical analysis of some acquisition stages in German child language. *Language Acquisition*, 1(4): 361-391.

----- and M. Penke. 1992. The acquisition of agreement morphology and its syntactic consequences: new evidence on German child language from the Simone-corpus. In J. Meisel (ed) (1992). *The acquisition of verb Placement*. Dordrecht: Kluwer Academic Publishers. pp. 181-223.

-----, -----, and T. Parodi. 1994. Functional categories in early child German. *Language Acquisition*, 3(4): 395-429.

DeVilliers, J. and P. DeVilliers. 1985. The acquisition of English. In D. Slobin (ed) (1985). *The crosslinguistic study of language acquisition, volume 1: The data*. Hillsdale, NJ: Lawrence Erlbaum. pp. 27-139.

Denison, D. 1995. *English historical syntax: Verbal constructions*. London: Longman.

Dreyer, H. and R. Schmitt. 1985. *Lehr- und Übungsbuch der deutschen Grammatik*. Munich: Verlag für Deutsch.

Goodluck, H. 1991. *Language acquisition: A linguistic introduction*. Cambridge, MA: Blackwell.

Goossens, L. 1982. On the development of the modals and epistemic function in English. In A. Ahlqvist and E. Traugott (eds) (1982). *Papers from the 5th annual International Conference on Historical Linguistics*. Amsterdam: John Benjamins. pp. 74-84.

Grewendorf, G. 1989. *Ergativity in German*. Dordrecht: Foris Publications.

Grimshaw, J. 1990. *Argument structure*. Cambridge, MA: The MIT Press.

------. 1993. Minimal projection and clause structure. In B. Lust, M. Suñer and J. Whitman (eds) (1993). *Heads, projection and learnability*. Hillsdale, NJ: Lawrence Erlbaum. pp. 75-85.

Guilfoyle, E. 1993. VNPs, finiteness and external arguments. *Proceedings of the 24th annual meeting of the North Eastern Linguistic Society*. Published by the GLSA, University of Massachusetts, Amherst, MA.

-----. 1996. The acquisition of Irish and the internal structure of VP in early child grammars. In A. Stringfellow, D. Cahana-Amitay, E. Hughes, and A. Zukowski (eds) (1996). *Proceedings of the 20th annual Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press. pp. 296-307.

-----. 1997. Tense and N features in Modern Irish and early child grammars. In U. Lashkamanan (ed) (1997). *Minimalist approaches to language acquisition*. Dordrecht: Kluwer Academic Publishers.

----- and M. Noonan. 1992. Functional categories and language acquisition. *Canadian Journal of Linguistics*, 37(2): 241-272.

Haegeman, L. 1994. *Introduction to Government and Binding Theory*. 2nd Edition. Cambridge, MA: Blackwell.

------. 1995. Root infinitives, tense and truncated structures in Dutch. *Language Acquisition*, 24(3): 205-225.

Håkansson, G. 1989. The acquisition of negative placement in Swedish. *Studia Linguistica*, 43(1): 47-58.

Hale, K. and J. Keyser. 1991. The syntactic structure of thematic structures. Unpublished manuscript, MIT.

----- and -----. 1993. On argument structure and the lexical expression of syntactic relations. In K. Hale and J. Keyser (eds) (1993). *The view from Building 20: Essays in honor of Sylvain Bromberger*. Cambridge, MA: The MIT Press. pp. 53-111.

Hamann, C. 1996. Null arguments in German child language. *Language Acquisition*, 5(3): 155-208.

Heine, B. 1995. Agent-oriented vs. epistemic modality: some observations on German modals. In J. Bybee and S. Fleischmann (eds) (1995). *Modality in grammar and discourse*. Philadelphia: John Benjamins. pp. 17-53.

Hoeing, R. G. 1994. *Empty, expletive and missing Subjects in German*. New York: Peter Lang.

Holmberg, A. and C. Platzack. 1991. On the role of inflection in Scandinavian syntax. In W. Abraham, W. Kosmeijer and E. Reuland (eds) (1991). *Issues in Germanic syntax*. Berlin: Mouton de Gruyter. pp. 93-118.

Hyams, N. 1987. The theory of parameters and syntactic development. In T. Roeper and E. Williams (eds) (1987). *Parameter setting*. Dordrecht: D. Reidel Publishing Company: pp. 1-22.

Ingram, D. and W. Thompson. 1996. Early syntactic acquisition in German: evidence for the Modal Hypothesis. *Language*, 72(1): 97-120.

Jaeggli, O. and K. Safir. 1989. The null subject and parametric theory. In O. Jaeggli and K. Safir (eds) (1989). *The null subject parameter*. Dordrecht: Kluwer Academic Publishers: 1-44.

Koopman, H. and D. Sportiche. 1991. The position of subjects. *Lingua*, 85: 211-258.

Kratzer, A. 1994. The event argument and the semantics of voice. Unpublished manuscript, University of Massachusetts, Amherst.

Lange, S. and K. Larsson. 1973. Syntactical development of a Swedish girl Embla, between 20 and 42 months of age. Part 1. Age 20-25 Mo. *Report No 1*. Stockholms Universiteit, Institutionen för nordiska språk.

Larson, R. 1988. On the double object construction. *Linguistic Inquiry*, 19(3): 335-391.

Lenerz, J. 1977. *Zur Abfolge nominaler Satzglieder im Deutschen*. Tübingen: Gunter Narr Verlag.

MacWhinney, B. and C. Snow. 1990. The Child Language Data Exchange System: an update. *Journal of Child Language*, 16: 457-472.

May, Robert. 1977. *The grammar of quantification*. Ph.D. dissertation, Department of Linguistics and Philosophy, MIT.

Mayer, J., A. Erreich and V. Valian. 1978. Transformations, basic operations and language acquisition. *Cognition*, 6: 1-13.

Moorcroft, R. P. 1995. *Clause-Level functional categories in Germanic V2 languages*. Ph.D. Dissertation, Department of Linguistics, University of Toronto.

Öhlschlager, G. 1989. *Zur Syntax und Semantik der Modalverben des Deutschen*. Tübingen: Max Niemeyer Verlag.

Palmer, F. R. 1990. *Modality and the English Modals*. New York: Longman.

Park, T.-Z. 1981. *The development of syntax in the child with special reference to German*. Innsbruck: Innsbrucker Gesellschaft zur Pflege der Geisteswissenschaften.

Pinker, S. 1996. *Language learnability and language development*. Cambridge, MA: Harvard University Press.

Platzack, C. 1987. The Scandinavian languages and the null-subject parameter. *Natural Language and Linguistic Theory*, 5(3): 377-401.

-----. 1990. A grammar without functional categories: a syntactic study of early child Swedish. *Nordic Journal of Linguistics*, 13: 107-126.

-----. 1992. Functional categories and early Swedish. In J. Meisel (ed) (1992). *The acquisition of verb placement*. Dordrecht: Kluwer Academic Publishers. pp. 63-82.

Poeppel, D. and K. Wexler. 1993. The full competence hypothesis of clause structure in early German. *Language*, 69(1): 1-33.

Pollock, J.-Y. 1989. Verb movement, Universal Grammar, and the structure of IP. *Linguistic Inquiry*, 20(3): 365-424.

Radford, A. 1990. *Syntactic theory and the acquisition of English syntax*. Oxford: Basil Blackwell.

Reuland, E. and T. Reinhart. 1995. Pronouns, anaphors and case. In H. Haider, S. Olsen and S. Vikner (eds) (1995). *Studies in comparative Germanic syntax*. Boston: Kluwer Academic Publishers. pp. 241-268.

Ritter, E. and S. Rosen. 1996. Delimiting events in syntax. Unpublished manuscript, University of Calgary and University of Kansas.

Rizzi, L. 1993/1994. Some notes on linguistic theory and language development: the case of root infinitives. *Language Acquisition*, 3(4): 371-393.

Roberts, I. 1993. *Verbs and diachronic syntax*. Dordrecht: Kluwer Academic Publishers. pp. 238-242.

Rohrbacher, B. 1993. *The Germanic VO Language and the full paradigm: A theory of V-to-I raising*. Ph.D. Dissertation, Department of Linguistics, University of Massachusetts, Amherst.

-----. 1994. Explaining the 'syntactic' consequences of 'rich' agreement morphology: on the licensing of V-to-AgrS raising and pro. Unpublished manuscript, University of Pennsylvania.

-----, Vainikka, A. 1994. On German verb syntax before age 2. Unpublished manuscript, IRCS, University of Pennsylvania.

Scholze-Stubenrecht, W. and J.B. Sykes (eds). 1990. *The Oxford Duden German Dictionary*. Oxford: Clarenford Press.

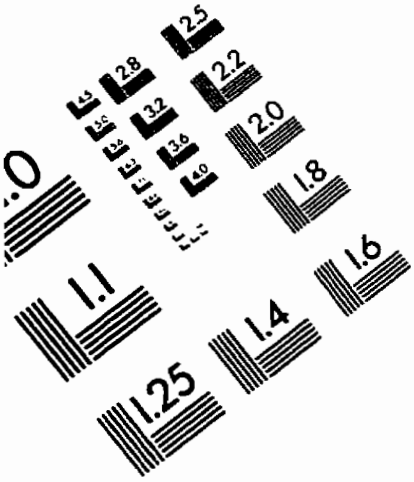
Schwartz, B. and S. Vikner. 1996. The verb always leaves IP in V2 clauses. In A. Belletti and L. Rizzi (eds) (1996). *Parameters and functional heads*. New York: Oxford University Press. pp. 11-62.

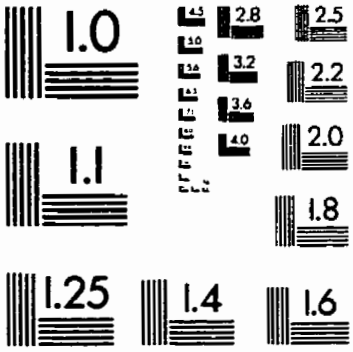
Speas, Margaret. 1993. Null arguments in a theory of economy of projection. Unpublished manuscript, University of Massachusetts, Amherst.

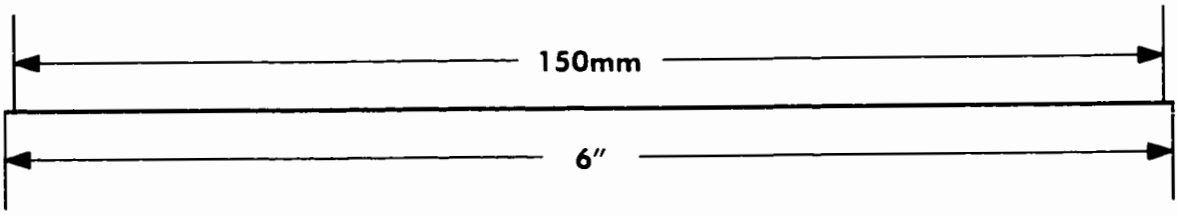
-----. 1996. Economy, agreement and the representation of null arguments. Unpublished manuscript, University of Massachusetts, Amherst.

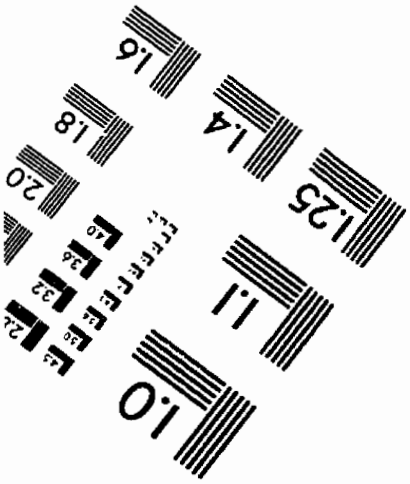
Steele, S., A. Akmajian, R. Demers, E. Jelinek, C. Kitigawa, R. Oehrle, and T. Waso. 1981. *An encyclopedia of AUX: A study of crosslinguistic equivalence*. Cambridge, MA: The MIT Press.

IMAGE EVALUATION TEST TARGET (QA-3)









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