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The Acquisition of German

Introducing Organic Grammar

by

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Dedication

We dedicate this book to the many adults, young and old, who through lack of choice or lack of fear acquire a second language without instruction. There are still too few studies of such learners; it is far easier for the researcher to collect data from the captive participants who are classroom learners than it is to track down those who are going about their daily lives while acquiring a second language. Were there more studies of uninstructed adult learners, those who have no choice and no fear would be joined by learners who choose to open minds they realize are still receptive to unmanipulated and undigested input.

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Without the cooperation of the second language learners, the families with whom they lived and the exchange student organization which supported their year-long stay in Germany (all of whom shall remain nameless to ensure anonymity), this book would have remained a linguists' dream. Various sponsors have supported our work; these include the research council who funded the project on which we began to work together at the University of Düsseldorf, namely the Deutsche Forschungsgemeinschaft-funded (DFG #C1 97/1-1, SFB 282) LexLern project led by Harald Clahsen, the National Science Foundation (NSF Grant #SBR-8920230) and the British Academy (SG-2953/APN3953).

Our studies at the same university predate our collaboration, and we owe our love of linguistics to those working on syntax and on second language acquisition at the University of Washington in the 1980s, namely Mike Brame, Joe Emonds, Fritz Newmeyer and Georgette Ioup. Tom Roeper and Jill deVilliers also represent a major influence on this work, through the first author's education at UMass/Amherst.

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This book represents several decades of collaboration on a research programme, the fruits of which have more often been argued against than agreed with. We thank the many who have taken our ideas seriously and we invite you to do so again. As with any endeavour, what has not killed the theory we now call Organic Grammar has made it stronger. We owe a considerable debt to our ever-present detractor, Bonnie Schwartz, and we generously present her and her FT/FA supporters with new ideas against which to argue. But as the originator of the Full Transfer/Full Access Hypothesis, whose second part is fully in line with Organic Grammar, we have far more in common than with those who either reject the idea of learners' use of language specific mechanisms across the lifespan or who completely reject the idea of such mechanisms. We hope that this book will prompt those who believe that language is not special, particularly for adult second language learners, to reconsider their views.

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Chapter 1

Introduction

1.0. Setting the context of the book¹

Since the study of human behaviour began, both casual and trained observers have noted that the development of a skill is marked by periods during which a particular immature behaviour predominates. Whether that skill is a specialized one such as snowboarding that not all members of a species acquire or an innately pre-determined skill such as bipedal locomotion, stages of development are familiar to us all, and this is particularly so when that skill is one which all members of *Homo sapiens* come to possess. For language, generative linguists view this skill as involving internal knowledge (I-language) that “makes sound and meaning relate to one another in a specific way” through an individual’s notion of structure (Chomsky 1986: 27). Since Noam Chomsky’s first publication in 1957, the study of language acquisition within the generative linguistics framework has entailed the idea that children are born pre-wired to acquire human language; as in the title of Steven Pinker’s (1994) book, *Homo sapiens* have a language instinct. Under this view, input in the ambient language is necessary for language acquisition to occur, but it is not sufficient. Rather, the newborn’s predisposition for language is also required to accomplish this task. Specific details of what this involves are outlined in Chomsky’s (1981) publication as the syntactic constraints known as the Principles and Parameters of Universal Grammar (UG). Since the 1980s these have been slightly refined, as we shall discuss below. The basic idea is that fixed, universal principles and binary (or sometimes multi-valued) parameters help direct the human infant towards the adult language of that speech community, and they also guide the child through developmental detours that much empirical research has shown are never dead-ends.² Children

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1. The reader completely new to formal or generative linguistics is advised to quickly read section 1.5 before beginning this chapter.
 2. Research into the precise nature of parameters of human language has been fraught with difficulty and few parameters that fit the definition proposed in 1981 (of a cluster of properties) have been identified. We argue that this is largely due to lack of a specific theory of how parameters

certainly vary in their pace of development, and they also vary in their vocabulary size, volubility and articulation. Yet when it comes to core grammar – to basic syntax – even though the paths which children take are indirect, numerous studies have pointed to stepping stones along these paths (children’s early and intermediate non-adult grammars) which are predictable for a given language also share characteristics across languages. This sort of evidence is some of the strongest for the existence of innate, pre-wired constraints on human language. All children learning English, for example, typically produce their first questions without inverting the subject and verb and without using auxiliary verbs. ‘Where did Daddy go?’ is for the two-year-old child ‘Where Daddy go?’ Before babies are ten months old, before they understand individual words, they have begun to segment the stream of speech surrounding them into single words they will later comprehend and then produce as illustrated in work by Peter Jusczyk and others discussed in his (1997) book. Only a year or so later, from the point at which they start to string words together, otherwise highly creative children do not create the ‘wild’ grammars that would violate the principles of UG (see for example the studies described in Stephen Crain’s [1993] summary of his and colleagues’ work).

Starting in the decade leading up to the turn of the millennium, research into both child language acquisition and second language acquisition has greatly accelerated. There are now thousands of studies of individuals and of groups of learners of spoken as well as sign languages using a range of observational and experimental methodology to investigate the development of widely spoken languages such as English or less commonly spoken languages such as Sesotho. Yet despite the vigour of the two disciplines in which such research takes place, namely linguistics and psychology, there is still heated debate on central issues. One of these issues – and the issue to which this book is devoted – is the precise nature of the mechanisms that underlie the language learner’s development. It is one thing to show that UG defines developmental stepping stones, i.e. that it constrains the language learner’s early and intermediate grammars.³ It is far more difficult to

are associated with syntactic structure during acquisition and aim to remedy this problem in the present book.

3. On the continued debate on questions of the innateness of language and the status of UG see the illuminating discussion in Smith (2005: 84–89), in his book *Language, Frogs and Savants*.

account for the learner's progression from one stage of development to the next. It is thus not surprising that acquisition research under the aegis of linguistics has focused on the specific properties of immature grammars with less concern for the mechanisms responsible for transition between developmental stages; after all, formal linguistics is concerned with the properties of the grammar children end up with, i.e. an end- or steady-state grammar. The generative acquisitionist's goal is then to account for 'the specific innate abilities that make this achievement possible' (Chomsky 1965: 27). Studies of language development within the discipline of psychology report somewhat more success in accounting for transitions, but few fully address syntactic development.⁴

This book is a foray into a syntax-driven explanation of transitions from one stage to another in children's acquisition of their first language (L1) as well as in children's and adults' acquisition of a second language (L2), primarily in naturalistic (uninstructed) settings.⁵ If there is controversy about the properties of children's immature grammars, there is far more controversy about the properties of the second language learner's pre-end-state or interlanguage grammars, particularly when it comes to post-puberty or adult learners. There are two complicating factors that impede resolution of the debate. To begin with, adults – particularly those studied by researchers – often receive instruction in the second language they are learning. If the researcher wants to know whether adults make use of the same linguistic mechanisms as children do, introducing into the equation the conscious retrieval and application of, for example, paradigms memorized from textbooks and grammar rules presented by the teacher creates difficulties for the researcher. When a second language learner says 'I like the

4. Tomasello (2003) and Ninio (2006) represent two recent psychology-based accounts of children's acquisition of syntax. Neither Tomasello's approach (based on Goldberg's 1995, 2007 Construction Grammar), nor Ninio's approach fully address acquisition of the various levels of syntax with which the present book deals.

5. Note that results from uninstructed learners allow us to probe the acquisition process without considering the influence of a particular teaching approach, method or style. Such results are, however, readily applicable to classroom learning as they reveal areas of strengths and weaknesses that the acquisition mechanism brings into the picture along the lines of Lightbown's (1986a) great expectations (of SLA research for classroom teaching).

apple pie' in response to 'What kinds of desserts do you like?', is the basis of non-target use of the definite article over-application of a consciously learned rule or over-generalisation as the result of internal, unconscious processing of language heard from native speakers? The second factor impeding resolution of the debate regarding adult second language learners' use of linguistic mechanisms is the paucity of studies on *child* second language acquisition. If the researcher's objective is to examine the hypothesized critical period, then it makes sense to compare learners who already know a first language but who vary only in age of initial exposure. It is unclear whether the originally proposed closure of the critical period during which language can be acquired to native competence is indeed around puberty (Lenneberg 1967), whether for the subsystems of language there are separate critical periods, as first proposed by Seliger (1978), some of which might begin to close as young as age six (e.g. phonology; Long 1991) or whether there is a critical period at all (Bialystok and Hakuta 1999); see Herschensohn's (2007) exhaustive coverage for the state of debate. What is required here are studies that carefully compare the properties of the interlanguage grammars of equally matched L2 children and L2 adults and do so during their development. There are still few such studies; rather, work on age differences has typically looked at learners whose age of initial exposure varies and compared them at the point at which their development has stabilised. Where the researcher can address the first stumbling block by investigating adults who have not received instruction but who have received ample exposure to the L2 (for example working immigrants), data from such learners present the opportunity for a more valid comparison with data from child second language learners. With increased studies of child second language learners, the likelihood also increases that age differences can be rigorously addressed.⁶

6. An interesting recent contribution relevant to the question of maturation is Paradis' (2010) discussion of research comparing L1 children with specific language impairment to typically developing L2 and bilingual children.

We now turn to a brief overview of German, in particular its verbs and the related inflectional morphology and word order patterns. We then introduce the Theory of Organic Grammar that is used and developed in this book, intended both as a theory of the development of syntax in any context, and as a theory of the target grammar. More details on the theoretical and syntactic background will be provided in later chapters as these details become relevant as well as in the *Extensions* section at the end of this chapter.

1.1. Introduction to German and its verbs

In this section we consider the syntax and inflectional morphology of German (i.e. its morphosyntax), but only in the verbal domain as this is the primary focus of the present book. For the L1 development of German *nominal* morphosyntax using an earlier version of our approach, see Clahsen, Eisenbeiss and Vainikka (1994). Standard German (also referred to as High German due to the non-low-land – i.e. not the northernmost – dialect from which the current standard originated) is the variety of German spoken in north-central Germany and used in written form and, to a lesser extent, the non-print media, throughout the German-speaking world. German is known as a richly inflected language due to its verbal as well as its nominal inflection. Relevant here is that verbs are marked for agreement with the subject by a suffix on the finite verb, as shown in Table 1.1.

Table 1.1 The subject-verb agreement paradigm for *trinken* ‘drink’

<i>Person/pronoun</i>	<i>Singular</i>	<i>Person/pronoun</i>	<i>Plural</i>
First: <i>ich</i> ‘I’	<i>trink-e/∅</i> ¹	<i>wir</i> ‘we’	<i>trink-en</i>
Second: <i>du</i> ‘you’	<i>trink-s(t)</i>	<i>ihr</i> ‘you’	<i>trink-t</i>
Third: <i>er, sie, es</i> ‘he’ ‘she’ ‘it’	<i>trink-t</i>	<i>sie, Sie</i> ² ‘they’ ‘you’	<i>trink-en</i>

1. First and second person singular suffixes vary in spoken German, as shown by the parentheses and zero allomorph options.
2. This form functions as the polite second person (you) form of address, for both individual and multiple addressees. In written form, it appears in upper case, as shown.

Some verbs in German are irregularly inflected in the second and third person singular, where, for example, the vowel of the verb stem undergoes changes:

Table 1.2 The agreement paradigm for *fahren* ‘go/drive’

Person	Singular	Plural
First	<i>fahr-e/Ø</i>	<i>fahr-en</i>
Second	<i>fähr-s(t)</i>	<i>fahr-t</i>
Third	<i>fähr-t</i>	<i>fahr-en</i>

In addition to marking first and third person plural, the suffix *-n* also marks non-finiteness on all verbs, i.e. on main verbs, modals and auxiliaries. The agreement paradigm applies as shown in Tables 1.1 and 1.2 to all main verbs in the present tense and in modified form (third person singular is not marked with *-t*) to modals in the present tense, and in the past tense for both main verbs and modals. There are suppletive forms, as shown in Table 1.3, for the auxiliary verbs *haben* (which also functions as main verb) and *sein* (which also functions as copula).

Table 1.3 The forms of *haben* ‘have’ and *sein* ‘be’

Person	Singular		Plural	
First	<i>habe/Ø</i>	<i>bin</i>	<i>haben</i>	<i>sind</i>
Second	<i>has(t)</i>	<i>bist</i>	<i>habt</i>	<i>seid</i>
Third	<i>hat</i>	<i>ist</i>	<i>haben</i>	<i>sind</i>

German syntax displays four main characteristics that involve the position of the verb: (1) the second position of the *finite* verb in main clauses, referred to as ‘verb second’ or V2’; (2) the final position of the *non-finite* verb; (3) the final position of the *finite* verb in embedded clauses and (4) subject-verb inversion in questions. We cover each of these characteristics, in turn.

In declarative clauses in German, the finite verb (the verb with agreement marking – *trinkt* in [1.1]) appears in second position, preceded by a subject or another single constituent. A word order where the verb *trinkt* occurs elsewhere in the sentence is ungrammatical, as in **Claudia immer trinkt Kaffee* ‘Claudia always drinks coffee’ where two constituents, *Claudia* and *immer*, precede the finite verb.

- (1.1) a. *Claudia trinkt immer Kaffee.*
 Claudia drinks always coffee
 ‘Claudia drinks coffee always.’
- b. *Kaffee trinkt Claudia immer.*
 coffee drinks Claudia always
 ‘Coffee is what Claudia always drinks.’

- c. *Immer trinkt Claudia Kaffee.*
 always drinks Claudia coffee
 ‘Claudia always drinks coffee.’

In spoken German, the past tense is formed by using an auxiliary verb, followed by the main verb with the prefix *ge-* and the suffix *-t* (regular verbs) or the suffix *-n* (irregular verbs), as shown in (1.2b).⁷ When the sentence includes the past tense auxiliary, or any other auxiliary or modal such as *will* (as in [1.2a]), the non-finite verb (here the second verb, *trinken*) appears at the end of the sentence.

- (1.2) a. *Claudia will morgen Kaffee trinken.*
 Claudia wants tomorrow coffee drink
 ‘Claudia wants to drink coffee tomorrow.’
- b. *Sie hat Kaffee getrunken.*
 she has coffee drunk
 ‘She drank coffee.’

There is a class of verbs in German whose derivational morphology entails the addition of a prefix, as in *fahren* ‘to go’ and *abfahren* ‘to go away/depart’. In declarative clauses, when there is no auxiliary or modal (as in [3b]), the prefix component of the verb appears in final position, after all other material in that clause, as shown in (1.3a).

- (1.3) a. *Claudia fährt morgen ab.*
 Claudia drive-3sg tomorrow off
 ‘Claudia departs tomorrow.’
- b. *Claudia will morgen abfahren.*
 Claudia wants tomorrow off-drive
 ‘Claudia wants to depart tomorrow.’

Recall that finite verbs occur in the second position in German. However, when the clause is an embedded one, its finite verb appears at the end of the sentence, as shown for the *warum* ‘why’ clauses in (1.4):

7. In this book we disregard what occurs in written registers due to the nature of the input (aural) to which the learners we primarily consider here – like children – were exposed.

- (1.4) a. *Hans fragt Claudia, warum sie immer Kaffee trinkt.*
 Hans asks Claudia why she always coffee drinks
 ‘Hans asks Claudia why she always drinks coffee.’
- b. *Hans will wissen, warum Claudia morgen abfahren muss.*
 Hans wants know why Claudia tomorrow depart
 must
 ‘Hans wants to know why Claudia has to leave tomorrow.’
- c. *Hans will wissen, warum Claudia morgen abfährt.*
 Hans wants know why Claudia tomorrow departs.
 ‘Hans wants to know why Claudia is leaving tomorrow.’

Similar to English, questions in German involve inversion. However, in all types of German questions, inversion involves not only auxiliary/modal verbs, but also main verbs, rather than a dummy auxiliary such as English *do*:

- (1.5) a. *Hat Claudia Tee getrunken?*
 has Claudia tea drunk
 ‘Did Claudia drink tea?/Has Claudia drunk tea?’⁸
- b. *Trinkt Claudia Tee?*
 drinks Claudia tea?
 ‘Does Claudia drink tea?’
- c. *Was trinkt Claudia?*
 what drinks Claudia?
 ‘What does Claudia drink?’

8. Note that German does not use auxiliaries to distinguish grammatical aspect. Instead of ‘be’ and ‘have’ and suffixation to mark progressive and perfect aspect as they do in English, in German this is done through use of adverbs.

1.2. Organic Grammar

The Theory of Organic Grammar can be thought of as a practical alternative to the latest syntactic theories that also draw a direct connection between acquisition and syntax. As is the case for these theories, syntactic trees (hierarchical representation) are also crucial in the OG approach. These will not yet be given here, but will be shown and explained as we go along. The basic idea of OG is that the child (or second language learner, as we shall see) begins with the ‘core’ of the sentence, the VP (the verb phrase: the main/thematic verb and its arguments, e.g. a direct object). The child then acquires further segments of the tree during development. Once all of these have been acquired – around the age of three or so – the child’s (subconscious) grammar can be said to represent the full adult structure. Since each segment of the tree (or technically, ‘functional projection’) that is acquired remains in the tree unchanged when the next piece is added, there is a straightforward connection between the child’s acquisition process and the final tree. This connection is fundamental to Organic Grammar; see Assumption 5 below. In addition, we also make what is a controversial claim, namely that during (uninstructed/naturalistic) second language development, regardless of age of initial exposure, the learner goes through basically the same syntactic stages as children do in acquiring German (with certain differences that we will address later).

An important difference between Organic Grammar and other theories of syntax and its acquisition is that OG does not adopt the standard assumption in generative syntax that there exists a single, fully articulated syntactic structure or tree (the CP or complementizer phrase) with the complete array of fixed functional projections that are directly provided by Universal Grammar. Under this assumption, CP is not only projected for subordinate clauses it represents, but CP is projected for all sentence types regardless of their complexity. The nature of these projections will become increasingly clear in subsequent chapters. Under these theories, it is considered preferable to have the same syntactic structure in all adult languages as well as across any possible stages of acquisition (see *Extensions* at the end of this chapter). The lexicon is where information on the phonology, morphology (including properties of functional morphology) and semantics of a language is held, and acquiring the contents of the lexicon of a language is seen as the language learner’s sole task. Organic Grammar relaxes the single-tree assumption; it is precisely the gradual appearance of parts of syntactic

structure (i.e. the specific functional projections) that gives rise to stages of acquisition. This piecemeal development of the structure is the basis of the Theory of Organic Grammar.

In granting acquisition a central position in a theory of grammar, it follows that the two crucial components of modern syntactic theory – namely, structure (as represented by trees) and movement – are also implicated in stages of acquisition. The ten assumptions that comprise Organic Syntax make direct reference to structure, and follow from the relaxation of the single full tree assumption. The learner must also acquire language-specific rules of movement such as subject-auxiliary or subject-verb inversion for question formation in English and in German. Under Organic Grammar, the acquisition of syntactic movement follows as an indirect consequence of the structure that the learner gradually posits. As we shall see, the learner only becomes able to move a particular element during development when he/she has projected the relevant syntactic structure. Thus the reason learners at lower stages of development do not demonstrate subject-verb inversion is because they have not yet projected the part of the tree into which the verb can move and then appear to the left the subject.

Organic Grammar is based on the set of ten assumptions which we present below. The first seven assumptions define the idea of a *Master Tree*. This tree is the basis of syntactic structure. Of these seven assumptions, Assumptions 1–4 establish the syntax-driven acquisition mechanism for the structure of any language, while Assumptions 5–7 deal with applying the Master Tree to syntax, and with the relationship between acquisition and syntax in terms of structure.

As we have just discussed, the standard approach in generative syntax has been to assume that all languages have the same structure: a single tree with all functional projections made possible by Universal Grammar. An additional idea in syntactic theory is headedness; this entails the order of the head and its complements in a given projection. With respect to the VP, the question is whether the verb precedes its direct object argument (as in English ‘eat sushi’) or follows it (as in Japanese *sushi-o taberu*). A syntactic projection may also involve a specifier position (for subjects, possessives and intensifiers) which in both English and Japanese precedes the head position. Under the single tree approach, some syntacticians (e.g. Kayne 1994) also argue that the headedness of projections is invariable. Under Kayne’s view, all projections in all languages are head-initial. The obvious result of the single-tree assumption is proliferation of structure in this universal tree; for

example in Cinque (1999), more than 30 projections are proposed to account for the syntax of adverbs.⁹ In contrast, under Organic Grammar, the set of functional projections may vary from language to language, as represented by the Master Tree (or Master Tree Algorithm; see footnote 21, Chapter 2) for each language. This is Assumption 1.

Assumption 1: Each language has a Master Tree that includes all possible projections occurring in that language.

Our second assumption relates to what is known as the Mirror Principle, first introduced by Mark Baker (1985) and then developed further by Jane Grimshaw (1986). This is the idea that inflectional morphology mirrors syntax; in particular, inflectional morphology mirrors functional projections. At least as far as inflectional morphology is concerned, we follow Joseph Emonds (2009) who argues that there is no separate component of morphology (even derivational morphology). Thus rather than involving the traditional four components, only three are involved: syntax, phonology and the lexicon. For Emonds, phenomena belonging to traditional morphology involve the interface between the mental lexicon and syntax.¹⁰

Assumption 2: All and only those projections occur in the Master Tree for which there is evidence in the language.

Assumption 2 allows for differences in the headedness of projections across languages (*contra* Kayne) as well as for differences across lan-

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9. An apparent advantage of the standard assumption of a fixed CP tree is that no acquisition mechanism is required to explain children's development. This means that there are no stages in the acquisition of syntax since nothing needs to be acquired. In Organic Grammar, a mechanism is required – in particular, Assumptions 3 and 4 – and the mechanism is general, perhaps derivable from the assumptions needed for adult syntax.
10. One instance of a phenomenon traditionally belonging to morphology is case realization. In a recent paper, Brattico and Vainikka (submitted) show that two of the three (“morphological”) variants of accusative case in Finnish are completely *syntactically* conditioned – the choice of the variant in an embedded clause is determined by the presence or absence of agreement in the matrix clause, and the process is sensitive to so-called syntactic islands. The third variant is provided by the lexicon, very much like the accusative forms of the English pronouns such as *him* and *us*.

guages in terms of which functional projections are actually posited (this will become clearer when we look at acquisition in the following chapters). This assumption is a crucial component of an acquisition mechanism. There must be some version of what is known as Economy of Projection (proposed in syntax by Giorgio and Pianesi 1997; Fukui and Sakai 2003; Grimshaw 1997; Speas 2001), where there is overt evidence for a projection, to guide the learner in determining which functional projections occur in his/her language.¹¹ Assumption 2 – and Economy of Projection – follows the spirit of another current theory (originally only a theory of phonology), Optimality Theory: posit as few functional projections as needed (see e.g. Legendre et al. 2002).¹²

Assumption 3 makes explicit the need for some sort of acquisition mechanism since Organic Grammar rejects the idea that all languages share a single syntactic tree. We assume that Universal Grammar provides at least the information about all the possible functional projections in human language.

Assumption 3: Universal Grammar provides the tools for acquiring the Master Tree, based on input.

We now require an additional assumption that allows for the *intermediate* stages of both first and second language development, where we find so-called “truncated” forms of the Master Tree as discussed for first language acquisition by Luigi Rizzi (1993/4). As we will see in the discussion of acquisition in the following chapters, there is compelling evidence for an early stage at which only lexical projections (such as

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11. Proposals regarding the nature of evidence (what the learner unconsciously notices about the ambient language) in acquisition include those by Clark and Roberts (1993); Janet Fodor (1998); Gibson and Wexler (1994) and Lightfoot (1999), where all agree evidence must be robust in the input data. In this book we adopt Fodor’s (1998) idea, that the grammar designates the type of evidence that causes a particular option to be pursued by the learner.
 12. Due to its fundamental ties to neural network computation and Connectionism under which language development is completely input-driven and UG takes a back seat, we do not follow OT (but see Smolensky and Legendre’s (2006) two-volume book *The Harmonic Mind – from Neural Computation to Optimality-theoretic Grammar*). We concur with Bertolo (2001: 5) and the conclusion that humans do not learn by enumeration of probabilities/hypotheses about previous grammars.

the VP) exist, followed by subsequent stages each of which involve individual functional projections. The fourth assumption is the only one truly specific to the acquisition mechanism, but even this assumption may be derivable from Assumptions 6 and 7, which pertain to end-state, adult syntax.

Assumption 4: The Master Tree is acquired from the bottom up.

Assumption 5 makes explicit the strong prediction that stages in acquisition correspond to the acquisition of specific functional projections within the Master Tree, moving from the bottom up. It can be thought of as a logical consequence of Assumptions 1 through 4.

Assumption 5: The Acquisition-Syntax Correspondence: syntax mirrors acquisition.

Given the assumption of a strong correlation between acquisition of syntax and the (resulting) end-state adult syntax, the following two assumptions, Assumption 6 and Assumption 7, are, in effect, applications of the acquisition mechanism to syntax.

Assumption 6: Actual instantiations of the tree are projected from the bottom up, based on the Master Tree.

This bottom-up assumption is similar to what is assumed in the Minimalist Program, under the application of Merge (Chomsky 2001). As we discuss in section 2.1 in Chapter 2, under Minimalism an item is selected (Select) from the lexicon, combined with another item to build syntactic structure (Merge) and may then relocate (Move) to another position, for example to ‘check’ agreement (as in subject-verb agreement). This removes the traditional Chomskyan deep and surface structure. Functional projections are posited from the bottom of the tree up based on the features of the verb, rather than selected from top down as in earlier versions of generative syntax under subcategorization which states which elements must or can accompany a given head.

Assumption 7: Partial trees may be projected for constructions which do not involve the full Master Tree structure.

As during intermediate stages of acquisition, adult constructions or second language learners' constructions representing acquisition of the target language such as non-finite clauses and the imperative may involve just a portion of the Master Tree. Portions of the Master Tree are limited to 'truncating', where higher functional projections (such as the CP or IP) are left out.

Our final three assumptions deal with other issues related to syntactic structure, where Assumption 8, in particular, is relevant for the theory of acquisition presented here.

Assumption 8: Lexical and functional projections differ in terms of how they are represented in the grammar.

Evidence from acquisition suggests that lexical projections (which involve content words such as nouns and verbs) are included in the Master Tree without explicit evidence, unlike functional projections (which involve grammatical morphemes or information). The assumption that lexical but not functional projections are included in the Master Tree is not an unexpected one if UG still directly provides these projections without the child having to discover them through the input alone.¹³ This assumption leads to the prediction that there should be very little or no cross-linguistic variation in lexical projections, apart from their headedness (that is, word order). This fits the proposal in generative syntax that variation between languages (that is, parameters) is located in the functional projections, and that the inventory of lexical categories may be universally uniform (Fukui 1986; Baker 2003; Muysken 2008).

The final two assumptions are not crucial for the analyses provided in this book, but they are included here for the sake of completeness. Organic Grammar contains the assumption that Ray Jackendoff's (1977) X'-Theory (or something similar) exists, where the grammar makes a real distinction between what are known as specifier and com-

13. As noted above, the universal status of adjectives and adverbs is unclear; we can, however, assume all languages have verbs and nouns, and thus VPs and NPs. We also leave open here whether PPs (prepositional phrases) are lexical or functional projections (but see Muysken 2008: 65–70 for a recent discussion). If APs (adjective phrases) (or AdvPs; adverb phrases) are not universal, Assumption 8 would need to be reformulated to distinguish between the lexical projections NP and VP and all other projections.

plement positions (unlike what Chomsky 2002 would prefer under current ideas on syntax known as Minimalism/the Minimalist Program). Cross-categorical generalizations can be stated in the grammar based on the Master Tree, as stated in Assumption 9.¹⁴

Assumption 9: Cross-categorical generalizations about structure are possible.

The final assumption involves syntactic adjunction, a process that adds (intermediate) syntactic elements to existing structure). In its most parsimonious or economical form, the Master Tree does not include any adjoined elements, these being theoretically ‘costly’ for the grammar to posit; that is, they do not automatically follow from the Master Tree.¹⁵ However, there are situations in which adjunction may be necessary. The status of adjunction is controversial in syntactic theory, and the acquisition of adjunction is beyond the scope of this book.

Assumption 10: Only as much adjunction is posited as necessary.

We conclude that in Organic Grammar – as in current generative theory under Chomsky’s Minimalism – syntactic structure is built derivationally from the bottom up. The main difference between Organic Grammar and Minimalism is that, in addition to adult syntax, *acquisition* of syntactic structure proceeds from the bottom up, with identifiable steps along the way. Robert Bley-Vroman (2009) has recently pointed out that all of L2 research must be rethought in light of the advances in syntax in the last 20 years, in particular the challenges presented by Minimalism to acquisition research. In our view, the OG approach allows us to do so by combining certain aspects of Minimalism (in particular, bottom-up derivation) with more traditional assumptions about syntax, while making strong predictions about acquisition.¹⁶ There is an

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14. For example, in the syntax of Finnish, partitive case occurs in the complement position of lexical heads, while genitive case occurs in the specifier position of lexical heads (Vainikka 1989, 1993, 2003).
 15. Assumption 10 follows the spirit of Emonds (1985) – the Structure Preserving Hypothesis – and Kayne (1994); however unlike Kayne, projections may vary in headedness (see discussion above).
 16. We foresee another future similarity between OG and Minimalism in that we expect to incorporate the Probe-Goal process of Minimalism

advantage to presenting a theory in the strong fashion that we do – apart from the fact that it works very well – in that even potential or actual counterevidence for the theory represents progress in the field. However, the Organic Grammar approach forces us to abandon the standard view (in Minimalism and in earlier versions of Chomskyan theory) that all languages and stages of development share the same (complex) syntactic tree.

We now turn to a description of the book as a whole, followed by a reading guide.

1.3. The rest of this book

In Chapter 2, we cover the classic analysis of German which explains the four relevant word order patterns found using the tools of modern syntax, in particular functional projections and verb movement. We then revise the traditional analysis to bring it into conformity with the assumptions of Organic Grammar and to allow for a resolution of certain problems in acquisition and syntax. In Chapter 2 we also provide further syntactic background to the book.

Beyond Chapter 2, the remainder of this book discusses key longitudinal data from children learning German as a first language as well extensive cross-sectional and longitudinal data from unstructured/naturalistic pre- and post-puberty learners of German from less educated and educated backgrounds. The data from the children and from the less-educated L2 adult learners have been well discussed by us and by other researchers. However, little of the analysis of the longitudinal data from the educated L2 adults – in a naturalistic L2 acquisition situation – has been covered in any publications. We present these data and our analyses by applying the Master Tree idea and the assumptions of Organic Grammar to German. As we pursue the acquisitional implications for the Theory of Organic Grammar over the next several chap-

(Chomsky 2001, 2008) into OG for dealing with syntactic dependencies. However, we reject the assumptions about movement based on feature checking (that the movement of an element is motivated by the requirement of the verb to check a feature such as tense or agreement). We incorporate movement into OG by motivating movement in terms of the filling of syntactic positions, as first suggested in Vainikka and Young-Scholten (1994).

ters, we will see that this simple theory yields very interesting results, results that are very relevant for current interests in both L1 and L2 acquisition.

1.4. A reading guide

This book is relevant for readers of various backgrounds, but we suggest here what to concentrate on depending on the reader's interest. For each subsequent chapter, we provide the crucial information covered in that chapter in the summary at the end of the chapter. We expect that the syntactician will be most interested in the new analysis of the German sentence in Chapter 2, as well as the development of functional projections in Chapters 3, 5, and 7. A person well versed in theoretical L2A but perhaps less interested in syntax might wish to just read the summary of Chapter 2 (and 3, on child language), and then move on to the continuous story of L2 stages in Chapters 4–7. If the reader is interested in the general theory of any type of acquisition, Chapters 3 and 4 are most relevant, since the basis of our approach to acquisition – in both L1A and L2A – will be covered in those chapters. For those unfamiliar with current syntactic or acquisition theory, footnotes can generally be ignored, as these typically serve to provide additional information about theory-internal debate, as demonstrated in the present chapter. The *Extensions* section, where we extend our argument at the end of each chapter, is aimed at readers with such a background.

For the reader with interests in the teaching (or learning) of German, the summaries at the ends of Chapters 2 and 3 will be useful in following the rest of the discussion in the subsequent chapters. Chapter 4 is perhaps the easiest to read for readers with little or no background in syntax, and gives the general idea of the approach developed here. Such a reader might then want to skip to the summaries of Chapters 5, 6 and 7. Chapter 8 is for teachers the most interesting one for the implications and practical applications of our approach.

Extensions

In discussing the history of syntax in their book *Simpler Syntax*, Culicover and Jackendoff (2005) provide a very useful starting point for developing a theory of syntax which also covers its acquisition. (An

earlier version of the discussion here can be found in Vainikka and Young-Scholten 2007a). Where the linguist working on such a theory must choose between simplifying principles and simplifying structure, they point out that in doing the former, generative linguists implicitly make an assumption of Uniformity. In practice this means that all sentences in all languages have a maximally uniform structure; that is, if at all possible, a full CP projection (with all possible functional projections beneath it, as discussed above) is posited for all sentences in all languages.

Culicover and Jackendoff take issue with the Uniformity assumption, which if relaxed, allows drastic simplification of structures posited for various constructions. The relaxation of Uniformity leads to the possibility that an already acquired, end-state grammar and a learner's interlanguage grammar can project structures below the full, CP tree. (Culicover and Jackendoff do not consider the ramifications of relaxing Uniformity for acquisition.) In arguing against Uniformity assumption implicit in all versions of Chomskyan syntax, Culicover and Jackendoff break Uniformity down into three parts (2005: 46–47):

- i. Structural Uniformity: An apparently defective or misordered structure is actually a distorted regular form.
- ii. Interface Uniformity: The syntax-semantics interface is maximally simple, in that meaning maps transparently onto syntactic structure; and it is maximally uniform, so that the same meaning always maps onto the same syntactic structure.
- iii. Derivational Uniformity: Where possible, the derivations of sentences [across languages] are maximally uniform.

Given Structural Uniformity, sentences or phrases that appear to have missing segments (such as infinitives or gerunds) are often assumed to derive from regular, full-fledged sentences (i.e. they have an abstract subject). This is a part of the Uniformity Assumption that we are fairly comfortable in maintaining, contra Culicover and Jackendoff; that is, we allow for abstract elements in syntax – as long as there is enough overt evidence for the child to acquire it.

Under Interface Uniformity, there is a one-to-one correlation between a type of sentence and its meaning. This is the type of Uniformity that we take issue with, given the acquisition data. What we find in

both child L1 data and adult L2 data are utterances (such as Root Defaults/Infinitives) that appear to have an intended meaning of a finite clause, but the learner's competence does not (yet) allow him/her to utter a target finite clause. If we take the same learner at various points in acquisition, we find that for the same situation and meaning (for example, describing the same picture with the same intended meaning) we find sentences that differ syntactically in complexity. If we were to assume Interface Uniformity, we would be forced to claim that whenever a learner utters a non-target-like utterance, it must have a meaning different from the target utterance. The Strong Continuity approach that we argue against (details provided later) assumes – implicitly following Interface Uniformity – that what is intended as a regular finite clause is always a full CP projection, regardless of the form of the actual utterance.

Dealing specifically with functional projections, Thráinsson (1996) discusses (both a strong and weak version of) what he calls the Structural Uniformity Hypothesis, which actually corresponds perhaps most closely with Culicover and Jackendoff's Interface Uniformity (see also the discussion in Muysken 2008: 59). In contrast to his Structural Uniformity, Thráinsson also presents the Limited Diversity Hypothesis according to which different clause types may be realized with different functional projections, and the order and realization of functional projections may vary from language to language (but all functional projections are based on a universally possible set of features). We agree with Thráinsson's Limited Diversity Hypothesis.

The third type of Uniformity, Derivational Uniformity, basically involves overt vs. abstract movement. That is, in WH-questions it is typically assumed that even if the language does not have overt WH-movement, at an invisible level (such as LF) there is an instance of something corresponding to overt WH-movement. This type of Uniformity is not a serious problem for us, again as long as the child is able to acquire such abstract WH-movement, or it follows from something that does not need to be acquired.

In sum, we reject Interface Uniformity. Since we accept both abstract elements and syntactic movement, we accept some version of Structural Uniformity and Derivational Uniformity (as well as Thráinsson's [1996] Limited Diversity Hypothesis). We discuss (and argue against) Culicover and Jackendoff's syntactic approach in more detail in Chapter 2.

Chapter 2

Organic Syntax of Adult German

2.0. Introduction

In Chapter 1, we outlined Organic Grammar as a new approach to syntax that aims to be both a theory of human language and a theory of how language (syntax) is acquired. Is such a theory possible, one which covers not only end-state knowledge, but also an infant's initial language development as well as (second) language acquisition at various points across the lifespan? In this chapter we set aside acquisition and test the limits of the new theory by applying it to what is known about German syntax. This test will allow us to determine the goal of acquisition, i.e. the end-state *adult grammar* when it comes to children's first language development, and the *target language* in L2 acquisition. None of the existing approaches to syntax or to L1 or L2 acquisition match our assumptions about acquisition, so these cannot be used as a goal or target of acquisition. We need a *prima facie* target of what is being acquired to *consider* acquisition, which we provide below.

The outcome of this test is that not only is the theory we propose feasible in terms of accounting for those garden-variety German data that already have an analysis from others' previous work, in particular the basic word order facts, but our theory allows us to provide interesting solutions for problems in the syntax and acquisition of German that have resisted adequate analyses. This chapter is by no means intended as a thorough analysis of German syntax, and thus much work is not covered. The target tree that is developed – based on the assumptions of Organic Grammar – will turn out to work extremely well for acquisition. For the purposes of the acquisition data to be covered in the rest of this book, we ask the reader to set aside his/her reservations about the new structures(s) presented in this chapter. To the extent that our proposal makes sense of the acquisition data, it behooves the reader familiar with syntax and/or acquisition research to reconsider perhaps deeply-held ideas about the structure of basic German sentences.

Before turning to German syntax, we present some general background; perhaps the most important part of section 2.1 for the more naïve reader is Table 2.2, a summary of functional projections.

2.1. Overview of syntax and inflectional morphology

The idea of a tree has long been used metaphorically to convey the hierarchical structure of syntax and in this book we lay out how we think this structure grows anew for each language acquired, directed by humans' genetic code for language. Inflectionally rich and syntactically varied German provides a clearer illustration of growth of structure than a morphologically impoverished language such as Modern English. Because we consider the intricate details of the acquisition of German sentence structure, a brief overview of the relevant aspects of syntactic theory is first in order. We only include those aspects of grammar that are crucial for understanding later discussion.¹⁷ We assume the basic syntactic apparatus which has been used in Chomskyan generative grammar from 1957 to the present, including sentence structure represented as trees, and the possibility of movement. Various versions of this theory are listed in Table 2.1 (Cook and Newson 2007: Fig 1.1); we return shortly to discussion on the variants of the theory:

Table 2.1 Versions of generative grammar

<i>Starting date</i>	<i>Model</i>	<i>Key terms</i>	<i>Key book/article</i>
1957	Transformational generative grammar (TG)	Rewrite rules Transformation Generative Kernel sentence	Chomsky 1957
1965	Aspects, later Standard Theory	Competence/performance Deep/surface structure	Chomsky 1965
c. 1970	Extended Standard Theory (EST)		Chomsky 1970
1981	Government/Binding Theory	Principles Parameters D- and S-structure Movement	Chomsky 1981
post-1990	Minimalist Program (MP)	Computational system Interface conditions Perfection	Chomsky 1993

17. For a guide to generative syntax theory, see Cook and Newson (2007), and on L2 acquisition, see Hawkins (2001); White (1989) and (2003b).

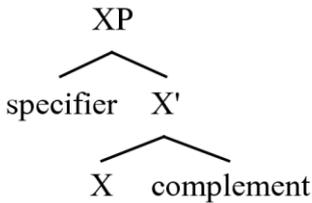
We begin here – for the naïve reader – with discussion of the assumptions that have dominated generative syntax since the 1980s. Syntactic structure has for decades been held to be hierarchical (e.g. Chomsky 1981) – hence the idea of trees (and branching) – where different types of relationships between phrases are best expressed in layered tree form, as mentioned earlier. The building blocks of a syntactic tree are branching syntactic *projections*, with so-called maximal projections such as VP (Verb Phrase) and NP (Noun Phrase) consisting of a head (for example, V [verb] or N [noun]) and all the arguments (e.g. direct object in a VP) and modifiers of that head. It is straightforward to assume that all languages have verbs and nouns, and thus VPs and NPs (see e.g. Shopen 2007: 5), but the universal status of adjectives and adverbs is less clear. Typically a maximal projection will contain as one of its arguments a *complement* position; in the case of a VP, this will be a direct object if the verb is transitive. The order of constituents within a phrase can vary with respect to the position of the head vs. its arguments and modifiers. For example, in English, the complement position follows the head as in ‘eat sushi’, whereas in Japanese it precedes it, as in *sushi-o taberu*. A typical projection may also involve a *specifier* position (containing the subject in a VP); the specifier position precedes the head in English, as it does in Japanese.

A finite clause contains not only a VP-projection, in which a main verb (as opposed to copula, modal or auxiliary verbs) such as *eat* is the head of the VP. All the arguments of the verb are also base-generated in the VP (including the subject); that is, relations between these elements are established in the original position, prior to any displacement or movement (see below). The essence of the generative syntactic enterprise has been and continues to be the idea that what is base-generated is in some sense common to all languages. That is, the building blocks of human language and the relations between them do not vary (apart from the word order variation mentioned above).¹⁸ Because the VP contains no functional elements whose identity is purely syntactic (such as auxiliary verbs), it is referred to as a *lexical* projection. However, the VP-projection lacks the room to locate all material in a sentence; grammatical or functional elements (the ‘little words’ such as the dummy past tense auxiliary *did*, past tense copula *was*, complementizer *if*...). Inflectional morphology (such as tense or agreement suffixes on

18. This is subject to some debate among syntacticians; see e.g. Kayne (1994).

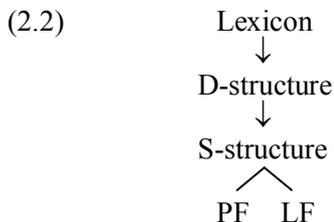
verbs) requires further projections, which are layers of branching projections added to the tree, on top of the VP. Projections are held to be uniform in construction, where under X'-Theory (Jackendoff 1977) any head 'X' takes a complement and a specifier, as shown in this generic tree, where XP represents any maximal projection:

(2.1)

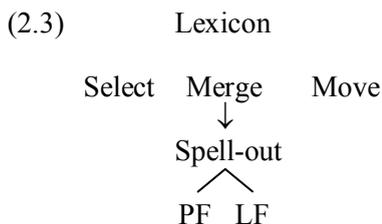


These additional projections are *functional* rather than lexical projections, and in any theory of the acquisition of syntax, they turn out to be extremely important. In fact, our basic proposal under Organic Grammar is that each stage of acquisition corresponds to the acquisition of a new functional projection – in effect, a new layer in the syntactic tree. For example, at the nominal level, each argument of the verb has its own structure, with the noun (N) as a typical head of a lexical NP projection. The standard functional projection above the NP is called Determiner Phrase (DP); in English this contains the articles *a* and *the*. A declarative sentence can then be seen as an elaborated projection of the original lexical projection, VP (where one might think of VP as the tree trunk), topped with several layers of functional projections. For a recent critical review on the status of functional projections in language, see Pieter Muysken's (2008) book where he discusses relevant literature from various linguistic sub-fields such as Historical Linguistics, Agrammatism, and Language Attrition (in particular, see the summarizing figure on p.245).

Under pre-1980s Chomskyan syntax, languages differed from each other in terms of their formulation and inventory of syntactic rules, but from the early 1980s onwards, language-specific rules were replaced by universal principles held to apply to all languages and binary/multivalued parameters differentiating languages. Under both pre- and post-1980s generative linguistics, grammar consists of a lexicon, a syntactic component (deep structure/underlying relationships) and actual articulation (surface structure/ Phonetic Form [PF]) and semantic interpretation (Logical Form [LF]), as in (2.2):



Under Minimalism, Chomsky's most recent conceptualization of language (Chomsky 1995, 2001, 2008), the lexicon is the locus of cross-linguistic variation and contains phonological, morphological, semantic and syntactic properties. The lexicon's language-specific contents are what the child (or L2 learner) must learn, from input that provides information regarding the characteristics of a particular language. A given lexical item directly projects basic syntactic structures, thus removing the D-(deep) structure and S-(surface) structure of previous theories and replacing D-structure with the three categories: Select, Merge and Move. An item is selected from the lexicon, merged with another item (to build syntactic structure) and may be moved to a particular position, for example to 'check' agreement (e.g. in subject-verb agreement):



So-called Economy considerations (see Speas 1990) lead to disfavoring of the movement of elements. The lexicon includes the lexical categories (content words) Verb, Noun, Adjective and Preposition, members of which refer to real-world objects, entities and ideas, and for which semantic roles such as Agent and Patient are relevant. The lexicon also includes the functional (grammatical) categories Tense, Agreement, Negation, Complementizer and Determiner.¹⁹ Under Minimalism, syn-

19. Although Chomsky (1995) wishes to eliminate Agreement from Minimalism because it may have no role in the lexicon, under our Theory of Organic Grammar, it is still part of the syntax, i.e. the AgrP projection continues to exist. For arguments for the existence of agreement in the

tax is a function of the abstract features of the lexical items under each category. For example, the category Agreement checks a feature which is cross-linguistically strong or weak. In German, agreement is strong and thus forces the verb to raise. In English it is weak, resulting in lack of main verb raising as shown by the contrast between the English (2.4) and the German (2.5):

- (2.4) a. *Mary always **drinks** coffee in the kitchen.*
 b. *Mary is always **drinking** coffee when the news comes on.*
 c. **Mary **drinks** always coffee in the kitchen.*
- (2.5) *Maria **trinkt** immer Kaffee in der Küche.*
 Maria drink-3SG always coffee in the kitchen
 ‘Mary always drinks coffee in the kitchen.’

Those readers with a linguistics background will observe that our Theory of Organic Grammar is strictly speaking, post-1990s and post-Minimalist; however, OG shares perhaps more features with the Principles and Parameters approach and Government and Binding (GB) Theory (Chomsky 1981) than with Minimalism (1990s and beyond). It should be noted that although the basic ideas in Chomsky’s most recent work are exciting, Minimalism is still a work in progress, as readily acknowledged by those working on it. In the present volume, we present an approach that can be seen as a ‘practical’ alternative to Minimalism in terms of both syntax and acquisition.

Consider an example tree in (2.6) that uses most of these projections for the English sentence shown in Table 2.2 *Liam was riding the school bus*:

syntax (equivalent to AgrP) in explaining the distribution of accusative case realization, subject-verb agreement, and possessive suffixes in Finnish, see Brattico and Vainikka (submitted). See also Baker’s (2008) volume on the syntax of agreement and concord in the languages of the world.

(2.6)

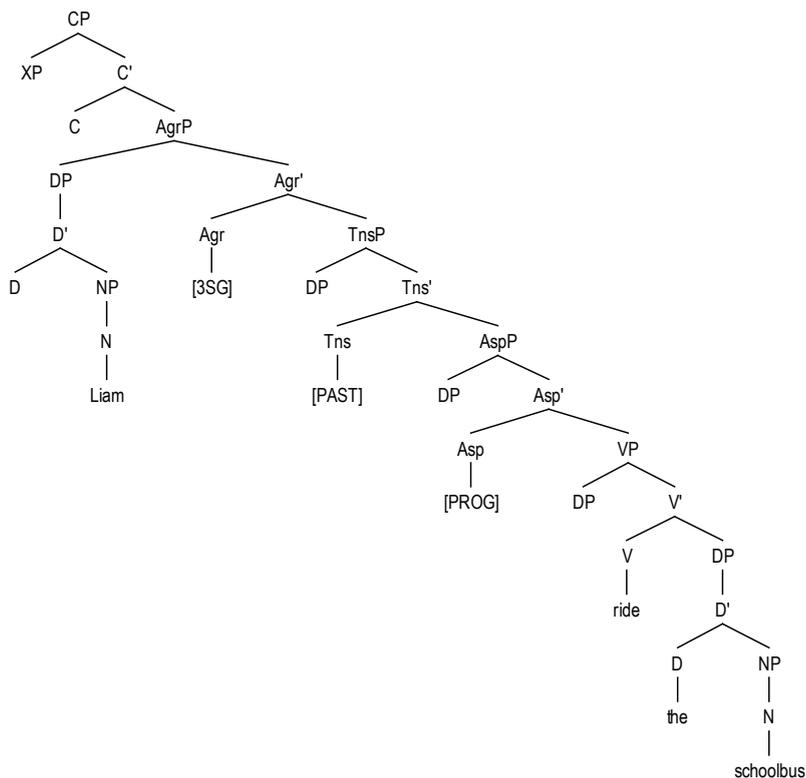


Table 2.2 Common sentence-level functional projections.

<i>Full Name</i>	<i>Abbreviation</i>	<i>Sample contents</i>
Tense Phrase	TP or TnsP	Past tense (-ed suffix); <i>When did the action take place?</i>
Negation Phrase	NegP	The morpheme <i>not</i> ; <i>Did the action take place or not?</i>
Agreement Phrase	AgrP	Subject-verb agreement; the suffix -s in 'he walks'; <i>Who did something?</i>
Aspect Phrase	AspP	Progressive aspect (-ing suffix); <i>Is the action on-going?</i>
Inflection Phrase	IP	All of the above combined.
Complementizer Phrase	CP	Question information (WH-phrase or Yes/no question); other information about sentence type.

There is much controversy about exactly which functional projections exist in human language; unlike for main verbs, the existence of an element that represents a separate (functional) category does not necessarily entail an accompanying syntactic projection; each category must have clear syntactic ramifications. The table lists the most commonly proposed functional projections, along with sample grammatical information from English belonging to each projection. Note that the categories above IP subsume that category; this is the result of work by syntacticians on these categories. As we have already discussed in Chapter 1, a number of linguists hold the position that because human language allows for a range of functional projections, what is provided by Universal Grammar is a massive tree that contains all possible projections.²⁰ Under this view, the newborn's innate knowledge of language consists of such a tree; acquisition of a specific language then involves acquiring the lexical items that belong to each projection (and presumably leaving at least some projections empty). Thus the child's linguistic development resembles something like growing leaves on (some of) the existing branches.

An alternative to the idea of a uniform universal tree is that because specific languages vary in terms of their functional projections, only those for which there is evidence in the input grow in the first place; this entails that the CP projection would be omitted from our tree (2.6) because CP only projects when needed, e.g. an embedded clause. That is, the uppermost projection for the clause shown is AgrP. Under the view we adopt in this book, there is no universal tree present in every language, although Universal Grammar provides the information about possible projections in human language in some form (perhaps as an ordered list). Rather, variation across languages is a factor of which set of functional projections the grammar of a specific language contains. Each language is defined by its own (potential) tree, i.e. those functional projections involved in the grammatical information realized in the language.²¹ Our assumptions about the functional projections in English

20. See for example Rizzi (2004). For a logical consequence of this approach, recall the already-mentioned result of Cinque (1999) who proposes 30+ functional projections for all sentences in all languages.

21. Strictly speaking, a grammar would be defined by the tree with all the possible projections available in the language, or as a possible alternative, an algorithm for projecting all possible projections. Under Organic Grammar, the tree with all of the possible projections is referred to as the Master Tree (see Chapter 1) of the language, but the whole Master Tree

will be presented in Section 2.4, after a discussion of German syntax; however, the reader might choose to read the English section 2.4 prior to the German sections.

As we will see in subsequent chapters, the German tree differs slightly from those in L2 learners' native languages in terms of which functional projections are realized, and at intermediate stages of L2 acquisition the trees will look yet different from either the learner's L1 or L2. This view of acquisition might seem to automatically call up transfer of the learner's native language functional projections, but as we shall see from Chapter 4 onwards, the way in which UG operates and does so across the lifespan seems to result in less influence than expected.

In addition to the idea of hierarchical structure, the second most important development in syntactic theory is *movement*, a tool that is extensively used in generative syntax. Syntactic movement involves an element starting off in its base-generated position (say, the verb in the V-position or head position of the VP), and when the verb is finite, moving to another syntactic position, higher in the tree. This type of movement of the verb – common in many languages such as French and German, but not in English – is referred to as *verb raising*. In particular, a syntactic head such as the verb can only raise to other head positions, such as T (head of TP) or Agr (head of AgrP). As the main verb raises to a functional head, it may be thought of as 'picking up' the inflectional suffix occurring in that head (e.g. the past tense suffix in T, the head of TP). The idea here is that inflectional morphology in general is actually base-generated in the head of a functional projection, and content words – verb (V) or noun (N) – raise from their lexical head position to higher, functional heads to 'obtain' their inflectional morphemes, such as past tense marking or subject-verb agreement marking.²² Hence the presence or absence of verb raising at a particular stage

need not be projected for various constructions (such as the imperative, or non-finite constructions) or at various stages of development.

22. Readers with a linguistics background will have observed that we reject the version of movement theory assumed under Minimalism, i.e. that syntactic movement is motivated by checking (abstract) features such as the EPP-feature. In previous work we suggested that movement is motivated by the need to lexical fill syntactic positions higher in the tree (Vainikka and Young-Scholten 1994; Vainikka and Levy 1999), and this is the general approach we maintain here. For the purposes of this book, we therefore assume GB-style movement – head-movement, A-movement, and

of development turns out under Organic Grammar to be an important clue to the presence or absence of a particular functional projection.

Turning now to German syntax, we first present the classic tree for German syntax, then summarize the English tree based on Organic Syntax (from Vainikka, submitted), and finally present the new German tree.²³ Apart from providing possible solutions for some existing problems, the new German tree is preferable to the old tree given that the new tree can be acquired in a stage-by-stage fashion (following our Assumption 5, according to which syntax and acquisition mirror each other).

A'-movement – while leaving open the exact motivation of each instance of movement.

23. We omit coverage of the German passive in this chapter in order to simplify the discussion somewhat. In English, passive is acquired late. The passive involves a complication beyond verb morphology, verb raising, or subject raising, namely that of – in effect – reversing the surface order of the subject and object arguments. See Chien and Wexler (1990) for the proposal that passives in L1 English are late because of maturation of A-chains (required for the movement of the DPs in passive); we discuss a new approach to the English passive later in this chapter. We expect that – due to its rarity in colloquial speech – the German passive with the verb *werden* may be even later in acquisition than its English counterpart.

2.2. The classic German tree

In the previous chapter we saw that the finite verb in German (that is, the verb that agrees with the subject phrase, i.e. the subject DP) has two possible locations, depending on the type of the sentence (see examples in Section 1.2). As these examples showed, in a free-standing declarative main clause, the finite verb occurs in the second position (referred to as 'V2'), but in an embedded (subordinate) clause (prefaced with *dass* 'that', *ob* 'if', or other complementizers) the finite verb occurs at the very end of the clause. Linguists working on German within early generative (Chomskyan) syntax were faced with this word order puzzle, working under the premise that a speaker's knowledge of syntax, namely all possible constructions in that language, is represented by a single syntactic tree. Yet the German facts seem to require taking the undesirable step of proposing two separate trees, one for main clauses and another one for embedded clauses.²⁴ The solution to this problem actually revolves around the idea that there is a single tree in German and any syntactic differences between sentence types in a given language will be based mainly on moving elements to various locations within a fixed structure.

The classic, post-1970s, post-transformational grammar analysis of German syntax which beautifully accounts for the two distinct finite verb positions by using a single syntactic tree is due to Hans den Besten (1982).²⁵ Under his analysis, the original or base position of the German verb is sentence-final (as in the embedded clause), and the main clause order is derived by movement of the finite verb; for arguments that the sentence-final position is the basic order for the verb in German

24. A two-tree solution to the German problem is undesirable under (Culicover and Jackendoff's) Uniformity Assumption discussed in Chapter 1. However, given Assumptions 1 and 7 of *Organic Grammar* (Chapter 1), while there is a single Master Tree that provides all possible projections in a language, specific constructions may employ different subsets of the Master Tree. Thus, the revised analysis of German word order developed in this chapter will end up positing what one might take to be slightly different trees for main and embedded clauses.

25. Although not widely acknowledged, according to van Riemsdijk and Williams (1986: 57) the verb-second analysis for German was already proposed in Bierwisch (1967) and Emonds (1970), ch.1. For an influential analysis of the single tree proposal in the Germanic languages, see also Schwartz and Vikner (1996).

as well as in closely related Dutch, see Koster (1975), citing Emonds (1970), and Koopman (1984). Under Organic Grammar, the German verb also originates at the end of the sentence.²⁶

Under den Besten's analysis, the second position of the German (or Dutch) sentence corresponds to the head of the CP projection, C (or COMP), which was originally posited by Bresnan (1970) for English to contain complementizers such as 'if' and 'whether'. In den Besten's proposal, the CP projection is extended to German main clauses which do not have an overt (i.e. phonetically realized, i.e. audible) complementizer. Given this extension, both main clauses and embedded clauses (in German) have the same structure: a full CP tree (as also claimed in Schwartz and Vikner 1996).

In a German declarative main clause, the finite verb (but no other verb; see [2.11] below) moves up to the C position; this yields the result that the finite verb in main clauses occurs as the second constituent in the sentence, demonstrating the aforementioned V2 property of German:

- (2.7) *Ich **trinke** jeden Abend Kakao.*
 I drink every evening cocoa
 'I drink cocoa every evening.'
- (2.8) *Jeden Abend **trinke** ich Kakao.*
 every evening drink I cocoa
 'I drink cocoa every evening.'
- (2.9) **Jeden Abend ich **trinke** Kakao.*
 every evening I drink cocoa
 'I drink cocoa every evening.'

26. Recall our mention in Chapter 1 that Kayne (1994) proposes that all languages have a basic head-*initial* word order; Zwart (1997) has applied Kayne's approach to Dutch and German. This is, of course, inconsistent with both the traditional version of the German analysis and the Organic Grammar analysis adopted in this volume. For a recent argument that a dialect of German (Mennonite Low German) is head-final and left-branching, contra Kayne, see Kauffmann (2007). Addressing Kayne's proposal is beyond the scope of discussion in the body of this chapter, but see *Extensions* at the end of this chapter for further discussion.

- (2.10) *Ich kann immer Kakao trinken.*
 I can always cocoa drink
 ‘I can always drink cocoa.’
- (2.11) **Immer kann trinken ich Kakao.*
 always can drink I cocoa
 ‘I can always drink cocoa.’

The assumption that the finite verb raises to C is not an unreasonable one – verbs often move to various head positions higher up in the tree in various languages – however, den Besten needed to stipulate the reason to provide a motivation for the verb to move. Stating that German is a V2 language that requires the verb to move to C was not sufficient; it simply rephrases the description of German. A major advance in 1980s syntax over the phrase structure and transformational rules of the two earlier decades of generative syntax were constraints on movement. The 1980s operation *Move Alpha* makes it possible for an element in a clause to move with constraints, then dictating both the motivation for movement and the position into which an element can move. The clincher for explaining the non-V2 word order in the German embedded clause is that the C position is not available because an overt complementizer (such as German *dass* ‘that’) already occupies C. The finite verb is therefore forced to remain lower in the tree, resulting in the sentence-final word order in an embedded clause. This is illustrated in (2.12) with the complementizer *dass* ‘that’ vs. (2.13) where it is omitted, as in English.

- (2.12) *Ich denke, dass er spät ankommt.*
 I think that he late to comes
 ‘I think that he will arrive late.’
- (2.13) *Ich denke, er kommt spät an.*
 I think he comes late to
 ‘I think he will arrive late.’

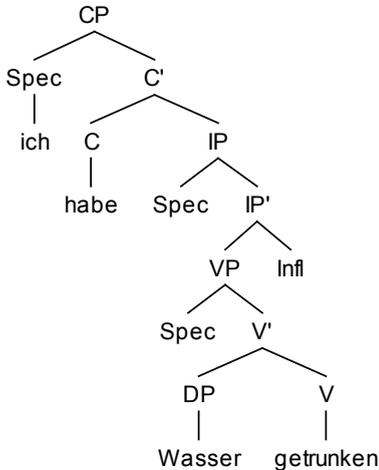
Lower in the tree does not, however, mean that the finite verb can remain in the VP; even in the embedded clause in German, the verb is assumed to raise, but not all the way to C. Rather, the finite verb in an embedded clause raises to a lower projection, to a head-final INFL-related (tense/agreement) projection. In effect, then, the finite verb al-

ways raises as high as it can – all the way to C in the main clause, and up to the (head-final) head right below C in an embedded clause. (2.14) provides an example of a main clause, and (2.15) an example of an embedded clause, together with their syntactic trees.²⁷

- (2.14) *Ich habe Wasser getrunken.*
 I have-1SG water drink-past.partic
 ‘I have drunk water’ or ‘I drank water’.

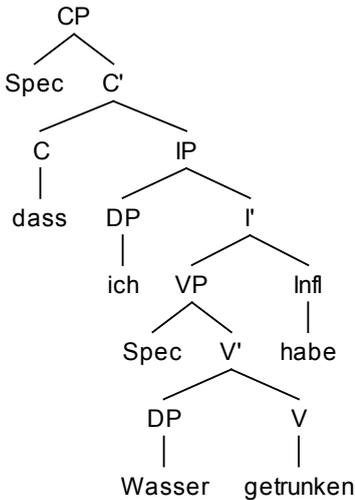
- (2.15) *dass ich Wasser getrunken habe.*
 that I water drink-past.partic. have-1SG
 ‘...that I have drunk water’ or ‘...that I drank water.’

(2.14’)



27. The trees in (2.14’) and (2.15’) represent the situation before a proposal by Pollock (1989) under which the projection IP (Inflectional Phrase) was split into INFL-related categories including agreement and tense; see Table 2.2.

(2.15')



Apart from contestation of this analysis by Kayne (see Chapter 1 and the *Extensions* section of this chapter, below) the analysis presented here basically represents the still standard analysis of German verb placement. However, it has been clear since Pollock (1989) that at least the IP (Inflectional Phrase) projection is made up of more than one sub-projection.²⁸ Naturally, this makes the classic analysis of German a bit more complicated.

In his seminal article on the functional projection IP, Jean-Yves Pollock (1989) proposed “splitting” the IP into finer sub-projections, such as AgrP (Agreement Phrase) and TP (Tense Phrase) that refer to parts of syntactic structure. Pollock’s proposal was developed for French and English, but was intended to be universal in keeping with the goals of generative linguistic theory discussed in Chapter 1. The splitting of IP does not in an obvious way affect the classic analysis of German word order just presented (but we will see an indirect effect concerning the CP shortly). If we were to make the standard assumption that all languages have the same functional projections, in the same order (*contra* Organic Syntax; see Chapter 1, in particular assumptions 2 and 5), German would have the same AgrP and TP projections as

28. The further splitting of projections in addition to IP has been proposed. Only when relevant, will these be discussed in this chapter.

English and French, presumably in the same order in the tree, and den Besten's V2 analysis would work the same way as in the trees in (2.14 and 2.15), but with two IP-level functional projections instead of one.²⁹

Since Pollock (1989), the number of IP-level functional projections has increased, and it is not clear what the most recent standard assumption for German is. That is, we do not know exactly which IP-level projections German has, and in what order; the situation will improve once we apply the assumptions of Organic Grammar to German, as we will shortly do.³⁰ However, as long as the CP involves just one projection, and the highest IP-level projection (say, AgrP) is head-final, the classic V2 analysis of German appears to work fine.

29. Although largely irrelevant to what we address in this volume, we note that the actual order (i.e. which projection is higher in the syntactic tree) of AgrP and TP in English and French has been somewhat controversial; cf. e.g. Pollock's original proposal and the textbook discussion in Haegeman and Gueron (1999).

30. Here we elaborate on our discussion for the interested syntactician. For example, Koopman (1995: fn.11) states that this question is "by no means settled" for Dutch (or German); she assumes the following functional heads for the Dutch sentence, from top to bottom: Wh C Nom Dat Acc AgrS T Neg AgrIO AgrO Asp V, but those she actually uses in her article are C AgrS T Neg Asp V. Craenenbroeck and Haegeman (2007) in their discussion of verb position in the Germanic languages use the following projections at the beginning of the clause: CP, followed by FP, followed by TP. A different type of proposal for German functional projections can be found in Hallman (1997), who proposes iterations of a fixed hierarchical template, based on data from German dialects with complementizer agreement. Instead of CP and IP, he proposes the following five projections: ConjP, WhP, higher CP, AgrP, lower CP; this template of five can be reiterated lower in the tree.

2.3. Problems with the classic analysis of German

At this point, our discussion becomes more accessible to the less naïve reader, familiar with recent debates in syntax. While the standard V2 analysis of German word order has stood the test of time (and new findings regarding how German operates), we are aware of some problems, namely, two problems with syntax and two with acquisition.³¹ After presenting the details of these four problems, we then turn to how Organic Grammar and the idea of a Master Tree provide a welcome solution.

2.3.1. Problem 1 (syntactic)

The first syntactic problem has to do with a proposal by Luigi Rizzi (1997) that the CP projection is also split in a similar way to what Pollock proposed for the IP, allowing for an analysis of various combinations of topic and focus patterns in English and Hungarian matrix and embedded clauses (see e.g. the argumentation in Haegeman and Gueron 1999: 330–347). If it is correct that the CP is universally split, the classic V2 analysis of German syntax loses its elegance and explanatory power, resulting in a serious problem. This is because the Split-CP proposal gives rise to several (head-initial) CP-level head positions presumably even in German,³² resulting in sufficient room in the early part of the sentence for *both* an overt complementizer *and* a finite verb, in the V2 position. This then would result in an ungrammatical word order in the embedded clause such as

31. There is a third traditional problem for the one-tree version of German syntax, namely the impossibility of a sentence-initial object pronoun *es* ‘it’ in some contexts. This pattern was used by Travis (1984) to argue for a two-tree solution for German: IP for main clauses, CP for embedded clauses. See Meinunger (2007) for latest developments on this issue; we will not pursue this topic further.

32. Note that under our Assumption 2 there must be evidence in the input for each functional projection. Thus, in order for the German CP to be split, we expect that the language learner would be able to identify evidence in the input for the specific ‘sub-projections’ of CP, as he/she would do in acquiring English or Hungarian. If it were to turn out that there is no such evidence for German or Dutch, the Split-CP problem would be moot.

- (2.16) **dass ich habe Wasser getrunken.*
 that I have water drunk
 ‘...that I drank water.’

Here the only apparent way to salvage the classic analysis presented above is to add a stipulation that the finite verb raises (to C) in the main clause but does not raise from the VP (or at least not all the way to C) in the embedded clause. The existing elegant explanation for why the finite verb does not raise from a head-final IP projection to the C in the head-initial CP – because the C position is already occupied by the complementizer – in the embedded clause is thus lost. While the Split-CP proposal is not yet as well established as the Split-IP proposal, it seems quite likely that syntactic theory in the future will involve more than one CP-level projection as standard in the single universal tree assumption.

2.3.2. Problem 2 (syntactic)

While probably less serious, there is yet another (albeit perhaps unnoticed) problem with the classic analysis of Germanic languages, having to do with Hilda Koopman’s (1995) compelling finding relating to Dutch prefix verbs. Developing an earlier observation by Hubert Haider (1993), she notes that certain finite verbs in Dutch do not raise to the highest head-final IP projection (e.g. to head-final AgrP) but that they remain lower in the tree, in the VP, as shown in (2.17) (from Koopman 1995, examples [2.5c] and [2.4c]):

- (2.17) a. ...*omdat ze zulke programmas regelmatig*
 because they such programs regularly
heruitzenden.
 re-broadcast
 ‘...because they rebroadcast such programs regularly.’
- b. **Dit programma heruitzenden ze regelmatig.*
 This program re-broadcast they regularly
 ‘They rebroadcast this program regularly.’

- c. **Dit programma uitzenden ze regelmatig her.*
 This program re-broadcast they regularly
 ‘They rebroadcast this program regularly.’

The 3rd person plural finite verb *heruitzenden* ‘re-broadcast’ cannot be raised to the V2 position, nor can any part of it (i.e. *uitzenden*) be stranded (2.17c). However, since (2.17a) is possible, there must be an analysis available without verb raising (see *Extensions* for details of the argument).

Since the Dutch or German finite verb can remain in the VP, as Koopman’s data show, this discovery has the effect that we can no longer tell whether the functional projections *between* the German and Dutch CP (which are head-initial) and the VP (which are head-final) are head-final or head-initial, or at least whether the crucial projection – the highest one – is head-final or head-initial; Koopman herself does not pursue such ramifications of her data. Based on the earlier data, it appeared obvious that the intermediate projections in German (and Dutch) were all head-final; however, given Koopman’s data, AgrP (agreement phrase) might now equally well turn out to be head-initial.³³ If the German AgrP were analyzed as being head-initial, the classic analysis would lose the explanation of the word order difference with respect to the position of the finite verb in main clauses (V2) and embedded clauses (final). That is, in both types of clauses, under such an analysis one would expect that the finite verb in Agr would occur early in the sentence, and certainly never at the end of the sentence.

2.3.3. Problem 3 (acquisition)

In addition to the syntactic problems with the classic analysis, there are two problems concerning the acquisition of the functional projections in German. The first acquisition problem is a theoretical one, and it is specifically a problem given the strict assumptions of Organic Grammar: a single-tree analysis of German is not possible, because it would require an obligatory, *abstract* CP projection in a main, declarative or ‘matrix’ clause. Crucially, there is no morphosyntactic evidence for

33. This outcome is similar to the proposal in Travis (1984), as well as Zwart (1997), that the IP-level projections in German and Dutch are actually head-initial; see *Extensions* for further discussion.

such a CP for the German matrix clause, and therefore the acquisition mechanism of Organic Grammar would never be able to posit a CP for the German matrix clause (recall that we have ruled out the [traditional] assumption that all languages, all stages of acquisition, and all constructions in a language correspond to the same CP tree). But as we have argued, syntactic trees may vary across languages, and under Organic Grammar, sub-trees of the Master Tree are also possible both for various constructions as well as for the learner at earlier stages of acquisition.

2.3.4. Problem 4 (acquisition)

Finally, using Clahsen's (1991) approach to the acquisition of functional projections, which is similar to the precursor of Organic Grammar, assuming the classic analysis of German word order, a problem arises with the timing of the acquisition of agreement and CP-related elements. The prediction would be that finiteness of the verb (in particular, agreement) – as well as the correct placement of the finite verb in both matrix and embedded clauses – would coincide with the development of CP-level elements, since all of these processes would be associated with the CP projection. In fact, as we shall see in more detail in Chapter 3, the CP projection appears to be acquired *later* than the agreement. After revising the analysis of German syntax below to address the two syntax problems, we then return to the two acquisition problems introduced here.

By positing a new Master Tree for German, we aim to resolve all four of these problems, while at the same time providing an elegant analysis of how such a tree is acquired.³⁴ Before discussing the German tree, we describe the first Master Tree proposed under Organic Grammar, the English one, developed in Vainikka (submitted).

34. It will turn out that the child does not actually acquire a tree, but what we might more accurately term a Master Tree Algorithm that will generate the individual syntactic trees possible in a given language. Since in general individual projections are very similar or identical to each other, acquiring an actual tree would involve much redundant information.

2.4. English functional projections in Organic Syntax

Vainikka (submitted) represents the first application of Organic Grammar to syntax, and in this paper, a simple, constrained analysis of English adverbs and functional projections is developed.³⁵ This is an appropriate challenge for Organic Grammar because, descriptively speaking, the position of adverbs in an English sentence is a complicated matter, given their relatively unconstrained appearance, as shown in (2.18) (from Jackendoff 1972).

- (2.18) a. **Quickly** Mary ran to the café.
 b. Mary **quickly** ran to the café.
 c. Mary ran **quickly** to the café.
 d. Mary ran to the café **quickly**.
 e. **Usually** Mary ran to the café.
 f. Mary **usually** ran to the café.
 g. *Mary ran **usually** to the café.
 h. ?Mary ran to the café **usually**.

The distribution of adverbs not only in English but also cross-linguistically has resulted in some linguists positing a multitude of functional projections; as mentioned in Chapter 1, Cinque (1999), for example, has posited a minimum of 30 functional projections for the single, universal syntactic tree. Contrary to an approach in which each adverb is base-generated in its own maximal projection, Vainikka (submitted) follows among others Alexiadou (1997) by instead base-generating most adverbs in the VP and raising them to higher specifier positions. Under Organic Grammar, the number of functional projections is automatically restricted in a given language, based on what there is evidence for. There are no projections assumed specifically to account for adverbs, *contra* Cinque.³⁶ We now summarize the function-

35. The adverb analysis is based on Vainikka's (2003) pre-Organic Grammar analysis of adverbs in English and Finnish.

36. In his squib, Truswell (2009) argues against Cinque (1994) and Scott (2002) who propose a rigid, highly elaborated structure for attributive adjectives (with 15 or more projections), similar to Cinque's adverb analysis. Having conducted a corpus study based on internet searches, Truswell shows that both Cinque's and Scott's adjectival templates under-generate the attested adjective orders. A much simpler template of functional projections better accounts for the attested data.

al projections posited for English in Vainikka (submitted); as shown in that paper, most of the word order possibilities of English adverbs follow from the functional projections independently needed for inflectional morphology.

Given the productive tense morphology on English verbs (e.g. past tense *-ed*) and given the agreement morphology in English (the third person singular *-s* and the forms of the copula and auxiliary verb *be*), we follow the standard assumption (since Pollock 1989) that English has a Tense Phrase (TP) and an Agreement Phrase (AgrP).³⁷ That is, given the input that the child receives on English tense and agreement, these two projections are acquired and constitute part of adult syntactic structure. Both TP and AgrP are obligatory in English finite clauses; without them, the construction is something other than a finite clause, as shown for the verb ‘wash’ in (2.19a), where ‘washes’ is finite and in (2.19b) where ‘wash’ is nonfinite.

- (2.19) a. *Mary washes cars for a living.*
 b. *When John saw Mary, he asked her to wash his.*

As far as the acquisition of these projections is concerned, Organic Grammar predicts that TP (or tense marking) is acquired before AgrP (or subject-verb agreement); this is in fact what the child language acquisition literature shows for English (Brown 1973; de Villiers and de Villiers 1985; Ingham 1998).

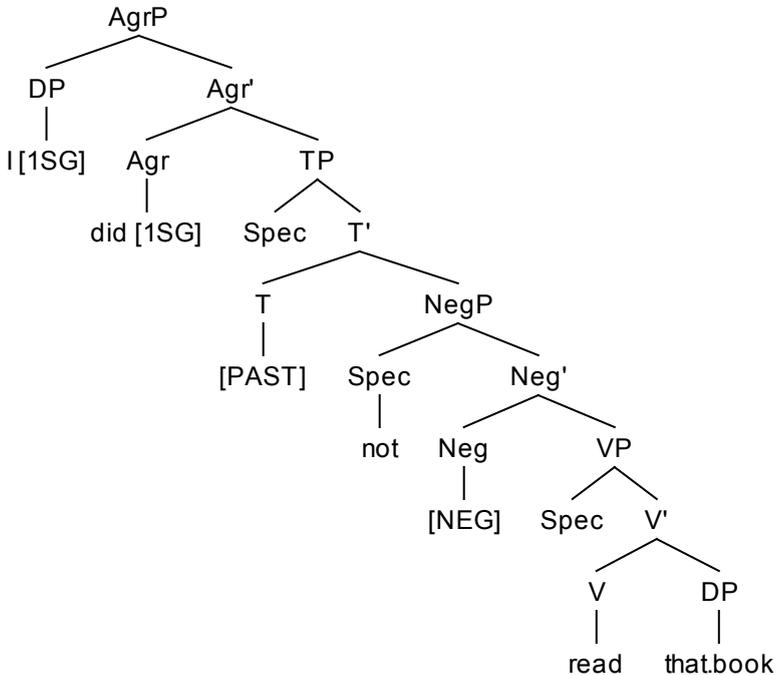
To account for sentential negation and the relevant morphemes (e.g. the sentential negator *not/ n't*) a negation projection (NegP) is also assumed for English, following Laka (1990) and Zanuttini (1991). Zanuttini proposes that NegP dominates both AgrP and TP, while Ouhalla

37. What motivates a further split of AgrP into AgrSP and AgrOP is the additional object agreement which exists in various languages, including Italian as in *Li ho comprati* ‘(I) have bought them’, where the past participle *comprati* agrees in number with the object pronoun *li*. Under the single tree approach, all languages reflect this split. However, there is no overt object agreement morphology in English (or in German), and thus under Organic Syntax, the AgrP phrase is an AgrSP (for subject agreement), and there is no AgrOP (for object agreement). We follow e.g. Belletti (1990), Mitchell (1991) and Haegeman and Gueron (1999) in taking the English AgrP to dominate the TP, contrary to Pollock’s original proposal. We return to the relative position of AgrP and TP in German in Chapters 3 and 5 when we discuss their acquisition.

(1991) and Benmamoun (1992) argue that neither the position nor the headedness of NegP is fixed universally. We follow the latter authors and for example Haegeman and Gueron (1999: 311–314) in positing the English NegP below AgrP. It is less clear whether the NegP dominates the TP or vice versa, but for the purposes of the adverb analysis in Vainikka (submitted), TP dominating NegP works well, this is what will be tentatively assumed here. An example of a simple English sentence with the three projections posited so far is provided in (2.20) (see discussion below on *do*-support).

(2.20) *I didn't read that book.*

(2.20')



Turning now to more complex constructions involving auxiliary verbs beyond *do*, we first consider the passive. We will, in fact, take the passive *be* to exist outside of the auxiliary system of English, and propose that the passive (at least in English) involves the copula *be*, rather than

an auxiliary *be*. This analysis has a number of benefits: (1) it explains Chomsky's (1957) insight, according to which passive constructions should not be generated by the basic phrase structure rules given the heavy restrictions on this construction. This renders the passive *be* "unique among the elements of the auxiliary phrase" (1957: 42); (2) it explains why – contrary to the predictions of Organic Grammar or any other structure building approach³⁸ – the passive is acquired very late (in L1 and L2 acquisition); (3) it may explain why a different main verb, *get*, can be used for the (*get*-)passive (*This book got returned very late*) – a possibility not found with any of the other auxiliaries, as far as we can tell; and (4) it allows us to generalize *do*-support to the other auxiliaries in English, as proposed below. Without providing further argumentation at this point, as it would take us too far afield, we nevertheless proceed on the assumption that the passive *be* involves the main verb (copula) *be*, and the construction therefore does not entail any of the IP-level functional projections.³⁹

Leaving aside the passive, then, the remaining complex constructions in English involving the auxiliary verbs *be* and *have* are the progressive construction (*be -ing*) and the compound tense-aspect construction (*have -en*). At first glance, it appears that *two* projections might be required for each construction, given the assumptions of Organic Grammar for syntax: for example in the progressive construction, one for the auxiliary *be* and the other for the progressive morpheme *-ing*. However, using an approach to parsing in morphology developed by Brattico (2007, 2009, 2010) for complex verb morphology in Finnish (and further applied to English in Vainikka, submitted), one projection per construction turns out to be sufficient. The idea is similar to previous proposals concerning *do*-support in English (harking back to Chomsky's *do*-transformation, Chomsky 1957: 113): if a bound morpheme, such as [+PAST] *-ed* in English, attempts to attach to a stem which cannot take a bound morpheme, such as a missing main verb or the negative morpheme *not*, an auxiliary verb is inserted (higher up in

38. In Chapter 3 we introduce the idea of structure building approaches (those that do not assume a single universal tree) to language acquisition.

39. We leave open the internal structure of the passive below the VP headed by the main verb *be*. However, our approach fits naturally with Emonds' (2009) approach to passive, according to which both verbal and adjectival passives are APs/adjective phrases in English (and in some other Indo-European languages).

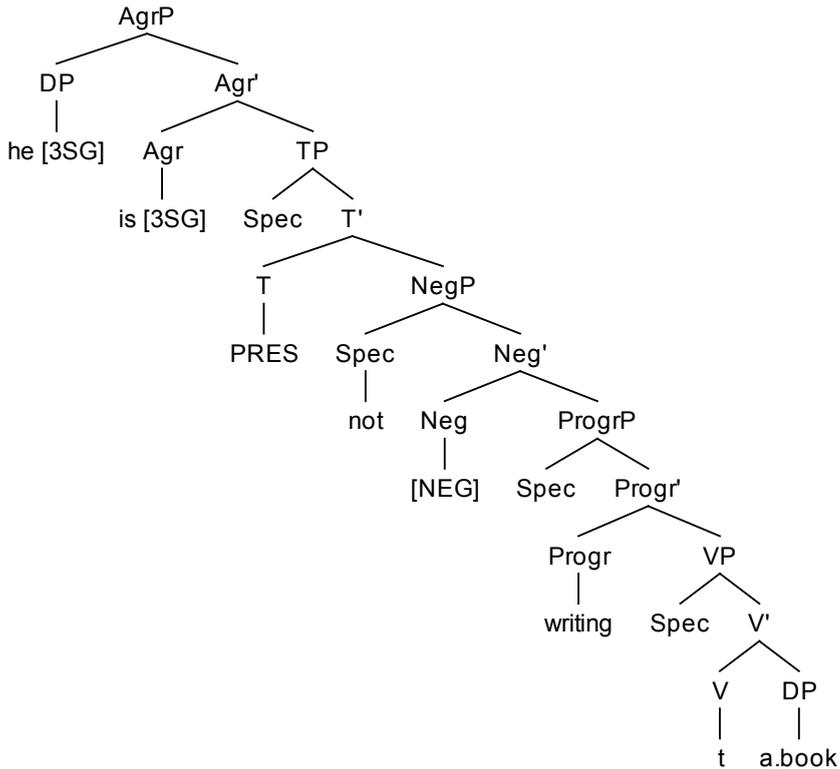
the tree) to ‘rescue’ the bound morpheme. The new idea here generalizes this approach beyond the auxiliary *do*.

Consider the progressive suffix *-ing* (as in *The boy was fishing*). Under the approach detailed in Vainikka (submitted), all verb features (in this case, [+Progr] [+Past] [+3sg]) are base-generated on the main verb, and one of them, [+Progr], is realized on the main verb as *fishing*. The problem is that the verb form *fishing* (perhaps being somewhat of a nominal form) cannot have the tense/agreement morphology (such as the past tense *-ed*) suffixed to it. In order to rescue the tense/agreement features or affixes, an auxiliary is inserted (say, in T). The choice of the auxiliary depends on the suffix on the main verb; that is, in some sense the auxiliary ‘binds’ the particular affix, or is at least co-indexed with it.⁴⁰ A form of the auxiliary BE ‘binds’ *-ing*, a form of the auxiliary HAVE ‘binds’ the (past participle) *-en*, and a form of the auxiliary DO ‘binds’ the 0-affix on the main verb (the final option being equivalent to DO-support). That is, the purpose of each of these insertions is to rescue the otherwise stranded tense or agreement features/affixes, but the choice of the auxiliary depends on the affix on the main verb that is being ‘bound’. An example tree with progressive aspect is provided in (2.21’); if compound tense were also present (*He has not been writing a book*), there would be additional projection between ProgrP and NegP. The exact surface position of the verb forms in English is not critical for the present purposes, but see Vainikka (submitted) for a new verb movement account in English based on the approach sketched here.

(2.21) *He is not writing a book.*

40. For those familiar with Minimalism (Chomsky 2001, 2008), the unusual ‘binding’ processes discussed here would be subsumed under a Probe-Goal process; in the morphologically rich language Finnish, morphosyntactic Probe-Goal processes occur throughout the grammar; cf. Brattico (2009, 2010).

(2.21')



Before turning to the equivalent German tree, we very briefly consider the predictions for acquisition (we will tentatively refer to the projection for compound tense as 'CT Phrase'). There are two types of predictions for acquisition of English that the projections posited so far give rise to: (1) the order of acquisition of the functional projections is Progressive – CT – Neg – T – Agr (from the bottom up); and (2) for the two projections involving an auxiliary (ProgrP and CTP), the suffix on the verb is acquired earlier than the corresponding auxiliary. The second prediction follows from the proposed analysis according to which the auxiliary would only be needed once the language learner has acquired the TP (and AgrP) projection, which would be later than the Progressive Phrase and the CT Phrase, given structure building; it is only this later point for which the child would need a rescuer for a stranded tense/agreement affix. Combining the two predictions, we

expect an order of acquisition of the English morphemes along the following lines: (1) the (progressive) *-ing* suffix; (2) the (participial) *-en* suffix (without the auxiliary); (3) negation; (4) past tense *-ed* (and the auxiliaries *be* and *have* and *do* [marked for Tense]); (5) the 3rd person singular *-s*, and the agreement forms of *be*, *have* and *do*. The progressive *-ing* is clearly the first verbal suffix to be acquired in L1 English, without its auxiliary (Brown 1973; de Villiers and de Villiers 1973, 1985: 68). As we have already mentioned and will discuss further in Chapter 3, the general order of tense and agreement (and even negation) holds in the L1 acquisition of German as well. The only perhaps surprising element is item (2), the participial *-en* suffix, since the compound tense construction is known to be acquired late. However, this construction involves the auxiliary as well, which we predict is acquired relatively late. On the other hand, the acquisition of the past participle morpheme, independent of the auxiliary, is difficult to study due to its ambiguity with the past tense form with many verbs (e.g. *He ate and he has eaten* vs. *He walked* vs. *He has walked*). We speculate, however, that the participial forms (*-en* and *-ed*) without the auxiliary may be used by L1 children for aspectual marking prior to the acquisition of Tense, perhaps for marking completed actions in contrast to the on-going progressive *-ing* (see the literature on the primacy of aspect in L1 acquisition [e.g. Vendler 1967; Antinucci and Miller 1976; Shirai and Andersen 1995; Becker 2000; Gavruseva 2003; and Torrence and Hyams 2003]).

2.5. The Master Tree in end-state adult German

What is it that children learning German will have acquired resulting in the end-state syntactic structure comparable to that of the mature speakers (older children, teenagers and adults) in their speech community? Starting at the bottom of the tree, we first posit the standard head-final VP we have discussed above, with the subject base-generated in the Spec(VP) position.⁴¹ The head of the VP is V, the infinitive *-en*

41. The specifier of a projection (generically expressed as Spec for an unspecified XP – written either Spec(XP) or Spec, XP) is a position at the beginning of a phrase (see tree in 2.5). Typical elements in a specifier position are a subject phrase (DP), a possessive DP (*Mary's* in *Mary's hat*), or an intensifier ('very') of an adjective. There is controversy in the lite-

form of the verb. However, in a typical free-standing finite clause, both the finite verb and the subject DP raise to (a head-initial) projection at the beginning of the sentence (details to be presented below). The non-subject arguments of the verb, e.g. objects, may also be moved out of the VP; this is known as scrambling and it involves a number of additional constraints which include definiteness and other discourse considerations. Example (2.22) illustrates the scrambling of the object *das Auto von Hans* from its base VP position as a result of the speaker wishing to emphasize or focus it.

- (2.22) a. *Maria wäscht gerne Autos.*
 Mary washes gladly cars
 ‘Mary likes to wash cars.’
- b. *Das Auto von Hans möchte Maria waschen.*
 the car of Hans wants Mary to wash
 ‘Mary wants to wash John’s car.’

For the German tree, next in order and moving upwards from the VP, is a NegP projection which contains the morpheme *nicht* ‘not’ in the Spec(NegP) position.⁴² Both Deprez and Pierce (1993) and Hoekstra and Schwartz (1994) assume that NegP is below IP (with its sub-projections) in the German tree. Similarly, Hamann (1996) argues that the NegP is lower than the TP in child and adult German. Based on the syntax of German, it is difficult to determine exactly where – between the lower VP and the higher IP – the German NegP indeed occurs. Here acquisition data point to a solution; based on children’s early acquisition of NegP (which we shall discuss in due course, in Chapter 3) we propose that the NegP, in fact, immediately dominates the VP. German children already produce sentences with negation around their second

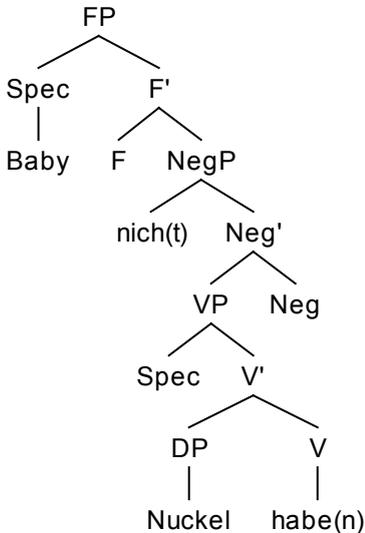
rature about whether all phrases have a specifier, and whether there can be more than one specifier in a phrase. We follow a traditional approach of a single specifier per phrase.

42. As is standard, we posit the negative morpheme in the specifier position, rather than the head Neg of NegP; if *nicht* were located in Neg, it would block all verb movement out of the VP, an undesirable result. This means that the Neg position itself is phonetically empty, although it presumably contains abstract syntactic or semantic features of negation.

birthday, as exemplified in (2.23) [from Miller 1976];⁴³ the tree corresponding to (2.23b) is also provided:

- (2.23) a. *Nein ich putt mache.* [Simone, 2;2]
 No I broken make
 'I won't break it.'
- b. *Baby nich Nuckel habe.* [Simone, 2;0]
 baby not pacifier have
 'The baby does not have a pacifier.'

(2.23b')



Since the negative morpheme *nicht* occupies a specifier position to the left of the head of NegP, it is not easy to tell whether NegP is head-initial or head-final; for the sake of presentation, we assume it is head-final; we return to this below. Above the NegP we have posited one

43. See Deprez and Pierce (1993: 67) for a discussion of the subject either following or preceding negation at this stage. Note that in Simone's dialect, the infinitive verb in standard German with an *-n* is pronounced only with the schwa that precedes the *-n*, written here as *-e*, and thus, as we would expect, the verb forms in (2.23) are consistent with the infinitive.

more projection, FP ('Finite Phrase') – an early head-initial functional projection – which has been proposed for L1 German acquisition by Clahsen (1988, 1991) and for L2 German acquisition by Vainikka and Young-Scholten (1994); for the moment this projection is just a 'place holder' in our analysis.

Recall the discussion of English auxiliaries earlier. Formally similar to English compound tense, but used as regular (simple) past tense, German past tense formation involves two verb forms, the past participle (with the prefix *ge-* and suffix *-t/-en*, with possible stem changes) and an auxiliary verb (various forms of *haben* 'have' or *sein* 'be'). Similar to the proposal for the English progressive and compound tenses, we posit the past participle information (i.e. the prefix *ge-* and the participial features) in the head of its own projection, TP; given that the German participle actually appears to involve two morphemes – the *ge-* prefix and the participial form of the stem (suffix and possible changes in the stem, as in English) – it may be that two separate projections are involved here.⁴⁴ We will continue to treat the TP as one projection for now, keeping in mind that during acquisition we might find evidence for it splitting into two projections. As we proposed for English, the auxiliary in a higher projection will rescue the otherwise stranded agreement features in Agr (which cannot be realized on the participle). That is, the auxiliary verb is inserted in Agr to rescue the agreement features, and the choice of the auxiliary is determined by the type of verb that the auxiliary 'binds' – *sein* 'be' for the subcategory of motion verbs that require it in German (as in *Ich bin nach Berlin gefahren*/I am to Berlin driven = 'I drove to Berlin'), and *haben* 'have' for other verbs. It is clear from the word order possibilities that the TP headed by the past participle is head-final;⁴⁵ we return to the headedness of the AgrP,

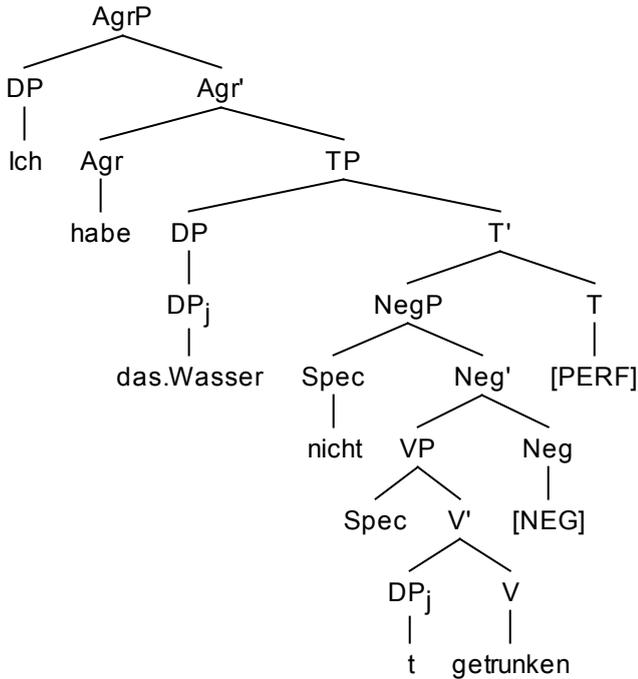
44. Note that when a participle is formed from certain prefix verbs in German, the prefix *ge-* is omitted; for example, the participle of *verstehen* 'understand' is *verstanden* and not **geverstanden* or **vergestanden*. This supports the idea that the stem changes and the *ge-* prefix may be somewhat independent components of participle formation, perhaps even involving two separate functional projections.

45. The past participle follows all material in the VP, and thus the TP headed by the participle is head-final; for example: *Wir sind heute draussen im Wald gewesen*/we are today outside in-the woods been = 'We've been/we were outside the woods today' (from *Kurze Deutsche Grammatik* 1982: 73).

but we will provisionally represent it as a head-initial projection here. Consider the tree in (2.24') with the projections posited so far:⁴⁶

- (2.24) *Ich habe das Wasser nicht getrunken.*
 I have-1SG the water not drink-past.partic.
 'I have not drunk the water' or 'I did not drink the water.'

(2.24')

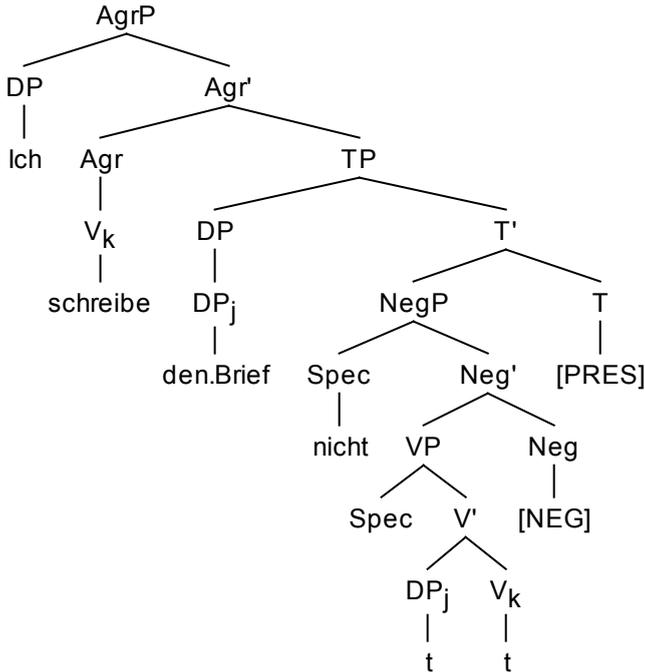


We propose that for the simple present and simple past verb forms, the same TP and AgrP are posited, but since both agreement and tense features *can* be realized on the verb, no auxiliary is inserted, and – for the same reason – the surface position of the verb is different from the participial construction:

46. For the sake of economy, *das Wasser* 'the water' has been fronted to the Spec(TP) projection in (2.24'), but we leave open its actual location for now.

(2.25) *Ich schreibe/schrieb den Brief nicht.*
 I write-1sg-present/1sg-past the letter not
 'I am not writing/did not write the letter'

(2.25')



We are now in a position to determine whether a regular matrix clause has a CP projection as the highest syntactic projection, in addition to the projections given in (2.24') and (2.25'). Recall that the traditional (single-tree) analysis of German syntax requires such a CP projection even in matrix (main) clauses – although the CP projection is originally associated with embedded clauses. However, as we have already discussed (Problem 3 earlier), such an abstract CP is *not* possible for the German matrix clause, given the assumptions of Organic Grammar – since the language learner would need to have clear evidence in the input to posit such a projection. On the other hand, Koopman (1995) has argued that (Dutch) finite verbs do not always raise to Agr in embedded clauses (see Problem 2 for the classic analysis). This, as we

have pointed out, means that the evidence for a head-*final* AgrP is no longer clear. We wish to propose that in German (and Dutch) main clauses, the AgrP is, in fact, head-*initial*, and that the finite verb raises to the head-initial Agr, resulting in the V2 word order in main clauses, exactly as was provisionally shown in the trees (2.24') and (2.25').⁴⁷ We continue to assume that the lower projections (including the TP and the VP) are head-final.

Koopman's (1995) argument (Problem 2) thus does not appear to be a problem for the new analysis (see *Extensions* [Part 1] for further discussion). Furthermore, Rizzi's (1997) Split-CP proposal (Problem 1) is also no longer a problem for this new proposal, since the finite verb in the main clause does not raise to a head-initial C, but rather to the head-initial Agr. A Split-CP proposal is now possible for German without the verb raising analysis being affected by it.

While the situation will turn out to be more complex for embedded clauses, the new matrix clause analysis resolves one of the acquisition problems with the classic analysis of German (Problem 3): if matrix clauses no longer have an abstract CP projection (given the lack of any overt morphosyntactic evidence), the problem of how such a CP would be acquired for the matrix clause disappears.

What, then, is the analysis for the German embedded clause? There are two possible solutions that we can offer: (1) the finite verb in the embedded clause raises no higher than TP; since the TP-projection is head-final, a finite verb remaining in a T-position will occur at the end of the sentence, as desired; or (2) the headedness of AgrP varies between the matrix clause and the embedded clause. We do not consider option (1) further since there is no obvious explanation for why the finite verb cannot raise to Agr in the embedded clause but it must do so in the matrix clause. Let us then turn to option (2) – on the face of it the more drastic solution – and one that to our knowledge has never been proposed.

Taking a step back, consider the headedness of projections in German in general. We have so far seen that under an Organic Grammar analysis, the VP and TP are both head-final, while the AgrP in the ma-

47. Contrary to standard assumptions, the Spec(AgrP) position in German would have to be an A'-position in order to allow DPs other than the subject to occur in it. See *Extensions* [Part 3] for further discussion on this issue. Also, see *Extensions* [Part 2] for a brief discussion of the relationship between this proposal and Travis (1984) and Zwart (1994).

trix clause is head-initial. Recall, furthermore, that during acquisition there is an early projection (FP) – prior to the development of tense or agreement marking – that is head-initial (cf. example [2.23b]). We propose the following generalization about German headedness of projections:⁴⁸

- (2.26) *German(ic)*⁴⁹ *Headedness Generalization (GHG)*:
 German is a head-final language, but the first functional projection in the sentence is head-initial.

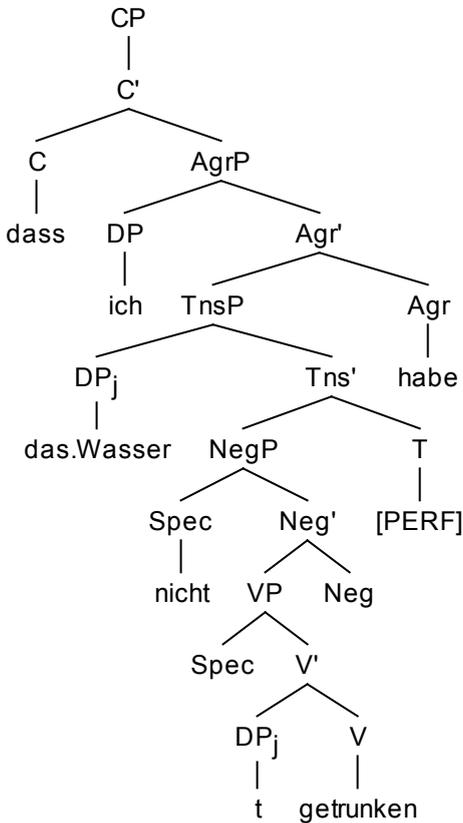
With such a generalization, the FP projection would be the sentence-initial projection at the relevant stage of acquisition, and therefore head-initial.⁵⁰ Once further projections are acquired, the FP would become head-final, whereupon it would, in fact, be equivalent to the (head-final) TP projection.⁵¹ Once all projections have been acquired, the first projection in the matrix clause will be the AgrP projection, therefore head-initial. All other projections below the AgrP are head-final, including NegP, whose headedness we had left open, but which we can now resolve.

Turning now to the embedded clause, the generalization in (2.26) has the effect that the AgrP projection is head-final, since it is not the first projection in the sentence. Whether the finite verb in the embedded

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48. We realize that there is a problem regarding where in the grammar such a statement as (2.26) would be located. Since we are not assuming Kayne (1994), we need to have headedness information in the grammar for any language, and the natural location for this information would be the Master Tree. Given that most languages are either uniformly head-initial or uniformly head-final, the Master Tree is most likely actually not itself a tree, as already mentioned (since each projection would redundantly contain the information about headedness), but rather an algorithm for building trees for the language. The Master Tree Algorithm for German could thus involve the generalization in (2.26).
49. We might refer to “Germanic”, rather than “German”, because the generalization also covers Dutch.
50. We have to stipulate that GHG only holds for functional projections, since at the VP is always head-final, even if it is the only projection in the clause.
51. A curious indication that the TP (which we claim is equivalent to the head-initial FP) is somehow related to a head-initial projection is the prefix *ge-* of the past participle in T, as opposed to the rest of the inflectional morphemes in German which are suffixes.

clause raises all the way to Agr, or has the option of remaining lower in the tree (to account for Koopman's data), the finite verb in the embedded clause ends up at the end of the sentence. We have now replaced the classic V2 analysis with one where the finite verb raises to a head-initial AgrP in the matrix clause and to a head-final AgrP in the embedded clause; the latter happens because the embedded clause has at least one (CP-)projection dominating the AgrP, as shown in example (2.27) and the corresponding tree (of the embedded clause); as in the trees (2.24') and (2.25'), the object *das Wasser* 'the water' is shown as having been moved to Spec, TP:

(2.27')



- (2.27) *Der Kellner hat bemerkt, dass ich das Wasser*
 The waiter has-3SG noticed that I the water
nicht getrunken habe.
 not drink-past.partic have-1SG
 ‘The waiter noticed that I have not drunk the water’ or ‘...that I
 did not drink the water.’

Thus, the basic word order of any projection in German is head-final (including the AgrP), but if the projection ends up being the first in a sentence, it becomes head-initial. The CP projection, as long as it is not split, would always be first in a sentence, and thus always head-initial; if the CP were split, the highest sub-projection would be head-initial, and the other projection(s) would be predicted to be head-final.

2.6. Comparing the German and English Master Trees

Finally, let us briefly compare the German and English Master Trees to see how the two related languages differ. Doing so will also enable us to more fruitfully discuss the new L1 English/L2 German data which are the focus of the second language acquisition chapters of this book. Both languages have a CP projection (in embedded clauses), an AgrP, and a TP, with the same mutual ordering. AgrP and TP are posited in all finite clauses in the two languages. Both languages have an optional NegP-projection which appears (based on acquisition data) to be located below the TP in German (and actually in English, as well). The two languages differ in word order: in English, all projections are head-initial, while in German only the first projection in a sentence is head-initial, the rest being head-final. The two languages also differ in the type of DPs that can be fronted (see *Extensions* Part 3), resulting in further word order variation in German.

While both languages have auxiliaries, the two languages differ in which constructions and projections are involved in the auxiliary constructions: in German, the agreement features in Agr are rescued by an auxiliary when the head of TP contains a past participle; in English, both tense and agreement features in Agr or Tense are rescued when the verb is base-generated in the head of ProgrP (suffix *-ing*) or the head of Compound Tense Phrase/CTP (suffix *-en*). English ends up having two additional (optional) projections, ProgrP and CTP, apparently not needed for German verb morphosyntax. However, it might be that the

German compound past tense involves an additional (optional) projection for the prefix *ge-*, as mentioned above.

2.7. Summary

Given the basic assumptions of Organic Grammar, and working through the ramifications for English and German verb morphology, we have arrived at a revised analysis of German syntax, with a very limited number of functional projections (for a summary of common sentence-level functional projections in syntax, see Table 2.2 above). The new analysis takes care of some syntactic and acquisition-related problems with the classic (one-tree) analysis of German. The new proposal ends up being a ‘two-tree solution’: a different structure for the matrix and embedded clauses of German. The structures we ended up with are exemplified for the matrix clause in (2.24-25) (past vs. present tense), and for the embedded clause in (2.27).

In addition, our new analysis of German includes the insight (generalization [2.26], GHG) that only the sentence-initial projection in German is head-initial, while the rest of the projections are head-final. However, these (perhaps undesirable?) results are off-set by the clear benefits of the approach: (1) a psychologically plausible, limited number of functional projections, (2) an explanation of how the German tree is acquired, including all the sub-stages – as we will see in the subsequent chapters – and (3) possible resolution of some syntactic (and acquisition) challenges to the classic analysis. In the next chapter, we outline the existing literature on the L1 acquisition of German functional projections, and show how the predictions we make are borne out.

Extensions

1. Koopman’s argument

Koopman (1995; see Problem 2 earlier) describes the distribution of Dutch verbs with the prefix *her-* (‘re-’), addressing the question of whether in embedded clauses the finite verb (simple present or simple past) raises to Infl (or T and Agr) or whether it remains in the VP (or lower in the tree than T and Agr). The most straightforward assumption under the classic approach would be that the finite verb in Dutch and

German raises to T and Agr to check the tense and agreement features. However, separable prefix verbs in Dutch with an additional *her-* prefix cannot occur in V2 contexts (resulting in ungrammaticality regardless of the word order), in main clauses where verb raising is overtly ‘forced’ because the separable prefix must be left behind while the *her-* prefix must be pied-piped. These verbs can occur in non-finite forms where they have not been raised, as well as embedded clauses as finite verbs. This shows that the verb in embedded clauses does not have to raise (away from the prefix *her-*). It can be deduced that the finite (main) verb in the Dutch embedded clause does not always raise to T and Agr. Koopman concludes that feature checking in these instances takes place at LF, rather than in overt syntax (via V-movement).

To fully solve the problem raised by Koopman’s (1995) data under our new proposal, we may still need an account of why in the matrix clause the finite verb always has to raise to Agr; we assume this has to do with the special nature of the first projection, whereby both the specifier position and the head position must be overtly filled. Note that even if we were to combine this stipulation with a head-initial AgrP in all clauses (as in Travis 1984), an explanation for why the finite verb *cannot* raise to Agr in the embedded clause is needed. Under the switching headedness of the AgrP, on the other hand, there is at least the possibility to get the correct word order by raising, and there may be the possibility of feature lowering between heads in the same direction (e.g. from head-final Agr to head-final T in the embedded clause) which is normally not available in German.

2. Kayne’s (1994) and Zwart’s (1994) proposals

The situation of German word order has been made more complicated by the very influential proposal of Kayne (1994) that all languages are head-initial. For a traditionally head-final language such as Japanese, much syntactic movement would be required to result in the surface head-final order throughout the sentence. In German and Dutch – given their mixed headedness – somewhat less movement is needed to obtain the surface order. We emphatically reject Kayne’s proposal, and continue to maintain that functional projections may vary in headedness. For a proposal as to how Kayne’s approach would work in Dutch (and German), see Zwart (1994, 2001). While we reject Zwart’s proposal given his assumptions about headedness, it should be pointed out that

our new proposal is similar to Zwart's – as well as Travis' (1984) – in that the finite verb in a matrix clause remains below the CP. (For an alternative economy-motivated analysis of German, see Haider 1997.) Williams (1998) provides a critical review of Zwart's proposal where he points out that the original explanation for the verb position differences in the classic analysis is lost. Our new proposal differs from Zwart's (and Travis') in that we claim that the headedness of AgrP varies between matrix and embedded clauses – due to a general statement (2.20) about headedness in German – and this difference in headedness gives rise to the different verb positions.

In a recent *Linguistic Inquiry* squib, van Craenenbroeck and Haegeman (2007) argue that the clitic pattern in Belgian Dutch (the Brabant dialect of Wambeek) provides evidence for the subject NP moving out of the TP to Spec(CP), contra Travis (1984) and Zwart (1997). On the face of it, van Craenenbroeck and Haegeman's data also constitute evidence against the present approach, since we claim that both subjects and objects remain within the AgrP. However, a new functional projection is assumed by van Craenenbroeck and Haegeman for the clitics, between TP (corresponding to our AgrP) and CP. Under Organic Grammar, such an FP can also be posited (since it is associated with the clitic morpheme), and the object or the subject in a matrix clause then has the option of moving to the specifier position of this head-initial FP (in contrast to van Craenenbroeck and Haegeman, who actually posit no Spec position for this functional projection). The finite verb would raise to the F-position (with the clitic acting as an inflectional suffix on the verb). No CP is thus needed for Belgian Dutch matrix clauses, and the problematic data appears to be accounted for.

3. *Are the specifier positions in German A- or A'-positions?*

Under the analysis developed in this chapter, the Spec(AgrP) in German would need to be an A'-position, rather than an A-position, as is usually assumed. An A'-position in the AgrP is required in order to maintain the analysis according to which main clauses do not involve a CP; fronted objects and other phrases would need to occur in the Spec(AgrP); this analysis is consistent with Grewendorf and Sabel (1999) according to whom short scrambling to the front of the sentence (pre-subject) has A'-properties in German, while having A-properties in

Japanese. If no such scrambling occurs, the subject DP occupies this position.

Allowing the Spec(TP) to also be an A'-position lets us posit maximally economical trees for the common word orders found in e.g. negative clauses, as shown in the trees (2.20'), (2.21') and (2.23b'); this would suggest that German is similar to its relative, Modern Yiddish, in which the Spec(TP) position has been argued to be an A'-position (Diesing 1990; Santorini 1992). It appears that no further projection is needed to account for the word order possibilities of the direct object DP, at least in affirmative sentences (we return to negative sentences and brief discussion of double object constructions in Chapter 3). It would take us too far afield to reanalyze all the literature on German word order and scrambling – such as the recent works by Haider (2005) and Hinterhölzl (2009) – but we take the present proposal to account for the basic word order facts sufficiently well to warrant being considered as the target of acquisition.

4. *Post-Minimalist syntactic approaches that are not suitable for acquisition data (see Vainikka and 2007)*

As the theory of syntax develops, the working syntactician must lay his/her cards on the table with respect to structure and movement, as well as the status of basic principles of syntax, while accounting for various phenomena in language. These phenomena include the classic ones such as case marking, passive formation and question formation, as well as more recently (in the 1980s) discovered phenomena such as binding, parasitic gaps, and long-distance WH-movement.⁵² When we consider generative and well as non-generative theories of syntax,⁵³ variation exists in terms of whether a given theory opts to simplify

52. Apart from (short distance, i.e. within a single clause) WH-movement, these phenomena are not covered in this book; those readers with a non-linguistics backgrounds might wish to consult an introductory generative syntax book for further information, such as Haegeman and Gueron (1999).

53. Current non-generative theories of syntax include Goldberg's (1995, 2007) Construction Grammar and Halliday's (1994) functionalist approach.

principles of grammar or to simplify *structures*.⁵⁴ The goal of recent versions of the (1981) Chomskyan Principles and Parameters approach and to a greater extent the (1990s) Minimalist Program is to minimize the number of distinct principles of grammar, to the extent that language is characterized as a ‘perfect’ system relating sound and meaning. The problem is that principles can only be simplified at the expense of structure, where structures then turn out to be very complex, involving tens of functional projections, the majority of them phonologically empty.⁵⁵

A theory of acquisition or of syntax (such as Chomsky’s Minimalist Program) that belongs to the class of theories that minimizes distinct principles of grammar (while failing to minimize structure) confronts problems in explaining the prevalence of reduced structures illustrated by children’s early language production. Although Minimalism was not designed as a theory of acquisition, a true theory of syntax will also allow for a natural way to account for acquisition; this does not appear to hold for Minimalism – any more than it does for the Strong Continuity Hypothesis (which we will discuss in the next chapter) – where each language, each construction type, and each stage of development is presumably represented by the exact same, very complex syntactic tree.

Not surprisingly, a number of generative linguists have taken on various ideas proposed for Minimalism, offering their own alternatives. Among them are Peter Culicover and Ray Jackendoff (2005), who focus on Minimalism’s coverage of facts relative to Chomsky’s (1980s) theory. They note that one of the main problems is that the fruitful (1980s) analyses of basic phenomena are no longer available under Minimalism. With Steven Pinker in another (2005) publication, Jackendoff points out that Minimalism ignores both inflectional and derivational phenomena in morphology and phonology and it dismisses basic processes in syntax such as case, agreement and word order. Pinker and Jackendoff further point out that Minimalist-based work in acquisition

54. Culicover and Jackendoff (2005) provide an illuminating analysis of the history of syntax in terms of theory classification; we already discussed this work in Chapter 1 in terms of the Uniformity Assumption.

55. We do not preclude the possibility of empty or abstract syntactic positions; however, we take each such position to be a challenge to the language learner, where the input must contain concrete evidence for positing any abstract or empty positions.

has failed to provide new insights.⁵⁶ Under Culicover and Jackendoff's (2005) alternative theory for syntax, *Simpler Syntax*, Universal Grammar includes X'-Theory as their theory of how syntactic projections are built, but this is only relevant for *lexical* heads. For Culicover and Jackendoff, acquisition is a process of applying simple rules. However, application of the ideas of *Simpler Syntax* to acquisition of syntax fails; for example, there does not appear to be any possible explanation for development from the (simple) stage at which subjectless utterances with non-finite verbs predominate (which we will discuss in Chapter 3). Furthermore, given the complete lack of functional projections in Culicover and Jackendoff's theory, there is no way to incorporate the idea of developing functional projections as an explanation of language learners' successive stages.

Similar to Culicover and Jackendoff's alternative to Minimalism, William O'Grady's (2005) proposal, *Syntactic Carpentry*, takes seriously the familiar syntactic phenomena for which pre-Minimalist syntax provided an account, but eliminates much of the complex structure and innate machinery specific to syntax.⁵⁷ Under this theory, syntactic trees are constructed based on words in the order they are heard by the listener. Thus, in a typical English sentence, the first step involves an Agent argument (the subject) combining with the verb. The tree constructed is then updated by the addition of a Theme argument (the object) and so on. Using this simple mechanism, O'Grady deals with a number of syntactic phenomena in English including anaphora, control, agreement, coordination, and WH-questions. The theory accounts for cross-linguistic similarities and differences in terms of the 'carpentry'

56. This is not to say that Minimalism may not allow the syntactician to arrive at new insights. For example, in Brattico (2010) and Huhmarniemi (in preparation), it is shown that the Minimalist approach allows us to connect under the same umbrella several phenomena in Finnish syntax (e.g. accusative case marking, binding, Negative Polarity items, and variants of disjunction 'or', and multiple WH-question formation), in a way not available to earlier approaches to syntax. However, as we have pointed out, current versions of Minimalism suffer from the Uniformity assumption, and are thus not useful for the data we present in this book.

57. To the extent that syntactic phenomena can be reduced to mechanisms shared between language and other cognitive areas such as vision, the general theory of cognition would be simplified; this certainly is a laudable goal. Unfortunately, this particular formulation by O'Grady turns out not to work for the acquisition data, as we shall see.

involved in constructing trees. At first glance, *Syntactic Carpentry* appears to be promising for acquisition in its reduction of the amount of innate language-specific syntactic material. If one makes the reasonable assumption that comprehension and production make use of the same underlying mechanisms, in a language with SVO order such as English, the subject-verb combination occurs first in production as well. This suggests that the subject-verb combination is more basic than the verb-object combination. Indeed, for O'Grady, there appear to be no situations where VO is more basic or primary than SV. Even in languages whose basic word orders differ (for example SOV Japanese or Turkish), the SV combination is taken to occur first (O'Grady 2005: 195). Applied to early acquisition, this approach predicts a stage where Agent-Action SV utterances predominate, followed by a stage with fully projected SVO structure. Utterances of the sort in (7) above, which are common in early grammars, are not predicted and cannot be straightforwardly accounted for. Thus while O'Grady's approach has much theoretical merit, it falls short as a theory of acquisition.

Chapter 3

Organic Grammar and L1 acquisition

3.0. Introduction

In discussing data from children's early English, Karin Stromswold (2000: 910), in discussing data from L1 English, notes the extremely regular order in which 15 children studied "acquired complex constructions – questions, negative constructions, passives, datives, exceptional case marking constructions, small clause constructions, verb-particle constructions, and relative clause constructions." Indeed children's syntactic development has long been known to follow a predictable path in terms of order of acquisition – one whose probability occurring as a matter of chance is practically zero (Laurence and Margolis 2001).

In this chapter we discuss what is known about the order of acquisition of syntactic elements associated with particular functional projections, in particular in the L1 acquisition of German. Under Organic Grammar – an approach that draws a direct connection between developmental stages and the resulting syntactic structure – the order of L1 acquisition of various morphological and syntactic phenomena is predicted by the Master Tree developed in Chapter 2, based on the input available to the language learner in typical and common sentences in English and German.⁵⁸ Recall that the Master Tree of a language includes all possible projections in the language, but that not all projections need to be projected by a speaker for each sentence or construction (Organic Grammar Assumptions 1, 6 and 7). With the caveat that robust – as yet unidentified for these two languages – syntactic or morphosyntactic evidence for more than one CP-level projection may be available for the language learner; these trees represent the skeleton of each language. (We will discuss the CP-level further in Chapter 7.) Except for the exact position of the NegP (above or below

58. Beyond the sentence-level projections (i.e. the extended projections of V), the full Master Tree (or the equivalent algorithm) will also include extended projections of N, A, and any other lexical heads in the language.

TP),⁵⁹ the structures posited for German (and English) were developed independently of the acquisition data, completely based on the morphosyntax or syntax of the adult language. The only requirement was that the morphosyntactic or syntactic evidence be robust, i.e. such that a language learner can readily be exposed to such input even in simple constructions (Organic Grammar Assumption 2).

Until the early 1980s when Chomsky put forward his ideas about Universal Grammar, the child was seen as a hypothesis tester who continuously weighed the merit of potential grammars on the basis of evidence, both positive and negative. The problem with this account are studies that point to a narrower hypothesis space. Children, it turns out, are highly systematic in the non-adult assumptions they make about the language they are acquiring, that is, they do not entertain all possible hypotheses about the so-called primary linguistic data (i.e. input) to which they are exposed. So although the role of parental feedback in informing the child about what is ungrammatical continues to be hotly debated, this observation alone obviates the need for negative evidence. An equally fundamental problem for a hypothesis-testing account of language acquisition is that close examination of mature speakers' syntactic competence reveals complexity far beyond what any input could possibly account for. This is the basis of the poverty of the stimulus problem whose solution is that children's developmental systematicity is the result of a hypothesis space narrowed by the structural constraints on the distribution of syntactic elements under Universal Grammar. If UG constitutes 'the initial state of the language faculty' (Chomsky 1995: 167), investigation of L1 acquisition becomes a matter of what these constraints involve during actual acquisition. Before we

59. We expect that there must be evidence (although we have not yet uncovered it) in German and in English that tells the learner of these languages to develop a NegP before the TP. From the L1A literature on the non-Indo-European language Finnish we know that NegP before TP is *not* a universal order, either in syntax or in L1 acquisition. In adult Finnish, sentential negation involves a negative verb that carries subject-verb agreement but not tense; in Finnish syntax, the negative verb clearly occurs in a high functional head reserved for finite verbs (such as Finite Phrase, AgrP or CP; Holmberg et al. 1993; Mitchell 1991; Koskinen 1998; Brattico and Huhmarniemi 2006; Koskinen 1996) and Brattico and Saikkonen (2010) show that Finnish negation in L1A is acquired after tense marking, and is associated with the acquisition of finiteness, agreement, and nominative Case.

turn to the detailed predictions for the L1 acquisition of German, we first consider L1 acquisition of functional projections in general, in sections 3.1–3.3. The discussion in this chapter is by necessity limited to the L1 acquisition literature that bears on the structure building approach to the acquisition of German, and the main purpose of the chapter is to demonstrate that one-by-one development of functional projections (i.e. structure building) is feasible for German child language.

The second language acquisition data discussed in this chapter and subsequent chapters of this book involve mainly naturalistic data and in the case of children learning German as their first language, the data also include diary data. In her (2006) book, Barbara Lust discusses the widely used practice of such natural speech sampling in first language acquisition, which since modern equipment has become available involves audio and video recording and transcription as well as sharing (e.g. CHILDES).⁶⁰ She notes how use of longitudinal data in particular allows the researcher to consider a given inflectional morpheme, measuring both its first occurrence and its productivity at given points in time. Ideally, establishing whether a morpheme is clearly productive entails at the minimum calculating the frequency in obligatory contexts of the form under consideration as well as its contrastive use within a paradigm, its occurrence with more than one lexical item and in more than one linguistic context (i.e. not as part of an unanalyzed chunk). In some of the data we discuss, it may not be possible to establish the productivity of a morpheme to such a clear degree; however, even less clearly established data can be used to draw tentative generalizations.

Here we point out that we take the productive use of overt (inflectional) morphology in the oral production data to indicate the presence of the corresponding functional projections. This is a controversial approach. However, the alternative is *not* to examine morphosyntactic data in acquisition in a syntactic fashion, and instead relegate such data to Spellout, treating the data as primarily having to do with non-syntactic processes such as language processing, memory and interfaces

60. CHILDES (Child Language Data Exchange System; MacWhinney and Snow 1985) is an open-source databank of orthographic transcripts of speech samples from a range of languages including German, the majority of which have involved L1 acquisition. The special coding which transcribers use allows the researcher to query the data for counts and co-occurrence for syntax, morphology and lexis. See <http://www.childes.psy.cmu.edu>.

with phonology or with discourse pragmatics (see e.g. Goad, White and Steele 2003; Haznedar and Schwartz 1997; Lardiere 1998; Sorace 2005, White 2003a). An overarching goal of this book is to show that when we seriously consider the possibility that overt morphology in acquisition data reveals underlying functional projections, we end up with far-reaching, explanatory results.

Lust (2006) further points out how reliance solely on natural speech – on what children spontaneously say – means that the researcher is left empty-handed when the child (or second language learner) fails to produce any instances of a particular construction, and she discusses the additional choices available to the researcher who wishes to elicit specific constructions. Given the relative youth of the research program on the acquisition of functional projections, there is currently very little work on this topic in L1 acquisition using methods other than natural speech sampling. The L2 acquisition data discussed in the remainder of the book, however, will draw to some degree on alternative methods.

We now turn to functional projections in acquisition. Our first task is to introduce two approaches to functional projections in acquisition. The Strong Continuity approach in acquisition corresponds to the already familiar Uniformity assumption in syntactic theory (see Ch. 2 *Extensions*) as well as the classic single-tree analysis of German syntax discussed in Chapters 1 and 2. The alternative Weak Continuity approach – which we espouse – allows for smaller trees (not just the full CP) during acquisition and in adult syntax.

3.1. Strong and weak continuity in acquisition

It is easily observed that children omit a considerable amount of required material in the utterances they produce when they set out on the task of acquiring their first language. Their earliest single-word utterances directly reveal little about syntax, apart from systematic absence of functional elements despite the high frequency of these elements in the input. However, the earliest multi-word utterances clearly point to children's quick grasp of head-complement relations. For example, at age 1;10, young German learner Meike (Mills 1985) has established that in the language surrounding her, the non-finite verb (where -INF = infinitive suffix) follows its object complement; that is, that German has an object-verb (OV) order in the VP (as does Japanese; recall our example in the preceding chapters; *sushi-o taberu* 'sushi eat'). In Eng-

lish the opposite holds: VP order is VO, and Adam's two-word utterance at age 2;3 demonstrates his early knowledge of this (Adam I; Brown 1973: 141):

- (3.1) a. *Hause gehen.* [Meike 1;10]
 home go*-INF
 ‘(I) go home.’
- b. *Give doggie.* [Adam 2;3]

Young children routinely omit subjects and all manner of functional (inflectional) elements; these are but two representative examples. The issue that researchers have long been grappling with is how much (indeed if any) syntactic structure can be assumed for a child who just utters two words, and how the child then develops from combining just two words to complex sentences – i.e. the problem of the relationship or continuity between early and later grammars. This problem relates to the mechanisms assumed to move the child from one non-adult grammar or stage to the next.

Dating back to the early 1990s and based on Steven Pinker's (1984) ‘continuity assumption’, the Strong Continuity Hypothesis has been entertained as a possible solution to this problem. This issue arose under the 1960s/70s assumption that the child's earliest system was actually not syntactic at all, but rather a purely semantic system governing the relationships between words in utterances produced by the child (e.g. Braine's [1963] pivot grammar; see also McNeill 1966 and Slobin 1966). The child's development was thus thought to exhibit cognitive discontinuity, and research attention was then directed to determining how the child moved from a pre-syntactic to a syntactic system (see Brown 1973; Pinker 1982, 1984; and the chapters in Wanner and Gleitman 1982). The specific nature of *Homo sapiens*' hard wiring for language presented by Chomsky in the 1980s has since made it possible to propose that children's early language is syntactic from the start, regardless of existing semantic relationships between the words produced by children in their early two- and multi-word utterances. In other words, the idea that the Principles and Parameters of Universal Grammar constitute this hard wiring means that syntax (in addition to semantics) constrains development from the start.

From its inception, proponents of the Strong Continuity Hypothesis have assumed that UG provides what we have referred to above as a

single, uniform and universal syntactic tree which all languages share (see e.g. Boser, Lust, Santelmann and Whitman 1992; Hyams 1992; Poeppel and Wexler 1993; Weissenborn 1990). Under this view, a CP is always projected, and all other possible projections are also included in this tree. Thus no additional acquisition mechanisms are required for acquiring structure since the full structure is what UG provides. When acquiring the ambient language over time, the child fills in the specific lexical items in response to the input. Extending the tree metaphor, the child simply adds leaves to selected branches of the universal tree. This view of acquisition entails the premise that even though children produce a considerable number of utterances that are not at all adult-like, where these utterances reflect the child's pre-adult syntactic system, this immature grammar will nonetheless not violate principles of Universal Grammar.⁶¹ And this in turn means that children's successive pre-adult grammars, or stages of acquisition, represent possible grammars. However, under the Strong Continuity Hypothesis, stages of acquisition reflect little about syntactic structure, since all structure (i.e. all functional projections) is assumed to be present from the beginning of acquisition. Thus under the Strong Continuity approach the two-word utterances in (3.1a) and (3.1b) represent full syntactic structure, but both content and function words/affixes will be missing where the child has not yet learned them. The approach we adopt in this book places much more emphasis on the actual development of syntactic structure, and we therefore *reject* the strong version of the Continuity Hypothesis for first language acquisition.

The equivalent of Strong Continuity under Universal-Grammar-constrained second language acquisition is Bonnie D. Schwartz and Rex Sprouse's (1996) Full Transfer (of first language syntax) and Full Access (to Universal Grammar; see also Eubank and Schwartz 1996, and papers therein) Hypothesis. As in first language acquisition under Strong Continuity, proponents of FT/FA assume that the learner's mental representation of syntax involves a single syntactic tree consisting of all functional projections. At the start of second language acquisition (referred to as the "initial state"), the L2 learner's entire L1 tree transfers. In addition, at later points in development, transfer of elements involving any portion of that tree is possible. To explain the readily observed optional supplience of inflectional morphology by L2 learn-

61. Where children's grammars do violate UG, maturation of certain principles is then invoked (see below).

ers, various researchers promote the Missing Surface Inflection Hypothesis (MSIH; Epstein, Flynn and Martohardjono 1996; Haznedar and Schwartz 1997; Lardiere 1998) as a sub-hypothesis of Strong Continuity and/or Full Transfer. Under the MSIH the inflectional morphology associated with syntactic projections is variably omitted due to non-syntactic factors such as learners' slow processing.

In our view, the main difficulty that all Strong Continuity proponents must contend with is the premise that all functional projections are present in the learner's grammar from the beginning of acquisition, whether in first or second language acquisition. This approach precludes the possibility of a natural way of proposing stages of acquisition – namely, that each stage corresponds to the emergence of a new functional projection. We discuss the problems with Strong Continuity in more detail in the later chapters.

Since the early 1990s, a number of first language acquisition researchers have, like Andrew Radford (1988, 1990, 1995), followed the alternative Weak Continuity approach where they maintain that children start the acquisition process with some sort of syntactically reduced structure (functional elements are not simply optional but actually missing), while maintaining the continuity position where syntax is present from the earliest word combinations. (For English, Dutch, German and Swedish see Clahsen 1991; Clahsen and Penke 1992; Clahsen, Eisenbeiss and Vainikka 1994; Guilfoyle and Noonan 1992; Lebeaux 1989; Ling 1999; Platzack 1990; Vainikka 1993/4; Wijnen 1995.) Where Radford's (1988, 1990) original idea was that acquisition of functional projections was a product of the child's independent, biologically-driven maturation, a subsequently proposed alternative is that growth of the syntactic tree is the result of the interaction of the input received by the learner with the learner's hard-wired Universal Grammar. The approach we develop in this book falls under the non-maturational version of the Weak Continuity Hypothesis.

3.2. Root Defaults in L1 acquisition

Above we described Radford's proposal in his influential (1990) book on first language acquisition that the child's early grammar involves only lexical projections; importantly, the idea of this syntactic system is to explain children's typical utterances at the two-word stage. Extending Radford's approach to other languages appears to provide an expla-

nation for a systematic type of non-adult utterance found in children's utterances from various languages, variably referred to as "Root Infinitives", "Optional Infinitives", "Non-finite Root Forms", or – the term we adopt – "Root Defaults" (see *Extensions 2* below for a definition and some details of the terminology). Our approach is related to Radford's in that the child's earliest syntactic stage is a reduced structure (a bare VP projection). However, in addition to accounting for the earliest syntactic stage, Organic Grammar provides an explanation for the gradual development of *later* stages, something that Radford's (1990) maturation approach does not address. For Radford, all functional projections mature at once.

Root Defaults are infinitival or participial (and sometimes even finite – see *Extensions*) verb forms that children appear to use as main verbs in their production of non-adult utterances that lack an inflected, finite verb. Under both Radford's approach and an Organic Grammar approach, Root Defaults are explained because children's early sentences lacking an inflected verb would, in fact, lack the functional projections that correspond to finiteness (e.g. tense – TP – and agreement – AgrP). The process of children's use of Root Defaults is well documented for a number of Indo-European languages (e.g. Hamann and Plunkett 1998; Phillips 1995; Platzack 1990; Rizzi 1993/4; Varlokosta, Vainikka and Rohrbacher 1998; Wexler 1994; more recently Gagarina 2003 and Kallestinova 2007 for Russian; and Castro and Gavruseva 2003 and Licerias, Bel and Perales 2006 for Spanish). Consider the examples in (3.2), ([a–d] from Hyams 2007; [e–f] from Gülzow and Gagarina 2008; [g] from Castro and Gavruseva 2003; no translation provided); the German data will be discussed in more detail below. For discussion of Root Defaults in languages with rich inflection, such as Italian, see *Extensions 2*.

- (3.2) a. *Papa schoenen wassen.* [Dutch]
 Daddy shoes wash*-INF
- b. *Michel dormer.* [French]
 Michel sleep*-INF
- c. *Auch Teddy Fenster gucken.* [German]
 also Teddy window look*-INF

- d. *Jag ocksa hoppa där a där.* [Swedish]
 I also hop*-INF there and there
- e. *lomat koleso.* [Russian]
 break*-INF wheel-ACC
 'I'm breaking the wheel.'
- f. *Spat bruu.* [Russian]
 sleep*-INF car (onomatopoeia)
 'The cars are sleeping.'
- g. *Mi hacer otra.* [Spanish]
 me make*-INF another
 'I will make another one.'

In addition to Radford's (and the Organic Grammar) approach, the Root Default data can also be explained by other approaches involving optional projection of higher structure. These include Luigi Rizzi's (1993/94, 1998, 2000) Truncation Hypothesis (a child may truncate a sentence at VP, TP, or CP)⁶² and Ken Wexler's (1994) Optional Infinitive Stage (see also Wexler, Schütze and Rice 1998; Agreement and Tense are optionally projected in the child's grammar). They also include Tom Roeper's (1996) Minimal Default Grammar (see also Hamann, Penner and Lindner 1998; early grammars allow reduced structure).⁶³ These approaches can be seen as assuming a slight variant of

62. Rizzi (1998, 2000) proposes that Categorical Uniformity (the requirement that all clauses are CPs) is not yet required at children's earlier stages of acquisition, and Structural Economy – where he advocates use of minimum structure – results in truncated structures in children's early grammars (Rizzi 1993/4). It is also claimed that CP is not always required in adult grammar (such as root infinitives in newspaper headlines), and thus stages of acquisition correspond to variation in adult grammar. We consider a fully worked-out proposal of this type to be perhaps indistinguishable from Organic Grammar, but at the moment Rizzi's approach is not sufficiently worked out to explain the systematic stages of acquisition that we will see in this book.

63. In a fascinating discussion of early child Russian, Kallestinova (2007) argues that there are three root infinitive stages in Russian: (1) AspP, TP and ModalP are all underspecified; (2) only ModalP is underspecified; and (3) the ModalP has been acquired. We would reanalyze her data as

the Strong Continuity Hypothesis (Section 3.1), where researchers promoting these approaches maintain that a regular, UG-conforming grammar always involves a full CP projection regardless of the type of construction. Children's earliest grammars are considered to be exceptional and may not fully conform to UG, perhaps due to lack of maturity of certain principles connected to UG.

Although each of these approaches provides a similar explanation of the Root Default phenomenon (involving reduced structure), only Organic Grammar can be straightforwardly extended to account both for later stages in first language acquisition, as well as early and later stages in second language acquisition, as we will see in the following chapters. Those accounts of Root Defaults that invoke maturation as an explanation for the early reduced structures – in particular Radford's and Wexler's⁶⁴ – are not extendable to (adult) second language acquisition, since maturation clearly cannot be used as an explanation for the Root Defaults of adults. If children's Root Defaults were due to something that has not yet matured (say, typically by the age of three), the Root Defaults cognitively developed adults produce during second language development would require a separate explanation (see Vainikka and Young-Scholten 1998 for the original argument). Note that abandoning the maturation assumption would also – we believe – force these researchers to abandon the Strong Continuity Hypothesis (as may be the case for Rizzi 1998, 2000; see footnote). In addition, none of these approaches provides a general mechanism of the building up of structure/tree growth that would extend to an explanation of later syntactic

involving a bare VP at stage (1), a bare TP at stage (2) and a ModalP at stage (3). To the extent that adult Russian warrants this order of functional projections (in particular, that ModalP occurs above the TP), these stages would naturally follow from Organic Grammar, while they would need to be stipulated in the other approaches discussed here.

64. Like Radford's approach, Rizzi's (1993/4) Truncation Hypothesis also assumes maturation as a driving force; the possibility of truncation is extinguished around age three. However, in more recent work (e.g. Rizzi 1998, 2000), Rizzi does not assume maturation, but proposes that input is responsible for development. Wexler and his coauthors (e.g. Wexler, Schütze and Rice 1998) allow the extension of the Optional Infinitive Stage to accommodate the delayed development of children with Specific Language Impairment, up to and even older than age five. It is not clear how input alone would account for differences in these two populations of children.

stages such as that afforded by Organic Grammar.⁶⁵

In a recent paper, Vainikka and Young-Scholten (2010) present the argument that Root Defaults, in fact, occur in all types of language acquisition situations. It had been established previously that children with specific language impairment (SLI) produce Root Defaults both in English (Wexler and Rice 1996) and French (Paradis and Crago 2001), and that the Optional Infinitive Stage lasts longer for SLI children than typically developing children. The SLI situation is included in Table 3.1, along with a number of other exceptional L1A situations (from Vainikka and Young-Scholten 2010):

65. While Structure Building precursors (in particular Guilfoyle and Noonan 1992 and Wijnen 1995) would in principle work similarly to Organic Grammar, these approaches were never developed beyond initial proposals. Similarly, while Lebeaux's (1989) would also account for the earliest syntactic stage, this approach does not assume later building of structure which involves functional projections. Clahsen's Lexical Learning approach, on the other hand, involves Structure Building, but he explicitly rejects both adult second language acquisition involving a syntactic process closely related to L1A (Clahsen and Muysken 1986, 1989), and an early stage with a bare VP (Clahsen 1991). Ling's (1999) analysis of L1 German is similar to ours, except that an underspecified IP is assumed for Root Defaults.

Table 3.1 First language acquisition in exceptional circumstances

<i>Situation</i>	<i>Representative study</i>	<i>Child's age during relevant period of observation</i>
Lack of input	i. <i>Genie</i> (Curtiss 1977; Fromkin et al. 1974)	14 to 15 years old
	ii. <i>Kaspar Hauser</i> (Louden 1999)	Adolescence
Lack of easily usable input	i. <i>Oral language of deaf individuals</i> (McGuckian and Henry 2003)	2;11 to 3;6
	ii. <i>Home sign</i> (Goldin-Meadow and Mylander 1990)	1;4 to 4;1
Cognitive impairment	i. <i>Down Syndrome</i> (Thordardottir et al. 2002)	childhood; adolescence
	ii. <i>children with hemispherectomies</i> (Curtiss and Schaeffer 1997; Curtiss and de Bode 2001)	childhood
	iii. <i>Specific Language Impairment</i> (Wexler et al. 1998; Hamann et al. 1998; Leonard 2000; Letts 1993; Lindner 2002)	4 to 7 years old

The rationale for examining each of these exceptional acquisition situations lies in the possibility that – despite there being definite differences between L1 and L2 acquisition – access to Universal Grammar may be independent of any critical period, at least as far as syntactic structure is concerned (see *Extensions* for further discussion). Therefore we might expect to find evidence of an early VP-stage in child language acquisition under protracted language development (resulting in a later age for various subsequent stages of L1 development). Language development is slowed down when the input has been severely compromised (first two lines of Table 3.1), or when the input is perhaps less readily able to be processed by the child (third line). Similarly, we would also expect the possibility of subsequent progress involving functional projections. Table 3.2 summarizes the data from each of the studies in Table 3.1 with respect to the earliest stage (from Vainikka and Young-Scholten 2010, slightly modified; the language involved is English unless otherwise indicated):

Table 3.2 Morpho-syntax at the earliest stage of exceptional L1 acquisition

<i>Study/child</i>	<i>Morphology mentioned</i>	<i>Syntactic features mentioned</i>
Genie	no tense	invariant SVO order complementizers absent question words absent passives absent no movement
Kaspar Hauser [German]	non-finite verbs	SOV order subject omission ⁶⁶ no modals no copula complementizers absent
oral language of deaf children	few pronouns few function words	rigid SVO order passives absent few conjunctions
home sign users		OV utterances preferred subject omission
children with Down syndrome	functional elements absent	
children with hemispherectomies	non-finite verbs	
children with SLI	non-finite verbs non-nominative subjects no agreement no tense	SOV (for German) subject omission WH-questions absent complementizers absent passives absent

Genie's and Kaspar Hauser's earliest data are clearly consistent with a bare VP grammar, and the verb forms these two learners produce are most likely Root Defaults, given the lack of tense (Genie) and the reported presence of non-finite forms (Kaspar). In the oral language of deaf children, the relative lack of function words (grammatical words) and conjunctions (i.e. elements such as *if* and *because* that are related to the CP projection) suggests that the data also come from an early stage with few functional projections. In addition to producing Root Defaults, children with SLI exhibit a general lack of inflectional morphology, suggesting a corresponding lack of functional projections. Functional

66. Note that any subjects which do occur contemporaneously with Root Defaults can be accounted for under the by-now standard VP-internal Subject Hypothesis of Koopman and Sportiche (1991), where the subject is in Spec(VP).

elements, and therefore presumably functional projections, are also lacking in the early data produced by Down Syndrome children. The presence of non-finite verbs with children that have undergone a hemispherectomy as treatment for severe epilepsy, again, suggests the use of Root Defaults. We return to later developments by some of these children below.

It is not surprising, given Organic Grammar, to find this type of (potential) Root Default data in various L1 acquisition situations. However, such data are particularly problematic for proponents of the Strong Continuity Hypothesis, at least those who do not follow Rizzi (1998, 2000) in assuming that various truncated structures are available to the child during acquisition. We maintain that all of these situations involve an early bare VP projection lacking functional projections, and it is precisely the lack of functional projections that gives rise to Root Defaults.

3.3. Beyond Root Defaults in L1 acquisition

If we take the stage of development where Root Defaults predominate to be the initial syntactic stage in L1A,⁶⁷ we also expect later stages corresponding to the major functional Infl- or IP-level projections (TP and AgrP) and to CP. In Vainikka and Young-Scholten (2007) we provide an overview of descriptive data from twelve child languages (summarized based on the data in Slobin 1985, 1992) that indicate CP is acquired later than the IP-level projections.

67. We assume that the very earliest stage of acquisition involves just a bare VP projection, but in the earliest analyzable data there is often chronological overlap between the bare VP stage and the next stage, which involves a single functional projection. This period of overlap would explain the variation found at Wexler's (1994) Optional Infinitive Stage; see further discussion on the earliest syntactic stage in L1 German, below.

Table 3.3 L1 acquisition of IP and CP in twelve languages

<i>Language</i>	<i>IP-elements acquired earlier [before or around age 2]</i>	<i>CP-elements acquired later [after age 2]</i>
English	tense auxiliary verbs	relative clauses sentential complementation
Polish	tense/aspect	relative clauses complex sentences
Scandinavian	negation	relative pronoun
French	clitic pronouns tense negation	subordinate clauses relative clauses
Hebrew	tense negation agreement	relative clauses causal and temporal linking of clauses
Turkish	verb inflections	conjunctions
Georgian	agreement inflections	two-clause constructions
Mandarin	modals	topicalisation
Chinese	aspect marking	discourse particles
Japanese	verbal inflection	relative clauses
Kaluli	tense	discourse particles
Sesotho	tense/aspect	relative clauses topicalisation
K'iche 'Maya	aspect negation	yes/no question particle

The L1 acquisition literature further supports the general picture shown in Table 3.3. For example, based on the acquisition of WH-questions in Russian, Rojina (2004) argues that the CP projection emerges late (see also Vainikka and Roeper 1996 for a similar point for the L1 acquisition of English, based on experimental data). The development of IP and CP has perhaps been studied most for the L1 acquisition of German, and will be reviewed shortly.

While it is straightforward to argue for the emergence of IP before CP in L1 acquisition, there is very little data that look at the entire developmental picture, from the acquisition of VP to IP, and on to CP.⁶⁸

68. We note here that Powers (2001) has argued for a structure building approach in L1 acquisition that is realized within Minimalism (Chomsky 1995). She argues that Minimalist structure building more accurately cap-

An exception is Vainikka (1993/4), who considers subject case marking, referring to data from several children including Nina (from the CHILDES Database; McWhinney and Snow 1985) to argue that Nina's earliest data represent a bare VP-projection, followed by her development of IP, followed by her development of CP.⁶⁹ In Nina's files 1–9 (ages 1;11–2;1), *my*-subjects predominate in the first person, and there are no modals, no past tense marking, and very few instances of auxiliary verbs.⁷⁰ A typical example from this stage is provided in (3.3a). In file 10 (age 2;1), there is a sudden increase in nominative subjects when Nina produces 56 nominative *I*-subjects (example 3.3b). Note that the data in this file were recorded only nine days after file 9, where there is just one instance of a nominative *I*. What might be going on? The size of the files does not account for the dramatic difference between them. A preferable explanation is that between files 9 and 10, Nina posits a new, IP-level syntactic projection. As one would expect under this analysis, modals, auxiliaries, and tense marking begin to develop and occur with increasing frequency in Nina's grammar from

tures early developmental data involving bare heads and less than full projections. Since relatively little attention is paid to specific functional projections in such an approach, it is not directly applicable to our data.

69. The data from the other children considered in Vainikka (1993/4), Adam, Eve and Sarah, are less striking, but are consistent with the stages proposed, which are based on Nina's data. See also Powers (1995) who shows that not all English-speaking children go through a stage with non-nominative subjects, and Ito (2001: 119) for a list of remaining problems with the analysis of Vainikka (1993/4), including the observation that the non-first person nominative forms seem to "lag" behind the first person nominatives and the IP-related elements. While Schütze (1997), based on Schütze and Wexler (1996), provides a perhaps more far-reaching analysis of the early case data, it crucially relies on the relationship [+/- Accord] which appears to have been stipulated solely in order to account for such data. See also Rispoli (1998), who presents a non-syntactic analysis of the early case errors involving children's problems with paradigm construction.
70. For example, in files 1-6 there is a total of 50 *my*-subjects and only seven *I*-subjects. Vainikka (1993/4) concentrates on the first person singular forms due to their preponderance in early L1 data. For an extension of this analysis to child L2 English data, see Mobaraki, Vainikka and Young-Scholten (2008).

this point on.⁷¹ However, she still produces no inverted *yes/no* questions or embedded clauses, even in files 10–13 (or earlier).⁷² Strikingly, there appears to be what Vainikka calls a “pre-CP” stage at which the earliest WH-constructions containing a pronominal subject involve a *my*-subject, rather than *I*, given in (3.3c). In Nina’s file 19, where (3.3c) occurs, there are otherwise 68 *I*-subjects (and only two other *my*-subjects). These CP-related non-nominative subjects occur in relative clauses (like the headless relative in (3.3c) – see Hamburger and Crain (1982), in WH-questions, and in embedded clauses. Later in her development, from file 32 (age 2;9) onwards, all of Nina’s CP-related constructions involve a nominative subject, as in (3.3d).

- | | | |
|-------|---|---------------------|
| (3.3) | a. <i>My make a house.</i> | [Nina 2;0, file 5] |
| | b. <i>I take him tail off.</i> | [Nina 2;1, file 10] |
| | c. <i>Look what my got.</i> (x2) | [Nina 2;3, file 19] |
| | d. <i>Why can’t we open this piano?</i> | [Nina 2;9, file 33] |

Vainikka (1993/4) analyzes all of Nina’s *my*-subjects as occupying the Spec, VP position, at both the 1st oblique (=non-nominative) subject stage in (3.3a) and the 2nd oblique subject stage in (3.3c) (in the CP-constructions).⁷³ Although the IP-projection has been posited in file 10, resulting in the emergence of nominative case marking and other IP-related material, the lack of a CP projection appears to cause problems

71. We note here than under OG, the learner’s positing of structure is relatively rapid, and while new structure provides positions for additional categories of lexical items, these words and suffixes must nonetheless be learned over time. Their suppliance will therefore be somewhat gradual and variable.

72. This is also approximately the point at which Deprez and Pierce (1993) argue that Nina begins to raise her subjects from the Spec,VP based on negative placement in her data. At age 2;1, Nina produces sentences with the subject following negation (e.g. *No dog stay in the room. Don’t dog stay in the room.* [Nina 2;1;2]) while in later data the subject precedes negation, as in the adult language (e.g. *Cause I don’t want to.* [Nina 2;5]).

73. Further evidence for the non-nominative subject correlating with something like a bare VP projection comes from the language impaired/SLI and typically developing children that Wexler, Schütze and Rice (1998) studied: while nominative forms occur with both uninflected and agreeing verbs, non-nominative subjects almost never appear with verbs with finite inflection.

for the earliest CP-related constructions, perhaps forcing the subject to remain in the Spec, VP rather than raising to its usual Spec, IP position. Thus, Nina's subject case marking and other functional elements clearly show three distinct developmental points over the eight months after the period during which she only projects a VP: first, the point at which the IP projection develops (file 10/age 2;1); second, the point at which the CP-related elements begin to emerge (file 19/age 2;3); and third, the point at which the CP has been fully acquired (file 32/age 2;9, or perhaps a bit earlier, due to a gap in data collection).

We need now to consider whether there is more to children's syntactic development than the positing of IP and CP. Since Pollock's (1989) classic article on the Split-INFL Hypothesis, it has been assumed that there are functional projections at the sentence level in addition to IP and CP. The data in Table 3.3 above, as well as the L1 acquisition data discussed so far, provide a useful starting point for considering the acquisition of the finer-grained IP-level projections, such as a projection involved in tense (TP) and in subject-verb agreement (AgrP).

The mutual order of acquisition of TP and AgrP has been addressed in two publications, one on the L1 acquisition of English (Ingham 1998) and the other on the L1 acquisition of French (Legendre et al. 2002). Based on spontaneous oral production data from one child, Richard Ingham shows that between the ages 2;6 and 2;9 there is clearly evidence for at least one functional projection beyond the VP, due to the occurrence of negation, utterance-internal adverb positioning, modals, and past tense marking. However, Case and agreement contrasts are virtually absent in sentences, arguing for a missing AgrP projection. Thus, the data indicate that this child has acquired the TP projection prior to the AgrP projection.

In Legendre et al. (2002), an interesting pattern occurs in the acquisition of French,⁷⁴ showing that TP is acquired prior to AgrP in French as well as in English. For three children acquiring French as their first language (Gregoire, Stephane and Phillip), use of clear agreement (non-third person) forms was negligible in the early files (around age 2),⁷⁵

74. In Legendre et al. (2002), it is assumed that the French AgrP occurs higher in the tree than the TP, just like for the related languages English and German.

75. The measure used for determining stages involved Vainikka et al.'s (1999) is the PLU-measure (proportional length of utterance), related to the MLU (mean length of utterance; see Brown 1973) and the proportion

whereas clear tense marking (forms not in the present) was already produced about one-third of the time at this early stage – that is, already about one third of the main verbs were marked for non-present tense. (Legendre et al. compared this pattern to the adult data from the children’s parents, and non-present tense marking was used about 1/3 of the time, as well.) At the subsequent stage (between ages 2;0 and 2;8, depending on the child), children’s use of agreement rose noticeably (about 15% of all main verbs were now marked with [non-3rd person] agreement); at the same time, [non-present] tense marking fell (also to 15% of main verbs). At the final stage discussed in the paper (ages 2;5–3;3), non-present tense regained its adult-like proportion (over 30% of main verbs), and (non-third person) agreement also reached the adult level of over 35%. These data reveal that while agreement was being acquired in a linear fashion, tense underwent the U-shaped learning curve familiar from studies of the L1 acquisition of English irregular and regular verbs since Berko (1958) observed children’s initial forms to all be adult-like and then plunge to the bottom of a U when their newly acquired rule is overgeneralized to irregular forms. Legendre et al. conclude that while there was already a functional projection available for Tense at the earliest stage discussed, the children’s grammar lacked a separate projection for Agreement, i.e. to house agreement suffixes. That is, as in Ingham’s (1998) L1 English results, the TP had been acquired prior to the AgrP, as predicted by Organic Grammar and the bottom-up development of functional projections (for languages with a Master Tree where TP is below the AgrP). Given the lack of an AgrP projection at the intermediate stage when agreement is beginning to emerge, Legendre et al. account for the reduction in tense marking as a result of competition for space.⁷⁶ This competition gives rise to the U-shaped learning curve as follows: while the initial adult-like tense marking at the first stage indicates the acquisition of a TP, it appears that this TP is ‘extended’ at the intermediate stage to contain either tense or agreement morphology, resulting in a reduction in overt tense

of utterances with verbs in each file. The earliest files corresponded to Stage 3b, when Gregoire was 1;9–1;10 years old and Stephane was 2;2–2;3 years old. Phillip’s data collection began at the subsequent stage.

76. The detailed analysis in Legendre et al. involving such competition combines the basic insights of structure building (a precursor of Organic Grammar) with Optimality Theory, originally developed for phonology (see e.g. Prince and Smolensky 1993/2004).

morphology. At the final stage, in addition to the TP, an AgrP projection had been posited by the children, and there was no longer competition between the two grammatical features.

The data from first language acquisition in exceptional rather than typical circumstances are consistent with the Organic Grammar approach. For Genie, two years after her discovery some evidence of a functional projection was attested (Curtiss 1977; Fromkin et al. 1974), although her data indicate that she had reached a plateau, presumably corresponding to fossilization in adult L2 acquisition. There are also relevant data on deaf children acquiring an oral language (McGuckian and Henry 2003), and these data reflect what has been reported by Dula and Burt (1973) for child L2 acquisition: functional morphology in English emerges in the order *copula* > *auxiliary* > *tense* > *agreement*. Although less clear, the deaf children who create their own home-signing system studied by Goldin-Meadow and Mylander develop some apparently functional morphology (e.g. marking of transitivity vs. intransitivity), and biclausal utterances, both of which emerge during development, presumably corresponding to the development of an IP and a CP projection.

Under the competing Strong Continuity approach, the type of data discussed thus far are unexpected, and receive no systematic explanation. If the full CP tree with all functional projections – as provided by UG – is posited by the child from the beginning of syntactic development, there would be no reason to expect positions in an existing syntactic tree to be filled by categories of lexical items in any particular order at all. If anything, perhaps we might expect a left-to-right filling of syntactic positions during acquisition, since the speech stream to which the child is exposed is processed from left to right, i.e. from the start to the end of the utterance. Crucially such an order of acquisition would actually give rise to the opposite of what is attested in the data to which we refer; instead, the tree would be filled in from top to bottom, as argued for adult syntax by O’Grady (2005) in *Syntactic Carpentry* (see discussion in *Extensions* of Chapter 2).⁷⁷ Organic Grammar, on the other hand, provides a UG-guided mechanism for the development of the syntactic tree that accounts for the data discussed thus far.

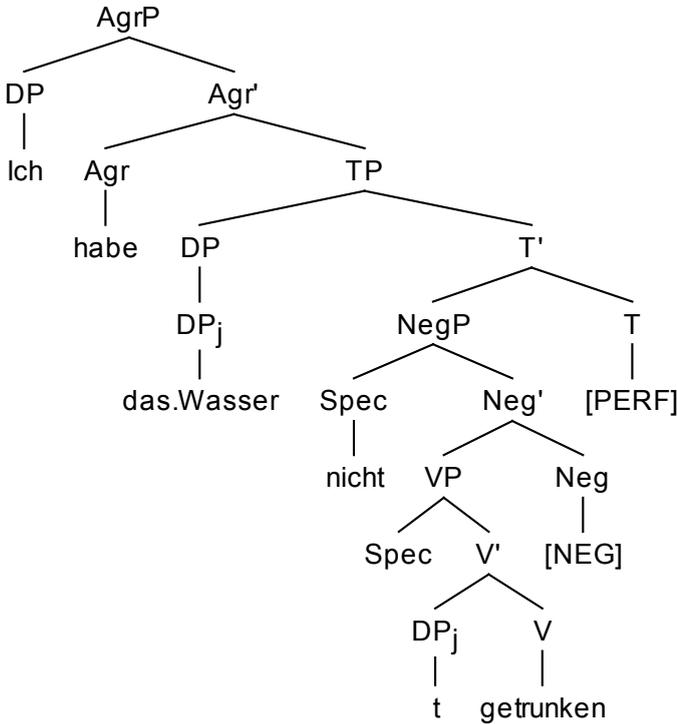
77. Similarly, less syntax-driven L2 acquisition approaches such as Piennemann’s (1997) Processability (to be described in Chapter 4) do not provide an explanation of these L1 data.

Note that even if it were stipulated under Strong Continuity that the syntactic tree is “filled in” with (functional) lexical items from the bottom up, some of the data discussed above would still be problematic. In addition to showing that TP develops before AgrP in L1 French, Legendre et al.’s (2002) data also appeared to reveal an actually *absent* AgrP. Under an approach to acquisition according to which the functional projections are present from the beginning – and there would thus be space both for Tense and Agreement features and morphemes – it would be extremely surprising to find that the acquisition of the agreement paradigm would affect the use of tense marking (i.e. resulting in temporary decline) in the way discussed in Legendre et al. Furthermore, Nina’s CP-data discussed above (Vainikka 1993/4) would also be problematic. Before the development of the CP projection in her L1 English data, Nina’s earliest CP-related constructions involved the unexpected reappearance of non-nominative subjects at what is essentially a stage prior to the development of the CP, or a stage right at the beginning of the development of the CP; this was treated by Vainikka (1993/4) as involving CP-related elements in IP preventing the subject from raising from the VP to its regular nominative subject position (in Spec[IP]). If Nina had a full-fledged CP available (at file 19) that she was basically just waiting to begin using, we would not expect any such competition over space.

3.4. Stages of development in L1 German

We now turn to the L1 acquisition of German. Having developed the Master Tree for the target language, i.e. for adult German, in Chapter 2, we are in a position to test Organic Grammar against what is known about German children’s L1 acquisition. The German tree (for a matrix or main clause) from Chapter 2 is repeated in (3.4) – recall that embedded clauses contain one more projection, the CP, above AgrP:

(3.4)



Given the Acquisition-Syntax Correspondence (Organic Grammar Assumption 5) and the assumption that the tree is acquired from the bottom up (Assumption 4), we make the following strong prediction about the order of development, corresponding to four main stages (not counting the NegP, for now; the location of the NegP was stipulated, thus no true prediction – see later discussion of the NegP):

(3.5) Stages in L1A of German, as predicted by OG:

- (i) head-final bare **VP** [V with the infinitival suffix *-n*]
- [(ii) **NegP**]
- (iii) **TP** [some sort of tense marking without the auxiliary, using just the participle verb form]
- (iv) **AgrP** [the agreement paradigm; the auxiliaries *haben* ‘have’ and *sein* ‘be’ that rescue the agreement features in the participle construction]

(v) CP [embedded clauses]

Given the German(ic) Headedness Generalization/GHG (Ch.2), the highest functional projection at each stage would be head-initial, in particular TP at Stage (iii), AgrP at Stage (iv), and CP at Stage (v). (For NegP at Stage [ii] we will not be able to tell what the headedness is, since the head of NegP contains just abstract features.) As we saw in Chapter 2, in adult/target German, an AgrP in an embedded clause below a CP is head-final (Stage [v]), but an AgrP in a matrix clause, without a CP, is head-initial. That is, the headedness pattern is systematic across stages, and there is no stage in L1 acquisition which is specific to the switching of headedness of any projection.

In her very interesting (2002) paper, Rosemarie Tracy addresses the learnability problem as applied to German word order; that is, how do children figure out German syntax? She creates a hypothetical learner whom she names HECTOR (for HEAd deteCTOR). HECTOR is an expert at creating phrase structure and he knows the basic principles of phrase structure and economy (based on her Principles I–IX, 2002: 666).⁷⁸ Given the apparently contradictory verb-object (VO) and object-verb (OV) word orders in German surface structure (i.e. the output of children’s caregivers and others in their environment which serves as children’s input), HECTOR ends up concluding that one of the word orders is a “fake” (p.668), i.e. that something has been moved from its original position. This then gives rise to a new level of functional structure in the child’s (HECTOR’s) grammar. Presented with continued German input data, the expert learner HECTOR ends up preferring the least possible amount of structure, i.e. a grammar where there is just one head-initial functional projection beyond the VP. Here Tracy follows proposals by Haider (1993, 1997) and Brandt et al. (1992) for German syntax. The head of the single projection is either “F”/functional head (Haider) or varies between “I”/inflection and “C”/complementizer (Brandt et al.) depending on the sentence the speaker utters.

While we accept the basic principles of syntax that Tracy (2002) assumes, and are in particular sympathetic to the assumptions about economy, Organic Grammar contains a crucial additional component that guarantees somewhat more structure than what Tracy’s HECTOR creates – namely, specific functional projections. Under Organic

78. On economy in syntax, see OG Assumptions 1 and 2 in Chapter 1.

Grammar, UG provides a list of all possible functional projections in human language (i.e. for which syntactic evidence exists in a given language); the language learner ‘refers’ to this list (subconsciously) and chooses actual projections in his/her language when during acquisition he/she is confronted with morphosyntactic and syntactic evidence in the input (see OG Assumptions 1 and 2 in Chapter 1). We believe that arguments in the syntactic literature are sufficiently convincing to warrant positing more than one functional projection, and our language learner will therefore not end up treating German as having a single functional projection.

The traditional stages posited for early L1 acquisition of German can be summarized as below. These are based on ground-breaking Weak Continuity-based work by Harald Clahsen (Clahsen 1982, 1988 and 1991). Other Weak Continuity approaches to German L1 acquisition include Fritzenschaft et al. 1990; Gawlitzek-Maiwald et al. 1992 and Meisel and Müller 1992:

(3.6) Traditional stages in L1A of German

Stage A: some evidence of functional projections (but no agreement); both Root Default sentences (with an infinitival *-en* verb at the end) and modal or 3rd sg. (*-t*) marked verbs in 2nd position.

Stage B: the acquisition of the agreement paradigm (in particular the 2nd sg. *-st*); Root Defaults reduced or absent; verb raising (V2) frequent or obligatory.⁷⁹

Stage C: adult-like subordinate clauses.

In the following, we discuss each stage in more detail and compare the stages to the predictions of Organic Grammar.

79. Clahsen and Smolka (1986: 147) provide examples of finite-looking verbs from this stage that appear not to have raised: *hier Bett leg*/here bed lie, Mathias (32.2;1,87) – M. is pointing to a picture book lying on the bed) and *die Auto hier Boot umkippt*/the car here boat upset, i.e. ‘The car here upset the boat.’ Mathias (33.1;1,72).

3.4.1. Is the earliest syntactic stage a VP-stage or an FP-stage?

The earliest syntactic stage generally discussed for L1 German (Stage A in [6]) corresponds to Wexler's (1994) Optional Infinitive Stage: sentences with a non-finite verb form (i.e. Root Defaults in the terminology we are using) are common, with the verb in a clause-final position (see e.g. Mills 1985), and there are many omitted subjects.⁸⁰ In the data there are some instances of early IP-level elements such as modals, auxiliaries, forms of *sein* 'to be', and raised verbs with (the third person singular) *-t* are also attested; however the second person singular *-st* is still missing. At this point in the child's development there is no overt evidence of a CP projection: there are no complementizers or subordinate clauses, no object topicalizations and no WH-questions (Clahsen 1988, 1991; Clahsen and Penke 1992; Clahsen, Eisenbeiss and Vainikka 1993/4; Clahsen, Eisenbeiss and Penke 1996; Ingram and Thompson 1996; Meisel and Müller 1992; Poeppel and Wexler 1993; Rothweiler 2006; Tracy 2002).

Consider the examples in (3.7) (7a from Miller 1976; 7b from Clahsen et al. 1996; 3.7c/d from Clahsen, Penke and Parodi 1993/4):

- (3.7) a. *Hause gehen* [Meike 1;10]
 home:LOC go.INF
- b. *Mone auch lump ausziehen.* [Simone 1;11]
 Simone also rag take-off.INF
- c. *Weint die Katze.* [Hannah 2;0–2;4]
 cry-3SG the cat
- d. *Will Lala habe.* [Simone 1;8–2;0]
 want-1sg/3sg dummy have*-INF

Although the general consensus in the L1 German literature is that the earliest syntactic stage in L1 German involves a functional projection (what Clahsen 1991 calls "FP", an underspecified functional projec-

80. A similar situation holds for Danish, another Germanic language: based on data from two children, Hamann and Plunkett (1998) argue that although there is a well-defined stage of subject omission and root infinitives, there is no stage where only infinitival forms occur.

tion), in our view the question of the earliest syntactic stage in L1 German has not been satisfactorily settled. It should be noted that the spontaneous oral production data on which the L1 German analyses are based were *not* specifically collected to study the initial syntactic stage, and thus involve data from a randomly selected (at least with respect to this stage) point onwards. However, the earlier the data, the more difficult collection is. Feasibility factors may conspire to create a situation where the earliest stage found in the data may, in fact, not be the earliest syntactic stage. For example, Tracy (2002) believes that the potential IP-related constructions in the earliest data such as the FP are what she calls “V2 mimicry”, i.e. they should actually be treated as unanalyzed, memorized chunks (also see Myles’ [2004] argument that L2 learners’ use of chunks leads the unwary researcher to overestimate stage of acquisition).

If we cast our net wider, there are indeed studies that present evidence for a bare VP-stage in child German. Döpke’s (2000) longitudinal study of four bilingual English/German (English-dominant) children reveals a bare VP in the earliest German data which patterns after English, i.e. it is head-initial. At the next stage, three of the four children in the study show a preference for a head-final VP in their German (see also Bonnesen 2005 on bare VP in bilingual learners).

As we will see in Chapter 4, the data in L2 acquisition are extremely robust in their indication of development that commences with a bare VP, which is initially transferred from the learner’s L1. We have argued that the many acquisition situations which result in prolonged development, as discussed above (based on Vainikka and Young-Scholten 2010), readily reveal a bare VP stage. It may simply be the case that when the researcher does not set out to look for evidence of a bare VP, a number of factors ranging from study design (data collection commences only after the earliest stage), to children’s use of unanalyzed chunks, to the low frequency of main verbs and the coinciding of the child’s first functional projection with suspension of initial prosodic constraints limiting utterance length (e.g. Demuth’s [2007] bisyllabic window) result in the attested data.

The situation thus justifies the conclusion that the earliest syntactic stage in L1 German could well be a bare VP projection. While it is beyond the scope of this book to settle this question conclusively (as it would most likely involve the collection of new L1 data), we take it as a working hypothesis that the L1 German data are consistent with the first prediction of OG, and we follow Tracy (2002: 663) in assuming

that there is an earlier, bare VP stage in L1 German. The benefits of this assumption are two-fold: (i) we have an principled explanation for the source of the Root Defaults (the head-final infinitives) in L1 German and (ii) we have an analysis of the traditional Stage A as an *intermediate* stage between the earliest OG stage – the bare VP-stage – and a later stage involving one (or more) functional projections, but not yet the AgrP or the CP.

3.4.2. The development of NegP

As we saw in Chapter 2, the location of the NegP projection in the Master Tree of German is not clear when we consider the adult/target syntax.⁸¹ For example, Günther Grewendorf (1995) assumes that *nicht* ‘not’ occurs in Spec(NegP), below the IP projection, while Gabrielle Zanuttini (1991) proposes that NegP (universally) dominates both AgrP and TP. (See *Extensions* at the end of this chapter for some further examples of negation in adult German.) However, as was suggested in Chapter 2, the L1 acquisition data (given some version of structure building) reveal that NegP in German should be higher in the tree than the VP, but lower than the functional projections (for general discussion on the L1 acquisition of German negation, see Wode 1977; Park 1979; Clahsen 1988; and Hamann 1996). In particular, Jürgen Meisel (1997: 231) claims that NegP is sufficiently high in the tree for the German (acquisition) data if its position is immediately above the VP; that is, NegP need not occur above any IP-level projections.

In the L1A literature on German and other Indo-European languages we find the generalization that at an early point in children’s development the negator *precedes* the verb in non-finite constructions (such as Root Defaults), while it *follows* finite verbs. (See Clahsen 1988; Poeppel and Wexler 1993 on German; Hoekstra and Jordens 1994 on Dutch; Plunkett and Strömqvist 1990 on Swedish; and Deprez and Pierce 1993 on French).⁸² Consider the following examples from German (from

81. These ideas, first presented at Arbeitsgruppe Functional Elements: Variation in Learner Systems, organized by Christine Dimorth and Peter Jordens at the Deutsche Gesellschaft für Sprachwissenschaft conference in Siegen, 28 February 2007, are taken further here.

82. Gilkerson, Hyams and Curtiss (2003) provide a way to maintain the negation/word order generalization despite the findings of Stromswold and

Clahsen 1988; Simone's data with dialect-based schwa rather than *-n* for infinitival in [3.8a]) for *Es tut nicht weh*. 'It doesn't hurt.':

- (3.8) a. *Nich aua mache.* [Simone 1;10]
 Not ouch make*-INF
- b. *Macht nich aua.* [Simone 1;10]
 Make-3SG not ouch

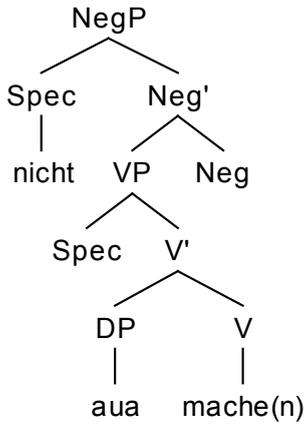
Various authors (e.g. Pierce 1989; Wexler 1991; Hoekstra and Jordens 1994) have noted that this general pattern can be explained by assuming that negation occurs between the functional head to which the finite verb raises and the underlying V-position. That is, NegP is located between the VP and some higher functional projection. When the non-finite verb remains in V (as in [3.8a]), negation precedes the verb; when the verb raises to a functional head, (as in [3.8b]) such as a head-initial T, Agr, or C, negation then follows the raised verb.

While we accept the general verb raising analysis of the early German negation examples, we further propose that in examples such as (3.8a), there is just one projection – a NegP projection – above the VP,⁸³ as in the tree (3.8a'), while in examples such as (3.8b) there are two – a NegP and our TP projection (or Clahsen's FP projection) – as in (3.8b'):⁸⁴

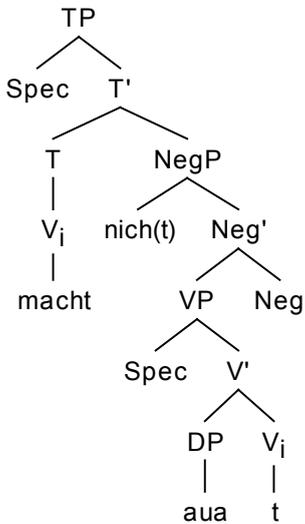
Zimmermann (1999/2000) and Drozd (1995), who claim that the vast majority of external 'no' sentences produced by young children are anaphoric, that is, adult-like. According to Gilkerson et al. (2003), the VP internal subject parameter is initially set to allow subjects to stay internal to VP (and later reset); this approach is consistent with our early bare NegP structure.

83. In Penner, Tracy and Wymann (1999) it is argued that there is an early (head-initial) functional head *auch* 'also' in L1 acquisition which acts as a precursor to verb raising (V2). We suggest that the projection involving *auch* is instead a precursor or variant of the NegP projection, as it occurs prior to the appearance of sentence-internal negation (Tracy 2002: 669).
84. Under the German(ic) Headedness Generalization (Chapter 2), the highest functional projection in German is head-initial. Thus, the NegP is head-initial in (3.8a'), while the TP is head-initial in (3.8b').

(3.8a')



(3.8b')



The proposed structure in (3.8b') explains a generalization noted in Clahsen (1988), that the negator *nicht* 'not' must be adjacent to the finite verb at the early stage represented by example (3.8b), and that only at later stages can *nicht* and the finite verb be separated by other (fronted) elements. He stipulates that the verb and the negator are mor-

phologically attached to each other at the early stage. However, we propose that the lack of separation follows in a more principled way from the structure in (3.8b'), since there is no position between the raised verb and the negator that any other element might occupy. A few months later in the child's development, the data show the possibility of separating the negator and the finite verb (Clahsen 1988: 16); this occurs in conjunction with evidence in the data of subject-verb agreement and other evidence of higher functional projections (and thus more "space"):

- (3.9) a. *Das darfst du nich.* [Simone 2;2]
 That may-2SG you not
 'You are not allowed to do that.'
- b. *Ich mach das gar nich putt.* [Simone 2;4]
 I make-1SG that at-all not broken
 'I won't break that at all.'

In Clahsen et al. (1996: 144), Simone is seen as having acquired the subject-verb agreement paradigm at age 2;4, or around the time that example (3.9b) was produced. Crucially, earlier examples of the type in (3.8b) which involve sentence-internal negation clearly show that some version of sentential negation is acquired prior to the agreement paradigm. We conclude that the NegP projection was acquired by Simone prior to AgrP. In the next subsection we consider the mutual order of acquisition of the NegP and the TP.

3.4.3. *The development of TP (previously FP)*

Once the first functional (grammatical) elements (apart from the negative morpheme) such as modals and finite verb forms are clearly productive (as they can be at the traditionally discussed 'earliest' stage), Organic Grammar generally follows Clahsen's (1982, 1988, 1991) analysis. Here such verb forms occupy the head position of an early head-initial functional projection. Clahsen has termed this projection "FP", for Finite Phrase. Under our approach, this projection is Tense Phrase, TP, and it is head-initial at this stage, given the Germanic Headedness Generalization, according to which the highest functional projection in an utterance is head-initial. The advantage of treating this

projection as TP is that unlike the FP, a TP is part of the Master Tree for adult German, and therefore no additional acquisition mechanism is needed for getting rid of the FP in the child's grammar, or changing the FP into something only found in the adult grammar (Clahsen 1991, for example, needs to assume that the FP turns into a CP projection at a later stage of acquisition).

Do the German L1 data allow us to determine whether TP is acquired before or after NegP? The early negation pattern (prior to the AgrP) discussed in the previous section, where finite verbs precede negation (and non-finite verbs follow) shows that there must exist a head position into which the finite verb raises. Since we can tell (from other elements present and not present in children's data) that this head position is not yet Agr, the only possible position available to the language learner is Tense, the head of TP. If the TP projection in German were located below the NegP, we would *not* expect the pattern in (3.8a) vs. (3.8b); rather, we would expect (3.8b) to have the word order *negation-finite.verb-object* (instead of what we find, *finite.verb-negation-object*). Note that although we are discussing L1 acquisition data, we are actually making a syntactic argument, based on children's word order and verb raising; the *syntactic* data from the early stage of L1 acquisition under consideration thus show that the TP projection is located above the NegP. It now follows from the Syntax-Acquisition Correspondence (OG Assumption 5) that NegP is predicted to have been acquired before the TP projection, at a yet earlier stage.

The general consensus on L1 German negation is that it is acquired early; for example, Anne Mills (1985) in her (theory-neutral) description of the acquisition of German discusses the acquisition of negation as being 'error-free' and present around or soon after the age two. The typically used past tense in German, as we saw in Chapter 2, is a compound tense involving an auxiliary and the *ge*-prefix, both of which are acquired relatively late, around age three, according to Mills (1985). However, we posited in Chapter 2 an analysis of the auxiliary which involves a higher projection, the AgrP projection, and therefore the acquisition of the auxiliaries would not tell us about the TP. Is it possible that the participle is acquired before the auxiliaries? Angelika Wittek and Michael Tomasello (2002) conducted an oral production experiment in which young German children were taught the infinitive form of verbs, and then tested on past participle forms (and the reverse). They found that children as young as 2½ years old were able to produce the participle but had considerable difficulty with the corresponding

auxiliary verbs. The construction as a whole was not acquired until around age four, according to this study. Thus, it appears that negation is acquired prior to either component of (past) tense marking, and within the (past) tense construction, the participle is acquired before the auxiliary, as predicted under Organic Grammar.

Furthermore, it can be determined that TP (as the first functional projection into which a verb can raise) is acquired before AgrP, given that there is already some sort of verb raising present at the traditional Stage A, as we have seen, but no clear signs of productive agreement marking on main verbs at this point. Maike Verrips and Jürgen Weissenborn (1992) also argue that verb raising is acquired before the agreement paradigm in L1 German and French; our reanalysis of Verrips and Weissenborn's data involves such early verb raising to a head-initial TP, rather than to the C position to which they assume children raise main verbs.⁸⁵

It behooves us now to address the problem that at the earliest traditionally assumed syntactic stage in German L1 – Stage A in (3.6) – there appear to be three types of structures: (i) bare VPs (or Root Defaults), (ii) structures with a single functional projection, NegP, as in (3.8a'), and (iii) structures with two functional projections, NegP and TP, as in (3.8b').⁸⁶ Crucially, however, there is not yet an AgrP or a CP projection. Following Clahsen's original analysis, the lack of an AgrP corresponds to the missing agreement paradigm, and the lack of a CP corresponds to the non-occurrence of various CP-related constructions such as questions and embedded clauses. Furthermore, the existing acquisition data suggest, as was discussed above, that the three struc-

85. We should point out that in traditional generative literature on German, it is assumed that whenever a non-subject XP precedes the finite verb (in 2nd position), the structure must involve a CP projection, since subjects are only allowed to occur in the traditional Spec(IP) position. Given that we have posited a different matrix clause for German, without a CP projection, we must allow for the possibility (available in some other Germanic languages such as Yiddish [Diesing 1990]) that a non-subject XP may occur in the typical subject position (for us, either the Spec(TP) or the Spec(AgrP), depending on the developmental stage). See *Extensions* in Chapter 2 for further discussion.

86. This is consistent with the proposals of Rizzi (1993/4) and Haegeman (1995) according to whom the root infinitive stage contains some functional projections, such as NegP, while higher projections can be truncated.

tures correspond to three distinct stages: (i) a bare VP-stage [Stage Ai], (ii) a NegP-stage [Stage Aii], and (iii) a TP-stage [Stage Aiii].

Variation between two (or perhaps more) grammars is a common phenomenon attested in acquisition when considering developmental stages. We call this ‘stage seepage’. Roeper (1999) and Tracy (2002) equate this sort of transitional variation in acquisition with the coexistence of grammars in bilingual adults. A similar situation obtains in historical syntax, where competition between two grammars has been posited at points in time where language change is about to occur (Kroch 1989). We can no longer straightforwardly adopt the approach for L1 acquisition proposed by Chomsky (1981) and commonly assumed in the generative literature on L1 acquisition, that parameter setting is instantaneous. For example, in Clahsen (1991) a main difference between L1 and (adult) L2 acquisition was assumed to be that the former is instantaneous and the latter is not. We have also seen cases such as Nina’s acquisition of the IP during the nine days between two data collection sessions where there is a more or less instantaneous reorganization of the grammar. We also note that under OG, the language learner’s acquisition of each new functional projection is tantamount to instant parameter setting (see *Extensions* for further discussion on this idea). However, working out the *consequences* of such a change in the grammar – such as acquiring the new lexical items associated with a new projection – takes some time during the child’s development.

The existence of competing grammars during L1 development has, in our view, led to Wexler’s (1994) widely adopted idea of an Optional Infinitive Stage and related analyses in L1 acquisition, where the language learner may optionally posit either a Root Default structure, or a sentence with more structure. With the stages predicted by Organic Grammar, combined with the idea of stage seepage, we have an alternative explanation for the existence of the so-called Optional Infinitive Stage.

3.4.4. *The development of AgrP*

At the subsequent stage of the German child’s morphosyntactic development we observe the tight coupling of syntax and morphology noted by a range of researchers not only for German but for other languages as well (see in particular Clahsen 1982, 1991; Clahsen and Penke 1992;

Clahsen, Eisenbeiss and Penke 1996; Meisel 1994 for German; e.g. Rizzi 1993/4 for English, and for an alternative analysis of similar Dutch child data, see Verrips and Weissenborn 1992). Again, following Clahsen, under Organic Grammar children posit a head-initial AgrP at this point in their development – Stage B in (3.6). At this stage, children’s acquisition of the German subject-verb agreement paradigm occurs alongside a reduction in their dropping of subjects (see Hamann 1996). Both properties would in a natural way be associated with the AgrP projection, given the traditional proposals concerning the Pro-Drop Parameter being associated with the IP-projection (e.g. Hyams 1996). Furthermore, Root Defaults (root infinitives) either disappear or for some children linger (Poeppel and Wexler 1993). Correspondingly, the V2 property of German (where the finite verb always occurs in the 2nd position in the matrix clause) becomes either common or obligatory. Clahsen et al. (1996, Table 3) show that for four German children verbs with 0/-e suffix⁸⁷ occur in the V2 position about half the time before the acquisition of the agreement paradigm (at age 2;4–3;1, depending on the child),⁸⁸ while after the acquisition of the paradigm, verbs with the same suffixes occur in the V2 position 93–100% of the time, depending on the child. Consider the examples in (3.10), produced by children after the acquisition of the agreement paradigm (recall also the examples in [3.9] above) (from Clahsen et al. 1996):

- (3.10) a. *Die andern Sachen schenk ich für uns.* [Svenja 3;2]
 the other things give-1SG I for us
 ‘I give the other things to us.’

87. Verbs with the 0/-e suffix cover the following verb possibilities: either the verb is the 1st person singular verb form (colloquial 0, formal -e) or it is a Root Default without a suffix (0) or with the dialect-based schwa suffix. That is, combining the two includes one possible finite verb form and one possible non-finite form. Regardless of how individual children treat each occurrence of each suffix, combining the two allows the researchers to have a measure of the overall prevalence of Root Defaults vs. obligatory verb raising to the V2 position.

88. Recent comprehension data from eye tracking from two separate studies show that three-year-old German toddlers are able to match sentences solely based on the agreement suffix on the verb (Brandt-Kobele and Höhle 2010 and Legendre et al., in press).

- b. *Hoffentlich ess das Piepmatz das* [Mathias 3;1]
 hopefully eat-3SG the cheeping.bird that
nich auf.
 not up
 ‘Hopefully the bird won’t eat it.’

We take the marked increase of verb raising after the acquisition of the AgrP to follow from the proportion of the various grammars (i.e. tree structure) available to the child, with the assumption that the child will attempt to posit a structure that has room for all the functional (grammatical) morphemes thus far acquired. This assumption would give rise to a situation where the most recently acquired functional projection is most commonly used. Since the child has acquired the agreement paradigm, an AgrP needs to be posited to represent the agreement morphemes. In syntax, either verb raising or inserting an auxiliary is obligatory in the AgrP so that the agreement suffixes are not stranded (as we saw in Chapter 2), and this results in obligatory verb raising to Agr; this in turn results in obligatory V2 if we allow non-subjects in the Spec(AgrP) (as we must; see *Extensions*, Chapter 2). Thus, whenever the child posits the full AgrP projection, he/she will also exhibit the V2 pattern. To account for the lingering Root Defaults – and other reduced structures with verb raising, but perhaps without subject-verb agreement – under Organic Grammar, a bare VP structure and a bare TP structure (i.e. from the earlier stage[s])⁸⁹ are still available at Stage B and will be used by some children to construct utterances, thus accounting for the lingering Root Defaults Poeppel and Wexler (1993) observe.

Note that the head-initial character of the AgrP at this stage follows from the German(ic) Headedness Generalization – that the functional projection that is the highest in any German sentence is head-initial (and the others are head-final) – in the same way that under Organic Grammar the TP projection (Clahsen’s FP) is also head-initial whenever an AgrP has not been projected.

Towards the end of Stage B (or immediately after Stage B), we have in various studies evidence from German children for an intermediate stage with subordinate clauses (finite verb at the end) but either with a missing (obligatory) complementizer or with a filler element in C (Fritzenschaft, Gawlitzek-Maiwald, Tracy and Winkler 1990; d’Avis and

89. A bare NegP structure is also predicted to be available; this would involve a negated Root Default.

Gretsch 1994; Müller and Penner 1997; Rothweiler 1993, 2006). Since the finite verb occurs at the end of subordinate clause, the embedded AgrP would have to be head-final, as in the examples in (3.11) (from Rothweiler 1993):

- (3.11) a. *ene fisch tot is.* [Max 3;0.16]
 FILLER fish dead is
 ‘The fish is dead.’
- b. *Nene schneller polizisten holen müssen.* [Max 3;0.16]
 FILLER faster police get must
 ‘Must get the policemen quicker.’
- c. *Valle fertig badet hat.* [Valle04 2;0.10 while
 Valle finished bathing has taking a bath]
 ‘...when Vale has finished bathing.’

Once overt complementizers are acquired, *wenn* and *weil* tend to appear first in children’s production data (d’Avis and Gretsch 1994: 97). We would have to stipulate that since the AgrP is head-final at this stage, a head-initial CP has already been posited, even if it is not always occupied by a filler element or an overt complementizer at this point.⁹⁰

90. Hamann, Penner and Lindner (1998) show that in German SLI the most common sentence type is an adult-deviant finite-verb-final matrix clause. (In addition, WH-questions and embedded clauses are usually adult-deviant, apparently usually involving reduced structures.) It is possible that in this case the SLI learner has not acquired the GHG, but perhaps instead makes the simpler assumption that all projections in German are head-final. Such a possibility might also occur in non-SLI acquisition, providing an explanation for example (3.11). According to Rothweiler (2006), in normal development of German, such finite forms in the final position of a root clause occur less than 10% of the time. However, a recent study by Brandt, Lieven and Tomasello (2010) reveals that the data are not so clear cut; Leo’s early embedded clauses between the ages of 2;0 and 2;6 were often not verb-final embedded clauses.

3.4.5. The development of the CP

Finally, at Stage C, evidence for a full-fledged CP projection is attested in children's utterances; this evidence includes object topicalizations, argument WH-questions and subordinate clauses with overt complementizers. These are constructions which emerge shortly after the point at which the agreement paradigm is acquired, or simultaneously or shortly after the acquisition of V2 in matrix clauses (see Fritzenschaft et al. 1990; Clahsen, Kursawe and Penke 1996; Ling 1999; Müller and Penner 1997 and Rothweiler 1993, 2006).

Recall that we argued in Chapter 2 that the highest projection in a German matrix clause is a (head-initial) AgrP. When the learner acquires the CP projection in German, this projection is only used in embedded clauses and other constructions involving overt elements beyond the AgrP. Whenever the CP is used in adult German, it is head-initial, while all the rest of the projections (in the embedded clause) are head-final. This accounts for the word order in the German embedded clause, as we saw in Chapter 2.

There are two crucial differences between Clahsen's (1988, 1991) analysis of the L1 German data and the analysis provided under Organic Grammar. First, in the treatment of the early data as discussed above, i.e. we posit an early VP-stage, followed by a NegP stage, followed by a TP stage. Second, the later data regarding the interaction of the AgrP and CP projections receive a different analysis. Given the standard analysis of German syntax that Clahsen assumes, there is a puzzle that emerges (see Clahsen 1991 and Problem 3 in Chapter 2). Since the standard analysis posits that verb raising to the second position in German always involves raising to the C position (see Chapter 2), Clahsen predicts that as soon as V2 is obligatory in the child's grammar, a CP projection is present as well. Furthermore, since Clahsen has proposed that the head-initial FP is reanalyzed as a head-initial CP, and a head-final AgrP is inserted below the new CP, it is particularly clear that the acquisition of the agreement paradigm should coincide with the acquisition of the various CP-related constructions. Where data indicate that this is not the case, serious doubt is cast on the validity of the details of Clahsen's analysis. As we have seen in this chapter, German children's acquisition of IP-level material (including tense, agreement and obligatory verb raising) tends to precede the acquisition of CP-level material. The same problem holds for the intermediate (pre-CP-stage) where data suggest that an apparent head-final AgrP might even occur without a

CP (see footnote 90). Under the analysis developed here, Clahsen's conundrum disappears.⁹¹ In Organic Grammar, agreement and obligatory V2 are predicted to develop before CP and before any CP-constructions are produced. A head-initial AgrP is acquired before the CP, and we expect to find evidence of the agreement paradigm before evidence of CP-constructions, and this is exactly what Clahsen's data look like. Once the head-initial CP is posited (for the embedded clause only), the (embedded) AgrP switches to a head-final projection, given our generalization about headedness of functional projections, i.e. the GHG. Clahsen's puzzle was the first of the two acquisition problems that we introduced in Chapter 2. The second acquisition problem was more of a theory-internal one: that the classic analysis of German matrix clauses involving an abstract CP would be impossible to acquire, given the assumptions of Organic Grammar. Since we have now revised the syntactic analysis of German in such a way that there is no abstract CP, and have shown that the L1 acquisition data actually fit the new Organic-Grammar-based syntactic analysis better than the classic analysis, we can omit the abstract CP from German grammar, and therefore prevent the second problem arising as well.

3.5. Summary

In this chapter we first presented Strong Continuity (corresponding to Uniformity and the single-tree approach from Chapters 1–2), and then the alternative that we pursue, the Weak Continuity approach. We then discussed L1 acquisition of functional projections in general, and argued that Root Defaults (root infinitives) represent the earliest bare VP-stage, followed by the acquisition of inflectional material (at the IP-level), followed by the acquisition of the CP projection (involving embedded clauses and other complex constructions); see the summarizing Table 3.3 from based on data from various languages. While reviewing the existing L1 acquisition literature on German, we compared the traditional stages with what Organic Grammar predicts, given the Master Tree developed in Chapter 2 based on adult German syntax. The data

91. Ling (1999: 63) also points out that her assumption that V2 in German (both in L1 acquisition and adult syntax) involves the IP projection – rather than the standard CP – allows one to do away with the reanalysis required by Clahsen's approach.

on NegP were stipulative, but completely consistent with our approach. For the remaining four stages, the existing data form a perfect fit with our predictions, repeated here:

(3.12) Stages in L1A of German, as predicted by OG

- (i) head-final bare **VP** [V with the infinitival suffix *-n*];
- [(ii) **NegP**];
- (iii) **TP** [some sort of tense marking without the auxiliary, using just the participle verb form];
- (iv) **AgrP** [the agreement paradigm; the auxiliaries *haben* ‘have’ and *sein* ‘be’ that rescue the agreement features in the participle construction]
- (v) **CP** [embedded clauses]

It should be noted that the L1 data are unclear with respect to the details of Stage (iii). What is clear is that there are some finite forms at this stage (but not yet productive subject-verb agreement). Similarly, the relationship between the auxiliaries and the agreement paradigm has not been studied, to our knowledge.

Extensions

1. The post-80s syntactic theories and acquisition

Given certain theoretical similarities between Organic Grammar and Minimalism (Chomsky 1995, 2001, 2008) – see discussion in Chapters 1 and 2 – one might wonder how well Minimalism would fare as a theory of syntactic stages of acquisition. Herschensohn (1999) notes that, given two Minimalist premises under which the computational system is universally invariant and cross-linguistic variation occurs in the lexicon, “the notion of incompleteness of L2A is one that the Minimalist Program accommodates much better than does the Principles and Parameters Model.” (1999: 79) She further notes that “such an approach favors a view of acquisition as a gradual morpholexical construction of a grammar [...]” (1999: 80). However, it is by no means straightforward to adopt Minimalism in an analysis of syntactic stages. Thus while Herschensohn correctly observes that Minimalism can pro-

vide a superior account of the acquisition of syntax, few have been forthcoming.⁹²

In our view, current theories of syntax, including Minimalism (and earlier versions of Chomsky's theory), *Simpler Syntax* and *Syntactic Carpentry* (see *Extensions* of Chapter 2), fail to provide a direct way to account for a developing grammar with syntactically identifiable stages of development. Unlike these three theories, our Organic Grammar approach, which simplifies structure while also keeping principles as simple as possible (as with *Syntactic Carpentry* and *Simpler Syntax*), allows us to represent stages of development syntactically.⁹³

2. *On Root Default terminology (and a note on rich inflection)*

Wexler (1994) and later work refers to 'Optional Infinitives' (while already acknowledging that a bare stem – not exactly an infinitive – might be the relevant form for L1 English), whereas Rizzi (1993/4) and later work have used the term 'Root Infinitives'. The problem with any form of the term that includes the word 'infinitive' is that it has become clear from the analysis of data from children that the relevant construction in acquisition need not be an infinitive; see Varlokosta, Rohrbacher and Vainikka (1998) and Hyams (2002, 2007) who argue that Greek children's early use of a participle construction is equivalent to the root infinitive construction (note that adult Greek does not have any infinitive forms). To remedy this situation in L1 Greek and L1 French, the term 'NFR/Nonfinite Root Form' was suggested in Legendre, Hagstrom, Vainikka and Todorova (2002). The terminology is discussed in detail by Paradis and Crago (2001), who propose the term 'Root Defaults' to replace the traditional 'Root Infinitives'. We follow the definition of Paradis and Crago (2001: 278) for Root Defaults: "a root [de-

92. With some notable exceptions, such as Roeper (1996, 2003), Platzack (1996) and Powers (2001) for L1 acquisition, and Wakabayashi (1997) who applies Minimalism to L2 acquisition; however, as the latter involves a structure building approach, we address it in a later chapter (Ch.5).

93. Our approach is closely related to Economy of Projection (e.g. Speas 2001) and to Ingham (1998), as well as being somewhat related to Optimality Theory (e.g. Legendre et al. 2002) – see below. Hawkins (2001) is a reformulation of the earlier version of our approach under which he assumes transfer of functional material at various stages of L2 acquisition.

fault] in developmental language can be either a nonfinite or basic finite form that is substituted repeatedly for correctly inflected forms across tense contexts"; they discuss the definition of 'basic' using Halle and Marantz's (1993) Distributed Morphology, but we leave open the exact definition of 'basic', taking it to be roughly equivalent to 'unmarked' such as perhaps the third person singular present tense verb form.

While there is somewhat of a consensus in the field of L1A that Root Defaults are not attested in languages with rich inflection, nor in null subject languages (cf. e.g. Phillips 1995), this conclusion appears to be premature. Aside from the Spanish data in Licerias, Bel and Perales (2006), Paradis and Crago (2001) point out that there is a Root Default stage in the normal L1 development of various languages with rich inflection and/or null subjects: Greek (Varlokosta et al. 1998); in Italian, where Salustri and Hyams (2003) have argued that the imperative is the RD equivalent in L1 Italian (see also Guasti 1993/4 fn. 7 on the possibility of participle as the RD form in Italian). Furthermore, there is a Root Default stage in impaired Inuktitut, as reported in Crago and Allen (2001). In general, when observation of the acquisition process begins early enough, and particularly when acquisition is more prolonged as it often is under conditions where access to input is compromised for various internal and external reasons (e.g. cases of SLI) in first language acquisition and in second language acquisition (e.g. adult L2A), we find reports of Root Defaults.

3. *Some more negation examples from adult German (and a slight problem)*

In adult German, *nicht* precedes the constituent it negates, as in (13) [from Clahsen 1988] where "this house" is negated:

- (3.13) *Peter kauft [nicht dieses Haus] (sondern jenes).*
 Peter buy-3SG not this house but that
 'Peter does not buy this house (but that one).'

In embedded clauses, following the classic analysis of Webelhuth and den Besten (1987), negation in German also involves *nicht*, underlyingly, at the beginning of its constituent (VP), as in (14), followed by scrambling which results in the un-marked surface order in (15) (examples from Clahsen 1988):

- (3.14) ...*dass er [nicht [dem Jungen ein Buch gab.]]*
 that he not the boy a book gave
- (3.15) ...*dass er [dem Jungen] [ein Buch] [nicht [t t gab.]]*
 that he the boy a book not gave
 ‘...that he did not give the boy a book.’

In main clauses, *nicht* follows the finite verb, but precedes any non-finite verbal element [Meisel 1997: ex.3 modified]; while other orders are possible, this is the unmarked order:

- (3.16) *Er hat seinem Freund den Champagner nicht*
 he has-3SG his friend the champagne not
angeboten.
 offered
 ‘He didn’t offer his friend the champagne.’

Note that the order in (3.16) is problematic for our tree, given that we have posited only AgrP, TP, and NegP in such sentences (see the trees in Chapter 2). The subject ‘er’ occupies the Spec(AgrP), according to our proposal, while ‘nicht’ is assumed to occur in Spec(NegP). In-between these positions there is only one position for a fronted object, the Spec(TP) position, but in examples such as (3.16) more than one element may be fronted. We leave this problem open for future research.

4. *An idea about parameter setting and functional projections*

While we have mentioned (Chapter 1) that specific parameters in first language acquisition have turned out to be difficult to pin down, the present approach opens up a way to see parameters in a slightly different light (for an illuminating discussion of the current state of parameters, and for an argument that ‘deep’ parameters exist, see Holmberg 2009). In acquiring syntax according to Organic Grammar, the child is provided with a potential set of functional heads in her language (by Universal Grammar), and her task is to define the Master Tree for the language to which she is exposed. We may think of the set of functional heads in UG as an ordered list of on/off parameters (what Vainikka [1999] termed “head parameters”); the ordering would reflect the possi-

ble orders of functional projections in the languages of the world, with variation in e.g. the position of NegP accomplished by having it occur in two positions on the list). That is, for each potential projection in some language of the world, the child is faced with the decision whether the projection occurs in her language or not. Let us consider the extended projection of the verb: the child begins with the lexical projection VP, universally present and provided by UG. However, once the VP has been posited, the child may then have to deal with at least one VP-related parameter, concerning the headedness of the VP (which may or may not be derivable from the headedness of other lexical projections). Now consider the following (incomplete) list: (1) Object Agreement, (2) Aspect, (3) Tense, (4) Subject Agreement, etc. Once the headedness of the VP has been determined (perhaps along with any other VP-related parameters), the child will treat (1) as a parameter: “Does my language have object agreement?” If the answer based on the evidence is affirmative, the corresponding projection is next posited; if not (as in English and German), the child moves on to parameter number (2). This parameter would be set to “on” for English, and perhaps to “off” in German, while parameter (3) is set to “on” for both languages. Once the TP has been posited, any other TP-related parameters could now take effect (such as perhaps some version of the Null Subject Parameter, or a parameter dealing with case assignment (nominative vs. ergative)).

5. Access to UG in L2A and the Critical Period

Jumping ahead to issues covered in the next several chapters, we consider age of exposure in second language acquisition here. Since 1981 discussion among L2 syntacticians of the role of the age at which the L2 learner begins acquisition (i.e. the Critical Period; Lenneberg 1967) has revolved around the issue of whether the learner’s interlanguage grammar at a given point in his/her development is constrained by Universal Grammar. This body of research has come to be known as property-theoretic work due to its focus solely on the formal properties of learners’ grammars. The earliest work in this vein was on L2 English with studies by Lydia White (1986), Suzanne Flynn (1984) and Jacqueline Schachter (1988, 1989). From these early studies onwards, research has come to look at this issue from several perspectives, resulting in the following questions with regard to principles and to parameters. The

first two questions address the issue of whether there is direct access to UG. (1) When principles are not instantiated in the learner's native language (e.g. constraints on WH-movement in languages with WH in situ) do adult learners' IL grammars nonetheless reveal operation of these principles? (2) When adult L2 learners' interlanguage grammars are not the result of native language transfer nor do they resemble the target language, are these possible grammars, are they constrained by UG? The third question concerns parameter resetting, i.e. whether direct UG access enables the learner to arrive at target language parameter setting different from that in his/her native language: (3) When the NL and TL setting differs, are adult L2 learners able to reset the parameter, and – crucially – does this resetting involve the cluster of properties for that parameter? While these questions are straightforward, arriving at answers has turned out not to be. Take, for example, (1). Although a principle might seem not to be instantiated for a construction such as WH-questions, it might turn out to be for another, e.g. topicalization. This then renders the question of direct UG access inaccurate (see Schachter 1989 for early work on this). Schwartz and Sprouse (2000) note that reliance on a particular linguistic theory does not prevent researchers from measuring L2 learners' sensitivity to a given property when there is no superficial evidence for its operation (i.e. instances of poverty of the stimulus), and researchers have continued to do just that. This sort of investigation requires determining what the learner's grammar allows and disallows, using grammaticality judgment tasks, which have become increasingly sophisticated with the additional measurement of processing see e.g. Foucart and Frenck-Mestre (in press). With respect to the question in (2), debate has largely focused on the interpretation of oral production data – sometimes the same data. For example, the same set of data from uninstructed adult L2 learners (of German) has led Clahsen and Muysken (1986, 1989); Klein and Perdue (1997) and Pienemann (1998) to take the position that adult IL grammars are not constrained by UG (see also Bley-Vroman 1989, 2009), and du Plessis et al. (1987); Eubank (1994); Schwartz and Tomaselli (1990); Schwartz and Sprouse (1994); and Vainikka and Young-Scholten (1996b) to claim that adult IL grammars are indeed UG-constrained. The situation is more complicated with respect to parameter resetting because it is only for the Pro-Drop Parameter that a cluster of properties has been proposed, yet this only holds for a handful (e.g. Italian and Spanish) of those languages which allow null sub-

jects. For extensive overviews of the research on adult access to UG, see White (1989, 2003) and Hawkins (2001).

Chapter 4

Second language acquisition at the VP level

4.0. Introduction

In Chapters 1 and 2 we established the principles (in Assumptions 1–10) involved in the Theory of Organic Grammar, and in Chapter 3, we provided an OG-theoretic account of how children acquire German as their first language. In this chapter, we turn to adults' acquisition of German and continue throughout the rest of this book to explore (primarily adult) L2 acquisition, given the very rich repository of data that makes this possible. To set the context for this chapter, we begin in section 4.1 with a brief review of the central issues that have shaped the field of second language acquisition since its inception. In section 4.2 we turn to a discussion of the initial state in L2 acquisition, and from section 4.3 onwards, we apply Organic Grammar to data from a range of adult second language learners of German. In Chapter 3, along with the L1 acquisition of German, we very briefly considered the acquisition of this and another language by young children (simultaneous bilingualism). Child second language acquisition (often termed successive bilingualism) would normally in such a book be considered before adult second language acquisition, given the age factor that additionally applies when dealing with adult data. However, quantity trumps logical order here: children's L2 development of German morphosyntax has received relatively little attention and thus ideas remain relatively more controversial. We therefore cover the child L2A of German in the *Extensions* section at the end of this chapter.

4.1. Current issues in the L2 acquisition of morphosyntax

Second language acquisition is, by definition, the acquisition of another language by an individual who already knows one. Since at least 1957 when Robert Lado proposed his Contrastive Analysis Hypothesis (CAH), the role of the learner's native language (or indeed of any other language acquired prior to adulthood) has been seen as the primary

force in second language development.⁹⁴ Researchers' views regarding first language influence or transfer shifted temporarily from the Behaviorist-driven interference-by-native-language-habits of the CAH to a L1 non-transfer position, starting with Dulay and Burt's and Bailey, Madden and Krashen's reports in 1973 and 1974 on data from cross-sectional studies of children's and adults' accuracy with respect to functional morphology in L2 English. L2 learners' accuracy in supplying a set of grammatical morphemes pointed to a common developmental order across learners from different native language backgrounds. Additional 1970s studies of L2 children's and adults' development of passives, negation and question formation bolstered the case that L2 acquisition was similar to L1 acquisition in that regardless of acquisitional environment – and in this the native language – all learners followed a common developmental route (see Larsen-Freeman and Long 1991 for an exhaustive overview of these studies). This led researchers to entertain the idea that the same or similar domain-specific – that is, linguistic – mechanisms that constrain first language acquisition continue to operate during second language acquisition, regardless of the learner's age. Yet throughout this period another line of research was revealing that age of initial exposure to the L2 played a central role in determining how far along this route of development learners managed to get, i.e. their ultimate attainment. Since 1967, when Eric Lenneberg in his Critical Period Hypothesis/CPH stated that puberty marks the end of a period of the learner's heightened resonance vis à vis the input, there has been considerable casual observation along with numerous studies pointing to routine pre-puberty success and post-puberty failure, despite years of L2 exposure; for a recent and comprehensive overview of the age factor, see Julia Herschensohn's (2007) book. For an overview of the positions on access to UG among younger and older L2 learners, see *Extensions* 5, Chapter 3.

In the context of research findings on differences in ultimate attainment for child and adult L2 learners, it is perhaps surprising that from the early 1990s, generative second language acquisition researchers have generally agreed that post-puberty L2 acquisition involves the domain-specific human language faculty. That is, contrary to what the CPH predicts, L2 grammars are constrained by Universal Grammar regardless of the learner's age of initial exposure to L2 input; for re-

94. Here and throughout 'second' language acquisition is used in the abstract sense to mean 'nonnative' or 'additional'.

views of the evidence, see Roger Hawkins' (2001) book and Lydia White's (1989) and (2003b) books. If, as Lenneberg proposed, the closure of the critical period for language acquisition is due to neurological development that finishes around puberty, one would on this basis expect pre- and post-puberty second language acquisition to exhibit fundamental differences from each other. However, the relevance to linguistic development of neurological changes that occur from childhood to early adulthood remains unclear (here, see Herschensohn 2007).

The involvement of linguistic mechanisms along with general cognitive mechanisms in adult L2 acquisition also remains unclear. Because more cognitive possibilities exist in second language acquisition than in first language acquisition, there continues not only to be considerably more disagreement but also more variation in the positions held by L2A researchers than among their first language counterparts. At one end of the spectrum are those who hold that second language acquisition, particularly by adults, is fundamentally different from children's first language acquisition.⁹⁵ Adults obviously do manage to learn second languages to some degree, and under this view, only those general cognitive mechanisms which adults have at their disposal are recruited for the task of learning a second language; for a recent update on this perspective, see Peter Robinson and Rod Ellis' (2008) publication as well as Robert Bley-Vroman's (2009) update of his (1989) and (1990) papers. At the other end of the spectrum are researchers such as Suzanne Flynn (1996) who argue that second language acquisition, including by adults, does not differ fundamentally from children's first language acquisition, including in its reliance completely on UG, with no recourse to the native language. These positions essentially spring from the importance the researcher attaches to the three facts that distinguish a second from first language learner: (1) the second language learner has knowledge of a first language and (2) s/he is older – and therefore – (3) s/he is more cognitively sophisticated.

95. Schachter (1988: 224), for example, presented this view; however, she uses the lack or non-target usage of grammatical morphemes such as articles or modals at early stages as evidence for the general lack of UG access in L2 acquisition. As will become clear, omission of grammatical elements by L2 adults provides evidence for an acquisition sequence similar to that found in L1 acquisition, and thus tends to support the idea of UG access by adults.

For older second language learners, the acquisition of another language thus potentially involves general cognitive mechanisms which can be recruited for the task of second language development. In his (1992) book on metalinguistic development in children Jean Emile Gombert notes how meta-linguistic skills have been observed to begin developing in early childhood. In the process of acquiring their first language, young children exhibit meta-cognitive awareness of language as an object, and with increasing age and schooling come the honing of a range of meta-cognitive skills, where the refinement of meta-linguistic knowledge is one of many byproducts. As noted above, there are acquisitionists who attribute post-puberty second language development solely to adults' application of skills involving these general cognitive mechanisms. There are also acquisitionists who dismiss the possibility of an important role for non-linguistic mechanisms. Within the context of continued access to domain-specific linguistic mechanisms across the lifespan, the role general cognitive mechanisms play in L2 development has since the 1980s been discussed extensively by Stephen Krashen (e.g. 1985) in his learning-acquisition distinction. Under Krashen's view, learned knowledge functions as a production monitor, and then only for a limited range of language forms and in situations where monitoring is feasible (e.g. written production). Bonnie D. Schwartz (1993) elaborates on the conceptual foundations of this distinction and lays out the generativist assumption that linguistic mechanisms – that is, language – much like vision, exist as an encapsulated mental module (Fodor 1975). Language is thus separate from and cannot directly access general cognitive mechanisms and meta-linguistic knowledge. Here Peter Jordens (1996) admonishes the second language researcher to remember that adults' ability to apply meta-cognitive strategies does not mean that these are responsible for establishing linguistic competence. Yet as Schwartz (1993) points out, what the L2 learner produces when speaking or writing a second language can be the result of either general cognitive mechanisms or linguistic mechanisms. As a surface phenomenon, the production of morphology (and in turn its acquisition) is particularly susceptible to application of meta-linguistic skills/general cognitive mechanisms. It is then up to the researcher to determine the mental source of a given learner's linguistic performance, and taking this challenge seriously, we consider this point below as well as in Chapter 8.

In investigating adults' use of purely linguistic mechanisms in second language acquisition, the goal has been to determine whether

learners internalize the formal linguistic properties of the language to which they are informally exposed. That is, do various properties become a part of the learner's mental grammar when s/he is exposed to utterances produced by speakers of the L2, i.e. to primary linguistic data? Numerous studies have now shown that, similar to younger learners, L2 adults subconsciously arrive at systematic interlanguage grammars which cannot be accounted for solely by the input (see White 1989, 2003b).⁹⁶ However, whether this knowledge simply comes via the learner's first language or also involves UG has been a point of contention since the late 1980s,⁹⁷ with general questions about how the learner's first language constrains the learner's interlanguage receiving renewed interest in the 1990s. After a two-decade hiatus beginning in the 1970s when first language transfer was downplayed due to emerging findings equating L1A and L2A and to generativists severing connections to Lado's Behaviorism-imbued Contrastive Analysis Hypothesis, the mid-1990s saw the L1 reappear in a starring role in the form of the so-called initial state debate (see Eubank and Schwartz's [1996] special issue of *Second Language Research*). While there has always been some discussion in the second language acquisition literature regarding L1 transfer (as discussed in Schwartz's [1999] review of a half-century of relevant research), with the application of the idea of Structure Building to second language acquisition in 1994 by Vainikka and Young-Scholten, the discussion has come to revolve around the existence of L1-based functional projections at the initial state of L2 acquisition. This lively debate pits UG-access approaches which assume less L1 influence against those which assume more influence. In a spectrum which includes various other approaches (see White 2003b), the two positions occupying its opposite ends are Minimal Trees/Structure Building (Vainikka and Young-Scholten 1994, 1996a) and Full Transfer/Full Access (Schwartz and Sprouse 1996).⁹⁸

These two sets of study reports draw on data from adults whose exposure to the target language was wholly uninstructed or

96. Study of what are now referred to as poverty of the stimulus effects is of considerable importance in generative SLA; see *Extension 5* in Chapter 3.

97. See e.g. Bley-Vroman (1989); Clahsen and Muysken (1989) and Schachter (1988).

98. An intermediate position between Minimal Trees and Full Transfer is Eubank's (1996) Valueless Features approach. Eubank proposes that the initial state involves L1 syntactic structure, but features that would result in verb raising are inert (or valueless).

‘naturalistic’, following the tradition of studies starting with large-scale projects in the 1970s of *Gastarbeiter* ‘guestworkers’ and other immigrants to Germany. These studies are summarized in Table 4.1; several of these will be discussed in more detail in the later section on non-UG-based approaches to the acquisition of German. The study whose data are the main focus of this book – Vainikka and Young-Scholten’s Americans (VYSA) is boldfaced.

Table 4.1 Studies of naturalistic **adult** learners of German

<i>Study/researcher/seminal publication</i>	<i>L1 and L2</i>	<i>Subjects</i>	<i>Type of study</i>
Heidelberger Pidgin Projekt Klein and Dittmar (1979)	L1 Spanish L1 Italian	48	cross-sectional
ZISA (Zweitspracherwerb italienischer, portugiesischer und spanischer Arbeiter) Clahsen, Meisel and Pienemann (1983)	L1 Spanish L1 Portuguese L1 Italian	45 12	cross-sectional 2 year longitudinal
ESF ⁹⁹ Klein and Perdue (1992)	L1 Turkish L1 Italian	4	2 ½ year longitudinal
LexLern (Lexikalisches Lernen) Clahsen, Vainikka and Young-Scholten (1991)	L1 Korean L1 Turkish	17	cross-sectional
Von Stutterheim (1987) ¹⁰⁰	L1 Turkish	10	cross-sectional
Dimroth (2002)	L1 Russian L1 Croatian L1 Turkish	40	cross-sectional
VYSA Vainikka and Young- Scholten (2003a)	L1 English	3	1 year longitudinal

99. The European Science Foundation study involved 40 Arabic, Finnish, Italian, Spanish and Turkish learners of English, German, Dutch, French and Swedish, with L1 overlap for each L2, e.g. there were two Turkish learners of both German and Dutch, two Italian learners of German and English, two Arabic-speaking learners of Dutch and French and so on.

100. Von Stutterheim (1984, 1987) covered altogether 20 speakers of Turkish (7 female, 13 male), aged 25-45, residing in Berlin where they were acquiring German without any instruction. She studied conceptual categories, temporal reference, lexical aspect and use of the adverbial system, especially with respect to the L1 Turkish system of temporal reference. Some of the Turkish speakers we have analyzed come from this corpus (see Table 4.5 below).

As we shall see in this and the following chapters of this book, some of the most convincing evidence for the operation of UG has come from naturalistic adult learners who were exposed only to primary linguistic data from the start of exposure and throughout development of the L2. In addition, low levels of education of the adults in nearly all studies shown in Table 4.1 can be assumed to have curtailed learners' application of meta-cognitive strategies. Lack of instruction crucially precluded learners' conscious learning of inflectional morphology (at least in general, but we will see that in the case of one VYSA study learner, this can occur in a naturalistic setting), thus putting the naturalistic adults in these studies on a more equal footing with the L1 children to whom they have mainly been compared. Given the likelihood those highly educated – to secondary school and beyond – learners who receive no instruction in the L2 may consciously employ general cognitive strategies to deal with inflectional morphology, the researcher probing the developmental coupling of morphology and syntax in L2 acquisition is advised to avoid such learners until there is consensus regarding the L2 development of cognitively less sophisticated and uninstructed learners.

The most recent set of naturalistic L2 German data listed in Table 4.1 is from the longitudinal VYSA study, and represents a slightly different group of learners than appears in the rest of the table. The naturalistic VYSA learners were secondary school exchange students who were assumed to be more cognitively sophisticated than their migrant worker counterparts. Here the VYSA study data provide a rare opportunity to consider how general cognitive mechanisms – particularly meta-cognitive strategies based on these – might influence the course of L2 development in the absence of instruction. After a full discussion of how the L1 – and UG – constrain acquisition for uninstructed adult L2 learners of German in this and the following three chapters, we return to this issue in Chapter 8 where we discuss VYSA data and other data bearing on role played by general cognitive mechanisms during L2 development.

A final methodological point is in order here. The researcher wishing to address what constitutes the learner's knowledge at initial state of acquisition needs to take additional measures to insure that the production data under scrutiny indeed come from the initial stage of acquisition, for practical purposes, from the earliest point at which multi-word utterances can be observed. This can be difficult. Younger L2 learners, for example, may spend the first several months of exposure in a silent

period (Krashen 1985). When such a situation results in data collection commencing after many months of L2 exposure have elapsed, the researcher can easily fail to capture the earliest stages of development. Kenji Hakuta's (1974) study is one such example, where the longitudinal study of a Japanese-speaking child's English morphosyntax commenced after she had been attending kindergarten for four months. It is clear from Hakuta's earliest data from her that she had already acquired some of the functional morphology of English by the start of the study and was therefore not at the earliest stage of morphosyntactic development. Equally important – if the study is to be a longitudinal one that addresses more advanced stages of acquisition – is that learners selected by the researcher make sufficient progress during the planned period of investigation; this is particularly challenging when one is dealing with adult learners in the target language culture who are able to choose the interlocutors with whom they interact. They typically prefer their compatriots. Both issues will arise again at various points during the course of discussion in the remainder of this book.

4.2. Claims regarding the initial state in L2

It was only in the context of studies of less cognitively sophisticated, uninstructed adult migrant workers that a debate could have arisen about whether and how UG and the learner's first language constrain the adult second language learner's development over time. The value of these data to the study of the acquisition of morphosyntax of cannot be overestimated. In this respect, the best known account of L2 development to emerge from the 1970s/1980s studies are found in Harald Clahsen and Pieter Muysken's (1986) and (1989) publications on data from Italian, Portuguese and Spanish learners and, in addition, on data from a group of Turkish learners. Clahsen and Muysken's conclusions were that adult L2 acquisition is neither influenced by the learner's L1 nor UG-constrained; instead acquisition involves use of general cognitive strategies.¹⁰¹ Under this view, where the initial state consists of

101. Note that Clahsen and Muysken's analysis also presents a problem for what we have discussed earlier regarding the (conscious) operation of general cognitive mechanisms. Since these learners were neither instructed nor were their levels of formal education high, they would not have been expected to be able to apply meta-linguistic knowledge.

such cognitive mechanisms, the initial stage in the L2 acquisition of German is characterized by the application of a canonical SVO word order strategy by all learners, regardless of whether their native language has a head-initial VP (Italian, Portuguese and Spanish) or a head-final VP (Turkish). This view of an initial canonical SVO word order has since been shown to be erroneous, as we shall discuss below.

Since its formal launch in Eubank and Schwartz (1996), the UG-based initial state debate has been devoted to the study of the nature of L1 influence on the acquisition of L2 morphosyntax. Including the no-influence position of Flynn (who does not address morpho-syntax but only syntax), six distinct positions are shown in Table 4.2; these only include UG-access-based positions, and thus Clahsen and Muysken are not included. Hawkins' views are based on a re-examination of Dulay and Burt's (1973) and Bailey et al.'s (1974) studies as well as work by Andersen (1978), Makino (1980), Stauble (1984), and Zobl (1989). A more recent study by Florence Myles (2005) of British school children's acquisition of L2 French can also be included under the Minimal Trees approach.

Table 4.2 Views on the adult L2 learner's initial state with respect to morpho-syntax

<i>Researcher</i>	<i>Initial state claim</i>	<i>Data</i>
Flynn (1987)	No L1 transfer	L1 Japanese – L2 English
Vainikka and Young-Scholten (1994)	L1 lexical projections only (Minimal Trees)	Various L1s – L2 German
Eubank (1994)	L1 features are inert	Various L1s – L2 German
Hawkins (2001)	L1 lexical projections only, but later L1 functional projection influence	Various L1s – Various L2s
Bhatt and Hancin-Bhatt (2002)	(L1) IP, but not CP is projected	L1 Hindi – L2 English
Schwartz and Sprouse (1994)	Complete L1 syntax	L1 Turkish – L2 German

Apart from Vainikka and Young-Scholten's and Hawkins', approaches to the initial state fall into the Strong Continuity category (see Chapter 3), under which at least one functional projection (Bhatt and Hancin-Bhatt) or the entire syntactic tree is available to the L2 learner from the start of acquisition (all other views). Under a Strong Continuity ap-

proach, even if learners' grammars do not derive from the L1, the L2 learners' early grammars still entail a full set of functional projections because UG is assumed by these researchers to provide a universal tree. L1 transfer would, however, involve the lexicon and its functional contents (recall from Chapter 1 that this is now the locus of cross-linguistic variation, under Minimalism). The Spell-out of these elements of course needs to be learned.

4.3. L2 learners' earliest syntax

4.3.1. *VP transfer*

The issues of VP transfer and extent of L1 influence can and will be considered separately here. It is the latter which is the main focus of this chapter, so we therefore first provide a brief discussion of the former.

In the post-1980s literature on the second language acquisition of morphosyntax, arguments for the claim that the learner's L1 VP headedness transfers at early stages of adult L2 acquisition have largely gone unchallenged by those who assume operation of UG throughout the lifespan. In fact, researchers who assume UG involvement only via the learner's L1 syntax also predict transfer of VP headedness as do proponents of Full Transfer/Full Access, who further assume that more than the VP transfers. Early opponents of Clahsen and Muysken's no-transfer/no-UG access position assumed transfer of VP-headedness by Romance language speakers when proposing that these learners' L1 VP headedness flips from head-initial to head-final during the course of acquisition (du Plessis, Solin, Travis and White 1987; Eubank 1992; Schwartz and Tomaselli 1990). On the other hand, Klein and Perdue (1997), Meisel (2003) and Pienemann (1998) have largely maintained Clahsen and Muysken's original developmental sequence, where the first stage of adult L2 German is an SVO order regardless of the learner's L1.¹⁰² However, in studies of the L2 acquisition of related, head-final Dutch, one of which predates Clahsen and Muysken, it was already argued that the learner's L1 VP transfers (Jansen, Lalleman and

102. But see Pienemann (2003) where there is acknowledgment that the initial stage under Processability can involve transfer of e.g. Turkish and Korean learners' head-final VPs.

Muysken 1981; Jagtman and Bongaerts 1994; van de Craats, Corver and Van Hout 2000).¹⁰³ In addition, Zobl (1982) already acknowledged VP transfer in discussing how Turkish and Moroccan Arabic L1 speakers acquiring Dutch produce early SOV structures.¹⁰⁴ Similarly, we showed in Vainikka and Young-Scholten (1994) and (1996a) that headedness transfers from the learners' L1 to their L2 German where learners' interlanguage varied depending on whether their L1 VP was head-initial or head-final. We discuss details of this research later in this chapter.

From longitudinal studies of *child* L2A there is also now solid evidence of VP transfer from instances where L1 and L2 headedness differ. This is clearly shown in several studies of L2 English: Yamada-Yamamoto's (1993) of a Japanese boy; Belma Haznedar's (1997) of a Turkish boy; and Mohsen Mobaraki's (2007) of a Farsi-speaking brother and sister. In these studies, L1 head-final VP transfer is clearly documented at the start of acquisition, with a subsequent shift to the English head-initial value. In Mobaraki's study, for example, where weekly or fortnightly data collection began after the children had been in England for one month and were attending the local school, they produced utterances such as those in (4.1) and did so until VP headedness started to shift in Sample 9, completely shifting by Sample 12.

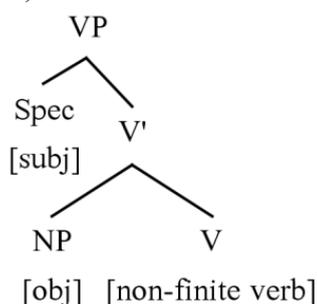
- (4.1) a. *We tennis play.* [Bernard, Sample 4]
 b. *Spot cupboard have.* [Melissa, Sample 7]

103. Based on an analysis of the Dutch L2 data (including the ESF data from Moroccan Arabic and Turkish L1), van de Craats et al. assume complete L1 transfer; when clear evidence to the contrary is encountered in the L2 data, the initial hypotheses are abandoned by the learner. As support for this view, they discuss the early word order in the VP: the word order is typically SOV for the L1 Turkish speakers (Ergün 64-86%, Mahmut 90-91% of the time), while the SOV order is less common for the L1 Arabic speakers (Fatima 36-37%, Mohammed 32-40%).

104. Zobl's approach can be seen as a precursor of Hawkins' Modulated Structure Building proposal, since he argues that transfer can add a different initial starting structure and that "[...] modifications due to L1 influence may delay initiation of a sequence, delay or speed up passage through it, or even add sub-stages to it, but never seem to involve omission of stages or changes in the sequence of stages." (1982: 98)

Under all Full Transfer approaches (including that of Bhatt and Hancin-Bhatt 2002 for head-final Hindi), it is not only the learner's L1 VP which transfers, but the entirety of their L1 syntax. In Chapter 3, we addressed the question of how much syntax is projected in terms of the existence of Root Defaults (RDs),¹⁰⁵ which in child L1 acquisition is well documented (and was discussed in detail in Chapter 3): children's earliest production in various languages often involves non-target utterances that look like infinitival clauses; in German RDs contain a sentence-final main verb with the suffix *-n* (or schwa, in some dialects), regardless of the subject NP context, as represented in the tree in (4.2):

(4.2)



We noted in Chapter 3 that accounts of the occurrence of Root Defaults in first language acquisition vary due to the speed of typically developing children's acquisition, as well as due to lack of consensus by researchers on what constitute non-finite verb forms for the learner. Are RDs in evidence in adult second language acquisition? If they are, this would provide evidence that L2A also commences with a bare VP projection, and thus (at least at first), that *only* a VP is transferred from the learner's L1. Acquisition by the low-educated migrant worker adults who have been studied is often far slower, and the possibility therefore exists that Root Defaults might be more rather than less readily observable than they are for typically developing children. The same methodological challenge in determining what constitutes non-finite forms as exists in first language acquisition (see early part of Chapter 3) also exists in second language acquisition, compounded by the L2 learner's transfer of their native language phonology, which may disallow final

105. See discussion in Chapter 3 on the terminology; the relevant structure has traditionally been called 'root infinitive' or 'optional infinitive'.

consonants or consonant clusters. An additional methodological hurdle involves separating truly productive functional elements from those present in the unanalyzed chunks learners might use ; this is particularly common in data from early stage instructed learners, as discussed in Myles (2004).

4.3.2. *Root Defaults (Infinitives) in L2 acquisition*

Consideration of Root Defaults (RDs) under those second language acquisition approaches which assume continued UG access roughly parallels discussion in first language acquisition. The earliest clear documentation of RDs in L2 acquisition is Philippe Prévost's work; some examples are provided here (from Prévost 1997, based on child L2 data from Lightbown 1977 [a–c] and adult L2 ESF data [d–e]). Months given here represent time elapsed since the start of the data collection.

- (4.3) a. *manger les oreilles.* [Greg, 10 months]
eat*-INF the ears
- b. *pas jouer avec la ferme.* [Greg, 10 months]
not play*-INF with the farm
- c. *moi pas aller à l'école.* [Kenny, 8 months]
me not go*-INF to the school
- d. *i parler beaucoup.* [Zahra, 18.5 months]
he speak*-INF much
- e. *rester à le bureau.* [Zahra, 14 months]
stay*-INF at the office
- f. *tu couper tout.* [Zahra, 24.5 months]
you cut*-INF everything

The parallel with L1 acquisition is also nicely exemplified in Prévost and White (2000a/b/c), who cover data from L2 children and adults in several combinations of native and target languages. In L2 learners' production of non-finite vs. finite verbs in raised and non-raised positions, more morphological variability is attested than for L1 learners;

this is indeed the case in German, as we shall see in Chapter 5. To account for the patterns found in their data, Prévost and White consider Rizzi's (1993/4) Truncation Hypothesis along with the more recent Missing Surface Inflection Hypothesis/MSIH (Hawkins, 2000; Haznedar and Schwartz, 1997; Lardiere 1998). Falling under the Strong Continuity category, the MSIH is an attempt to explain why, if the full syntactic tree is projected from the start, and functional projections are available, inflection is omitted by even more advanced learners in their oral production. The data examined by Prévost and White lead them to argue in favor of the Rizzi's Truncation Hypothesis for child L2 acquisition on the basis of children's non-finite forms following negation and not occurring in CP constructions.¹⁰⁶ But in adopting this position, they cannot explain on the same maturational basis as Rizzi does for first language acquisition what accounts for L2 children's acquisition beyond the point at which they no longer produce RDs.¹⁰⁷ We adopt Rizzi's (1993/4) analysis of such Root Defaults as consisting of a bare VP projection, with no functional projections, comparable to the tree in (4.2) above.

As is the case in German child language acquisition, the German L2 acquisition data allow relative ease of analysis in identifying Root Defaults in terms of both syntactic position and status as non-finites, given the richness of inflection and the word order of German. In addition, for most of the naturalistic adult L2 learners who have been intensively studied, acquisition frequently proceeds at a markedly slow pace, thus affording the researcher a vivid picture of the earliest stage of acquisi-

106. For L2 adults, Prévost and White argue for the Missing Surface Inflection Hypothesis; see Vainikka and Young-Scholten (2007) for a reanalysis of their data, where we conclude that perhaps 10% of the data involve missing surface inflection, but the rest of the data are analyzable in terms of missing vs. present functional projections. If adults' interlanguages were to involve missing inflection and no Root Defaults, we would expect no contingency between non-finite verbs and any syntactic position, yet there is such a contingency for the final position in the German L2 data, as we observed in various publications in the early 1990s (e.g. Vainikka and Young-Scholten 1994).

107. In Chapter 3 we discussed Rizzi's approach and pointed out that his more recent work does not necessarily assume maturation. For a new approach that attempts to get around the maturation problem in the development of syntax, see Flynn, Foley, Gair and Lust (2005) which we discuss in *Extensions* to this chapter.

tion. We find considerable evidence for reduced structures among such learners, pointing to a bare VP grammar. Early discussion of adult RDs in German is found in Clahsen (1988), but the topic has received relatively little attention in comparison to L1 acquisition. Typical Root Default examples from our L2 German data are provided in (4), from L1 Turkish and Korean speakers in Vainikka and Young-Scholten 1994 (as we will see later, these utterances were produced in a relatively controlled context, and therefore we know what the speaker is attempting to convey):¹⁰⁸

- (4.4) a. *Teekanne die Ofen setzen.* [Aysel/Turkish L1]
 teapot the oven put*-INF
 (Ich setzte die Teekanne auf den Herd.)
 'I put the teapot on the stove.'
- b. *Hier Jacke ausmachen.* [Changsu/Korean L1]
 here jacket off-take*-INF
 (Hier zieht sie ihre Jacke aus.)
 'She is taking her jacket off here.'

The utterances in (4.4) show the main verbs *setzen* 'put' and *ausmachen* 'switch off' (i.e. target German *ausziehen* 'take off') in final position, and no functional verbal morphology (cf. the tree in [4.2] above); this lack of functional morphology includes lack of functional suffixation, where we note that the final verbs are both in the German infinitive *-n* form. What remains to be shown is that the L2 learners at the earliest stage do not project anything more than RDs allow, but rather just a bare VP.

108. This is an important methodological point: if the researcher must guess at the speaker's intended meaning, assignment of properties to elements in an utterance is not likely to be entirely reliable.

4.4. The predicted stages of acquisition in L2 German

The data in the study from which the above examples come point to considerable evidence for Root Defaults in adult L2 German, and in turn, for a bare VP stage. Indeed for some L2 learners, this early stage seems constitute the end state of acquisition. These are Wolfgang Klein and Clive Perdue's (1997) lower-level Basic Variety users for whom socio-economic factors can result in a meagre amount of exposure to German and ultimately to fossilization at this stage. It is also not surprising that production data collected in a British classroom from 12–13 year-olds learning French reveal a bare VP stage that persists for their first 254 hours of instruction (Myles 2005).

There is overwhelming evidence for early stage learners' projection of VP, without functional projections; despite the possibility that adults could transfer their entire L1 syntax, the data show that they do not. Thus, apart from target language divergent L1-based VP-headedness, the earliest stage of L2 acquisition resembles the earliest stage of children's acquisition of German as a first language. Head-initial VP learners' early step in the acquisition of German is thus to switch headedness. Once such learners have done so, their acquisition of functional projections then commences. (Switching headedness and the earliest functional projections may coincide for some learners, as we shall see.) Detailed data bearing on the early VP-stage will be provided in the rest of this chapter, and the emergence of functional projections will be discussed in the following three chapters.

The explanation for the patterns observed shifts under Organic Grammar from what is optionally projected (cf. Wexler's Optional Infinitive Stage in L1A, and Chapter 3) to what the learner's grammar consists of. At the earliest stages of acquisition, this is a bare VP, a Minimal Tree. Main verbs are found in their base-generated position, since there is no position – i.e. no higher, functional projection – into which the verb can raise. Any functional material associated with projections above the VP will not be produced by the learner. This therefore excludes free morphemes in German such as the copula, auxiliaries and modals, and inflectional suffixes on the main verb that mark subject-verb agreement and tense. Because there is no CP, there are no embedded clauses with complementizers; nor are there inverted yes/no

or WH-questions. Any questions the learner produces will be marked as such only by intonation or will be formulaic.¹⁰⁹

The description of German inflectional morphology in Chapter 1 and the standard syntactic analysis of German syntax presented in Chapter 2 as well as the revision of the standard analysis developed in that chapter illustrate what the learner of German must acquire in the process of phrase structure development, and Chapter 3 served as a reminder. That is, the learner must acquire the headedness of lexical (VP) and functional (IP-level and CP) projections, obligatory raising of finite verbs to a higher position, depending on whether the verb is in a matrix or embedded clause, the marking of finite verbs with various suffixes and the form(s) for non-finite, non-raised verbs. This entails the predicted stages of subsequent development beyond the VP shown in Table 4.3. Functional projections are posited by the learner throughout acquisition based on evidence in the input, just as we saw for L1 acquisition of German in Chapter 3.¹¹⁰

The full main verb agreement paradigm, modals, auxiliaries, and the requirement that sentences have overt subjects in German (with stages being clearest in the pronoun data), are predicted to be acquired together with the AgrP projection. Similarly, complementizers and complex WH-questions are associated with the acquisition of the CP projection. The predictions for verb raising are dependent on where we assume the German finite verb to occur: under the traditional analysis discussed in Chapter 2, the finite verb always occurs in the C (complementizer) position, but under the revised analysis developed in that chapter based on Organic Syntax, the finite verb in main clauses only raises to a (head-initial) Agr; the predictions in Table 4.3 reflect the latter analysis.

109. The syntactically sophisticated reader may wonder how the semantics of a question can be represented without a CP projection. As discussed in Chapter 3, we follow Vainikka and Roeper's (1996) suggestion that a CP-tree at LF (Logical Form) may be associated with a reduced structure in surface syntax, such as a VP-projection.

110. In addition to the projections in Table 4.3, a NegP projection is expected to develop immediately after the VP; see discussion in Chapter 5.

Table 4.3 The predicted gradual emergence of inflectional morphology and functional projections

<i>Stage criteria/ properties</i>	<i>VP</i>	<i>TP</i>	<i>AgrP</i>	<i>CP</i>
Word order	L1 order, and if differs, then L2 order	head-initial; then head-final	head-initial; then head-final	head-initial
Overt pronominal subjects	none/in formulae	emerging	obligatory	obligatory
Modals, auxiliaries	none	emerging	acquired	acquired
Agreement paradigm	none	emerging	acquired	acquired
Verb raising	none	emerging	obligatory (main clauses)	obligatory (embedded clauses)
Complementizers	none	none	emerging	acquired
Complex WH-Qs	none/in formulae	none/in formulae	emerging	acquired

Under Organic Grammar, functional projections are not transferred because the corresponding functional morphemes themselves are not transferred; the Master Tree from the learner’s L1 is not available for use in the process of L2 acquisition. We speculate that this lack of transfer is a result of Universal Grammar under the assumptions of OG whereby functional projections in general are tightly coupled with the inflectional morphemes with which they are associated. Given such an approach, it would be impossible to transfer the Master Tree of a language to another language because the corresponding functional morphemes would have to be transferred, as well.¹¹¹ We expect that such transfer should only be possible between close cognates, i.e. between languages where inflectional morphemes are cognates of each other (such as perhaps German and Dutch,¹¹² or between dialects of the same

111. Note how this questions the Minimalist premise that the lexicon is the only locus of variation where it contains cross-linguistically varying functional morphology (and see Emonds 2009 who rules out morphology as a separate component of the grammar).

112. Also see work on Dutch/German attrition by Ribbert (2004), according to whom the more syntactic an item is, the less susceptible to transfer it is.

language). On the other hand, while transfer of the functional projections is not possible, UG provides a general acquisition mechanism for children acquiring their L1 (or L2) which also appears to remain available for adult L2 learners. Furthermore, for lexical projections it is not the case that they are not transferable given that the lexical items themselves have semantic content that carries over from one language to another.

Finally, as we show in Table 4.3 above, the prediction is that headedness of the VP is first transferred, and then switched to the target VP early on, perhaps prior to the development of functional projections. However, it is not crucial (and not specifically predicted by Organic Grammar) that the headedness of the VP be flipped precisely at this point, before any functional projections emerge. As already discussed, it is clear from the data that VP headedness *does* switch, but it is an empirical question exactly when the switching occurs. The data we present below, however, support the claim that that the switching takes place at or around the point reflected in the table.

This fits our approach as what is considered more syntactic is likely to involve a functional projection.

4.5. The VP-stage of L2 adult learners of German

It is not our aim in this book to exhaustively present analyses of data from all existing studies of L2 German. Rather, the bulk of our discussion here and in the following chapters starts with our own earlier analyses of the ZISA, von Stutterheim and LexLern data, and then focuses on new data from English learners of German. We first consider the status of utterances at the earliest point in acquisition where verbs are produced by the learner, and we then provide a complete picture of data from a range of naturalistic adult learners of German. Drawing on oral production data from her 2005 study of instructed learners of L2 French mentioned above, Myles proposes an earlier, verbless, stage, but as the topic at hand is verbal syntax, we will not closely consider data that would doubtless reveal that the adult L2 German learners under scrutiny here also pass through such a stage. Our exclusion from analysis of dozens of utterances where no verbs were produced is sufficient evidence that early stage learners indeed produce such utterances.

We now consider the earliest grammars for two sets of learners: those with an L1 head-final VP and those with an L1 head-initial VP, as shown in Table 4.4. Of these six languages, only Korean does not mark subject-verb agreement, and all languages apart from English and German allow null subjects.

Table 4.4 VP headedness in learners' L1s (and German)

	<i>Headedness of VP</i>	
	<i>Final</i>	<i>Initial</i>
German	√	
Korean	√	
Turkish	√	
Italian		√
Spanish		√
English		√

If VP headedness is the same in both the learner's native and target language, only one stage of development is involved at this point in their development. We first look at data from the LexLern study of Korean and Turkish learners of German where this is the case. In a sense, the Korean and Turkish data are not interesting from a VP transfer point of view since when VP headedness is the same in L1 and L2, learners posit what turns out to be the right initial grammar for German;

this applies to the Korean and Turkish learners whose data we first present. When L1 VP-headedness differs from that of German, acquisition proceeds in two sub-stages. At the first sub-stage, the learner adopts the headedness of the native language VP.¹¹³ As the learner continues to be exposed to German, the headedness of the VP flips to head-final. Coverage of the head-initial group is divided into two parts below: the ZISA and LexLern Romance speakers, and the more recent longitudinal study of L1 English speakers, who received considerably more naturalistic exposure to the L2 than most other such learners studied. We will therefore focus more on their data in subsequent chapters.

In each section, our concern will also be whether learners project more than a VP at these early stages of L2 German. Here the Korean and Turkish data turn out to be more helpful than the Romance and English data, given the difficulty of determining whether a given utterance involves a transferred head-initial VP or a head-initial (transferred or not) functional projection.

4.5.1. The VP stage for head-final L1 speakers (Korean and Turkish)

The first table in this section (Table 4.5) and in each following section in this chapter presents the biographical details of all the adults who were acquiring German without classroom instruction whose data we consider throughout the rest of this book. Names/pseudonyms are arranged by language and then alphabetically. The data constitute oral production and come from the cross-sectional LexLern study and the cross-sectional von Stutterheim study, representing utterances collected using general interviewing techniques.¹¹⁴ The LexLern data were collected in a part of North Rhine Westphalia where either standard German or a variety not far removed from standard German is generally spoken. To provide extra-linguistic contexts for accurate interpretation of utterances and to avoid elliptical utterances in response to interview

113. Still writing in the 1980s, when the learner's L1 was held to play a minor role, Zobl (1980a, 1980b) proposed that along the common route followed by all L2 learners (as, for example, claimed by Bailey et al. 1974) were L1-induced detours, as noted above.

114. From 1989–1991, the two authors of the present volume were part of the DFG-funded LexLern study at the University of Düsseldorf, headed by Harald Clahsen, to whom data from Christiane von Stutterheim's study were also then made available.

questions, several tasks were designed for elicitation of oral data. These tasks served to elicit a variety of sentence types to enable the researcher's examination of subjects, verb placement, and person and number marking. (See Vainikka and Young-Scholten 1994 for full details; the work in this section was first presented therein.) Data collection sessions took place either at the speaker's home, place of work, or cultural center in one or two meetings lasting between 45 and 90 minutes during which background information including the speaker's age and years of length of residence (LoR) in Germany was also collected. The audio-recorded sessions resulted in several hundred utterances from each speaker which were then transcribed, followed by checking of the transcriptions against the recordings.

Table 4.5 Head-final VP speakers (Turkish and Korean L1)

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age at testing/LoR</i>	<i>Study</i>
Ahmet	Turkish	M	52/22	LexLern
Aysel	Turkish	F	43/11	LexLern
Emine	Turkish	F	28/6	LexLern
Harva	Turkish	F	36/6	LexLern
Kadir	Turkish	M	36/11	von Stutterheim
Kemal	Turkish	M	37/11	von Stutterheim
Mehmet	Turkish	M	55/24	LexLern
Memduh	Turkish	M	47/9	von Stutterheim
Mine	Turkish	F	42/22	LexLern
Özgül	Turkish	F	45/17	LexLern
Sevinc	Turkish	M	34/9	von Stutterheim
Changsu	Korean	F	60/6	LexLern
Dosik	Korean	M	34/1 ½	LexLern
Ensook	Korean	F	41/4	LexLern
Gabho	Korean	M	38/13	LexLern
Park	Korean	M	38/13	LexLern
Samran	Korean	F	35/3	LexLern

Prior to analyzing the data, we excluded all utterances lacking a verb (see above) or containing just a verb and nothing else as well as imitations and clearly idiomatic, rote-learned chunks. The remaining sentences were each analyzed for verb placement, based on word order. We excluded agreement marking as a criterion for whether a given verb had been raised, but we then considered agreement morphology and other IP-related material to determine learners' stage of development. Deciding whether an utterance consisted solely of a head-final VP

without a raised verb/functional projection(s) resulted in our analyzing the verb as head-final in the VP when preceded by a direct object, indirect object, a locative adverb/PP, other PP arguments or adjuncts of the verb, or a predicate noun or adjective. Below we establish our two main points: (1) the VP is head-final; (2) there are no productively used functional elements present at this point.

These data revealed predominance of Root Defaults (i.e. root infinitives) for two of the 11 Turkish speakers, Aysel and Memduh, and one of the six Korean speakers, Changsu. Length of residence in Germany turns out to bear little relation to the stage of acquisition learners had reached when tested: Aysel had resided in Germany for 11 years, Memduh for 9 years and Changsu for six years. Table 4.6 points to a high frequency of XV word order (where X represents any of the elements listed in the above paragraph). This indicates transfer of the Korean and Turkish head-final VP.

Table 4.6 Position of the verb in the VP

<i>Learner</i>	<i>total XV and VX</i>	<i>XV</i>	<i>VX</i>
Aysel (T)	55	55 (100%)	0 (0%)
Memduh (T)	129	127 (98%)	2 (2%)
Changsu (K)	43	41 (95%)	2 (5%)

Note: these figures exclude SXV and SVX sentences, given that the presence of an overt subject may indicate a functional projection.

The utterances in (4.5) from these three speakers show main verbs which are in final position and bear the infinitive suffix *-n* (4.5b/f were already provided above in [4.4], but are repeated here). These examples (from Vainikka and Young-Scholten 1994) provide evidence for the optionality of subjects, supporting the status of these utterances as Root Defaults. Note that the presence of a subject does not necessarily entail a functional projection: analyses in the 1980s (Zagona 1982; Kitagawa 1986 and Sportiche 1988) allow an overt subject in the Spec, VP position. Under this – now standard – VP-internal subject assumption, in the bare VP tree, overt subjects can occur (4.5a, 4.5c, 4.5e), but are not obligatory (4.5b, 4.5d, 4.5f).

- (4.5) a. *Oya Zigarette trinken.* [Aysel]
 Oya cigarette drink*-INF
 (Oya raucht Zigaretten.)
 ‘Oya smokes cigarettes.’

- b. *Teekanne die Ofen setzen.* [Aysel]
 teapot the oven put*-INF
 (Ich setzte die Teekanne auf den Herd.)
 'I put the teapot (on) the stove.'
- c. *Ama ich zwei Jahre Berlin bleiben.* [Memduh]
 but (Tk) I two years Berlin stay*-INF
 (Aber ich bin zwei Jahre lang in Berlin geblieben.)
 'But I stayed in Berlin two years.'
- d. *Ja alles hier kaufen.* [Memduh]
 yes everything here buy*-INF
 (Ja, ich kaufe hier alles.)
 'Yes (I) buy everything here.'
- e. *Eine Katze Fisch alle essen.* [Changsu]
 a cat fish all eat*-INF
 (Eine Katze hat den ganzen Fisch aufgefressen.)
 'A cat ate the whole fish.'
- f. *Hier Jacke ausmachen.* [Changsu]
 here jacket off-take*-INF
 (Hier zieht sie ihre Jacke aus.)
 'She is taking her jacket off here.'

The overwhelming majority of utterances with main verbs Aysel, Memduh and Changsu produce conform to a VP grammar that does not include functional projections. In Aysel's data, there are no modals or auxiliaries, and almost all verbs bear the suffix *-n* (95%; Vainikka and Young-Scholten 1994: 282). Aysel is clearly at the bare VP stage of development.

A small proportion of utterances in their data suggests that two of these learners, Memduh and Changsu, are projecting something beyond a bare VP; perhaps even Aysel is starting to do so. Such utterances might be taken as indicators of entry into a stage at which the learner posits the first functional projection. When data were collected from them, Aysel, Memduh and Changsu had each been in Germany for between six and 11 years and we would certainly expect at least some progression beyond a bare VP grammar, even with minimal regular

exposure to German.¹¹⁵ Indeed evidence for a nascent functional projection comes from a small proportion of verbs that are raised to the left of the VP, clearly outside of the VP (though almost always lacking agreement and tense; for details on the few possible agreement forms, see Vainikka and Young-Scholten (1994: 282). Consider Table 4.7:

Table 4.7 Bare VP sentences and sentences with more than a VP

<i>Learner</i>	<i>Total sentences with verbs</i>	<i>Verb in the VP</i>		<i>Verb outside the VP</i>	
Aysel (T)	75	66	88%	9	12%
Memduh (T)	175	151	86%	24	14%
Changsu (K)	81	68	84%	13	16%

An indication that such utterances in which the verb is outside the VP actually represent an emerging functional projection for these learners is the pattern of overt subjects:¹¹⁶ when the verb remains in the VP, the proportion of overt subjects is only 23% (calculated based on Vainikka and Young-Scholten 1994: 283), but as shown in Table 4.8., when the verb is raised, the proportion of overt subjects is 73% (averaged over the three speakers):

115. On the other hand, utterances potentially involving a functional projection might also come from a repertoire of rote-learned stock phrases in which verbs are raised. Although we were careful to exclude such phrases in our counts, we can never be completely sure concerning an individual sentence when a speaker's utterance reflects rote learning and when it represents a grammar; nevertheless, the general picture of the data from these speakers appears to be clear.

116. In Vainikka and Young-Scholten (1994: Table 3), we summarize in an implicational scale the data from all the Turkish and Korean speakers studied; according to these results, verb raising and obligatory overt subjects develop in tandem, while the agreement paradigm develops somewhat later.

Table 4.8 Overt subjects in sentences with raised verbs

Learner	All sentences with raised verbs	All sentences with overt subjects	Overt subjects in raised V sentences
Aysel (T)	9	15	4 44%
Memduh (T)	24	45	18 75%
Changsu (K)	12	39	11 92%

This table excludes yes/no questions, imperatives and grammatical topic drop (as in: *Weiss nicht* '(I) don't know'). Subjects in raised verb sentences include both subjects preceding and following the verb.

Included in the sentences with a possible raised verb for Memduh in Table 4.7 are some other signs of potential IP-material: 6% of his total sentences contain a modal, an auxiliary, or a copula (Vainikka and Young-Scholten 1994: 284). However, even such sentences contain neither agreement nor tense: over 70% of Memduh's verbs bear the infinitival *-n* suffix, and there are no instances of clearly correct agreement (most of the rest bear no suffix, and this bare form appears not to be an agreeing form for Memduh; Vainikka and Young-Scholten 1994, fn. 28).

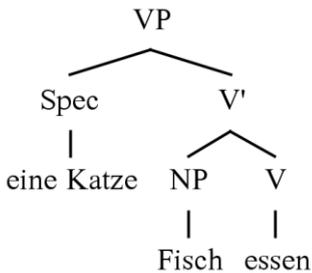
Changsu – the most advanced of the three speakers, despite the potential 'handicap' of being an L1 Korean speaker without subject-verb agreement – also uses the default *-n* suffix on most verbs, but there are some stirrings of agreement marking involving the 3rd person suffix *-t* (1994: 284); overall, 11% of Changsu's sentences contain a raised verb with correct agreement, or with a modal or auxiliary. Consider these examples of such potential IP-examples from Memduh and Changsu:

- (4.6) a. *Sechs Mann hier arbeit Farbe eine Schicht.*
 Six men here work-0 paint one shift
 (Sechs Männer arbeiten mit Farbe während einer Schicht.)
 'Six men work with painting here during one shift'.
 [Memduh]
- b. *Ich bin Frankfurt Zug fahren.*
 I am Frankfurt train go*-INF
 (Ich bin mit dem Zug nach Frankfurt gefahren.)
 'I went to Frankfurt by train.'
 [Changsu]

Neither Memduh nor Changsu nor Aysel produce utterances in which there is functional morphology occurring to the *right* of the non-finite

verb as would be expected with the early-stage transfer of their head-final L1 functional projections predicted under Schwartz and Sprouse's (1994, 1996) Full Transfer/Full Access Hypothesis. Finally, confirming our predictions for learners at the VP stage, these three speakers do not produce embedded clauses or complex questions. The tree in (4.7) represents the typical sentence structure at this stage, where VP-internal material, including the subject, precedes the infinitival verb form.

(4.7)



There are no (productive) IP-level functional projections (either TP or AgrP) in the data from Aysel, as revealed by her lack of production of modals, auxiliaries, the copula, and agreement and tense marking on the verb. That Memduh and Changsu also lack *productive* IP-level projections is confirmed by the paucity of structures with any IP-level material (about 15% or less of all sentences with a verb). As we turn to more advanced speakers in the subsequent chapters of this book, it will become clear that Memduh's and Changsu's very occasional instances of modals, auxiliaries, or of main verb raising clearly do not constitute real acquisition of the IP. The combined absence of embedded clauses with complementizers, of WH-questions and of inverted yes/no-questions is indicative of the lack of a CP projection for all three speakers. These observations are summarized in Table 4.9.

Table 4.9 Fulfillment of criteria for more than a bare VP

<i>Learner</i>	<i>Possible raised verbs</i>	<i>INFL elements</i>	<i>Subjects obligatory</i>	<i>Embedded clauses w/overt complementizers</i>	<i>Complex Qs</i>
Aysel (T)	12%	No	No	No	No
Memduh (T)	14%	No*	No	No	No
Changsu (K)	16%	No*	No	No	No

*6% of Memduh's and 11% of Changsu's sentences with a verb contain a potential Infl-element; see text for details.

4.5.2. The VP-stage for head-initial L1: Romance speakers

We now turn to data from Romance learners of German: to cross-sectional data from the LexLern study, and to the longitudinal data from the ZISA study. The Italian LexLern data were collected following the same procedures as for the Korean and Turkish data (see Vainikka and Young-Scholten 1996c for further details on these data). The ZISA data were collected using interview techniques and, like the LexLern data, from individuals in the North Rhine Westphalia region of Germany; for details, see Clahsen, Meisel and Pienemann (1982). Age of arrival vs. length of residence is not relevant for the longitudinal ZISA learners as data collection commenced close to the start of acquisition, not long after their arrival in Germany.

It might be argued that longitudinal and cross-sectional data cannot be considered in the same analysis, as only the former unequivocally reveal development. The analysis of the Korean and Turkish data presented above justifies attempts to combine the two to determine development, and our analyses here indicate our decision was not misguided.

Table 4.10 Romance head-initial learners

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age at study start</i>	<i>Study</i>	<i># of files</i>
Bongiovanni	Italian	M	17	ZISA	18
Bruno	Italian	M	15	ZISA	19
Jose	Spanish	M	17	ZISA	23
Lina	Italian	F	33	ZISA	20
Salvatore	Italian	F	35	ZISA	5

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age/LoR at testing</i>	<i>Study</i>
Agapita	Spanish	F	42/22	LexLern
Antonio	Spanish	M	51/18	LexLern
Maria	Spanish	F	47/25	LexLern
Natividad	Spanish	F	39/10	LexLern
Nieves	Spanish	F	53/19	LexLern
Rosalinda	Spanish	F	40/13	LexLern

The longitudinal ZISA data were elicited at fortnightly intervals over two years using interviewing techniques. Sessions were audio-recorded and subsequently transcribed. The data we selected were – due to the existence of complete sets – from the four Italian speakers and one of the Spanish speakers. Bongiovanni’s and Lina’s data are equally useful because data were collected for the duration of the project. Bruno’s and Jose’s data represent almost the entire span of acquisition up to projection of CP, and for this reason are extremely valuable. While Salvatore only contributed a limited number of files, we examined his data because they reveal the earliest stages of acquisition. Of the five Romance speakers with longitudinal data, only four will be discussed in this chapter, while – due to his more advanced level – Bruno’s data will be discussed in Chapter 5.

When analyzing the data, as for the Korean and Turkish data, verbless utterances and those consisting of just a single verb were excluded, as were imitations and obvious rote-memorized chunks and idioms. Sentences were analyzed in much the same manner as those produced by the Korean and Turkish speakers; however, because of the difficulty of discerning whether a learner had produced a head-initial VP or a sentence with a raised verb, word order was not considered a reliable indicator of extent of syntactic structure at the earliest stages for these learners. Our analysis of the Korean and Turkish data established the relationship between word order and functional morphology (or lack thereof), and this enabled us to focus on the second sort of evidence,

namely, those functional elements which we found co-occur with newly posited syntactic projections. For the Romance language learners, we therefore began by looking for presence of functional elements, then taking word order into account when possible. Based on the criteria established for stages of acquisition for the Korean and Turkish learners, we placed the longitudinal learners at several stages as they progressed, and we placed each cross-sectional learner at a single stage.

Under Organic Grammar, when we add an additional source of knowledge to the acquisition engine, namely the L2 learner's L1 grammar, we do not see major differences between L2 learners and children learning their first language: the earliest or smallest tree structure posited by the L2 learner consists of only the lexical projection, VP. When we look at data from speakers of languages with a head-initial VP, we more clearly see that the VP is initially transferred from the learners' L1. It appears that only once the head-directionality conforms to that of the target language, functional projections begin to emerge, doing so without recourse to the learner's L1. That is, the VP transfer that Italian and Spanish learners of German exhibit will tend to only be evident at the initial stages of acquisition. In keeping with our conclusions about the characteristics of this stage, we further predict that learners will not have acquired auxiliaries, modals, the agreement paradigm, embedded clauses or complex questions. The earliest ZISA files from the Italian speakers, Bongiovanni (files 1–6) and Salvatore (files 1–3), and from the Spanish speaker Jose (files 1–3) indicate transfer of a head-initial VP, as do the cross-sectional data from Spanish speaker Rosalinda. The initial files of the ZISA learners and data from Rosalinda reveal little evidence of any functional projections. These examples are typical of these learners:

- (4.8) a. *Trinke de orange oder?*
 drink*-INF/1SG the orange or
 'She is drinking the orange juice, right?' [Rosalinda]
- b. *Ich wohne (en) la Grenza hier.*
 I live*-INF [on the border (Sp.)] here
 'I live on the border here.' [Jose]

- c. *Du kommen in Arbeit, Freitag?*
 you come*-INF in work Friday
 'Will you come to work on Friday?' [Bongiovanni]

There is an overall absence of complex WH-questions and inverted yes/no questions and there are no embedded clauses containing an overt complementizer and a verb in the data of any of these learners. The very few WH-questions produced are incomplete; that is, they are analyzable without recourse to a CP. With respect to functional morphology, these learners have not acquired auxiliaries or modals, as shown in Table 4.11, which categorizes all the utterances containing a verb and additional functional material produced by these speakers. Only Rosalinda shows some early signs of the emergence of auxiliaries and modals (with five instances of the auxiliary *is[t]* 'is' and three instances of the modal *wolle* 'want'). While Jose and Rosalinda produce instances of copula *is(t)*, no agreement paradigm is demonstrated in the use of these forms, with the vast majority of them simply being the item *is(t)* 'is'¹¹⁷.

Table 4.11 Verb types at the earliest stage (Romance speakers)

<i>Learner</i>	<i>Verbs</i>	<i>Main Vs</i>	<i>Copula</i>	<i>Aux.</i>	<i>Modal</i>
Bongiovanni (I; files 1-6)	40	39	1	0	0
Salvatore (I; files 1-3)	66	63	3	0	0
Jose (S; files 1-3)	69	29	40*	0	0
Rosalinda (S; x-sectional)	45	28	9	5	3

*39 of these are *is(t)* 'is' and one is *bin* 'am'.

Unlike for the Turkish and Korean speakers, the position of the verb at this stage does not tell us whether the verb occurs in the VP or outside of the VP. Because the position of the verb is unrevealing, we instead consider in detail the form of the main verb. The first question is whether a clear agreement paradigm is present with main verbs, and the clearest indicators that a learner has acquired the paradigm is their use of the 2nd person singular form (suffix *-st*) or the 3rd person singular form (suffix *-t*).

Since the plural (1st and 3rd person) forms are identical to the infinitive (suffix *-n*), these cannot be used as test cases; the 2nd person plural

117. Note that this early production of *is(t)* could have resulted from the borrowing of *es* 'it' from Spanish.

(-t) never occurs in these data, even for advanced speakers. In the 1st person singular, the main verb in colloquial spoken German typically occurs without the suffix *-e* and these forms cannot therefore be easily distinguished from bare stems; more will be said about these forms shortly.

None of the four speakers produce any instances of a verb with the *-st* suffix. In addition, neither Salvatore nor Rosalinda produce any instances of a verb with the suffix *-t*, while Bongiovanni and Jose produce a total of only four instances of (correct) 3rd person singular *-t*. The paucity of these forms suggests that the agreement paradigm has not been acquired at this point while at more advanced stages in the longitudinal data these forms become prevalent in the same interview context. We now turn to the occurrence of Root Defaults.

All four speakers produce main verbs with both the suffix *-n* and the suffix *-e*. The *-n* forms are most likely real instances of Root Defaults, and since it would be extremely surprising to find that these speakers have acquired the 1st person singular suffix normally reserved for written German, we take the *-e* forms to be a phonologically-conditioned 'Romance variant' of the Root Default suffix *-n*.¹¹⁸ Except for Bongiovanni, 80–90% of the main verbs at this stage are therefore Root Defaults, based on the morphology (calculated from Table 6, Vainikka and Young-Scholten 1996c). Bongiovanni's data, on the other hand, show signs of emerging agreement marking in that he produces 19 instances of the 1st person singular 0-form, 10 of which are correctly used in a 1st person singular context.

Overall, then, the four speakers at the earliest stage have not acquired modals, auxiliaries (or tense), or subject-verb agreement, embedded clauses, or complex WH-questions. This suggests that the vast majority of their utterances represent a stage without IP-related functional projections, i.e. TP or AgrP, and without a CP. This appears to be the bare VP-stage. To the extent that there are potential IP-level elements in Rosalinda's data (modals and auxiliaries, Table 4.11 above) and in Bongiovanni's data (the 1st person singular agreement marker), an IP-level projection seems to be emerging for them.

While simple main clauses do not reveal the presence/absence of verb raising for these speakers, early negation data from Salvatore as well as from Bongiovanni show that the main verb has not been raised,

118. This relates to the dispreference for word-final final consonants in these two languages.

as it follows negation (while preceding negation in the target language), as exemplified in (4.9) (from Vainikka and Young-Scholten 1996b: 158–159). Rosalinda produced no examples of negation, and Jose produced one example, which may be rote-learned.¹¹⁹

- (4.9) a. *Ich nix komme in Spanien.*
 I not come-1SG in Spain
 ‘I don’t go to Spain.’ [Bongiovanni]
- b. *In Fabriken eh nis so viel spreche Deutsch.*
 In factory uh not so much speak*-INF German
 ‘In factories there isn’t much German spoken.’ [Salvatore]

This pattern (main verb after negation) holds for all of Bongiovanni’s five examples in the early files discussed here, and for all four of Salvatore’s examples. The lack of verb raising in the utterances with negation supports our assumption that the main verbs with the suffix *-e* such as those in (4.9) in fact involve a non-raised Root Default structure. However, the early negation examples for Bongiovanni and Salvatore indicate that what we have predicted to be the earliest functional projection – NegP – may be emerging in their data.

These data reveal a preponderance of Root Defaults, and for the majority of utterances point to projection of just a bare VP. What, however, is the headedness of this projection? Since we have argued that the overwhelming majority of these speakers’ utterances involves a bare VP without verb raising, we can now consider what proportion of all utterances involves a head-initial vs. head-final VP. Only utterances with a verb and additional VP-internal material (but not subjects) were included in the calculations. This revealed that 65% of Bongiovanni’s, 75% of Jose’s, 80% of Salvatore’s, and 100% of Rosalinda’s VPs were head-initial, clearly indicating a preference for a head-initial VP as in Spanish and Italian (see Vainikka and Young-Scholten 1996c: 157 for details). However, the exact proportions are to be taken with caution: for example, Salvatore’s 80% figure may reflect a combination of head-initial VP utterances, a few raised verbs, and perhaps a few target-like head-final VP utterances.

¹¹⁹ *Ich spreche nicht so viel Deutsch/I speak not so much German/‘I don’t speak very much German’* in file 3.

If the VP is head-initial at the earliest stage for the Romance learners, when do learners switch the headedness of the VP to the German head-final value? This question is most straightforwardly addressed through the comparison of word order in main verb utterances produced by all the learners/learner files we consider here, in particular the later longitudinal data from Salvatore and Jose. Cross-sectional learner Antonio (Spanish L1) and the files from further data collection sessions from the ZISA longitudinal learners show that functional elements are still absent at this further point in development. Speakers at this stage are also still typically using *-n* (or *-e*) main verb forms that do not agree with the subject. Adverb data, with instances of *immer* ‘always’ and *jetzt* ‘now’ reveal lack of verb raising from the (now head-final) VP: that is, all adverbs precede the non-finite verb (see below). There is no more evidence for functional projections, including for complex questions, than in the data representing the earlier stage in Table 4.11, as the examples in (4.10) show.

Table 4.12 Verbal elements slightly further along (Romance speakers)

<i>Learner</i>	<i>Verbs</i>	<i>Main Vs</i>	<i>Copula</i>	<i>Aux.</i>	<i>Modal</i>
Salvatore (I; file 6)	37	36	1	0	0
Lina (I; file 6)	36	34	2	0	0
Jose (S; files 4-5)	59	39	19	0	1
Antonio (S; x-sectional)	115	109	3	2	1

- (4.10) a. *Wie heissen?* [Jose]
 what call*-INF
 ‘What is (it) called?’
- b. *Du wo arbeit?* [Salvatore]
 you where work*-INF
 ‘Where do you work?’

By file 6, Salvatore has still not acquired modals, auxiliaries, or the agreement paradigm. Table 10 in Vainikka and Young-Scholten (1996c) shows that he has no correct instances (or instances at all) of the 2nd person *-st* or 3rd person *-t* suffixes, and over half of his main verbs still carry the Root Default *-n* and [for Romance languages] *-e* suffix). Precisely the same pattern holds for Lina’s (L1 Italian) file

6).¹²⁰ The cross-sectional data from Antonio (Spanish L1) also fit this pattern, although he produced three instances of auxiliaries/modals. Like Salvatore, Lina and Antonio mostly produce main verbs with the suffix *-n/-e*, and there are no clearly correct instances of the agreement suffixes *-t* or *-st*. Although Jose also has not acquired modals or auxiliaries in his files 4–5, and although he still uses the Root Default forms over half the time, there is some indication of the emergence of the agreement paradigm: he produces three *-st* and four *-t* main verbs, some of them clearly correctly used. Overall, however, the speakers represented in Table 4.12 have not acquired a TP, an AgrP, or a CP projection yet.

In discussing the very earliest data from the Romance speakers (Stage VP-i), in 1996b we argued for learners' preference for a head-initial VP. If these L2 learners are to acquire the syntax of German, they must at some point switch the headedness of the VP from head-initial to head-final. Our data suggest that they do so while they still project only a bare VP (at Stage VP-ii, the stage represented in Table 4.12).¹²¹ Although less reliable for early stage speakers whose L1 VP is head-initial VP (see discussion above), we were able to apply the same criteria used for the Korean and Turkish data to determine whether these Romance speakers' utterances consisted of a head-final VP. We applied these criteria for utterances with and without subjects such as those shown in (4.11):

- (4.11) a. *Ich immer nur eine Tag in de Woche gucken.*
 I always only one day in the week look*-INF
 'I always watch (TV) one day a week only.' [Jose]
- b. *Vielleicht Schule essen.*
 maybe school eat*-INF
 'Maybe (he/she) eats at school.' [Salvatore]

120. Lina's files 1-5 contain too few relevant utterances to classify the data, but they are consistent with a bare VP stage.

121. We shall see in later data that switching of VP headedness may occur at the same time as (rather than before) the earliest functional projections are being acquired; this may also be true for Jose's data here in terms of an FP projection.

- c. *Ja sechszwanzig Tage arbeite.*
 yes six-twenty days work*-INF/1SG
 ‘Yes (I) work(ed) twenty-six days.’ [Lina]
- d. *Diese hier Tür zumache.*
 this here door close*-INF/1SG
 ‘This (person) here closes the door.’ [Antonio]

Table 4.13 presents the head-final VP results (second column), as compared to the head-initial VP figures already discussed above.

Table 4.13 Verb position at the two VP-stages – Romance learners

<i>Learner</i>	<i>Head-initial verbs</i> at the <i>early</i> VP-i Stage	<i>Head-final verbs</i> at the <i>late</i> VP-ii Stage
Rosalinda (S)	100%	n.a.
Salvatore (I)	80%	76%
Jose (S)	75%	38%
Bongiovanni (I)	65%	n.a.
Antonio (S)	n.a.	71%
Lina (I)	?	71%

The clearest results are from Salvatore, one of the two speakers whose data span the two stages: at Stage VP-i, he used a head-final VP 80% of the time, while at Stage VP-ii, only 24% of the time. There were insufficient relevant examples in files 1–5 from Lina’s longitudinal data to draw any conclusions regarding whether she had first projected a head-initial VP. In her file 6, there are sufficient examples, and the evidence points to a head-final VP. The longitudinal data from Salvatore and the cross-sectional data from Antonio and Lina are a compelling demonstration of head-initial VP learners’ switch to head-final, which occurs at a stage where there is not yet evidence for productive functional projections.¹²² Jose’s data pattern somewhat differently, likely due to his rapid trajectory (recall that he was the only one at this stage to show

122. The only evidence for an emerging functional projection in considering data from the three speakers Salvatore, Antonio, and Lina was Salvatore’s early negation examples at Stage VP-i. Although we predict the NegP to be the earliest functional projection to emerge, Salvatore’s data at Stage VP-ii do not yet reveal a productive NegP. Vainikka and Young-Scholten (1996b: 163) indicate no instances of sentence-internal negation in any of the files from these four speakers at Stage VP-ii.

emerging evidence of agreement). Unlike the others' files, none of Jose's data collection sessions seem to point to a pure head-final bare VP stage. In files immediately following those in which a head-final bare VP is clearly in evidence, Jose is already producing utterances which represent a structure allowing raised verbs. Yet there are examples of Root Defaults when Jose shifts his VP to head-final: when he uses a non-finite verb form, the verb is typically final.

We have thus far not directly addressed the obligatoriness of overt subjects; here Jose's data are particularly clear. At the two VP sub-stages, subjects are clearly optional, only occurring in roughly half the sentences. The L1 need not be implicated here since in projecting a bare VP grammar subjects are not obligatory. However, we note that Spanish – as well as the other three native languages considered thus far in this chapter – allows null subjects. Thus it might be argued that such data do not provide independent evidence for the existence of a bare VP. However, the evidence is illuminating when we discover that null subjects pattern in uninstructed L2 acquisition similar to how they pattern in L1 acquisition; this evidence assists the researcher in deciding when the learner has posited a functional projection.

4.5.3. *Head-initial VP L1: English speakers*

Studies of low-skilled migrant workers typically reveal slow progress by most such learners due to relatively little interaction with native or proficient L2 German speakers; as Salvatore puts it in (4.9b), *in Fabriken eh nis so viel spreche Deutsch*. These individuals often manifest levels of education insufficient to readily access written German as a further source of input. This situation has resulted in little naturalistic adult L2 data on the more advanced stages of development. The aim of the Vainikka and Young-Scholten's American learners of German (VYSA) study was redress these shortcomings by following the progress over a year of post-puberty learners with no previous knowledge of German who were uninstructed but whom we knew in advance would receive plentiful input, namely university-bound American secondary school students participating in a year abroad program. However, as mentioned above, these learners were assumed to be cognitively more sophisticated than their lower-educated migrant-worker counterparts. Even though they were naturalistic learners, we expected that

they might attempt to deploy meta-cognitive strategies, unlike the migrant workers previously studied.

The three young adults in the VYSA study were participants in an established exchange organization which has for decades both offered non-American secondary school students the chance to spend a year in the USA and American secondary school students the opportunity to either improve existing foreign language proficiency or to acquire a second language *ab initio* in an immersion setting, recognizing fact that foreign language study is often not required for university admission in the USA. While applicants to the program stated country preferences, these preferences were not necessarily heeded for students without any knowledge of a foreign language. The result of this was that these *ab initio* students demonstrated no discernable motivation to acquire German per se. After a four-week orientation course and short stay with host families, that year's cohort of exchange students was dispersed across the country to new host families to begin attending *Gymnasien* (academic secondary schools). The three students selected all lived with host families in standard-German speaking communities where they were often the only native English speakers. Their US secondary schools expected them to keep up with their studies, and the students themselves expressed high motivation to do so to be able to graduate with their US classmates upon their return home. Each student therefore took a full load of courses which included mathematics, philosophy, natural and social sciences as well as the English courses their native German-speaking peers took. There were no special German-as-a-second language courses offered by the *Gymnasien*.

Table 4.14 The VYSA learners

<i>Learner</i>	<i>Previous L2 exposure</i>	<i>Age at arrival in Germany</i>	<i>German exposure prior to first data collection session</i>
Joan	1 month Spanish	16	Three weeks, including
Paul	1 semester French	17	daily language and
George	1 year French	15	culture classes.

The orientation course required for all exchange students spending a year in Germany with this organization was held near where students lived with their initial host families. The amount of naturalistic exposure the *ab initio* learners received during this period was negligible; after their day-long orientation classes, they spent their free time with

their American classmates and only communicated with the English-speaking family members in their initial host families. For this group, language classes were conducted in English by a German teacher. Culture seminars were run by a young American expatriate, in English. (See Chapter 8 for further details.) Learners' comments made to the researcher during data collection sessions point to their prioritization of socializing with American peers rather than a language course for which there was no assessment and no exit examination. Thus despite the possibility that their cognitive sophistication might have led to application of meta-linguistic skills, even when the opportunity existed for them to have done so, there is no evidence that Joan's or Paul's morphosyntactic development was shaped in any way by these language classes. However, George's development seems to have been instruction-influenced. Where relevant, we discuss George's detours in this and the following chapters, and we devote the entire final chapter to consideration of what our data tell us about how instruction (even a little bit) influences acquisition.

In terms of data collection, we knew from earlier studies that the recording of utterances spontaneously produced during informal conversation could not be counted on to yield sufficient instances of constructions one might wish to examine, and we therefore devised a set of broad and narrow elicitation tasks whose purposes are given in the table below. Most tasks were administered every month, in addition to engaging the learners in the sort of informal conversation that all longitudinal studies rely on, at least in part. Several of these elicitation tasks pushed the learners to produce utterances before they might have otherwise done so. Given the challenge of designing comprehension tasks to measure morphosyntactic competence,¹²³ we saw this as crucial due

123. Due to lower processing demands, a learner's responses on a comprehension task can potentially reveal much more about his/her interlanguage competence than a production task can. However, there are two problems here. To begin with, design of appropriate tasks is problematic. While in L1 acquisition research there are some promising results on the comprehension of inflectional morphology and word order by infants using the Preferential Looking Paradigm (Hirsch-Pasek and Golinkoff 1996), a comparable test suitable for L2 learners (children or adults) at early stages of development has not been developed. Furthermore, tasks for older L2 learners that allow informants to apply knowledge from instruction question the validity of the results (e.g. Grüter 2005/6; see final chapter).

to the need to obtain sufficient data from the start of exposure to the L2 in order to make claims about early stages of development. The tasks used from the beginning were simple ones which allowed learners to use vocabulary they were exposed to during their four-week orientation. Conversing with the learners became considerably easier once they were comfortable with the researcher (the second author) and had amassed a store of lexical items. Despite the simplicity of some of these tasks, we continued their monthly administration for the duration of the study for purposes of comparison over time. There was no evidence of test-wiseness. Indeed the contrary was the case; our learners came to dislike these tasks and in their haste to complete them, they produced the sort of unmonitored utterances which were as likely as informal speech to reveal underlying linguistic competence.

Psycholinguistic experimentation using various new techniques (see e.g. Marinis, Roberts, Felser and Clahsen 2005) show more promise.

Table 4.15 Data elicitation tasks

<i>Task</i>	<i>Activity</i>
<i>Broad Elicitation Tasks</i>	
procedure de- scription	describing steps depicted in a series of pictures (making an omelette, constructing a bed)
picture prompt	forming utterances with magazine pictures of people, animals, food and objects; variant with subject pronouns written on cards
negation	forming negative utterances with magazine pictures
negation	talking about what's missing or different in a second, <i>nearly</i> identical picture
20 questions	guessing what experimenter is thinking of using yes/no and WH-questions
on-line translation	translating orally into German English sentences of increasing difficulty given orally
<i>Narrow Elicitation Tasks</i>	
modals (ability & desire)	forming utterances with \times <i>kann</i> 'can' and <i>möchte</i> 'wants' given orally with drawings of people engaged in activities
question formation	Producing questions based on cards with WH-words and non-finite verbs written on them
embedded questions	producing embedded clauses based on cards with <i>ich möchte wissen</i> 'I'd like to know' and <i>ich weiss nicht</i> 'I don't know'
clause joining	producing sentences based on two short clauses on cards
supply the missing finite verb	producing sentences based on sentence strips with a missing word and based on two separate strips
grammaticality judgment	giving judgments, corrections and reasons for judgments for sentences with grammatical and ungrammatical V2

Some early examples from the picture description task are provided in (4.12) and Table 4.16 provides a summary of the earliest data.

- (4.12) a. *Peter lernen die Buch.* [Paul, file 1]
 Peter learn*-INF the book.
 (Peter liest das Buch).
 'Peter reads the book.'
- b. *Du kauken für die Men.* [Paul, file 2]
 you buy*-INF for the men
 (Du kaufst (etwas) fuer die Männer.)
 'You buy (something) for the men.'

- c. *Der Kinder trinken der Schokolade.* [Paul, file 1]
 the children drink*-INF the chocolate
 (Die Kinder trinken die Schokolade.)
 ‘The children drink the (hot) chocolate.’
- d. *Ich trinken Tee immer Morgen.* [Joan, file 1]
 I drink tea always morning
 (Ich trinke morgens immer Tee.)
 ‘I always drink tea in the morning.’
- e. *Ich machda de Schokolade.* [Paul, file 1]
 I want-? the chocolate
 (Ich möchte die Schokolade.)
 ‘I want the chocolate.’

Table 4.16 Characteristics of Joan’s, Paul’s and George’s earliest utterances

<i>Learner</i>	<i>Verbs (total)</i>	<i>Main verbs</i>	<i>Copula</i>	<i>Aux.</i>	<i>Modals</i>
Joan 1	24	22	0	2	0
Joan 2	45	25	7	8	5
Paul 1	31	30	0	0	1
Paul 2	58	54	3	0	1
George 1	11	9	2	0	0
George 2	15	8	1	3	3

[Joan and Paul’s data from Table 2, Vainikka and Young-Scholten 2001]

Table 4.16 shows that modals and auxiliaries are very rare in the learners’ earliest files: George’s first recording contains no auxiliaries or modals, Joan’s first recording contains two auxiliaries and no modals, and Paul’s first two files contain one modal and no auxiliaries. This indicates a lack of IP-level projections. As with the L1 Turkish, Korean, and Romance speakers, the earliest data from these L1 English speakers contain no overt complementizers and no (complex) WH-questions, providing evidence for a missing CP projection. However, some WH-questions are attested, although we claim that a CP projection is not yet productive.¹²⁴ Some of these data come from a narrow

124. On the basis of previous – theory-neutral – studies of the acquisition of English (similar in this respect) by second language learners, Rod Ellis (1985: 60–64) posits the following stages prior to production of target-like WH-questions by learners from various L1 backgrounds: (1) WH-questions produced as holistic chunks; (2) productive WH-questions, but

elicitation task where learners were given a WH-word and an infinitive verb and asked to form questions; where these are accurately reproduced, this is shown in italics in the first lines of these examples.

- (4.13) a. *Wo* du *spielt*? [Paul, file 2]
 where you play-3SG
 (Wo spielst du?)
 ‘Where do you play?’
- b. *Warum* du *trinken*? [Paul, file 1]
 why you drink*-INF
 (Warum trinkst du?)
 ‘Why are you drinking?’
- c. *Warum* *sprechen* Deutsch? [Joan, file 2]
 why speak*-INF German
 (Warum spricht man Deutsch?)
 ‘Why speak German?’
- d. *Wo* du *fahren*? [Paul, file 2]
 where you drive*-INF
 (Wo fährst du?)
 ‘Where are you driving?’
- e. *Warum* Peter *trinken* [euh] das Bier? [George, file 1]
 why Peter drink*-INF the beer
 (Warum trinkt Peter das Bier?)
 ‘Why is Peter drinking/does Peter drink the beer?’

These very early WH-questions are taken to involve adjunction of the WH-phrase to the VP, similar to what Radford (1990: 134) proposes for early L1 acquisition. Alternatively, they might involve the WH-phrase exceptionally occurring in a specifier position of a lower functional projection (an early IP-level projection; recall Vainikka’s [1993/4] analysis, discussed in Chapter 3, for child English involving such WH-questions).

without inversion or auxiliaries; (3) target WH-questions; (4) incorrectly inverted embedded WH-questions.

In addition to the near absence of modals, auxiliaries (and thus tense marking), overt complementizers, and complex WH-questions, the data from the earliest files also reveal that the agreement paradigm has not yet been acquired, further pointing to the lack of an AgrP:

Table 4.17 Joan, Paul and George's *non-target* early main verb suffixes

Session	total main verbs	V-n Wrong	V-st Wrong	V-e/a Wrong	V-0 Wrong	V-t Wrong
Joan 1	22	14/17	n/a	4/5	n/a	n/a
Joan 2	25	11/16	1/1	4/4	3/3	1/1
Paul 1	30	15/20	0/1	9/9	n/a	n/a
Paul 2	54	25/31	1/1	6/10	6/7	5/5
George 1	9	5/5	2/2	0/1	0/1	n/a
George 2	8	2/2	2/2	0/1	0/1	2/2

[Joan and Paul's data from Table 3, Vainikka and Young-Scholten 2001]

Table 4.17 shows that these speakers have not acquired the 2nd person singular suffix *-st*, even after three months in Germany, in File 2. In this second recording we find some instances of the 1st person singular suffix *-0* and the 3rd person singular suffix *-t*, but both are almost always used incorrectly. The infinitive form with the suffix *-n* is the most commonly used form for all three speakers, and it is used incorrectly most of the time, as is typical for the Root Default form at this stage. Like the Romance speakers discussed above, these L2 German learners use the *-e*, the formal, written 1st person singular suffix (or sometimes **-a*), which we again assume is a variant of the Root Default form.¹²⁵ If the two forms are collapsed across the three speakers, 93% of the main verbs at session 1 are Root Defaults, while at session 2 the figure is 74%.

Thus, these three speakers appear to project just a bare VP structure in their earliest files (at least File 1 for Joan and George, and Files 1–2 for Paul), resulting in the general lack of modals, auxiliaries, tense,

125. We argued earlier that the *-e* variant of the *-n* suffix was found in the L1 Romance data due to a prosodic constraint in their L1 on final consonants. While the same constraint does not hold in English, the VYSA speakers occasionally use this variant of the Root Default form, as well. The alternative explanation – not feasible, in our view – would be to assume that these speakers have acquired the formal, spoken version of the 1st person singular suffix prior to the colloquial 1st person singular form, *-0*.

subject-verb agreement, and embedded clauses; at the second session, however, Joan's and George's data show some emerging functional elements in that they produce some modals and auxiliaries. A bare VP projection gives rise to Root Defaults (typically with the infinitival suffix *-n*), which are the predominant verb form in these files. We now turn to the question of the headedness of the VP and its relationship to verb raising.

Similar to what the other studies of L2 German have shown (e.g. Vainikka and Young-Scholten 1994, 1996c), these naturalistic learners acquire basic German word order rapidly (at the VP-level). Table 4.18 shows data from the ability/desire task which marks their shift to a German head-final VP as their first developmental milestone, around their third session/fourth month in Germany. Note that – as with the Romance L1 speakers discussed earlier – the spontaneous data do not fully reveal the position of a non-finite, non-raised verb within the VP, since sentences at this stage have just one verb (typically in the infinitive form) which might be located in the VP (either initially, as the L1, or finally, as in the L2) or might have been raised out of the VP. Examination of the spontaneous VYSA data reveals that at this stage Joan, Paul and George were not actually producing two-verb utterances, and the narrow task data should therefore not be construed as pointing unequivocally to learners' linguistic competence, i.e. to their actual acquisition of the modal verbs *möchte* 'want' and *kann* 'can'. (Number of tokens varies due to learners' knowledge of the lexical items represented by pictures shown to them to further prompt utterances.) However, administration of this task allowed us to conclude with a higher degree of confidence the position of the non-finite verb relative to other elements in an utterance, i.e. the position of the verb in the VP:

Table 4.18 Position of non-finite verb in *ability/desire* task

Session	Total utterances	VO	OV
Joan 2	15	15/15 (100%)	0
Joan 3	10	4/10 (40%)	6/10 (60%)
Paul 2	12	11/12 (92%)	1/1 (28%)
Paul 3	15	3/15 (20%)	12/15 (80%)
George 3	7	7/7 (100%)	0
George 5–6	16	0	16/16 (100%)

[Joan and Paul's data from Table 4, Vainikka and Young-Scholten 2001; George's data summarized from Table 10, Vainikka and Young-Scholten 2003a.]¹²⁶

The examples in (4.14) contain the non-finite verbs typical of learners' utterances at the earliest stages of development. The earlier examples are in English-based verb-object (VO) order. The task data in Table 4.18 show Joan's and Paul's preference for VO is nearly absolute in File 2 (File 3 for George). Still producing utterances with non-finite verbs (unless task-elicited), this preference on the part of the learners begins to change to OV, and the figures for VO and OV nearly flip by the third session (a bit later for George; see footnote). Some examples from the broad elicitation tasks (here picture prompt) or from spontaneous production from the relevant files are provided in (4.14), prior to learners' switching VP-headedness (a–b) and after switching (c–d):

- (4.14) a. *Der Kinder liebe der Hund.*
 the children love-*1SG the dog
 (Die Kinder lieben den Hund.)
 'The children love the dog.' [Joan, file 1]
- b. *[um] der Mann [euh] trinken [like] trinken der*
 uh the man drink*-INF drink*-INF the
Kaffee.
 coffee
 (Der Mann trinkt den Kaffee.)
 'Uh, the man is drinking the coffee.' [George, file 1]

126. File 4 is omitted for George because the situation is mixed: six of eight instances in the modal task were VO, but only two out of his 23 spontaneous two-verb utterances were VO at this point. We consider George to have acquired the OV order by File 4.

- c. *Die Mädchen immer die Buch lesen.*
 the girl always the book read*-INF
 (Das Mädchen liest immer das Buch.)
 ‘The girl always reads the book.’ [Paul, file 4]
- d. *Ich habe vergessen, aber ich denke, er hat Joker
 I have forgotten, but I think, he has Joker
 tot gemacht.*
 dead made
 (Ich habe es vergessen, aber ich denke, er hat den Joker
 umgebracht.)
 ‘I’ve forgotten, but I think he killed the Joker.’
 [Joan, file 4, spontaneous]

Thus, VP-headedness is switched to the German target language value early on during L2 acquisition. While we saw with the L1 Romance speakers’ data that this clearly occurred prior to the acquisition of all functional projections, in the VYSA data it occurs at least prior to the acquisition of AgrP and CP; since acquisition by these learners is rapid, it can be difficult to tease apart the acquisition of the very earliest functional projections (prior to Agr and CP) and the switching of headedness. (Note that while Joan’s utterance in [4.14d] is nearly target-like, closer examination reveals that this is due to her use of suppletive forms of *haben* – acquired relatively early – to her failure to use a complementizer in the final clause; *ich habe vergessen* and *ich denke* might well also represent memorized chunks.) In fact, we shall see in Chapter 5 that there is some overlap between switching of VP-headedness and the earliest functional projection, NegP. Overall, the early VYSA data are very similar or identical to the data from the L1 Turkish, Korean, and Romance speakers, despite differences in levels of education, differences in the intensity of exposure to the target language and differences in rate of acquisition.

4.6. Other views of L2 German and the VP-level data

We now take a brief look at other L2 German studies to see whether we find evidence of similar patterns of development. The earliest study of naturalistic adult learners of German was the Heidelberger Pidgin Projekt (1974, 1975, 1976, 1977, 1978), a study of 24 Italian- and 24 Span-

ish-speaking foreign workers in Germany (see e.g. Becker, Dittmar, Gutmann, Klein, Reick, Senft, Steckner and Thielicke 1977); this and other naturalistic studies of L2 German were summarized in Table 4.1. Using the technique of directed conversation to collect oral production data, the researchers then selected from samples 100 sentences from each learner for analysis. The initial stage proposed involved propositions formed without a finite element, including without a main verb, and without a subject. Verbal elements appeared in the following order: main verb, copula, modal, auxiliary, thus supporting OG-based development. The researchers note that the migrant adults studied were extremely socially, politically and linguistically isolated and categorized the 48 learners by period of residence: up to 2 years, 2–4 years, 4–6 years, 6+ years. In looking at development in relation to extralinguistic factors including type of job, amount of formal education, location of residence, intensity of contact with German speakers, family status, mobility, sex, age at immigration and attitudes, the researchers were able to account for variation in rate of acquisition after the first two years' residence.

A considerable body of work has now emerged from the longitudinal European Science Foundation (ESF) study of the naturalistic acquisition of five languages by 40 speakers from various native language backgrounds (see Table 4.1 above). The majority of this – including the L2 German data – has been work within an information structure framework (see Klein 1992; Klein and Perdue 1997, Hendriks 2003) where features of discourse rather than syntax are investigated. From the many studies using ESF data and additional studies of naturalistic adult learners since, we know a good deal about the various devices learners use before they have acquired the relevant syntax and functional morphology. Adverbs, for example, are used for past reference prior to the acquisition of tense (and verb raising) as is the ordering of single utterances in oral discourse prior to the learner's acquisition of syntactic subordination. More recently, a conceptual structure model has been proposed (Dimroth, Gretsche, Jordens, Perdue and Starren 2003) which involves topic, predicate and linking. At the initial, holistic stage, predicates may occur alone or topic and predicate are juxtaposed (not unlike the VP stage). The next stage, conceptual ordering stage/lexical validation, involves the relationship between the topic and predicate established by linking devices which express assertion, by scope particles such as *auch* 'also' and by precursors for grammatical imperatives and uninflected modals (see also the Finite Linking Model

discussed in *Extensions* of Chapter 5). As our book focuses purely on morphosyntax, we do not go into these findings here; suffice it to say that nothing presented in their analyses contradicts the stages of development we propose in this and the following chapters. Moreover, because researchers working in this framework have carried on the tradition of the study of naturalistic adult learners, these studies are also a rich source of data for the study of the acquisition of morphosyntax.

However, neither Organic Grammar nor any of the ideas associated with UG-based Strong Continuity fit into two further approaches, Klein and Perdue's Basic Variety (1997) – based on ESF and ZISA data – or Pienemann's (1998) Processability Theory because both approaches dismiss early stage L1-transfer, i.e. that L2 acquisition commences with an L1-based VP (and they do not assume UG-constrained adult L2 acquisition). That is, the Basic Variety and Processability approaches similarly assume the initial state involves neither the direct operation of UG nor the learner's L1.¹²⁷ In our critique (Vainikka and Young-Scholten 2006) on the grounds that neither captures the idea that syntactic principles drive morphosyntactic acquisition, we note that the lower level of the Basic Variety is basically the bare VP stage, apart from the (a) SVO word order (and c. is not relevant since we do not consider nominal syntax at present, but see Young-Scholten 2008).

- (4.15) a. SVO word order
 b. lack of inflectional morphology and other grammatical morphemes (agreement, tense, case)
 c. optional determiners
 d. existence of some aspectual distinctions
 e. lack of subordination and overt complementizers
 f. no movement

Thus, Organic Grammar encompasses the Basic Variety as a combination of the earliest syntactic stages including the VP-stage and some early evidence of functional projections. Processability, on the other hand, has been intended as an account of later stages. As such Organic

127. With respect to UG, Pienemann (1998) points out that his theory is not meant to address the issue of knowledge at the initial state. With respect to L1 influence, Pienemann (2003) now acknowledges that Turkish learners commence with SOV word order, noting that this has no repercussions for his processing assumptions.

Grammar covers data from both theories.

Dimroth's (2002) cross-sectional study of 40 untutored adult learners of German (31 Russian, 3 Croatian and 6 Turkish speakers) turns out to be of considerable relevance to the bare VP stage. Her main aim was – in the spirit of the ESF study – to examine learners' use of topic-related additive words such as *auch* 'also' and the data were therefore collected through asking learners to talk about a series of 30 pictures which depicted a crime unfolding. Importantly, Dimroth describes eight of the 40 learners as Basic Variety users, based on the presence of mostly non-finite verbs (over 90%) in their utterances. Shown in Table 4.19, these eight speakers can thus be placed at the bare VP stage in their acquisition of German (see Vainikka and Young-Scholten 2006 contra the Basic Variety as appropriate analysis of these data); the remaining 32 speakers would represent later stages of acquisition.

Table 4.19 VP stage Croatian, Russian and Turkish learners of German

<i>Characteristics</i>	<i># of learners at this stage</i>	<i>Dimroth's level</i>	<i>Organic Grammar stage</i>
Less than 10% finite verbs in utter- ances with a verb	8	Level I/ Basic Variety	VP1; VP2

- (4.16) a. *Bira trinken.* [Turkish speaker #5]
 beer drink*-INF
 '(He) is drinking beer.'
- b. *Gehen Wald.* [Russian speaker #31]
 go*-INF forest
 'He's going into the forest.'
- c. *Rote Mann Bier trinken.* [Russian speaker #10]
 red man beer drink*-INF
 '(The) red man is drinking beer.'

No breakdown for finite vs. non-finite verb position is provided by Dimroth, but the examples in (4.16) point to an initial bare VP stage which is L1-based (from head-final Turkish [4.16a] and head-initial Russian [4.16b] for the least advanced learners, and L2 German based [4.16c] for slightly more advanced Russians, after the headedness of the VP has been switched to the headedness of the target language. (4.16a)

closely resembles our data from speakers of head-final Korean and Turkish, and (4.16b) and (4.16c) resemble our data from head-initial English, Italian and Spanish.

4.7. Summary

In this chapter we reviewed data from Turkish and Korean adults (speakers of head-final languages), arguing that in their earliest data they posit a bare VP projection that is head-final, as in both their L1 and in L2 German. The data from Spanish, Italian and English speakers, however, showed two sub-stages: an early bare VP stage where the VP was head-initial (as in their L1), followed by a bare VP stage but with a head-final (target language) VP. In the final section we provided a brief review of earlier and more recent work on the L2 acquisition of German by uninstructed adults which, while not strictly from a generative syntax perspective, nonetheless supports the idea of learners' projection of a bare VP at the start of their acquisition of German.

Extensions

1. The earliest stages of Child L2 German

Over the years there has been relatively less focus on child second language acquisition perhaps due to the assumption that children invariably succeed in completely acquiring a second language to the during a critical period of heightened input sensitivity. Given that older learners nonetheless routinely take up the challenge of trying to master a new language, one of several aims of adult L2 research has been the determination of factors connected with success or lack thereof. However, without referring to younger L2 German learners, our picture of development is incomplete. As Schwartz (1992) notes, child L2 data can disentangle the influence of the L1, domain-specific linguistic mechanisms and general learning mechanisms on the learner's interlanguage. Indeed when the Critical Period Hypothesis was first formulated and until relatively recently, it has simply been assumed that pre-puberty L2 learners make use of the same domain-specific linguistic mechanisms do L1 children; the controversy has revolved around whether L2 adults do, too. There is a small set of work, dating back to such studies as

those by Dulay and Burt (1973) and Bailey, Madden and Krashen (1974), that directly compares L2 children and L2 adults. As did these 1970s researchers, Unsworth concludes in her more recent (2005) study of direct object scrambling in Dutch that children and adults follow the same developmental stages. We pursue in this section the issue of whether there are any fundamental differences between L2 children and adults in their initial projection of just a VP in German

There have been studies of L2 German immigrant children throughout the 1970s (e.g. Felix, 1976; Molony 1977), 1980s (Pienemann 1981) and into the 1990s (Kuhberg 1990)¹²⁸. Pienemann's 14-month-long study is particularly commendable since he began data collection from the three Italian eight-year-old girls from the earliest stage of development, when they had been in Germany between one and four weeks. All these authors generally assume that L2 children's development is driven by the same mechanisms as is L1 children's.

In an Organic Grammar reinterpretation of the Rizzi's Truncation approach, L2 children's earliest German syntax is a VP. We have established in the body of this chapter that this is the case for L2 adults, and we therefore turn to a recent study of L2 German children, focusing on some of the data presented in Haberzettl (2003, 2005). She considers data from Wegener's (1992) four-year longitudinal study of 12 Polish, Russian and Turkish six- to eight-year-olds learning German in Augsburg.¹²⁹ Her focus on two Russian children and two Turkish children is particularly useful to us in terms of early VP headedness. The Turkish children attended school in classes with other Turkish children in which context they initially received six and then later up to 19 hours of schooling in German weekly. Data collection began with both Turkish children when they had been in Germany for six months. The Russian children in the study were from repatriated (from German communities elsewhere in Europe) German families who first lived in temporary accommodation and were placed into a transition class at school where

128. Also see Tran (2005a/b) who looks at young school-age children's acquisition of German to address the issues under discussion here. However, because data were collected from instructed rather than naturalistic learners, we do not discuss the study further).

129. Augsburg lies in southwest Bavaria where local dialect diverges somewhat from standard German with respect to verbal morphophonology. There appear to be no repercussions of these differences for what we discuss here.

in both settings they were together with children from a range of linguistic backgrounds. We discuss only one Russian child below, as the second was too advanced at the start of data collection.

Early on, the Turkish children 'NE' and 'ME' produce formulaic chunks, and none of the functional elements associated with projections higher than a VP. The few main verbs at the start of acquisition tend only to be repetitions of what the researcher has just said/asked. NE's acquisition is relatively rapid, where main verbs are produced at month 6, and include in Habertzettl's presentation of the data at least one example of a bare head-final VP. (In most cases, we do not include the German target or English translation, since Habertzettl does not do so and any guesses on our part would be pure speculation.)

- (4.17) a. *Ja, zwei Essen.* [NE6]
 yes, two eat*-INF
- b. *Nusst esse.* [NE6]
 nuts eat-1sg

NE produces her first modal at sample 6, although Habertzettl remarks that it is likely this is a formulaic utterance:

- (4.18) *Blume mmm kann nicht.* [NE6]
 flower can not

Bare head-final VPs are still in evidence in sample 9, as shown by the following example (where it is clear that the intended utterance is *Das Kind kauft Eis* 'The child is buying some ice-cream').

- (4.19) *Das Kind Eis kaufen.* [NE9]
 the child ice-cream buy-*INF

ME's acquisition is more protracted, and she produces too few main verbs to determine what her VP headedness is. Interestingly – since Turkish has no copula – she (as well as NE, but to a greater extent) makes considerable use of *ist*, doing so in a raised position. This is potential evidence for a functional projection, yet one must take into account the fact that – unlike the adults whose data we discuss above – ME and NE were receiving plentiful instruction in the German language. While this would not necessarily have recruited meta-linguistic

skills, the presentational copula sentences common in classroom discourse such as the one in (4.20a) are plentiful in the children's data. Example (4.20b) shows that ME has extracted from classroom input *ist* as a verbal element (possibly with the help of explicit instruction), and uses it as a dummy main verb through month nine, when Habertzettl notes up to 40% of utterances with *ist* reveal such use.

- (4.20) a. *Das ist ein Mädchen.*
 that is a girl
- b. *Junge ist Mädchen die [w], die Wasser.*
 boy is child the the water

ME's classroom-based pattern of S + *ist* seems to be so entrenched that when main verbs start to become productive around month 10, the result is the English-like progressive pattern X *ist* + V-fin.¹³⁰ ME also seems to show evidence of past tense marking in sequences such as X *ist* + *gemacht*, 'X is made' however, the near-exclusive use of *gemacht* as past participle and the additional pattern X *ist* + V-fin + *gemacht* indicate that *gemacht* is an unanalyzed chunk, likely learned in during classroom instruction.¹³¹ When main verbs finally appear, they appear with *ist* and are in final position 94% of the time. Rather than evidence of a functional projection, it appears that ME takes the surface pattern S + *ist* and attaches to it a VP.

- (4.21) *Ein Junge ist die Fussball spielen.*
 a boy is the football play*-INF
 'A boy is playing (with) the football.'

Of interest is what ME produces after a month-long visit to Turkey between the 10th and 11th months of data collection. In addition to utterances similar to those produced prior to month 10, she produces in samples 11 through 14 for the first time several utterances that appear to be head-final bare VPs or raised verbs with default *-n* (though they consist only of subject + V-fin, making it difficult to tell).

130. Turkish also marks progressive aspect, but through verbal suffixation of which there is next to no evidence in ME's data.

131. Here lexical transfer of the Turkish compound construction V + make (*mek*) is feasible.

- (4.22) *Zwei Junge, ein Ball, die Ball spielen.* [Sample 11]
 two boy a ball the ball play*-INF

The data from NE and ME are surprising, and rather than evidence against the claim that L2 children initially project an L1-based VP (which would be counter-intuitive, given claims about L2 adults and given studies of L2 English discussed earlier in this chapter), the data compellingly show that even children can be strongly influenced by the classroom context. Because of the dominance of formulaic learning in NE and ME's data, there is little more to discuss about the coupling of morphology and syntax during their development.

The Russian data paint a rather different picture, most likely due to the child's naturalistic exposure to German, which included input from her German-speaking grandmother in Augsburg. Collection of data from AN began in her first month of contact with German in Germany. Main verbs are produced from the start; only 23% of these are inflected at this point, but by month 5, 98% are. Data from her first month nicely illustrate a Russian-based head-initial VP, where verb raising has not occurred, given the position of negation:

- (4.23) a. *Katze essen Maus.*
 cat eat*-INF mouse
- b. *Mama nicht essen.*
 mama not eat*-INF

At month 3, she produces clear instances of SXV and XV:

- (4.24) *Des Fahrrad Unfall machen.*
 the bicycle accident make*-INF
- (4.25) Interviewer: *Was macht er da?*
 AN: *Ein Bär malen. Spielen.*
 A bear paint*-INF play*-INF

Haberzettl (2005: 114) provides a table showing AN's main utterances where no auxiliary is involved. The evidence, albeit meager, suggests that in month 3, AN is in the process of acquiring a head-final VP which competes with her Russian head-initial VP, and that by month 5,

she has a functional projection. That subjects are not obligatory is suggestive of a lower functional projection.

Table 4.20 Word order in subjectless utterances with objects and adverbials

<i>Month</i>	<i>1</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>8</i>	<i>10</i>
VX (X)	3	4	13	5	4	0
	(1 finite)		(6 finite)	(all finite)	(all finite)	
X(X)V	0	5	2	0	2	3

2. The Grammatical Mapping Paradigm

Based on evidence from the acquisition of relative clauses, Flynn, Foley, Gair and Lust (2005) present a new approach to L2 acquisition, the Grammatical Mapping Paradigm, that is comparable with Organic Grammar in that it is UG-based, but appears not to assume Strong Continuity. They point out that the evidence they cite is incompatible with maturation, given the similarities between L1 and L2 acquisition. Furthermore, the data cannot be accounted for based on the atheoretical assumptions of input frequency or of simplicity: the earlier acquired forms are often not the most frequent, nor are the primary forms necessarily simpler than later forms.

The Grammatical Mapping Paradigm consists of the following assumptions:

- (1) Language learning is computational, not maturational;
- (2) The language learner maps from one primary source to another more developed structure by dissociating modular grammatical components and integrating them in the “assembly” of new language specific grammars;
- (3) The learner is constrained by UG in the course of acquisition.

Grammatical mapping is the computational component that links data, UG and the L2 grammar, resulting in a specific language.

We maintain assumptions (1) and (3), as well; assumption (2) is the crux of Flynn et al.’s new proposal. It is, however, not immediately evident how data of the type that we discuss in this book would be accounted for by the Grammatical Mapping Paradigm.

Chapter 5

Second language acquisition at the IP level

5.0. Introduction

In Chapter 2, we developed a syntactic tree for German that represents the target of acquisition for L2 learners of German. The main verb and its argument structure form the core of the sentence (the VP), and functional, IP-level projections are layered over the VP. In the last chapter, we argued that (naturalistic) L2 learners of German begin their syntactic acquisition with a bare VP structure, with its word order initially transferred from the speaker's L1, and in this chapter we present the case for subsequent development of functional projections.

A point we have already mentioned and which we will touch on throughout the rest of the book is the observation that some learners do not evidence further development beyond a bare VP – or beyond the lowest levels of what Klein and Perdue (1997) refer to as the Basic Variety – despite years of residence in Germany. Yet we neither know how much input L2 naturalistic learners actually receive in such immersion settings nor how much exposure they require in order to reach a particular stage or to attain native competence in the L2 (Carroll 2001). Perhaps the 9,000 hours of active input a child has received by age five (according to Sharwood Smith 1994) could serve as a guideline for how much input the L2 learner needs to become proficient in a second language. Can we assume that five years' residence equates to 9,000 hours? As will become clear when we look at data from adults who fossilize at lower stages of acquisition, although length of residence is regularly used as a proxy for L2 exposure in studies examining age differences in ultimate attainment, upon closer examination, mere residence may turn out to involve minimal exposure (see Herschensohn's [2007] review and Moyer's [2004] consideration of additional factors relating to phonological attainment in L2 German immersion). As Young-Scholten and Piske (2009) point out, the low amount of input some adult immigrants get is due to social exclusion which can be compounded by too little native language schooling for the establishment and transfer of literacy skills to enable access to print in the L2 (see e.g. Tarone, Bigelow and Hansen 2007; VanPatten 1988; Young-

Scholten and Strom 2006). We take up the implications of this issue in the concluding chapter of this book.

Our claim concerning the acquisition of IP-level projections will be that no further recourse to the learner's native syntax takes place beyond the initial transfer of the lexical projection VP; under Organic Grammar, functional projections do not transfer because the corresponding functional morphemes themselves are not transferable. Not only is this a controversial view (cf. e.g. White 2003b), but it may be too strong and we may also need to slightly adjust the strong lexical/functional divide that we have proposed, as will become clear. In general, however, the Master Tree from the learner's L1 is not usable in the acquisition of additional languages. Under Schwartz and Sprouse's (1994, 1996) Full Transfer/Full Access Hypothesis, evidence of transfer of all of the IP-level projections is predicted to be found from the very start of acquisition. A Strong Continuity view which also assumes no transfer such as Epstein, Flynn and Martohardjono's (1998) would still predict evidence of functional syntax, where the L2 learner, like the child, has access to the universal tree which UG is assumed to provide. However, the data from Japanese children and adults acquiring English upon which this claim is based, most likely did not represent earliest stage of acquisition, as pointed out in Vainikka and Young-Scholten (1998b).

We will see that once (or at the same time as) the L2 learner has projected the German VP, functional projections emerge, providing positions in which the grammatical elements associated with these projections can be realized. Verb raising first becomes possible for the learner, and then later becomes obligatory. Under Organic Grammar, productive use of functional elements – particularly those with little or no semantic content (e.g. auxiliaries) – further points to the acquisition of the syntactic position in which these elements occur. The agreement paradigm emerges, first for the copula, then for auxiliaries and finally on main verbs, and agreement finally becomes obligatory. Questions and embedded clauses are syntactically more complex, involving new positions in which finite verbs are found, but these are not yet native-like for reasons that will become clear below. In a detailed study of the longitudinal data from the Italian (ZISA study) learner Bruno, Müller (1998) notes that his grammar systematically allows non-L1-based and non-L2-related utterances in a UG-constrained manner. This is exactly the type of developmental pattern that OG seeks to explain.

As discussed in Chapter 2, the specific functional projections we need for German morphosyntax are, from the bottom up: Negation Phrase (NegP), Tense Phrase (TP), and Agreement Phrase (AgrP). (See the tree [2.18'] in Chapter 2.) In addition, embedded clauses have a further layer, Complementizer Phrase (CP). As we did in Chapter 3 for child German, we will present evidence that the projections are acquired in the order that they are posited in the adult target language: first the NegP, then the TP, then the AgrP; this is what is predicted by the structure building approach of Organic Grammar (see Chapter 1). In Chapter 7 we then discuss the later development of the CP projection. Here we look at learners of German we have studied as well as those studied by others, and as in Chapter 4, our discussion starts with our previous analyses of the ZISA, von Stutterheim and LexLern study data and then focuses on our (VYSA) data from English-speaking learners of German. The studies of the naturalistic adults presented in Table 4.1 will continue to be relevant, as they also involved cross-sectional learners at higher stages of morphosyntactic development, and also the longitudinally studied learners who progressed beyond to higher stages.

5.1. The acquisition of functional projections in a second language

In his textbook on the second language acquisition of syntax, Hawkins (2001) develops an approach akin to the pre-2007 version of Organic Grammar, which he terms Modulated Structure Building. Hawkins re-examines early studies on the second language acquisition of English (by a variety of L1 speakers) in terms of verbal morphology (Andersen 1978; Bailey, Madden and Krashen 1974; Dulay and Burt 1973, Maki-no 1980, Zobl 1989; but see Cox 2005 on problems with L2 morpheme order studies).¹³² Based on these studies, Hawkins presents a typical

132. Since Dulay and Burt (1973) and Bailey, Madden and Krashen (1974), there have been numerous criticisms from various vantage points. Cox's is but a more recent example. Attempts have also been made over the years to explain – criticisms notwithstanding – robust findings on morpheme order in English, and Goldschneider and DeKeyser (2001) is a recent example. Based on a meta-analysis of twelve L2 English morpheme order studies, they claim that properties related to the salience of the morphemes themselves may be responsible for the observed order to a high degree, rather than any type of syntactic model or innate blueprints. However, we suspect that this is a 'chicken-and-egg' type of problem –

order of acquisition of inflectional morphology that supports structure building and Organic Grammar: a transferred, bare VP is initially projected, and the order of acquisition of verb-related inflectional morphology in L2 English is uniform, regardless of age, type of exposure, and to a large degree the L1 of the speaker. Applying the Split-INFL Hypothesis (Pollock 1989; see Chapter 2) to the data Hawkins discusses, the following general order of acquisition emerges for L2 English. It strongly supports the L2 learner's gradual positing of functional projections:¹³³

VP → AspP → TP → AgrP

In a similar vein, Romano (2011), in his recent study of the acquisition of INFL-related properties in L2 English and L2 Italian by French, Spanish and English speakers, found that verb raising was acquired before agreement morphology. Here Biberauer and Roberts' (2010) Minimalist account whereby rich T-features in T trigger V-to-T while rich phi-features in T trigger null subjects predicts acquisition of verb raising before (target-like) subjects. Furthermore, Zobl (1998) concludes on the basis of absence of agreement, absence of the complementizer 'that', and the presence of non-finite verb forms that the three L2 English speakers (L1 Russian) whom he studied over six months did not initially project an IP projection. He notes, "The causal link proposed between the representation of affixal information and the building of true functional projections can be seen as an effort to elevate the role of bound morphology as a mechanism in the creation of a functional architecture for adult interlanguage grammars." (Zobl 1998: 366).

In chapter 4 of his (2001) book, Hawkins also reviews a number of studies on the L2 acquisition of English questions. The observed data

since the properties related to salience that they discuss include notions such as syntactic category, semantic complexity, and morphophonological regularity, it is possible that syntax – and the related areas of semantics and morphology – are the cause of the observed pattern, rather than the result.

133. Hawkins' order of acquisition corresponds to the order predicted for L2 English given the tree developed in Chapter 2, with 'Aspect Phrase' corresponding to our 'Progressive Phrase'. Two additional projections were needed in Chapter 2 based on the adult syntax, for data not included in Hawkins' discussion (negation and compound tense formation).

from across various L1 backgrounds suggest an early stage where learners' questions are formed without a CP, with CP developing later, and neither stage involving transfer from the L1. In fact, there is fairly general agreement in generative L2 acquisition literature that early grammars lack a CP projection, although we will return to challenges to this point of view in the CP-chapter (Chapter 7). Furthermore, when the CP emerges it may not be an L1-based one. Although they argue against Minimal Trees (one component of the precursor of Organic Grammar), Grondin and White (1996), Lakshmanan (1993) and Lakshmanan and Selinker (1994) present data that show development from AgrP to CP, with little L1-influence for child L2 French by English speakers and for child L2 English by Spanish speakers, respectively. When we do not find expected L1 transfer of functional material, this is evidence for the OG approach.

Similarly to what is claimed by Hawkins for L2 English, development by learners from all language backgrounds – regardless of the headedness of their functional projections – follows a common route for all L2 German learners, as well as closely paralleling L1 children's development. Although analyses differ, as we shall see, this pattern loosely fits Clahsen and Muysken's (1986) analysis of the cross-sectional and longitudinal ZISA study of 59 Romance-language-speaking adults learning German. One commonality across Clahsen and Muysken's (1986, 1989) approach, Pienemann's (1998) approach and Organic Grammar is the adoption of implicational stages, where acquisition of a subsequent stage implies acquisition of a previous stage.

Table 5.1 ZISA-study based stages of development in adult L2 German

1. SVO order	<i>Die Kinder spielen mit dem ball.</i> 'The children play with the ball.'
2. Adverb preposing	* <i>Da Kinder spielen.</i> 'There children play.' (<i>Da spielen Kinder.</i>)
3. Verb separation	<i>Alle Kinder <u>muss</u> die Pause <u>machen</u>.</i> 'All children must take a break.' (<i>müssen</i>)
4. Inversion	* <i>Dann <u>hat</u> sie wieder die Knoche gebringt.</i> 'Then she brought the bone again.' (<i>Knocke...gebrungen.</i>)
5. Verb-end	<i>Er sagte, dass er nach hause <u>kommt</u>.</i> 'He said that he'll come home.'

Subsequent to learners having initially acquired what Clahsen and Muysken refer to as the canonical SVO word order rule, Clahsen and

Muysken and Pienemann claim that the ZISA learners acquire the ‘particle rule’ or ‘verb separation’ which yields the superficial pattern of SVO-particle as well as nonfinite verbs in final position in declarative clauses, as shown in Table 5.1 for stage 3. Under Organic Grammar, this development instead points to Romance learners’ shifting their previous head-initial VP to head-final, as discussed in Chapter 4. The next step in development is then the finite verb’s occurrence in the second position in main clauses; our interpretation is that these involve learners’ head-initial IP-level projections. The last property acquired is the final position of the finite verb in embedded clauses: under Organic Grammar, CP – needed for embedded clauses – is not even projected until IP-level projections are in place, as we will discuss below and in more detail in Chapter 7.

Despite certain similarities across Organic Grammar and the approaches of Clahsen and Muysken and Pienemann, it will be clear to the reader that the details of the three analyses differ considerably. Clahsen and Muysken’s analysis and Pienemann’s Processability both exclude direct involvement of UG in adult L2 acquisition and all maintain that the post-puberty learner recruits only general cognitive mechanisms (and in Pienemann’s case, universals of processing). In our discussion below we will also refer to other recent non-UG analyses of adult L2 German. These analyses also eschew L1 transfer from the start (as discussed in Chapter 4) and throughout acquisition, and because the cognitive mechanisms assumed are universal, common patterns of acquisition are expected across L2 learners.

In each section below, our initial concern will be whether learners are systematic in their projection of additional, post-VP syntax in German. We will see that beyond the very early negation data, all learners first posit a head-initial functional projection which may not yet be specified for tense or for agreement, but which allows raising of the main verb. Unlike those who argue that non-linguistic cognitive mechanisms drive adult L2 acquisition, the similarities between adult L2 learners, child L2 learners as well as child L1 learners of German prompt us to favor an approach to the acquisition of syntax which involves linguistic mechanisms for learners across the lifespan.

We now turn to the detailed presentation of data from learners grouped by native language. Unlike in Chapter 4, where under Organic Grammar native language influence was first predicted and then confirmed for the lexical projection VP, in these three chapters OG predicts no such influence on the acquisition of functional projections. We still

need to attempt to rule out transfer, and we will therefore offer predictions based on learners' native languages. To address the native language knowledge of morphosyntax upon which a learner might draw, in the sections below we include relevant information, starting here with a cross-linguistic comparison of these languages to German.

Apart from English, all the languages shown in Table 5.2 on the following page allow null subjects, and all languages apart from Korean mark subject-verb agreement and tense on main verbs through suffixation. In Spanish, Italian, and English copula 'be' exists along with auxiliaries and modals, all of which also mark subject-verb agreement. While Turkish marks subject-verb agreement, there is no copula in the affirmative present tense, nor are there auxiliaries or modals with free morpheme status. With respect to word order, both lexical and functional projections in Korean and Turkish are head-final (Choe 1988 on Korean; Comrie 1981 on Turkish), while in English, Italian and Spanish they are head-initial.

Based on what is shown in Table 5.2, we would predict groups of learners to exhibit clearly distinct acquisition trajectories. If native language knowledge can be facilitative as claimed in Lado (1957), where similarities equate to ease of acquisition and in turn lack of errors, our English learners should commit the fewest errors. Where differences represent difficulty, realised as the production of non-target forms/errors, Korean learners of German should struggle the most, since apart from sharing a head-final VP, the native and target languages have nothing else in common. However, over half a century of research has shown us that Lado's Contrastive Analysis Hypothesis is not supported; it does not account for morphosyntactic development. As we will see, like first language acquisition, second language acquisition runs its natural UG-driven course where acquisition entails the mind working out the properties of a particular language in relation to the input received by the learner. This is not to say that L1 influence is discounted by all L2 acquisition researchers; recall our mention of the Full Transfer/Full Access Hypothesis (Schwartz and Sprouse 1994, 1996) in earlier chapters.

Table 5.2 Comparison of verbal morphosyntax in the five NLs with TL German

	<i>Agreement</i>	<i>Verbal morphology</i>			<i>Empty subjects</i>	
		<i>Tense</i>	<i>Copula</i>	<i>Modal</i> ¹	<i>Auxiliary</i> ¹	
Korean	no ²	Yes	yes ³	No	No	Yes
Turkish	Yes	Yes	no ⁴	No	No	Yes
English	Yes	Yes	Yes	Yes	Yes	No
Italian	Yes	Yes	Yes	Yes	Yes	Yes
Spanish	Yes	Yes	Yes	Yes	Yes	Yes
German	Yes	Yes	Yes	Yes	Yes	No

	<i>Projection headedness</i>	
	<i>Final</i>	<i>Initial</i>
Korean	√	
Turkish	√	
English		√
Italian		√
Spanish		√
German	√	√

1 'Modal' and 'auxiliary' refer here to free morphemes in the column headings.

2 While Korean does not otherwise mark agreement, the honorific form of the verb can be considered to involve agreement.

3 Copula *be* is another post-verbal suffix in Korean, and only occurs with nouns, not adjectives.

4 Copula *be* in Turkish only exists in negated utterances and in the past tense.

In each section below, we provide further information on the relevant native languages and we discuss the predictions that arise from the L2 learner's initial state, where along with UG, native language knowledge can potentially shape acquisition of German. After presenting the data collected and our analysis thereof, we then consider whether there is indeed any evidence of native language influence after the initial stages of acquisition.

5.2. The development of the NegP projection

In 1984, Andersen noted that negation has been "probably the most studied feature of second language interlanguage" (Andersen 1984: 122). Rather than provide a summary of this rich vein of research, our

main concern is the timing of the development of negation in L2 acquisition and its relationship to the NegP projection (a relatively recent invention, after Andersen 1984). Recall that the position of the NegP projection in the Master Tree of German was somewhat unclear based on (adult) German syntax alone (Chapter 2), but in Chapter 3, we discussed L1 acquisition data that point to the very early acquisition of negation. We thus adopted a position for the NegP projection immediately dominating the VP. This solution is both consistent with German word order and supported by the child developmental data (assuming any version of structure building, not only OG). Given the locus of the NegP in the Master Tree, we now predict that for naturalistic L2 acquisition, there will be evidence for a NegP projection prior to any other functional projections. This prediction turns out to hold.

Overall, there is more similarity in the acquisition of German negation between L1 and L2 acquisition than previously thought, according to Meisel (1997a). This point is also supported by child data from L2 English/L1 Icelandic from a study by Bohnacker (1997), who found overgeneralization of *do*-support in negative (and other) constructions, similar to what has been observed in L1A of English; this finding cannot involve transfer from the L1 as Icelandic has no equivalent of the English auxiliary *do*.¹³⁴ Further child L2 English data (L1 French; Gerbault 1978 and Tiphine 1983, no date) are examined in Eubank (1993), who notes that at early stages, their negation is L1-like (see e.g. Deprez and Pierce 1993). The negative element precedes the phrase or clause. This is what Organic Grammar predicts: at the earliest stages, head-initial negation should precede material in the VP (including a possible VP-internal subject). Moreover, during development thematic verbs never precede the negative element unlike in L1 French (thematic verbs also never seem to raise, unlike in French). Finally, Eubank (1993: 10–11) observes that auxiliaries (in negated sentences and in interrogatives) are limited, and there is no tense or agreement marking at the early stages.

Meisel (1997) points out that Schwartz and Sprouse's (1994) approach, which assumes transfer of the full syntactic tree from the L1 to

134. In contrast, however, Bardel's (2000) Ph.D. study data on the acquisition of negation in the Italian of Swedes suggest some L1 influence; both languages are head-initial, but the position of the negative morpheme differs between the two languages. This finding fits with the L1 Turkish data we will discuss shortly.

the L2, predicts considerable variation in the L2 acquisition of negation depending on the L1 background, whereas ‘surprising uniformity’ (p.242) is observed. In discussing the acquisition of negation in L2 English, Hawkins (2001: 113) also finds a “surprising lack of L1 influence”. This conclusion is further underscored by the findings of Yuan (2004), according to whom the acquisition of negation in L2 Chinese was very similar across various L1 backgrounds (English, French, and German).

The acquisition of German negation by Turkish learners is critical in determining whether negation transfers, since negation in Turkish (as well as in Korean) involves a suffix on the verb.¹³⁵ Clahsen (1988: 138) mentions that there are no examples of the naturalistic Turkish learners treating German negation as a verbal suffix as in Turkish; this is precisely what Organic Grammar predicts given no transfer of functional projections. Relevant data also exist from the L2 acquisition of English by a Turkish speaker which will allow us to more fully address this question. The earliest data from Erdem, a 4-year-old Turkish boy acquiring English, discussed in Haznedar (1997, 2001) and Haznedar and Schwartz (1997), clearly provide a counterexample to the strong claim that there is no transfer of functional projections. In Erdem’s first month of data collection (samples 1–3), he produced five utterances containing a verb and negation, all with the word order exemplified in (5.1), from Haznedar (1997):

- (5.1) a. I: *Oh it’s finished. Let’s play.*
 E: *Finish no.* [S1, 9 March 1994]
- b. I: *Shall we play hide and seek?*
 E: *Play no.* [S2, 17 March 1994]

Contrary to the strong version of our prediction concerning transfer, such examples appear to involve transfer from the head-final Turkish, assuming (as Haznedar does) that *no* is the head of a NegP projection. These data lead us to reconsider the generalization that only lexical

135. The following example of Turkish negation comes from Haznedar (1997: 96):

(Biz) *dün toplantıya katılmadık.*
 (we) yesterday meeting attend -neg -past -1pl.
 ‘We did not attend a meeting yesterday.’

projections are transferred from the L1 to the L2. Our idea was that transfer of functional projections is not possible because the grammatical elements associated with a particular projection cannot transfer, such as the agreement paradigm for AgrP, tense morphology for TP, or the set of possible complementizers for CP. The NegP projection differs from each of these in that it only involves one morpheme, *no*, for Erdem. We propose that the NegP may be more similar to the lexical projections in that the semantics associated with the morpheme are clear, universal, and in some sense simple (no paradigm is involved). Thus, Erdem's data can be seen to clarify the exact nature of elements that can transfer along with the corresponding projections: elements with a one-to-one correspondence between a word and its semantics.

This conclusion is reminiscent of Tomaselli and Schwartz (1990) who propose a tight relation between acquiring lexical items and figuring out the structure of the grammar whereby the learner should be able to use lexical material to fill the pre-given lexical heads but filling INFL will be more challenging. They note the straightforwardness for the learner to fill pre-given lexical heads V, N, A, P and even C relative to the learner's difficulty in filling INFL. In this paper, they conclude that there is no verb raising to INFL in early L2 grammars. Given Erdem's early data, it is possible that negation is treated in the same category as the lexical heads, in contrast to other IP-related material such as tense and subject-verb agreement. Interestingly, the remainder of Erdem's course of acquisition follows the predictions of Organic Grammar, as summarized in Table 5.3.

Table 5.3 Erdem's stages under Organic Grammar

<i>Data collection sessions</i>	<i>Characteristics</i>	<i>Organic Grammar stage</i>
1–6	Object-verb order	VP1 (L1-based)
7–8	Verb-object order	VP2 (target language order)
9–11	Copula; overt pronominal subjects	NegP; FP (early, underspecified, functional projection)
12 onwards	Modals, auxiliaries slowly reach criterion; tense, 3sg -s more slowly	AgrP and other IP-level projections

After the five Turkish-based negation examples in files 1–3, Erdem produces no verbal negation in the subsequent five recordings (made over about 1 ½ months). From session 9 onwards, there is evidence for a head-initial (or specifier position) negation, with negation preceding

the verb in all but one instance (the actual morphemes Erdem uses at this point are either *not* or *don't*, no longer *no*):

- (5.2) a. *Not die.* [S9, 5 June]
 b. *I don't like it you mummy.* [S9]
 c. *I don't eat it this.* [S10, 13 June]
 d. *I'm not eating.* [S10]

In Erdem's first 11 samples, subjects are optional, but from Sample 12 onwards, subjects appear to be obligatory, and various IP-elements emerge. Apart from the initial negation examples, Erdem's data are consistent with a bare VP analysis until about Sample 8, with NegP emerging in Sample 9, and other specified IP-level projections after Sample 12. We speculate that Erdem initially transfers both the VP and the NegP from Turkish,¹³⁶ but early on abandons the transferred NegP, building on structure on the VP as we will see with other learners.

Haznedar and Schwartz (1997) and Haznedar (2001) invoke the Full Transfer approach (Schwartz and Sprouse 1994) to account for Erdem's acquisition; however, we take Erdem's data to constitute overall support for the structure building approach of Organic Grammar while providing evidence for the possibility of negation (and NegP) transferring from the L1. Although this is by no means a relaxation of the view that transfer might include *all* functional projections, it appears that negation may sometimes behave similarly to lexical projections in terms of transfer, for the reasons suggested above.

In recent work on the acquisition of another Germanic language, namely Dutch, by adult Turkish and Moroccan speakers, Verhagen (2007) posits the following stages for the development of negation; note that there is no early stage with transfer of negation:

Stage 1: negation precedes non-finite main verbs (negation follows any modal that occurs)

136. As suggested by the example in the previous footnote, the negative morpheme in Turkish is adjacent to the verb, indicating that NegP may immediately dominate the VP in Turkish. Note that we are not suggesting that just any functional projection may be transferred in this fashion, but that the universal semantics of negation may make it more likely to be initially transferred, and its syntactic location adjacent to the VP in both languages would make such transfer even more likely.

Stage 2: negation follows an auxiliary (some variability in the placement of negation)

Stage 3: negation consistently follows all finite verbs (including main verbs)

The same pattern holds for speakers of head-initial languages (such as English, Italian or Spanish) acquiring L2 German, to which we now turn. Since the standard analysis for German negation and the Indo-European head-initial languages involves positing the negative morpheme in the specifier position of NegP (which is assumed to occur at the beginning of the NegP), negation data from a head-initial language will not turn out to be particularly informative in shedding light on L1 influence. However, if we can show that NegP is projected early, we have an argument for Organic Grammar and the development of functional projections.¹³⁷

As in L1 German, the earliest instances of negation in naturalistic L2 German involve preverbal negation with a Root Default verb form. Some such examples are provided in (5.3) ([5.3a] from Clahsen 1988, [25b] on Spanish/Italian L1; [5.3b] from Becker 2005 [on Italian L1 learners of German]):

- (5.3) a. *Aber nich helfen hier.*
 But not help*-INF here
 'But they do not help here'
- b. *Mein Vater nicht schlafen.*
 my father not sleep*-INF
 'My father doesn't sleep/isn't sleeping'.

For Italian and Spanish speakers acquiring German, Clahsen (1988: 22) posits the following three stages of development, based on the ZISA data (Clahsen, Meisel and Pienemann 1983):

- I: preverbal negation
 II: immediate postverbal negation
 III: NEG-separation

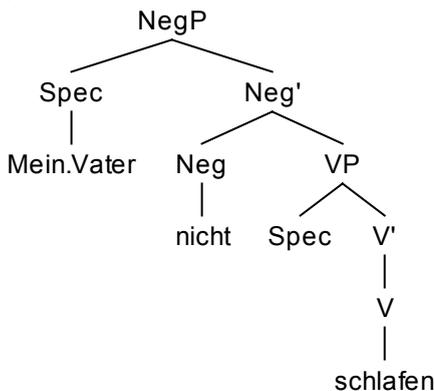
137. A preliminary version of the remainder of this subsection was presented at the DGfS conference in Siegen in 2007; we thank the audience for their useful comments.

In a longitudinal study of three Italian adults learning German naturalistically,¹³⁸ Becker (2005) arrives at slightly more fine-tuned stages, basically splitting Clahsen's Stage II into two substages (what we will call IIa and IIb here):

- I: preverbal negation with thematic verbs only
- IIa: auxiliary *haben* acquired; negator consistently follows (correct agreement)
- IIb: thematic verbs raised over negation

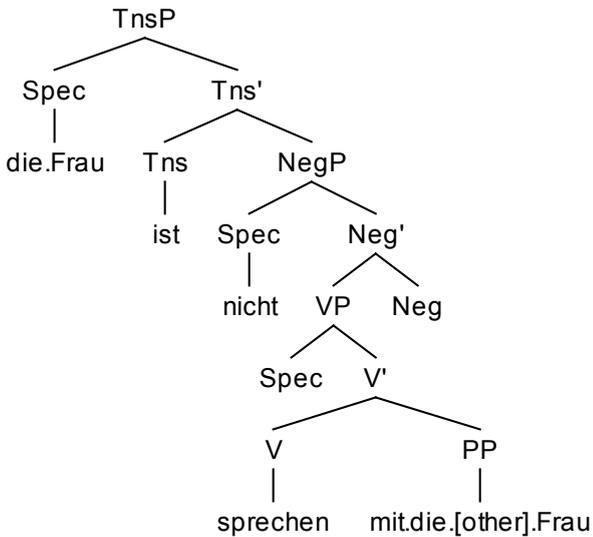
Recall Verhagen's (2007) stages for L2 Dutch (L1 Turkish/Moroccan) discussed above, which show the same stages as Becker's L2 German (L1 Italian) data. Completely in parallel with the L1 acquisition of German negation, we propose that Stage I would correspond to the development of a NegP projection above the already projected VP, and Stage IIa and IIb would involve a further projection beyond the NegP, as shown in the trees in (5.4) (see discussion below on headedness of the NegP and the subject position); (5.4a) corresponds to example 5.(3b) above, and (5.4b) to example (5.11) below:

(5.4a)



138. Becker's (2005) subjects were Angelina (a housewife) who had lived in Germany for 14 years at the start of data collection; ESF study learners Marcello and Tino (waiters) had lived for 9 months and 3 months, respectively, in Germany at the start of the 2 ½ year data collection period.

(5.4b)



As suggested in Schwartz and Tomaselli (1990) for L2 acquisition, modals and auxiliaries first occupy the INFL – our T(ense) – position (or raise to it) due to their semantic connection to modality and aspect, followed by a later stage at which main verbs raise to an initial INFL position. Furthermore, as pointed out by Clahsen (1988: 28), since the position of negation is after auxiliaries and modals in German, this stage (his Stage II), unlike in Spanish or Italian, supports the view that negation is not transferred from the L1.

Note that Clahsen argued in his (1988) negation article based on Clahsen and Muysken (1986) that the L2 German data show that adults do not have access to UG. However, duPlessis, Solin, Travis and White (1987); Schwartz and Tomaselli (1990) and Tomaselli and Schwartz (1990) argue against this conclusion, showing that Clahsen's data are not only consistent with a UG-based approach, but in fact provide evidence for UG-constrained adult L2 acquisition.

In Chapter 4 we briefly discussed negation examples in the data from the four Spanish/Italian speakers analyzed as representing the bare VP-stage. Two of the four, Rosalinda and Jose, produced basically no instances of negation.¹³⁹ All nine instances produced by Bongiovanni

¹³⁹ However, according to Parodi (2000), the L2 German data even from rapid learner Jose (and the other two longitudinal ZISA learners she stu-

and Salvatore (at the VP-stage) involve negation preceding the main verb, consistent with Clahsen's and with Becker's Stage I negation; examples repeated here (from Vainikka and Young-Scholten 1996c: 158–159):

- (5.5) a. *Ich nix komme in Spanien.*
 I not come-1SG in Spain
 'I don't go to Spain.' [Bongiovanni]
- b. *In Fabriken eh nis so viel spreche Deutsch.*
 In factory uh not so much speak*-INF German
 'In factories there isn't much German spoken.'
 [Salvatore]

These early examples from Bongiovanni and Salvatore – produced at the stage where the overwhelming proportion of utterances appear to be bare VP structures – are indications of a stage of acquisition beyond the bare VP stage, involving the NegP projection. Recall the headedness generalization developed in Chapter 2, that the first projection in a German sentence is head-initial (the rest being head-final). Following this German(ic) Headedness Generalization, the NegP projection at this stage would be a head-initial one. In fact, we propose that at the NegP-stage, negation first occurs in the head position of the head-initial NegP, as was shown in the tree above in (5.4a). While the standard analysis of the target language involves negation in the Spec(NegP) position, such an analysis – with an empty head position – is presumably universally marked and would thus be dispreferred by language learners, who research has shown favor unmarked structures.¹⁴⁰ Our analysis with negation in the head of NegP at this stage would also explain the possibility of another phrase – such as the subject – in Spec(NegP) at this stage.

died, Giovanni and Bruno), show the negative element preverbally at the earliest stages, but postverbally (target-like) when the verb is correctly marked for agreement.

140. Cross-linguistically, negation must have the option of occupying the Neg-head-position, as we have assumed above for the Turkish negative suffix. Furthermore, in Finnish sentential negation is a verb that inflects for subject-verb agreement (Holmberg et al. 1993). Since it is heads of phrases that are involved in agreement, UG therefore must allow for the option of negation heading a projection such as the NegP.

We now turn to negation in the naturalistic L1 English speakers acquiring German (the VYSA study). Recall that the data in Joan and George's file 1, and in Paul's files 1–2, represented a bare VP stage (Chapter 4), and that switching of VP-headedness took place around file 3 for Joan and Paul, and slightly later for George.

Two narrow elicitation tasks were administered for these speakers that were designed to elicit negative utterances. The learners were asked to spot the difference between two pictures and they were also asked to negate affirmative sentences they had already produced during other tasks (picture prompt and bed and omelette assembly). The data from all three speakers show a correlation between the position of negation and the verb form. (This is the same correlation as is found in the L1 German data; cf. Chapter 3.) In file 3, Paul produces 13 instances of sentential negation which show a perfect correlation between verb raising and verb form; in his earlier files, the correlation is not present. In two of the 13 utterances in File 3 the verb occurs in the infinitive (Root Default) form and follows *nicht* 'not', revealing lack of verb raising (reflecting the first of the negation stages):

- (5.6) a. *Die Mädchen nicht schlafen.* [Paul, file 3]
 the girl not sleep*-INF
 (Das Mädchen schläft nicht.)
 'The girl doesn't sleep/isn't sleeping.'
- b. *Der Mann nicht bauen ein Bett.* [Paul, file 3]
 the man not build*-INF a bed
 (Der Mann baut nicht ein Bett.)
 'The man doesn't build/isn't building a bed.'

In the other eleven sentences, the verb precedes *nicht* and bears finite verb morphology (not the infinitival *-n*), suggesting verb raising; both of these examples presumably fall under Becker's (2003, 2005) Stage IIa:

- (5.7) a. *Ein Frau or das Frau is nicht glücklich.*
 a woman or the woman is not happy
 (Eine Frau oder die Frau ist nicht glücklich.)
 'The woman is not happy.' [Paul, file 3]

- b. *Da die Frau hast nicht ein Jacke.*
 there the woman has-2sg* not a jacket
 (Da hat die Frau keine Jacke.)
 ‘There the woman doesn’t have/isn’t wearing a jacket.’
 [Paul, file 3]

The elicitation task forces Paul to produce negative examples, perhaps prior to his grammar being sufficiently developed for sentential negation. Typically, in Files 1–2 the Root Default verb form is used with negation, with variable position of negation and variable headedness of the VP; the four sentences below were uttered in succession:

- (5.8) a. *Der Mann fahren die Auto nicht, nichts – no*
 the man drive*-INF the car not nothing Nein
 (Der Mann fährt das Auto nicht.)
 ‘The man doesn’t drive the car.’ [Paul, file 2]
- b. *Die Mann nicht fahren die – no –*
 the man not drive*-INF the Nein
 (Der Mann fährt nicht das...)
 ‘The man doesn’t drive the...’ [Paul, file 2]
- c. *Die Mann [laughs] nicht Auto fahren.*
 the man not car drive*-INF
 (Der Mann fährt das Auto nicht.)
 ‘The man doesn’t drive the car.’ [Paul, file 2]¹⁴¹
- d. *Die Mann nicht, uh, die Auto fahren or der Auto*
 the man not the car drive*-INF or the car
fahren.
 drive
 (Der Mann fährt das Auto nicht.)
 ‘The man doesn’t drive the car.’ [Paul, file 2]

141. As we discuss later, Paul’s frequent laughter during tasks is an indication of his awareness of his non target-like production coupled with his discomfort at being powerless to alter it when being observed.

These sentences show negation both (5.8a) following and (5.8b) preceding a head-initial VP. In (5.8c) and (5.8d), negation precedes a head-final VP.

In George's first two files, the negation task gives rise to four instances of preverbal negation (with the Root Default verb form), as in (5.9a), and four examples of a finite verb form preceding negation, as in (5.9b). By file 3, all five negation examples from this task involve a finite (auxiliary) verb form preceding *nicht*, as shown in (5.9c–d); this file corresponds to Becker's Stage IIa:¹⁴²

- (5.9) a. *Die Kinder [uh]die Kinder nicht trinken der*
 the children the children not drink*-INF the
Kaffee.
 coffee
 (Die Kinder trinken den Kaffee nicht.)
 'The children don't drink/aren't drinking the coffee.'
 [George, file 1]
- b. *Die Fraülein [um] die Fraülein [uuh] hat nicht ein.*
 the girl the girl has not one
 (Das Fraülein hat nicht einen/keinen.)
 'The girl doesn't have one.'
 [George, file 1]
- c. *Er ist nicht lauen.*
 he is not smiling*-INF
 (Er lächelt nicht.)
 'He isn't smiling.'
 [George, file 3]
- d. *Das Foto hat [uuh mmm] nicht so viel Vogel.*
 the photo has not so many bird
 (Das Foto zeigt nicht so viele Vögel.)
 'The photograph doesn't have very many birds.'
 [George, file 3]

142. In the target German, definite NPs are typically 'scrambled' or fronted before negation; this was briefly discussed in Chapter 2 (*Extensions 3*) and Chapter 3 (*Extensions 2*). See also Unsworth (2005), who shows that child L2 and adult L2 learners acquire Dutch scrambling in the same way.

In Joan's earliest data (File 1), all four negative sentences produced in the Negation Task occur with the root infinitive form, typically with *nicht* or *keinen* preceding a head-initial VP (recall that the VP is still head-initial at this point):¹⁴³

- (5.10) a. *Die Frau nicht trinken der Tea.* [Joan, file 1]
 the woman not drink*-INF the tea
 (Die Frau trinkt den Tee nicht.)
 'The woman doesn't drink/isn't drinking the tea.'
- b. *Der Mädchen keinen essen Apfel.* [Joan, file 1]
 the girl no eat*-INF apple
 (Das Mädchen isst keinen Apfel/isst den Apfel nicht.)
 'The girl eats no apple/doesn't eat/isn't eating the apple.'

In Joan's Files 2–3 there is still one instance of the Root Default type in (5.10), along with six instances of a finite auxiliary preceding negation, as exemplified in (5.11) (the structure for this sentence was provided above in [5.4b]):

- (5.11) *Die Frau ist nicht sprechen mit die oder*
 the woman is not speak*-INF with the other
Frau.
 women
 (Die Frau spricht mit der anderen Frau nicht.)
 'The woman doesn't speak/isn't speaking with the other
 woman.' [Joan, file 3]

To summarize, as in Clahsen's (1988), Becker's (2005), and Verhagen's (2007) stages for negation, preverbal negation occurs first with a Root Default verb form for these three English speakers acquiring German naturalistically, most clearly in Joan's File 1. We propose that these structures involve a VP projection dominated by the NegP, as was shown in tree (5.4a). To the extent that the early negation involves the negative morpheme in the head of an initial NegP (as suggested above),

143. The only counterexample in Joan's File I is *Der Man [uh] l-liesen nicht Buch*, (the man read-INF not book/Der Mann liest das Buch nicht/'The man does not read the book') where some hesitation about the position of the verb is evident.

the Spec(NegP) position would be available for an overt subject (or some other phrase). The subsequent stage involves auxiliaries which then precede the negative morpheme, with a higher IP-level functional projection now present in learners' grammars for auxiliaries (File 3 for Paul and George, Files 2–3 for Joan), tree (5.4b). We can conclude that the NegP projection is acquired very early, certainly before the AgrP or CP projections, as will become clear. Furthermore, the stages of the acquisition of negation that we have seen show that the very earliest stage of negation (where negation precedes a Root Default verb form) represents a stage before any verb raising, or before auxiliaries are acquired. In addition, the data reveal that the same correlation between verb type and position with respect to negation is present for all three speakers, as found in L1 German. Note that this shows that the assumption by Meisel (1997) (and by Rothweiler 2006: 96, citing Meisel) that adults fail to distinguish between finite and non-finite verbs in terms of position is not well founded. There is a difference between children and adults in that non-finite verbs can be raised more readily by adults (as we will discuss in Chapter 6), but this does not mean that adults *lack* the correlation between finiteness and position altogether.

5.3. Verb raising, FP and TP

A recent comprehension experiment by Schimke (2011) shows that 25 adult lower-level Turkish learners of German who produced (Root Default) OV utterances processed non-finite syntax faster than finite syntax, while the control group produced the opposite result. The intermediate group (with production of auxiliaries) showed mixed results (non-finite syntax was processed faster, but non-finite and finite morphology did not differ in processing speed), leading Schimke to conclude that morphology precedes syntax. The task Schimke used was a self-paced listening task.¹⁴⁴ These results suggest that the production involving Root Default utterances reflects an underlying syntax that – not unexpectedly under OG – also affects the processing of input.

Once the naturalistic L2 learner realizes (subconsciously, of course) that there is inflectional material on verbs in the input which requires

144. There were four sentence types, matched with pictures:

- | | |
|--------------------|--------------------|
| 1a. S V-fin neg PP | 1b. S V+fin neg PP |
| 2a. S neg V-fin PP | 2b. S neg V+fin PP |

something beyond a bare VP (or a bare NegP) projection, under the Theory of Organic Grammar, UG provides a ‘temporary’ projection. The next projection we would predict to find evidence for beyond the NegP is Tense Phrase, TP (given the target structure developed in Chapter 2). However, there appears to be a stage at which the projection is posited but the learner has not yet determined that it is a Tense Phrase, similarly to what has been observed in L1 German. We will follow Clahsen (e.g. 1991, for child German) in referring to such an indeterminate functional projection as FP, for Finite Phrase. That is, FP would be a precursor of TP. Once the nature of the inflectional material on main as well as auxiliary verbs is realized, FP is fully specified as a TP, and a further AgrP projection is posited by the learner. Examples from this initial functional projection (FP) are given in (5.12), from the LexLern and VYSA data (during the picture prompt task).

- (5.12) a. *Jetzt brau Wohnungsamt fragen.*
 now need-0 housing-authority ask*-INF
 (Jetzt muss ich das Wohnungsamt fragen.)
 ‘Now I need to ask the housing authority.’
 [Sevinc/L1 Turkish]
- b. *Un anfang zu regnen.*
 and begin-0 to rain-INF
 (Und es fängt an zu regnen.)
 ‘And it begins to rain.’
 [Maria/L1 Spanish]
- c. *Ein Men liebe das Kuchen für Frühstück.*
 a man love-1SG the cake for breakfast.
 (Ein Mann liebt Kuchen zum Frühstück.)
 ‘A man loves cake for breakfast.’ [Paul 3/L1 English]

(5.13) now illustrates learners who have gone beyond this stage to one at which projections are fully specified, for agreement and for tense.

- (5.13) a. *Sie kommt zu Hause.*
 she come-3SG to home
 (Sie kommt nach Hause.)
 ‘She is coming home.’ [Ensook/L1 Korean]

- b. *Ich habe auf Italienisch gesagt.*
 I have-1SG in Italian said
 (Ich habe es auf Italienisch gesagt).
 'I have said (it) in Italian.' [Bruno 7/L1 Italian]

In a detailed analysis of three of the Spanish and Italian speaking learners of L2 German from the ZISA study (Giovanni, Jose and Bruno), Parodi (2000) argues that verb placement in adult second language acquisition is (contra Meisel 1997) indeed related to finiteness. Parodi observes that the three speakers distinguish between main or thematic and non-thematic verbs (i.e. auxiliaries and modals), the latter showing agreement and target-like position as soon as they occur. In our view, this study inadvertently – Parodi argues for Schwartz and Sprouse's (1996) Full Transfer/Full Access and contra our approach – supports Organic Grammar. Recent results on verb placement by L2 German and French speakers – using elicited imitation and production data (Schimke 2011) similarly show that as predicted by structure building, there is early variation in the placement of lexical verbs (given transfer of lexical projections from the L1), but the position of light verbs is target-like, as it is acquired based on the target language. The author also points out that the reverse pattern would be expected under Strong Continuity coupled with Missing Surface Inflection.

The Finite Linking approach of Jordens (2009) and Dimroth, Gretsch, Jordens, Perdue and Starren (2003) is designed to account for similar L1 and L2 German and Dutch data. Overall, the approach is a structure building one; the main difference between Finite Linking and ours appears to be that Finite Linking does not posit the Acquisition-Syntax Correspondence (Assumption 5) whereby the order of acquisition exactly mirrors the syntactic tree; as in our approach, acquisition of structure is assumed to be similar in L1A and L2A (Jordens 2008: 212). We further compare Finite Linking to our approach in *Extensions 1*.

While the development of functional projections largely follows the same overall trajectory in L1 and L2 acquisition of German, unlike L1 children acquiring German, L2 adults at the early and intermediate stages (when we claim some functional syntax is already present) frequently raise what appear to be non-finite verb forms as in (5.14):

- (5.14) *Ich kaufen Brot so türkische Geschäft.*
 I buy*-INF bread so Turkish store
 (Ich kaufe Brot in einem Türkischen Geschäft.)
 ‘I buy bread at a Turkish store.’ [Mine/L1 Turkish]

In our 1994 study of Korean and Turkish learners of German, 57% of the raised main verbs in the data from the five least advanced speakers occur with the infinitival *-n* suffix, regardless of the person/number of the subject NP (Vainikka and Young-Scholten 1994, Table F). These infinitival forms are also observed in data from learners at more advanced stages; we return in Chapter 6 to what is a problem for the idea that L2 acquisition completely resembles L1 acquisition.

5.3.1. Background on the head-final languages, Korean and Turkish, and data collection

The examples in (5.15) for Turkish and (5.16) for Korean illustrate the information that was summarized in Table 5.1, that these two languages allow empty subjects and that aspect and tense are marked by suffixes on the verb; this is also the case for modality and voice.¹⁴⁵ The examples given below for yes/no and WH-questions show that further suffixation is involved, pointing to head-final functional projections. Moreover, WH-words appear in situ in both languages. Finally, the examples of embedded clauses given in the sets of examples show that the functional projection involving them (CP) is also head-final.

(5.15) Turkish

- a. *(Ben) (bir) öğretmenim.*
 (I) (a) teacher-1SG.
 ‘I’m a teacher.’
- b. *(Ben) (bir) öğretmen değilim.*
 (I) (a) teacher not-1SG
 ‘I am not a teacher.’

145. We thank the following for providing the examples on this and subsequent pages: for Turkish Olcay Sert, for Korean Jeong-Young Kim, for Italian Nicole Bosisio and for Spanish Marcela Cazzoli-Goeta.

- c. *(Ben) (bir) öğretmenim.*
 (I) (a) teacher-PAST-1SG
 'I was a teacher.'
- d. *(Ben) şimdi İstanbul'da Türkçeyi öğreniyorum.*
 (I) now Istanbul-in Turkish-ACC learn-PROG-1SG
 'I'm learning Turkish in Istanbul now.'
- e. *Markus şimdi İstanbul'da Türkçeyi öğreniyor.*
 Markus now Istanbul-in Turkish-ACC
 öğreniyor.
 learning-PROG-3SG
 'Markus is learning Turkish in Istanbul now.'
- f. *(Ben) İstanbul'da Türkçeyi öğrendim.*
 (I) Istanbul-in Turkish-ACC learn-PAST-1SG
 'I learned Turkish in Istanbul.'
- g. *(Ben) Frankfurt'da Türkçeyi öğrenmiyorum.*
 (I) Frankfurt-in Turkish-ACC learn-not-PROG-1SG
 'I'm not learning Turkish in Frankfurt.'
- h. *(Sen) Türkçeyi konuşuyor musun?*
 (You) Turkish-ACC speak-PROG Q-2SG
 'Do you speak Turkish?'
- i. *(Sen) Türkçeyi nerede öğrendin?*
 (You) Turkish-ACC where learn-PAST-2SG
 'Where did you learn Turkish?'
- j. *(O) Türkçesinin çok iyi olmadığını düşünüyor.*
 (she/he) Turkish POSS very good be-NEG
 düşünüyor.
 thinks
 'She thinks that her Turkish isn't very good.'

- k. (O) *Türkçeyi İzmir'de öğrenmiş olması*
 (She/he) Turkish-ACC İzmir-in learn -should
gerektiğini düşünüyor.
 necessity thinks
 'She thinks that she should have learned Turkish in
 İzmir.'

Unlike Turkish, because Korean has no subject-verb agreement, reference can be to 1st, 2nd or 3rd person singular or plural in sentences (5.16c, d and f-j).

(5.16) Korean

- a. *Sue-nun sensayngnin-i-pnita.*
 Sue-TOP teacher -be-DECL
 'Sue is a teacher.'
- b. *Sue-nun sensayngnin-I-ess-supnita.*¹⁴⁶
 Sue-TOP teacher-be-PAST-DECL
 'She was a teacher.'
- c. *Cinan hay-ey (kunye-nun) apha-ss-supnita.*
 last year-in (she-TOP) ill-PAST-DECL
 'Last year (she) was ill.'
- d. *(Na-nun) Seoul-ese hankwuke-lul paywu-ko*
 (I-TOP) Seoul-in Korean-OBJ learn-PROG
iss-supnita.
 PROG-DECL
 '(I) am learning Korean in Seoul.'
- e. *Markus-nun Pusan-ese hankwuke-lul paywu-ko*
 Markus-TOP Pusan-in Korean-Obj. learn-PROG
iss-supnita.
 PROG-DECL
 'Markus is learning Korean in Pusan.'

146. Various alternations are phonological: between *-p* and *-sup*, between *-un* and *-nun* and between *-ess* and *-ss*.

- f. *(Na-nun) Seoul-ese hankwuke-lul paywu-ess-supnita.*
 (I-TOP) Seoul-in Korean-OBJ learn-PAST-DECL
 ‘(I) learned Korean in Seoul.’
- g. *(Na-nun) Frankfurt-ese hankwuke-lul paywu-ko*
 (I-TOP) Frankfurt-in Korean-OBJ learn-PROG
iss-ci anh-supnita.
 PROG-NEG NEG-DECL
 ‘(I) am not learning Korean in Frankfurt.’
- h. *(Tangsin-un) hankwuke-lul ha-pnikka?*
 (you-TOP) Korean-OBJ speak-Q
 ‘Do (you) speak Korean?’
- i. *(Tangsin-un) eti-ese hankwuke-lul*
 (you-TOP) where-in Korean-OBJ
paywu-ess-supnikka?
 learn-PAST-Q
 ‘Where did you learn Korean?’
- j. *Kunye-nun (kunye-ka) Seoul-ese hankwuke-lul paywu-*
 she-TOP (she-SUB) Seoul-in Korean-OBJ learn-
*ess-eyahay-ss-ta-ko sayngkakha-pnita.*¹⁴⁷
 PAST -should-PAST-emb cl DECL-that think-DECL
 ‘She thinks that (she) should have learned Korean in Seoul.’

With these facts in mind, let us first turn to how collection of the data took place, followed by initial analysis of the data.

As mentioned in Chapter 4, the Korean and Turkish data come from the LexLern Project and were collected in North Rhine Westphalia during audio-recorded sessions of between 45 and 90 minutes. Data from this project and from the ZISA project did not come from learners exposed to any German dialects whose inflections demonstrate marked

147. The Overt Pronoun Constraint (Montalbetti 1984) dictates that for languages that allow empty subjects, in the embedded clauses an empty subject is required when reference is not disjoint, i.e. reference is to the same person in both clauses.

deviations from standard German (e.g. southern German dialects).¹⁴⁸ In this chapter, we provide more detail on the elicitation methods used, as they are of greater relevance to the acquisition of functional projections (see Vainikka and Young-Scholten 1994 for full information). Five tasks were used to reduce the amount of elliptical utterances typically occurring during interview situations. These aimed to elicit a range of sentence types to examine verb placement and verbal morphology. The first two required the learner to tell stories following comic strips containing little or no text. One was designed to elicit agreement, the other overt pronouns or empty subjects; both also attempted to elicit verbs in various positions. The third task was designed to elicit transitive verbs in the third person singular through description of hand-drawn color illustrations of everyday activities. To elicit second person singular and past tense, a fourth task asked the informants to describe an action the researcher carried out when the informant's eyes had been closed. The final task required the informant to describe the steps of preparation of tea depicted in sets of pictures, one of which indicated a previous time, thus requiring use of past tense.

Answers to the interviewer's questions about the informant's background and all spontaneous utterances which occurred during the data collection session, along with the task data, were transcribed and checked. Repetitions and near repetitions of the researcher's speech were excluded. On the basis of presence in learners' production 60% of the time, the following implicational scale was established: *main verb agreement* > *verb raising for main verbs* > *overt subjects* > *head-final VP* (see Table 1 in Vainikka and Young-Scholten 1994: 278).¹⁴⁹ Similar to others using implication scaling (Clahsen and Muysken 1986; Pie-

148. Lack of correlation between age, length of residence (both of which varied a great deal) and stage of syntactic development for cross-sectional learners in these studies should be noted; see Chapter 4.

149. As discussed at the start of Chapter 3, the researcher looking at development must invariably decide when acquisition has taken place. We did not adopt first-time use (sometimes referred as emergence) as it does not represent productivity, particularly when a memorized chunk could be involved. When one is not dealing with chance (production of a form/construction vs. non-production is not akin to flipping a coin), a frequency of 60% use can indicate productivity. We found that this cut-off point was able to distinguish between speakers in the corpus on the basis of their preference for verb raising and preference for overt subjects.

nemann 1998), if a particular speaker displayed productive agreement marking, he/she had acquired verb raising, non-Pro-Drop, and a head-final VP. This scale allowed us to place learners at four stages. We have already considered those at the bare VP stage (which covers those learners that have acquired the head-final VP in the implicational scale). The other three elements in the implicational scale – overt subjects, verb raising, and agreement – involve IP-level functional projections, and thus all of the remaining Turkish and Korean learners from Vainikka and Young-Scholten (1994) will be considered in this chapter.

5.3.2. *FP in the data of L1 Turkish/Korean speakers*

As discussed in Chapter 3, Clahsen (1991) and Clahsen and Penke (1992) have argued that German children's first functional projection (in fact, their initial grammar) is an underspecified, head-initial one which provides a position into which the verb can raise, resulting in apparent V2 structures. For children, the subject-verb agreement paradigm has not yet been acquired and subjects and verb raising are optional. Data from five of the Turkish speakers indicate that they have progressed beyond the bare VP (or bare NegP) stage and are at a stage comparable to children's FP-stage.

Table 5.4 Turkish learners at the FP stage

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age at testing/ Years residence</i>	<i>Data source</i>
Sevinc	Turkish	M	34/9	von Stutterheim
Kemal	Turkish	M	37/11	von Stutterheim
Ahmet	Turkish	M	52/22	LexLern
Kadir	Turkish	M	36/11	von Stutterheim
Mehmet	Turkish	M	55/24	LexLern

This stage is characterized by optional verb raising, the production of some modals and auxiliaries, lack of an agreement paradigm, lack of yes/no and WH-questions with inversion and lack of embedded clauses with complementizers. Table 5.5 points to a preponderance of the same sort of suffixes learners at the bare VP stage produce (Table 2.10 from Vainikka and Young-Scholten 1998a):

Table 5.5 Suffixes on main verbs in all positions

<i>Name</i>	<i>Total main verbs</i>	<i>-n or bare stem</i>	<i>Other suffixes</i>
Sevinc	140	89%	11%
Kemal	257	93%	7%
Kadir	197	94%	6%
Ahmet	64	92%	8%
Mehmet	100	78%	22%

These five use slightly more functional elements than those at the bare VP stage, as shown here (from Vainikka and Young-Scholten 1998a):

Table 5.6 Free functional morphemes at FP stage

<i>Name</i>	<i>Total main verbs</i>	<i>Auxiliaries and modals</i>	<i>Copulas</i>
Sevinc	150	6	1
Kemal	304	17	13
Kadir	252	8	39
Ahmet	73	8	7
Mehmet	118	3	12

That agreement is not yet fully productive (i.e. the full paradigm has not yet been acquired) is indicated by data showing that none of these speakers used more than two of five German agreement suffixes. Further evidence that the projection used at this stage for verb raising is not yet an AgrP is provided by two further observations concerning verb raising and empty subjects. First, verb raising is optional at this stage,¹⁵⁰ occurring less than 60% of the time – if the learners had target-like AgrP and TP projections, we would expect obligatory verb raising:

Table 5.7 Verb raising (Table D, Vainikka and Young-Scholten 1994: 301)

<i>Name</i>	<i>Total Ss with verbs</i>	<i>Verbs in VP</i>	<i>Verbs raised</i>
Sevinc	150	63%	37%
Kemal	304	47%	53%
Kadir	252	55%	45%
Ahmet	72	54%	46%
Mehmet	118	52%	48%

150. In principle we would use the position of adverbs and negation relative to the finite verb as a diagnostic for verb raising (Emonds 1976; Pollock 1989), but the rarity of even temporal adverbs and negation in our production data precluded this. Instead, we looked at when verbs preceded rather than followed the same material which was used as a diagnostic for head-final VP at the bare VP stage.

At this stage, there are still Root Default utterances characteristic of the VP stage, without verb raising:

- (5.17) a. *Der deutsche Buch lesen.* [Kemal]
 the German book read*-INF
 (Ich lese das deutsche Buch.)
 ‘(I) read the German book(s).’
- b. *Immer jeden Tag 500 Stück machen.* [Kadir]
 always every day 500 units make*-INF
 (Ich mache jeden Tag 500 Stück.)
 ‘(I) always make 500 units every day.’
- c. *Diese auch Ofen ausschalten.* [Mehmet]
 this also oven off-turn*-INF
 (Ich schalte diesen Ofen auch aus.)
 ‘(I) also turn this oven off.’

The second observation related to a potential AgrP projection is that, while learners also produce subjects more frequently, their status is optional, unlike in the target grammar. Instead we find a strong correlation between the presence of a raised verb and lexical material preceding the verb which is often a subject as shown in (5.18) (Examples from Vainikka and Young-Scholten 1994: 288–289.)

- (5.18) a. *Jetzt brau Wohnungsamt fragen.* [Sevinc]
 now need housing-authority ask-INF
 (Jetzt muss ich das Wohnungsamt fragen.)
 ‘Now (I) need (to) ask the housing authority.’
- b. *Und dann mitnehmen vielleicht Wohnung.* [Ahmet]
 and then with-take*-INF maybe apartment
 (Und dann nehme ich es vielleicht in meine Wohnung mit.)
 ‘And then (I) maybe take (it) along (to my) apartment.’
- c. *Mir machen nichts mehr.* [Mehmet]
 me make*-INF nothing more
 (Sie tun mir nichts mehr.)
 ‘(They will) do nothing more (to) me.’

Table 5.8 Overt subjects vs. filled Spec(IP) position

<i>Name</i>	<i>Sentences with raised verbs</i>	<i>Something preceding the verb</i>	<i>Overt subjects in any position</i>
Sevinc	51	37 (73%)	24 (47%)
Kemal	139	110 (79%)	78 (56%)
Kadir	103	84 (82%)	74 (72%)
Ahmet	33	30 (91%)	24 (73%)
Mehmet	56	50 (89%)	41 (73%)

The Full House Principle proposed in Vainikka and Young-Scholten (1994) accounts for this pattern, where the specifier position of the functional projection learners posit must be filled, pointing to learners' (direct) access to X'-Theory. Choice of element to fill this position is likely to be related to discourse or semantic factors, which will often result in the learner producing a subject (an agent) in this position, giving the misleading impression that the obligatory status of subjects in German has been acquired.¹⁵¹

What we find, then, at the FP-stage is the possibility of verb raising (to an underspecified functional head), along with a typically filled specifier position. It is clear that this projection is not yet an AgrP, given the lack of an agreement paradigm on main verbs, the optional nature of verb raising and optional overt subjects. We should point out here that while modals and auxiliaries in German exhibit considerably richer agreement than, say, in English, there were two reasons why the copula, modals and auxiliaries were not used to determine whether AgrP had been projected. First, there is the possibility that modals and auxiliaries are base-generated in some IP-level head position and their presence would not reveal obligatory verb raising of main verbs, base-generated in the VP. Second, the production of modals and auxiliaries is poor indication of whether the agreement paradigm has been acquired, given their slightly irregular paradigms.

When producing finite verbs – without having an agreement paradigm – the learners either use no suffix at all, or more frequently, use the suffix *-n* (65–86% of the time), a finding which has since been confirmed by a number of others (e.g. Prévost and White 2000a/b/c). This

151. These patterns can also be found in publications by Perdue, Dittmar, von Stutterheim and others who have done a considerable amount of very interesting work on the discourse factors that shape interlanguage; see e.g. von Stutterheim (1987) and Dimroth et al. (2003), with the ESF data as a starting point.

leads to the conclusion that while learners have posited an IP-level projection to whose head verbs can raise, there is no specification for agreement; we will return to the question of whether the early projection, FP, may in fact be specified for Tense. Here the L2 data are both similar to and different from children's data. The child L1-adult L2 similarities revolve around the headedness of the first functional projection that appears in L2 adults' and L1 children's data. This projection is head-initial. In terms of addressing possible transfer, this projection cannot derive from the L1, since IP-level functional projections in both Korean and Turkish are head-final.¹⁵² Furthermore, as we shall see, the data show no differences based on native language; the Turkish speakers with their L1 agreement do not have an advantage over those whose native Korean lacks agreement. An L1/L2 difference, however, is revealed in the marking of raised main verbs. During development, verbs in final position (in the VP) for L1 children invariably appear as *-n* forms and in raised positions are marked for agreement (Clahsen and Penke 1992); this is the contingency observed between verb position and finiteness (see Chapter 3). Data from naturalistic L2 adults, however, clearly illustrate this contingency only with respect to the verb in the VP: verbs in final position, in a head-final VP, invariably end in *-n*, yet raised verbs are either marked for agreement or end in *-n*. (However, recall that the contingency was present with negation even for the L2 adults, earlier in this chapter; cf. also Chapters 4 and 6 on L2 children.) We return to the question of this apparent L1/L2 difference when we address the TP projection.

Finally, there is the question of whether these speakers only projected the initial IP-level projection, or also projected a CP. Evidence for such a projection would be embedded clauses with complementizers and yes/no and WH-questions with a raised verb (aka subject-verb inversion). Learners produced multi-clausal utterances, but only with coordinating conjunctions such as *und* 'and', *aber* 'but', *oder* 'or' and *ama* 'but' (Turkish). None of them produced yes/no-questions or WH-questions involving a raised verb and an overt subject that was not a formulaic chunk (see Chapter 4 on the route of acquisition for questions).

152. There are nearly no examples in the entire corpus from any of the learners of what could be analyzed as a head-final IP-related projection, that is auxiliaries, modals or past participles following the main verb or main verbs marked for agreement in declarative clauses.

5.3.3. Turkish/Korean Learners at a late FP-stage

We have not included the additional Turkish speaker and two Korean speakers mentioned above as their data indicate a slightly more advanced stage than the five discussed above, but they have not yet acquired the AgrP projection, as the following tables show.

Table 5.9 Speakers at the late FP stage

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age at testing/years residence</i>	<i>Data source</i>
Dosik	Korean	M	34/1½	LexLern
Park	Korean	M	38/13	LexLern
Özgül	Turkish	F	45/17	LexLern

Their frequency of verb raising either meets or nearly meets (for Dosik) our 60% cut-off point; the closest to this figure any of the five learners discussed above comes is 53% (Kemal), with the rest raising verbs between 37% and 48% of the time.

Table 5.10 Verb raising (see Table D, Vainikka and Young-Scholten 1994: 301)

<i>Name</i>	<i>Total Ss with verbs</i>	<i>Verbs in VP</i>	<i>Verbs raised</i>
Dosik	91	41%	59%
Park	109	40%	60%
Özgül	117	37%	63%

These three might seem to have posited a functional projection which requires verb raising, i.e. AgrP. However, their distribution of empty subjects indicates this is not the case, and the Full House Principle clearly also applies to their data. The figures for Park and Özgül are roughly the same, with the pre-verbal position filled by something 80%, and by an overt subject over 70% of the time. 100% of Dosik's finite verbs are preceded by something, and this is a subject nearly 90% of the time (see Fig 2, Vainikka and Young-Scholten 1994: 292). Like the other five learners, Park, Dosik and Özgül produced only one or two different agreement suffixes whose use is target-like. While Özgül's overuse of the *-n* suffix at 45% is similar to the frequency for the other five learners, Park's and Dosik's use of *-n* is comparatively very low, at 13%.

5.3.4. *FP in the data from speakers of the head-initial languages Spanish and Italian*

In the above sections, we discussed how neither the Korean and nor the Turkish learners demonstrated evidence of the acquisition of subject-verb agreement despite the latter language marking agreement in the same way as German. For speakers of both languages at the FP-stage, subjects and verb raising were optional. Lack of obvious transfer from Korean and Turkish of head-final functional projections led us to conclude that they, like L1 German children, are guided by X'-Theory and the input to posit a head-initial functional projection in German. Like the Korean and Turkish learners of German, Spanish and Italian learners also next manifest a stage of acquisition comparable to the stage of acquisition posited for children.

We begin discussion here with the first study of the acquisition of German by uninstructed adult speakers of Romance languages, namely the Heidelberger Pidgin Projekt (Becker et al. 1977; Clyne 1968). 24 Italian and 24 Spanish migrant workers living in Germany were interviewed, and as noted earlier, the corpus consists of one hundred successive utterances from each recorded conversation with the 48 L2 learners of German (16 male/8 female L1 Italian, and 16 male/8 female L1 Spanish), along with utterances from control native speakers. All speakers resided in Heidelberg, were over 18 years of age and were manual workers with at least primary education. Becker et al. state, "The first important result of the study was that learners in uninstructed L2 acquisition do not behave idiosyncratically but rather stages of acquisition are more or less common for all learners, and they pass through them in a well-defined path." (p. 45; translation, MYS). Table 5.11 summarizes the verb types and subjects in their utterances, with the learners divided into four groups based on their level of acquisition (from Tables 4.1–4.4 in Becker et al. 1977):

Table 5.11 Clausal element suppliancy by the Heidelberger Pidgin Projekt learners

<i>Group</i>	<i>Subjects</i>	<i>Verbs (all)</i>	<i>Only main verb</i>	<i>Auxiliaries</i>	<i>Modals</i>	<i>Copula</i>
I	53%	41%	98%	3%	1%	3%
II	61%	70%	94%	4%	3%	4%
III	66%	77%	84%	35%	12%	14%
IV	88%	96%	56%	22%	9%	23%

As can be seen from Table 5.11, the two lowest groups produce very few auxiliaries, modals, or copula verbs. For the native speaking German controls, 62% of their utterances contained just a main verb, and 19% contained a copula – only the most advanced Group IV has a fairly similar pattern. In addition, the lower and middle groups produce few agreement inflections, while the more advanced group has started acquiring them. These early data already show an interesting development between Groups III and IV: the proportions of verb types as compared to the native control group appear to be target-like for Group IV, and a high proportion of utterances also contains an overt subject for this group. Group III, on the other hand, produced much fewer overt subjects, and fewer copulas (but for some reason, more auxiliaries).

Of the Romance speakers discussed in Chapter 4 for whom longitudinal data are available, only Jose progresses through to the FP-stage (and beyond, see Eubank 1992 and Chapter 6).¹⁵³ (Bruno's [L1 Italian] data, which we will turn to shortly, also cover the more advanced stages but it did not begin with the earliest stage.) In addition to Jose, the cross-sectional LexLern data reveal that three of the Spanish speakers are also at this stage of acquisition.¹⁵⁴

Table 5.12 Spanish speakers at the FP-stage

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age at (initial) testing; relevant files/years of residence</i>	<i>Data source</i>
Jose	Spanish	M	17; files 6–7	ZISA
Agapita	Spanish	F	42/22	LexLern
Nieves	Spanish	F	53/19	LexLern
Maria	Spanish	F	47/25	LexLern

While transfer of a head-initial functional projection could account for these data, non-involvement of learners' native languages is indicated by the similarities to the data from Korean and Turkish speakers to the Spanish speakers' data. The examples in (5.19) represent this stage (see Vainikka and Young-Scholten 1996b: 167; 169)

153. According to Eubank (1992), Jose comes to differentiate agreement on non-thematic verbs vs. thematic verbs and position of verbs: main verbs with agreement are in Agr; main verbs without agreement are in T. This is shown by VS inversion.

154. See Parodi's (1991) discussion of this stage (FP) data in Italian speakers L2 German.

- (5.19) a. *Gut mach ich ihm eine Cappuccino mit
good make-1SG I him a cappuccino with
alles voll.
everything full.
'I make him a cappuccino with everything full.'* [Jose/7]
- b. *Die Leuten gucken sie mir so traurig.
the people look1-PL they me so sad
'The people look at me so sad.'* [Agapita]
- c. *Un hier komm eine Jone mit eine Puppe
and here come-*1SG a boy with a doll
in de Hand.
in the hand
'And here comes a boy with a doll in his hand.'* [Nieves]
- d. *Mehr Deutsche lerne.
more German learn-1SG/*fin
'(I) learn more German.'* [Maria]

Bruno's data have a slightly different pattern from the other Romance speakers we have studied; we have, in fact, not conducted a detailed analysis of his data, and our discussion of Bruno is based on Müller (1998). Bruno emigrated from Italy to Germany at the age of 16, and data collection began seven weeks after his arrival as part of the ZISA study. He differs from the other speakers in that his acquisition appears to have already progressed quite far in his first seven weeks in Germany, prior to the beginning of data collection. In his initial recording, he already produces finite modal and auxiliary verbs (suggesting at least an FP projection), and some subordinate clauses. A clear TP projection is arguably posited by week 24, given the emergence of two-verb clauses with *ge*-participials. However, while the acquisition of functional projections is definitely under way at this point, Bruno's headedness of the VP only becomes target-like around week 50, when the VO order disappears. In Bruno's data it appears that the headedness of the VP need not change before functional projections are posited; this is a pattern similar to what we will see later in George's data (L1 English).

Like Korean and Turkish, Spanish allows empty subjects, and like Turkish, subject-verb agreement is marked with suffixes. However,

unlike in Korean and Turkish, there are copulas, modals and auxiliaries, and all projections – including functional projections – are head-initial. Apart from AgrP headedness, this ought to make the acquisition of the functional morphology and functional projections in German easier than for Korean and Turkish speakers, and we should expect to see quite a different developmental trajectory. As we shall see, the data point to neither but instead to commonalities with these speakers. Spanish examples are provided in (5.20) to show what the Romance learners' L1 background looks like:

- (5.20) a. *(Yo) soy estudiante.*
 (I) am student.
 'I'm a student.'
- b. *(Yo) estoy cansado.*
 (I) am tired.
 'I'm tired.'
- c. *(Yo) estoy aprendiendo español en Madrid.*
 (I) am learning Spanish in Madrid.
 'I am learning Spanish in Madrid.'
- d. *Markus está aprendiendo español en Málaga*
 Markus is learning Spanish in Malaga.
 'Markus is learning Spanish in Malaga.'
- e. *(Yo) aprendí español en Ibiza.*
 (I) learned-1sg Spanish in Ibiza.
 'I learned Spanish in Ibiza.'
- f. *(Yo) no estoy aprendiendo español en Frankfurt.*
 (I) not am learning Spanish in Frankfurt.
 'I'm not learning Spanish in Frankfurt.'
- g. *Hablas (tu) español?*
 speak-2sg you Spanish?
 'Do you speak Spanish?'

- h. *Dónde aprendiste (tu) español?*
Where learned-2sg (you) Spanish?
'Where did you learn Spanish?'
- i. *(Ella) piensa que su español no es muy bueno.*
(she) think-3sg that her Spanish no is very good
'She thinks that her Spanish isn't very good.'

In comparison to the Romance data in Chapter 4 (including from Jose's earlier files), and in line with the Korean and Turkish data earlier in this chapter, we observe an increase in both the amount and the forms of auxiliaries, modals and agreement suffixes, as shown in Table 5.13. Recall from Chapter 4 that apart from Rosalinda none of the Italian and Spanish speakers at the VP-stage produced any auxiliaries or modals. The longitudinal data from Jose are a striking demonstration of this: he uses no auxiliaries or modals in his early files, but in files 6–7 he starts using auxiliaries productively with modal acquisition lagging behind. In these two files, he produces various forms of the *haben* 'have': *hab* 1SG, *hast* 2SG and *hat* 3SG as auxiliaries, and also some instances of forms of the auxiliary *sein* 'be'.

Table 5.13 Functional morphemes at the FP-stage (V and Y-S 1996b: 168)

Name	Total utterances with verbs	Copulas	Main Verbs alone	Auxiliaries	Modals
Jose	131	51	62	17	1
Agapita	159	40	72	33	14
Nieves	244	49	131	39	25
Maria	177	28	113	26	10

The other three Spanish speakers fall at a stage at least as advanced as Jose, with productive auxiliary as well as productive modal use. However, their lack of an agreement paradigm (to be discussed shortly) indicates that these three speakers are still at the first functional projection (FP) stage, where a full-fledged AgrP is not available. This is the head-initial projection that Korean speakers, Turkish speakers and German children project as indicated by the position of auxiliaries and modals either sentence-initially or in the second position. With respect to main verbs, all four speakers produce clear examples in which they appear to the left of verbal complements (and adjuncts), as shown in the examples in (5.19) and here in an additional example from Maria.

- (5.21) *Ich geh immer in Winter.*
 I go-1SG always in winter
 (Ich gehe immer im Winter.)
 'I always go in winter.' [Maria]

On the basis of the agreement facts presented in Table 5.14, we claim that the relevant functional projection is not yet AgrP. The low frequency of correct agreement for Agapita, Nieves and Maria is comparable to what is attested for the speakers at the bare VP stage (see Chapter 4). However, a developmental pattern can be observed in Jose's data where at the earlier stages, he manifested 35–40% target-like agreement, but in files 6–7, his target-like use is 61%.

Table 5.14 Proportion of correct main verb agreement at the FP stage (V and Y-S 1996b: 169)

Name	Total main verbs	Proportion with correct agreement
Jose	62	61%
Agapita	72	50%
Nieves	131	42%
Maria	113	31%

While Jose does meet our 60% cut-off point for acquisition, a look at the rest of his data suggests that even he is not yet at the AgrP stage. Again, if we compare the data from files 6–7 to data from earlier files, we see a decline in empty subjects (the relevant utterances are those which were not formulaic of the sort *Das ist* 'That is (adjective/noun)' and *Ich weiss nicht* 'I don't know'. When Jose is at the bare VP stage, the suppliance of subjects is likely driven only by discourse/semantic factors and their occurrence is optional, in line with what is expected if nothing special is stipulated about their distribution at this stage.

Table 5.15 Jose's empty subjects at the VP stage and FP stage (Table 13, V and Y-S 1996b)

Stage	Files	Relevant utterances	Proportion of empty subjects
head-initial VP	1–3	33	55%
head-final VP	4–5	54	52%
FP	6–7	90	34%

These figures are similar to those of the Korean and Turkish speakers' for empty subjects at the FP-stage for whom we argued that the Pro-

Drop Parameter has not yet been set at the appropriate German value, since subjects will not be obligatory until AgrP is projected.

There is little evidence for a CP projection at this stage. These Spanish speakers do not yet produce embedded clauses with overt complementizers although some WH-questions and related constructions attested at this stage may involve an emerging CP projection, such as (5.22b–c), but (5.22a) can be analyzed without a CP, as the WH-phrase can remain in Spec,FP. Parodi (1990) argues that CP-material can be attested in the L1 Romance speakers' data without AgrP-elements, which is surprising, given our approach of the tree developing from the bottom up; we return to this in Chapter 7.

- (5.22) a. *Wo kenn?* [Agapita]
 where meet*-INF
 (Wo hast du ihn kennengelernt?)
 'Where (did you) meet (him)?'
- b. *Aber wann komm einamal...* [Jose/7]
 but when come*-INF a time
 (Aber wenn X einmal kommt)
 'But when (subject) comes once...'
- c. *Und wenn sie alleine kommen...* [Nieves]
 and if she alone come*-INF
 (Und wenn sie alleine kommt...)
 'And if she comes alone...'

We have seen that Romance language learners of German can easily be placed at the same stage as the Korean and Turkish speakers considered above. The agreement paradigm has not yet been acquired, but the presence in the learners' data of auxiliaries, modals and optional verb raising requires a further verbal position in addition to the V in the bare VP. This evidence together with little evidence for the projection of CP points to learners' projection of a functional projection that is not an AgrP, what we have referred to as FP. We now turn to the question of whether the FP might actually be a head-initial TP projection, specified for tense.

Becker et al. (1977) in presenting the data from the Heidelberg Pidgin Project noted that some of the speakers used modals to mark tense, as shown in (5.23) (the authors account for the overgeneralization of

muss ‘must’ by its frequency of use in the workplace). Becker et al. provide the Spanish to point out lack of transfer:

- (5.23) a. *Ich muss fragen.*
 I must ask
 ‘I asked.’ [speaker Tomá A/Group II Spanish *yo digo*]
- b. *Ich muss gesehen.*
 I must see-past
 ‘I saw that/it.’
 [same speaker = *yo lo he visto* – I have seen it]

Parodi (1991), in analyzing the Italian speaker Giovanni’s (ZISA) data on L2 German, suggests that while Giovanni has not acquired agreement, the suffix *-t* is used to mark aspect or finished time (related to tense):

- (5.24) *Aber du nix probiert Essen meine zu Haus.*
 But you not try-past food my at home
 ‘But you didn’t try the food at my house.’
 [Giovanni, week 11]

While the modal pattern shown in (5.23) is not evident in the L1 English speakers’ data, the mutual development of FP and TP is further illuminated by the data produced by these speakers, to which we now turn.

5.3.5. FP or TP in the L1 English speakers’ data

It is worth a reminder that English is comparable to Spanish (and Italian) in nearly all relevant respects. It does not, however, allow empty subjects. Additional differences are that the complementizer ‘that’ is optional, as shown in (5.25g), and that the main verb does not raise, but remains in the VP. Moreover English, unlike German, marks both tense and aspect, as shown in (5.25a) vs. (5.25b) and (5.25e) vs. (5.25f).

- (5.25) a. *I am learning English from the internet.*
 b. *Markus speaks English with friends.*
 c. *They want to learn English in London.*

- d. *I'm not learning English in Frankfurt.*
- e. *I have learned English since you last saw me.*
- f. *I learned English in Frankfurt.*
- g. *Do you speak English?*
- h. *Where did you learn English?*
- i. *I wish (that) I could speak better English.*

In considering the early data from the three American exchange students in Germany (Paul, George and Joan), we find a similar stage of a developing functional projection as we have seen above for the Turkish, Korean, and Spanish speakers. However, presumably due to the rich input these speakers received in German, their acquisition proceeded at a rapid pace, to the extent that it may be that the FP-stage has – as we shall see – in effect been skipped (or we missed it in our monthly data collection). Furthermore, given the tasks administered specifically to elicit relevant utterances, we are able to address the status of various grammatical elements throughout data collection. Recall (Chapter 4 and the NegP section of this chapter) that in their first one or two files, these speakers can be argued to have a bare VP grammar, with the possibility of positing a bare NegP projection almost from the beginning. In File 3 for all three speakers (perhaps already in File 2 for Joan and George), we found evidence of a verb in a higher head-initial functional head, presumably FP (where the auxiliary preceded negation). Given Organic Grammar and the target structure developed in Chapter 2, we predict that the first fully specified functional projection beyond the NegP is TP. (We further predict that the AgrP and the CP are acquired later than the TP, to be discussed later in this book.)

The usual way of marking past tense in German involves a complex (perfect tense) construction with an auxiliary verb and a participial form of the verb, with the prefix *ge-* (see Chapter 1 for further details). However, in Chapter 2 we proposed that the productive use of the fully inflected auxiliaries is associated with the AgrP projection. If the early FP in these speakers' data were, in fact, a head-initial TP, what would we expect to find in the data, prior to the acquisition of the agreement paradigm? In Müller (1998), the Italian speaker Bruno's data show that (temporal) auxiliary verbs were produced from the beginning of data collection (seven weeks after arrival in Germany), while *ge-*participials emerged only in week 24. In addition to a pattern of auxiliaries without a participle, we might find bare *ge-* participles without an auxiliary. Prior to the acquisition of the agreement paradigm, an auxiliary that is

not inflected for agreement might occur either in the infinitival form *haben/sein* ‘have/be’, or in an overgeneralized, default form. In examining the development of the agreement paradigm in these speakers’ data, we showed in Vainikka and Young-Scholten (1998c; 2007) that the 2nd person singular suffix *-st* was overgeneralized in the data. We thus expect to find either *haben* ‘have-INF’ or *hast* ‘have-2SG’ as typical auxiliary forms at the FP-stage, when a tense form is produced.

In searching for instances of past tense marking in the early VYSA data, the data from certain tasks were excluded because some or all of the components of the past tense construction were given to the test subject as part of the task (see Chapter 4). The data we discuss here include the spontaneous data as well as data from broad elicitation tasks, where the test subject produced the relevant parts of a sentence on their own and then did so without imitation.

In Paul’s earliest files (Files 1–3) there are no instances of *ge-* forms. In File 4 we find emerging tense marking, with a total of 10 instances of the *ge-* prefix, exemplified in (5.26)¹⁵⁵:

- (5.26) a. *Wir haben vier Käse gegessen.*
 we have four cheese eaten
 (Wir haben vier [Stücke] Käse gegessen.)
 ‘We ate four (pieces of) cheeses.’
- b. *Sie hast uh hast Brot gekauft.*
 She has-*2SG has-*2SG bread bought
 (Sie hat Brot gekauft.)
 ‘She bought bread.’
- c. *Die Frau [euh] nichts Kaffee getrunken (or nicht*
 the woman nothing coffee drunk or not
Kaffee trinken).
 coffeedrunk
 (Die Frau hat keinen Kaffee getrunken.)
 ‘The women didn’t drink coffee.’

155. We translate these sentences as only marking tense rather than also marking aspect. To begin with, the target language does not verbally distinguish tense and aspect, so there is nothing in the input leading learners to this conclusion. There is also nothing in the data to suggest that these learners mark a tense-aspect distinction in their L2 German.

- d. *Der Mann [omitted] fragt [euh] wo [euh] wir*
 the man ask where we
coffee getrunken.
 coffee drank
 (Der Mann fragt, wo wir Kaffee getrunken haben.)
 ‘The man asked where we drank coffee.’
- e. *Der Buch dass er gekauft.*
 the book that he bought
 (Das Buch, das er gekauft hat,...)
 ‘The book that he bought...’

Example (5.26a) may involve either the infinitival form of the auxiliary verb, or correct plural agreement, while (5.25b) is an instance of the overgeneralized 2nd singular suffix, used in a 3rd singular context. In Vainikka and Young-Scholten (1998c) we showed that Paul frequently used this default suffix in Files 3–5; we return to this in connection with the AgrP discussion. Examples (5.26c–e) all involve the past participle without an overt auxiliary; these comprise the three such examples found in this file. It should be noted that all three examples come from an oral translation task, and involve syntactically complex constructions (negation, embedding).¹⁵⁶ The emerging tense marking indicates the emergence of a TP projection in Paul’s grammar in File 4, and as predicted it occurs after the point at which we see evidence of a bare VP (Files 1–2), a bare NegP (Files 1–2), or even an FP projection beyond the NegP (File 3). It appears that Paul has specified his head-initial FP as a TP in File 4.

In George’s data, there are no *ge-* forms in the earliest File 1. In File 2 there are five such instances, three with an auxiliary as in (5.27a–b) and two without (5.27c–d); the latter appear to involve some hesitation or production problem:

156. Note that examples (5.26c–e) cannot represent instances of a bare head-initial TP, given the location of the participle. We take them to involve a problem with the complex structure, where the auxiliary in F (or T) has been omitted. It is common for reduction to occur with grammatical morphology in the context of linguistic complexity; cf. e.g. Demuth (2007) on children’s production of inflectional morphology. She cites the increased tendency of SLI children to omit past tense with increasing syllable structure complexity, and a greater likelihood of 3rd person singular production when clusters did not result.

- (5.27) a. *Er hat [uh] Frühstück gemacht.*
 he has breakfast made
 (Er hat Frühstück gemacht.)
 ‘He made breakfast.’
- b. *Was hast du getrunken?*
 what have you drunk
 (Was hast du getrunken?)
 ‘What have you drunk?’
- c. *Was [uh] was gegessen, [uh] [eat, eat, no. Is that right?*
 what what eat
Don’t know that word.]
 (Was hast du gegessen?)
 ‘What did you eat?’
- d. *Der Mann fragt wo wir [walked, walked] gegangen.*
 the man asks where we walked
 (Der Mann fragt, wo wir hingegangen sind.)
 ‘The man asks where we went.’

There are also some instances of an overt auxiliary in George’s data in past tense contexts without a *ge-* prefix on the participle:

- (5.28) *Aber ihr habt nicht schreibt back. [They haven’t*
 but you have-2pl not write back
written back.]
 (Aber sie haben nicht zurück geschrieben.)
 ‘But they didn’t write back.’

In File 3, we find six instances with an auxiliary, and three without, again in complex sentences from the oral translation task:

- (5.29) a. *Gestern die Frau nach Market nich gegangen.*
 yesterdaythe woman to market not go
 (Gestern ist die Frau nicht zum Markt gegangen.)
 ‘The woman didn’t go to the market yesterday.’

- b. *Das Buch das er gekauft ist auf die Tisch.*
 the book that he bought is on the table
 (Das Buch, das er gekauft hat, ist auf dem Tisch.)
 ‘The book that he bought is on the table.’

In contrast to Paul, George’s tense marking already begins to emerge in File 2. Recall that George only had a bare VP structure in File 1, with some evidence of an FP already in files 2 and 3. It may be that for George the FP projection is specified as a TP as soon as it emerges, whereas Paul seemed to first project the underspecified projection FP which we claim is later specified as TP. In any case, the timing of the emergence of a TP is consistent with the predictions of OG, occurring slightly after VP and NegP (bare VP in File 1; bare NegP in Files 1–2, and as we will claim, before AgrP).

Finally, Joan’s data look similar to George’s in that there are already past tense examples in File 2 (none in File 1); there were seven with an overt auxiliary, and the following two without:

- (5.30) a. *Ich gekauft der Buch for Peter.*
 I bought the book
 (Ich habe das Buch für Peter gekauft.)
 ‘I bought the book for Peter.’
- b. *Ich gegessen der Apfel.*
 I ate the apple
 (Ich habe den Apfel gegessen.)
 ‘I ate the apple.’

These two examples of Joan’s in File 2 are interesting in that they actually show the participle in the second position, unlike all of Paul’s and George’s past tense examples that occurred without an auxiliary. Furthermore, Joan’s examples differ from the others’ in that there does not appear to be any performance problem involved: these examples did not involve the difficult oral translation task, and they were produced without hesitation and without English words. There are two possible analyses of the examples in (5.30) that are in some sense equivalent: either the participle has raised to a head-initial FP, or the head-initial FP has been specified as a head-initial TP (and the participle has raised to T).

As with George, only Joan's File 1 showed evidence of a bare VP stage (along with bare NegP), and evidence for an FP could already be seen in Files 2–3. Since TP examples are already observed in File 2, Joan's FP might thus be a TP projection from the start, as was perhaps the case for George. Overall, then, the development of the TP occurred for all three speakers at the exact point in development predicted by Organic Grammar and the target structure from Chapter 2. For Joan and George, a TP may be posited as soon as verb raising begins to occur, while for Paul (and the Turkish, Korean, Spanish, and Italian speakers discussed earlier), an underspecified projection FP is first posited, later specified as a TP projection. The extremely rich input that the three American secondary school exchange students were exposed to would be responsible for the rapid positing of a TP projection by George and Joan (similar to what appeared to happen with the Italian speaker Bruno).

5.4. The AgrP projection

In this section we will consider the fairly advanced learners who have already acquired the agreement paradigm; in our 1994 study, this constitutes the most advanced group of the Turkish and Korean learners of German. As discussed in Chapter 3, we see in the L1 acquisition of German (Clahsen, 1991; Clahsen and Penke 1992) a correlation between mastery of the subject-verb agreement paradigm with non-Pro-Drop and obligatory verb raising, due to obligatory checking of agreement features (Chomsky 1995); a similar process of Nominative Case checking could be responsible for the status of overt subjects (Roeper and Rohrbacher 1995). Optionality prior to this stage is due to the underspecification of agreement features represented by the FP (or TP) tree.

Before turning to the details of the data, it is worth noting that in early work on the L2 acquisition of German (Pienemann 1981; ZISA data; discussed in Vainikka and Young-Scholten 2006), the following (pre-theoretical) generalizations support our approach:

- there is no transfer of agreement by the Italian learners of German, despite Italian being a language with rich agreement

- there is lack of agreement in the longitudinal L2 German data until ‘inversion’.

Under Organic Grammar, we explain these generalizations as follows: agreement is not transferred because the AgrP projection is not transferred, and agreement is not acquired until the point at which the AgrP projection is posited during L2 acquisition, which itself takes place just before the acquisition of the CP (i.e. ‘inversion’ under V2).

5.4.1. *The Turkish and Korean learners’ AgrP projection*

Evidence for the L2 learners’ projection of an AgrP is their cessation of optional subjects, the near-obligatory status of verb raising (well over 60%, and nearly always for Harva and Ensook) and the acquisition of the agreement paradigm, where each of the six uses at least four of the five agreement suffixes correctly, and apart from some persistent *-n* forms in raised positions, the correct inflection of verbs in this position. Modals and auxiliaries are also always produced, and in correct form. The head of AgrP involves agreement features, which have now been acquired; this is clearest with modals and auxiliaries, which are always supplied in expected contexts and produced in their correct forms in various tenses.

Table 5.16 Turkish and Korean learners at the AgrP Stage

<i>Learner</i>	<i>L1</i>	<i>Sex</i>	<i>Age at testing/years residence</i>	<i>Study</i>
Harva	Turkish	F	36/6	LexLern
Emine	Turkish	F	28/6	LexLern
Mine	Turkish	F	42/22	LexLern
Gabho	Korean	M	38/13	LexLern
Ensook	Korean	F	41/4	LexLern
Samran	Korean	F	35/3	LexLern

While their nominal morphology and use of prepositions and selection of specific verbs is not always target-like, their verbal morphology and their syntax is German.

- (5.31) a. *Ich liebe diese so.* [Mine]
 I love-1SG this so
 ‘I really love this.’

- b. *Ich kaufe dich Eis.* [Gabho]
 I buy-1SG you ice-cream
 'I (will) buy you an ice-cream.'
- c. *Trinkst du Cola?* [Samran]
 drink-2SG you cola?
 'Are you drinking/Do you drink cola?'
- d. *Der Kleine geht Kindergarten.* [Harva]
 the small-one goes-3SG kindergarten
 'The young one goes (to) kindergarten.'
- e. *Sie kommt zu Hause.* [Ensook]
 she comes-3SG at home
 'She's coming home.'

The data also indicate that for learners other than Ensook and Harva, the bare VP structure is still available such that learners produce some utterances only consisting of a bare VP, with a non-finite main verb which ends in *-n*. In addition, some of the Root Defaults are still raised to the finite position; as shown in Vainikka and Young-Scholten (1994: 303 Table F), raised verbs uttered by these speakers occur in the infinitival form 4–37% of the time, with Mine and Gabho representing the higher figures. There is clearly some 'stage seepage' here. We return to this issue in the following chapter.

As at earlier stages, and similar to L1 children, these learners produce no forms other than non-finite forms (*-n* or bare stem) in final position in declaratives, pointing to lack of transfer of head-final functional projections from their native languages.

Table 5.17 Verb raising and agreement (V and Y-S Tables D and F, 1994: 301)

<i>Name</i>	<i>Total verbs</i>	<i>Vs in the VP</i>	<i>Raised Vs</i>	<i>Target agreement on raised verbs (-n excluded)</i>
Mine	267	34%	66%	88%
Gabho	159	26%	74%	97%
Samran	201	32%	68%	95%
Emine	159	25%	75%	97%
Harva	91	16%	84%	97%
Ensook	78	10%	90%	95%

Subjects are supplied by these learners, all of whose native languages allow empty subjects, between 81% and 96% of the time, well above the 60% criterion we adopted in the implicational scaling discussed earlier. The data indicate that Full House Principle still applies to some of the learners' utterances, indicating remnants of their previous stage of development.

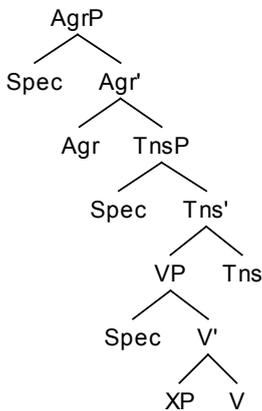
Table 5.18 Subjects and Spec(AGRP) at the AGRP-Stage (Vainikka and Young-Scholten 1994)

<i>Name</i>	<i>Sentences with raised verbs</i>	<i>Something preceding the verb</i>	<i>Overt subjects in any position</i>
Mine	173	150 (87%)	145 (84%)
Gabho	108	97 (90%)	87 (81%)
Samran	127	125 (98%)	122 (96%)
Emine	109	100 (92%)	96 (88%)
Harva	76	71 (93%)	65 (86%)
Ensook	62	54 (87%)	54 (87%)

Up to now we have concluded that learners at neither the VP nor the FP/TP stages project a CP, based on the absence of morphological (complementizers) or syntactic evidence (biclausal utterances, questions with raised verbs) for a CP. It has been pointed out that absence of evidence is not necessarily evidence of absence (Dekydspotter et al. 2005). It is always possible that absence of certain constructions is attributable to the way in which the data are collected. However, the data collection used as a basis of discussion here involved considerable narration of the sort in which embedded clauses naturally occur. Moreover, when we see the systematic unfolding from conjoined clauses to clauses with complementizers as in this corpus, this is support for an approach under which learners only produce that which their syntax al-

lows.¹⁵⁷ In the data from these five learners we indeed see the early stirrings of a CP projection evidence for which is WH- and yes/no questions with inversion (though not always) and embedded clauses with *weil* ‘because’ and *wenn* ‘if’ (six altogether). We discuss the details of their CP in Chapter 7. The tree below represents the five learners’ syntax at this stage (with the optional NegP projection omitted) – note that this is full target structure for a German matrix clause. Feature checking entails that Agr, which contains the feature agreement, must be occupied by a verb, and Spec, AgrP must be occupied by a phonetically realized subject, i.e. it cannot be empty.

(5.32)

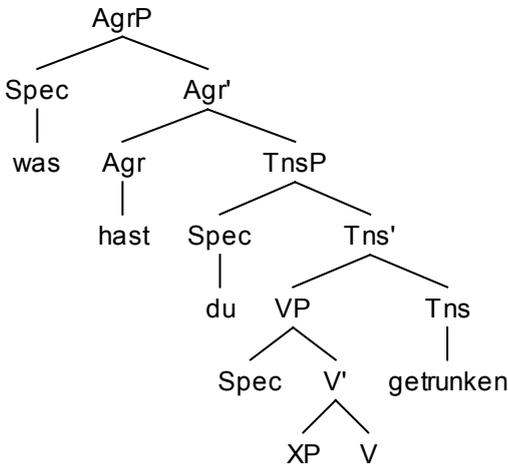


Questions produced at this stage are accounted for as follows. Rather than involving WH-movement to Spec(CP), they can be considered instances of topicalization or scrambling to Spec(AgrP) along the lines

157. For L2 English, Young-Scholten and Ijuin (2006) showed a clear progression from conjoined clauses to target-like embedded clauses in a cross-sectional study of 55 intermediate to advanced learners from various language backgrounds in a community college ESL program. When OG stage was compared with ESL program-internal placement and progression, a correlation was found for 49 of the 55 students. For the six for whom no correlation was found, the third author (a teacher on this program) revealed considerable dispute about these students by their teachers; all six were at levels higher than their OG stage indicated they should be, and were reported to be struggling.

of topicalization in Yiddish (Diesing 1990), and as discussed in Chapter 3 for L1 acquisition. Such a CP-less structure for questions is reminiscent of the structure proposed for the French *pourquoi* 'why' questions in Rizzi (1990), but note that an adjunction analysis is not feasible for our data, given the object WH-questions our learners produce. The WH-question in George's utterance 5.27b) above, for example, would involve the WH-phrase *was* in Spec(AgrP), the auxiliary *hast* in Agr, the subject pronoun *er* in Spec(TP), and the main verb *getrunken* in T. These questions are accounted by the following structure:

(5.33)



The analyses of the Korean and Turkish data discussed up to now point to the operation of UG where X'-Theory makes positions available that are filled by specific functional elements. Unlike what is found in their first language but similar to what L1 German children do, the Korean and Turkish adults at the stages discussed above posit head-initial projections. They also show little evidence of having adopted their native language Pro-Drop-Parameter value. Where Pro-Drop is connected with features in IP/AgrP, if there were L1 influence, we would expect the frequency of empty subjects to remain high or to even rise for learners past the bare VP stage. Furthermore, when it comes to L1 morphological influence, although Turkish marks subject-verb agreement, this appears to give the Turkish speakers no advantage over the Koreans. Again, while the headedness of the L1 differs, the data from the

Romance speakers we now turn to reveal the same type of acquisition of the AgrP projection.

5.4.2. Agreement in the Romance speakers' data

While we have not (that is, in any previous papers) analyzed the more advanced data from the Romance L1 speakers, we review here briefly Köpke's (1987) analysis of agreement in some of the ZISA data. Köpke provides the following phases in the development of agreement:

- Phase 1:* there is no agreement system; all learners at the start use *-e* or *-(e)-n* and 0 regardless of person
- Phase 2:* *-t* for 3rd singular (Anna and Giovanni acquire *-t* as first agreement marker; Bruno, Jose and Zita use both *-st* and *-t* early on, in third interview for Bruno and Zita)
- Phase 3:* *-st* for 2nd singular (Anna never acquired *-st*,¹⁵⁸ for Giovanni *-st* follows *-t*)
- Phase 4:* *-t*, *-st* have been acquired and overgeneralization of other suffixes ceases.

In her detailed study of Bruno's data, Müller (1998) also states that *-t* and *-st* play a special role in that there are no agreement errors with them, whereas there are errors with bare verb and *-n* forms. We now discuss the English L1 speakers' data in terms of the development of agreement and the AgrP projection.

5.4.3. The English speakers' AgrP projection

In discussing tense, we saw that tense marking began to emerge in Paul's data in File 4, while it did so already in File 2 for Joan and George. We now predict that the acquisition of the agreement paradigm

158. Prévost and White (2000a) mentions Ana's overgeneralisation of *-st*.

lags behind TP. An early example Paul's File 3 with incorrect agreement is provided in (5.34):

- (5.34) *Ein Man liebe das Kuchen für Frühstück.*
 a man love*-1SG the cake for breakfast.
 (Ein Mann liebt Kuchen zum Frühstück.)
 'A man loves cake for breakfast.' [Paul, file 3]

In Paul's File 4, the 2nd person singular suffix *-st* functions as a default agreement marker on auxiliaries (and the participle occurs with or without the *ge-* prefix):

- (5.35) a. *Sie hast uh hast Brot gekauft.*
 she has*-3SG has-3SG bread bought
 (Sie hat das Brot gekauft.)
 'She bought the bread.' [Paul, file 4]
- b. *Warum hast ich in Deutschland gehen?*
 why have*-2SG I to Germany gone?
 (Warum bin ich nach Deutschland gegangen?)
 'Why did I go (come) to Germany?' [Paul, File 4]
- c. *Habst du ein Apfelkuchen machen?*
 have*-2SG you an apple cake made
 (Hast du einen Apfelkuchen gemacht?)
 'Did you make an apple cake?' [Paul, File 4]

Note that example (5.35c) is a particularly clear instance of overgeneralization in that Paul must have generated the form *habst* (*hast* in the target language) himself, adding the *-st* suffix to the stem *hab-*. The *-st* also functions as a default agreement on main verbs, with an occasional instance already in File 3,¹⁵⁹ and definitely occurring in File 4:

159. In File 3, there is only one other instance of overgeneralized *-st* (with main verb *hast*), and only one correct instance of 2nd person singular *-st*: [*Can I ask a question?*] *Denkst du. Das Kuchen ist gut? Du denken das Kuchen ist gut?* 'You think. The cake is good?' [Paul/3] In addition, File 3 contains one instance of the modal *darfst* 'may' with unclear context/meaning.

- (5.36) a. *Die Frau hast kein Glas – [or] hat kein Glas.*
 the woman has*-2SG no glass has-3SG no
 glass
 (Die Frau hat kein Glas.)
 ‘The woman doesn’t have a glass.’ [Paul, file 3]
- b. *Die Frau liebst Schokolade.*
 the woman love*-2SG chocolate
 (Die Frau liebt Schokolade.)
 ‘The woman loves chocolate.’ [Paul, file 4]
- c. *Die Lehrerin schreibst Deutsch.*
 the teacher write*-2SG German
 (Die Lehrerin schreibt auf Deutsch.)
 ‘The teacher writes (in) German.’ [Paul, file 4]
- d. *Sie [euh] bist müde.*
 She be*-2SG tired
 (Sie ist müde.)
 ‘She is tired.’ [Paul, file 4]

Table 5.19 provides Paul’s agreement suffixes on main verbs in Files 3–5 (from Vainikka and Young-Scholten 1998c):

Table 5.19 Main verb suffixes in single-verb sentences

File	Total main Vs	V-n ✓	wrong	V-st ✓	wrong	V-e/-a ✓	wrong
3	78	12	37	2	3	7	5
4	98	20	19	5	25	11	1
5	66	3	13	1	7	21	0

File	Total main Vs	V-0 ✓	wrong	V-t ✓	wrong
3	78	4	1	7	0
4	98	10	3	4	0
5	66	13	0	7	0

NB: V-e/-a is mostly the formulae *Ich denke* ‘I think’ and V-0 is mostly *Ich weiss* ‘I know’

It is clear that Paul has not acquired the agreement paradigm in Files 3 or 4: there is a total of 28 wrong *-st* suffixes in these files, along with 56 instances of wrong *-n* suffixes (the Root Default form). In File 5, there is a sharp reduction in the overgeneralized *-st* forms (and a reduction in the *-n* forms), combined with correct agreement in the first person (0/*e/a*) and in the third person (*-t*). We conclude that at the time the data were collected for File 5, Paul had acquired the agreement paradigm of German for main verbs, along with the AgrP projection. We saw evidence earlier of Paul having acquired a TP projection in File 4, and the auxiliaries required in the past tense construction often occurred with the *-st* suffix, as well.

Joan and George also overgeneralize the *-st* suffix before acquiring its correct use. Given a data collection problem with Joan's file 4 (microphone trouble), and a reduced File 3, we cannot analyze Joan's data in detail during the period most relevant for the acquisition of the AgrP. However, instances of overgeneralized *-st* are attested in Files 2 and 4:

- (5.37) a. *Die Frau hast getrunken der Tea.*
 the woman has*-2SG drunk the tea
 (Die Frau hat den Tee getrunken.)
 'The woman drank the tea.' [Joan, file 2; picture prompt]
- b. *Meine Schwester hast [um oh] hast sprechen mit*
 my sister has*-2SG has*-2SG speak with
Freund, Freunden und [um ooo]
 friend friends and
 (Meine Schwester hat mit Freunden gesprochen.)
 'My sister spoke with friends.' [Joan, file 2; spontaneous]
- c. *Möchtest sie Buch lesen?*
 want*-2SG you book read
 (Möchten Sie ein Buch lesen?)
 'Do you (formal) want to read a book?'
 [Joan, file 4; oral translation]
- d. *Was machst ihm [at his job]?*
 what make*-2SG he
 (Was macht er?)
 'What does he do?' [Joan, file 4; 20 questions]

Consistent with the predictions of OG, it appears that Joan's AgrP is acquired after the NegP and the TP projections (which were already emerging in Joan's Files 1 and 2, respectively).

George produced the following five examples of the *-st* suffix (in any person/number context) spontaneously, not as part of any task, in Files 1–3:¹⁶⁰

- (5.38) a. *Ich wohnst [there euh]*
 I live*-2SG
 (Ich wohne...)
 'I live...'
 [George, file 1]
- b. *Ich machst nich. [surfing]*
 I like*-2SG not
 'Ich mag (es) nicht.'
 'I don't like (it)'
 [George, file 1]
- c. *Ja, mein Bruter hast [Interviewer: In Amerika?] – ja,*
 yes my brother have*-2SG yes
in Amerika – hast in [graduation] – und ich
 in America has*-2SG in and I
willst uuh zo gangen. [I wanted to go.]
 want*-2SG so go
 (Ja, mein Bruder hat – ja, in Amerika Abschluss – hat in –
 und ich wollte auch dort hingehen.)
 'My brother had – had in America – and I wanted to go.'
 [George, file 2]
- d. *Mein – meinen Eltern hast...*
 my my parents have*-2SG
 (Meine Eltern haben...)
 'My parents have...'
 [George, file 3]

160. While narrow task data were also collected from George, we only include spontaneous data here given his heightened meta-linguistic awareness. As we will discuss in detail in Chapter 8, although these three learners were essentially acquiring German without instruction (after their orientation classes), i.e. naturalistic learners, if they were so inclined, they could have drawn on the explicit grammar teaching they received that first month in Germany. There are very few indications that Joan and Paul did so, but George clearly did.

- e. *Was für Musik magst du?*
 what for music like-2SG you
 (Was für Musik magst du?)
 ‘What kind of music do you like?’ [George, file 3]

That is, except for (38e) which could even be a memorized chunk, George’s examples of the *-st* suffix in these files involve the 1st or 3rd person, rather than the target 2nd person singular. George’s main verb agreement in File 3 is summarized in Table 5.20 (from Vainikka and Young-Scholten 2003b):

Table 5.20 George’s verb agreement (File 3; main verbs only)

Suffix [Person/Number]	Correct	Incorrect	Unclear
0 [1sg.]	2	1	0
-e [1sg.]	7	0	0
-st [2sg.]	1	4	0
-t [3sg.]	32	3	2
-n [1/3pl.]	11	11	0
-t [2pl.]	2	0	0

Apart from the use of *-n* as a default form, and the overgeneralization of *-st*, George has acquired a good portion of the agreement paradigm. The 3rd person singular *-t* has clearly been acquired at this point (91% correct with plentiful instances), and he is doing well with the 1st person singular endings, as well (0 and *-e*; 90% correct).

By File 4 even the overgeneralization of *-st* has discontinued – in his spontaneous data in File 4, George produces three instances of correct *-st* suffixes, and no overgeneralized *-st*:

- (5.39) a. *Wo kommst du?*
 where come-2SG you
 (Wo kommst du her?)
 ‘Where do you come from?’ [George, file 4]
- b. *Hat –hast du [euh euh]diese – [euh] – nein –*
 Has have-2SG you this no
dieser Visa?
 this visa
 (Hast du dieses Visum?)
 ‘Do you have this visa?’ [George, file 4]

- c. *Ah du hast ein Deutsch.*
 ah, you have-2SG a German
 (Ah, du hast ein deutschen/-s...)
 ‘Ah, you have a German’

[George, file 4]

Recall that George already showed evidence of a NegP projection in Files 1–2, while the first evidence for TP projection was found in Files 2–3. George’s data is consistent with the predictions of Organic Grammar in that the overgeneralized *-st* has been acquired as a second person singular suffix by File 4, suggesting that the full agreement paradigm and the corresponding projection, AgrP, have been acquired by that point (recall from Table 5.20 that the other persons were already fairly well established in File 3). For all three speakers, then, the acquisition in particular of the correct usage of the 2nd person singular suffix (signifying the acquisition of the agreement paradigm, as argued in Clahsen 1991 for L1 German), occurs after the point at which the NegP and the TP have already emerged.

Is the *-st* that is used as a default suffix by these L1 English speakers transferred from the L1, the English 3rd person singular *-s*? This might at first glance seem likely especially because the /t/ in the *-st* can be omitted in spoken German. However, unlike the English *-s*, the overgeneralized *-st* is also used in non-3rd singular agreement contexts. Furthermore, the *-s(t)* suffix does not undergo L1-English-driven voicing assimilation; [wɪlz] for *willst* or [haz] for *hast* are unattested in these speakers’ data, and their overgeneralized 2SG form of the German copula *bist* (as in example [36d] above) is less similar to the English *is* than the 3SG *ist*, pointing to lack of transfer in this instance. We conclude that transfer is not an obvious explanation to the *-st* phenomenon. Rather, syntactic development appears to be driving the need for a default suffix and *-st* is recruited due to its salience. That is, at earlier stages – when the bare VP is predominant – the typically occurring verb form is the non-finite *-n* (Root Default) form, but once the learner has projected functional projections requiring finite verb forms, a new form is called for that can be resorted to before the full agreement paradigm has been acquired.¹⁶¹

161. There is evidence from learners from other L1 backgrounds e.g. Russian (more complex coda than Italian, Portuguese and Spanish) who also overgeneralize *-st*. In Habertzettl (2003/5) we find an instance of *-st*

We now briefly consider the status of possible transfer at any of the IP-level functional projections.

5.5. Is there evidence of L1 influence?

In his (2001) volume, Hawkins (Ch.2) argues for L1 influence in terms of subject-verb agreement. While Hawkins' volume develops an approach of Modulated Structure Building which is similar to Organic Grammar but with the possibility of transfer of functional projections at the relevant point in L2 development, his volume provides few actual arguments for such transfer from the L1 (see Vainikka and Young-Scholten's [2003b] review of Hawkins' book).¹⁶² It turns out that the only argument in the whole volume that deals with transfer from the L1 at the sentential level (i.e. not DP which we will return to) is the following. Stauble (1984) reports that Spanish L1 speakers acquire the copula and subject-verb agreement in L2 English more quickly than Japanese L1 speakers, suggesting L1 influence. However, as we have pointed out in Vainikka and Young-Scholten (2003b), there are two serious problems with this argument: (1) the study is very small – six speakers from each group, with only two hours of data collection from each speaker; (2) the proficiency levels are based on negation data from each speaker.

overgeneralization from child L2, with L1 background other than English (Turkish):

Der [mmm] die Jungen de habst den [ahm] die Fest
 the uh the boys they have-2SG* the uh the party
gemacht, ja.

made yes

(Die Jungen haben ein Fest veranstaltet.)

'The boys had a party.'

162. There are two arguments in Hawkins' (2001) book that are claimed to support transfer of functional projections from the L1, but we argue in Vainikka and Young-Scholten (2003b) that they do not show transfer from the L1 and must thus derive from UG: (1) the occurrence of resumptive pronouns in L2 Swedish relative clauses, even when neither the L1 nor the L2 allow them (Hawkins, ch.4); and (2) the relative facility for L1 Chinese speakers to acquire the English non-pro-drop setting of the Null Subject Parameter; transfer from L1 Chinese is not a clear explanation since Chinese allows omission of subjects, unlike English (under Topic Drop). Similar results for L1 Japanese speakers acquiring English were obtained by Wakabayashi (1997).

Since in current syntactic theorizing, negation is closely intertwined with verb inflection such as subject-verb agreement – both involving IP-level functional projections – statements concerning the proficiency levels and the acquisition of verb inflection suffer from circularity. Thus, we do not accept Stauble's (1984) data as reliable, and reject this conclusion in the absence of further corroborative studies.

Since four of the five languages of the learners discussed in this chapter allow empty subjects, we cannot necessarily tell whether this characteristic may have been transferred from learners' L1s (or whether it derives from the general optionality of subjects in the VP). Assuming that Pro-Drop is associated with AgrP, a transfer approach would predict an increase in empty subjects as speakers acquire agreement, and this is not attested. Moreover, to the extent that L2 empty subjects behave similarly to those found in L1 development, the data provide support for OG, where learners realize that German does not allow empty subjects when AgrP is projected but up to that point because of the syntax learners have projected (a bare VP and then an FP), subjects are optional.

Under a transfer view, it is unexpected that learners' utterances would at earlier stages be entirely devoid of the functional morphology associated with TP, AgrP and CP. It is unlikely that perceptual salience and frequency in the input can account for their absence; these elements are frequent, obligatory (e.g. complementizers, unlike in English), suffixes and free morphemes often end with or contain highly salient sibilants (e.g. second person singular *s(t)* as well as third person *is(t)* 'is' and *dass* 'that') and forms are not subject to the sort of phonological assimilation held to contribute to the difficulty in acquisition of third person singular *-s* in English.¹⁶³ When they emerge, one would at least expect to find the copulas, modals and main verb forms not ending in *-n* which learners produce in final position rather than in the raised positions in which they are invariably found in declarative clauses.

Further support from the lack of transfer at the IP-level comes from Paradis and Crago (2003) who argue that the pattern of accusative clitic omission is similar for L2 French children and age-matched French-speaking children with Specific Language Impairment (SLI). Both

163. See Goldschneider and DeKeyser's (2001) meta-analysis – discussed above – where they try to account for the morpheme orders attested based on various factors, including perceptual salience, but they do not invoke UG.

groups supplied the accusative clitics about 40% of the time (in contrast to the L1 control group who produced them 97% of the time), suggesting that these clitics represent a vulnerable area for all learners of French. Note that if transfer from L1 English were responsible for the performance of the L2 children, a separate explanation would be needed for the SLI children.

Our non-transfer analysis finds favor with those such as Flynn et al. (1998) who hold a full access/no transfer view, and our analysis also conforms to the views of Bhatt and Hancin-Bhatt (2002), for example, whose Structural Minimality Hypothesis maintains that learners do not start with a bare VP, but do then engage in the non-L1-based building of structure in their development from IP to CP. However, when one finds L1 child-L2 adult differences, one is invariably tempted to invoke transfer as an explanation, and indeed Full Transfer/Full Access proponents who hold that the entirety of the L1 grammar shapes acquisition from the initial state onwards argue that transfer of Korean and Turkish learners' head-final IP is responsible for the (S) OV patterns found (Schwartz and Sprouse 1994, 1996) – utterances that we would treat as involving transferred bare VP structures. In general, the learners' inter-language grammars and their distribution of functional elements reveals a shared (by speakers from various L1 groups) systematicity not traceable to their L1s.

5.6. Summary

In this chapter, we have presented a case for Organic Grammar-driven acquisition beyond the bare VP projection that was argued for in Chapter 4, for naturalistic L2 learners of German. As predicted by Organic Grammar and the structure for the target language developed in Chapter 2, we first find evidence of a NegP (Negation Phrase) projection, followed by the evidence of a TP (Tense Phrase) projection – which its initial underspecified version, FP – and finally evidence of an AgrP (Agreement Phrase) projection.

In most cases, we were able to argue that the projections have been acquired based on the input data, rather than transferred from the learner's native language, supporting our strong view that functional projections, in general, do not transfer. However, the negation data suggest that (at least sometimes) the NegP can also transfer; we take it that this apparent possibility follows from the fact that NegP behaves similarly

to lexical projections in that it has universal semantics, and it does not involve a paradigm or a set of grammatical morphemes.

Extensions

1. Organic Grammar and Minimalism

Organic Grammar is similar to Minimalism (Chomsky 1995, 2001, 2008) in that both are derivational approaches involving structure building, as pointed out by Wakabayashi (1997), who – following our earlier work – applies Minimalism to structure building in L2 acquisition (L1 Japanese, L2 English). He proposes that in L1 acquisition, the child's grammar initially involves a VP-projection in both overt syntax and LF, while at later stages there can be a mismatch between the two levels in terms of projections (e.g. VP in overt syntax, IP at LF). In L2 acquisition, the learners similarly begin with a VP projection, but he suggests that – contrary to L1 acquisition – the IP is first constructed in overt syntax and only then posited at LF. Organic Grammar differs from Wakabayashi's theory in that he assumes the possibility of transfer of functional elements similar to Hawkins (2001). We are sympathetic with such a combination of structure building and Minimalism, but we believe that the ten specific assumptions of Organic Grammar presented in Chapter 1 allow us to make more precise predictions about L1 or L2 acquisition.

2. Finiteness Linking

Various current ideas represent the evolution of the information structure treatment of the naturalistic L2A data from the ESF project data and aim to account for development of morphosyntax (early incarnations of information structure, along with the Basic Variety, did not aim to do so). These ideas draw on data from new longitudinal studies of L1 and L2 German and of Dutch (P-Moll data, ESF data for the L2A). Under Jordens' (2007) Finiteness Linking, at all stages the learner expresses explicitly or implicitly a topic and a state of affairs in relation to that topic: this is referred to as validation. At the Holistic Stage, validation is pragmatic and early verbs may be predicates rather than real verbs. At this initial stage/initial state, there is no finiteness,

no head movement, no specifier position, no topicalization, WH-questions or inversion. For the validation/linking and anchoring at this stage, learners are forced to rely on lexical means of expression, i.e. only for lexical projections. Root Defaults for Jordens do not represent syntax, but are rather only lexically learned. The next stage is Conceptual Ordering where validation is lexical and ordering is based on principles of information structuring. Topics are initial, as anchors, the predicate is final (representing state of affairs); this can include the main verb. A linking element occurs between the topic and predicate which can be a scope particle such as *auch* or a modal. An intermediary stage involves the projection of the functional category AUX. Finally, at the Finiteness Linking stage validation becomes morphosyntactic, the learner's syntax is constrained by X'-Theory and the category FIN is projected.

3. *Early is/ist in L2 Dutch and German*

There is also recent work in Dutch on the function of *is* (e.g. Verhagen 2007; see also van de Craats and van Hout 2010 on Dutch; and Haberzettl 2001 on L2 German, in Chapter 4). In L2 Dutch *is* may function as finite verb despite learners' lack of finite syntax where it is used by learners with a main verb to represent completed action or progressive aspect (e.g. Starren 2001), in a non-target fashion; see Haberzettl's (2003) tinkering with chunks. Are these L1-driven patterns? In the cross-sectional Dutch data referred to, Moroccan learners of Dutch seem to use proto morphology (*is*) while Turkish speaking learners of Dutch use protosyntax (*-n*). Verhagen notes the following implicational relationship: *aux* > *copula* > *modal* and invokes mini-paradigm learning for morpheme acquisition (Bittner, Dressler and Kilani-Schoch 2000): there is 50% accuracy on three different forms, and these do not occur more often in an incorrect than correct context.

While occurrences of *ist* with a main verb in the L2 German data whose analysis we discuss in the present volume are virtually non-existent¹⁶⁴, Jose and Rosalinda demonstrate a high frequency of produc-

164. Some of the VYSA learners produce during narrow elicitation tasks what seem to be transferred English *be -ing* constructions (see e.g. example 5.11 above). Given that the tasks sometimes demanded performance beyond their current syntactic competence in German (as noted in the re-

tion of *ist* at the bare VP stage. Moreover, we have not found such frequent use of *ist* with any of the Italian speakers at this stage, which suggests that the frequency with which *is(t)* appears in the Spanish speakers' German might be a result of the morphological similarity of the third person singular Spanish copular *es* to its German counterpart *is(t)*; the third person singular copula *e* in Italian does not appear to facilitate such early acquisition of *ist*. One interesting observation is that learners do not use the infinitival form of *sein*, unlike they do with main verbs. This is most likely a result of its rarity in the input, and of naturalistic learners' lack of instruction in German, where such citation forms are common. Another factor in the observed frequency of third person singular 'be' in learners' production is likely due to the fact that forms of the verb *sein* 'be' are all suppletive (see Chapter 1), and therefore subject to memorization as chunks which are listed unanalyzed in the lexicon, along the lines of what Berko (1958) proposed for the initial production of irregular verbs. (See also Myles 2004 on the overrepresentation in learners' production of their linguistic knowledge.) Thus the plentiful instances of *ist*, some of which involve overgeneralization, point to *ist* as the sole lexical entry for the verb 'be'.

4. Modals and auxiliaries, and the AgrP

Raised modals and auxiliaries in either bare stem form (for modals) or with correct agreement (for forms of *sein*) do not for us unambiguously demonstrate the productivity of agreement or projection of an AgrP, whereas main verb agreement does. However, *sein* or *haben* forms may function to trigger AgrP for learners whose L1 phonology makes it more difficult for them to analyze complex syllable codas, i.e. all learners other than the English speakers we have studied. The copula is perhaps more accessible than are modals, where each copula form is unique, clearly inflected, occurs less often in final position in embedded clauses and never (in its nonfinite form) in single clauses, and occurs without a second verb. Moreover, no *sein* (or *haben*) form involves

levant text), we view this as a performance strategy. Note that the same might certainly be the case with the Turkish children Haberzettl studied; their acquisition of German in an instructed context and the testing situation might have led to their attempts to produce utterances beyond their current level of syntactic competence.

more than two consonants in the syllable coda; main verb stems often end in one or more consonants, resulting in codas with three consonants, e.g. *machst, kaufst, trinkst, sitzt* ('do'-2SG, 'buy'-2SG, 'drink'-2SG, 'sit'-2SG).

We have not used modals as evidence for functional projections as where they are base-generated is subject to some debate (see for example the typological position of modals in Muysken 2008: 245, as compared to auxiliaries or main verbs), although in adult German they appear to be base-generated in the VP. Moreover, in the present tense, agreement on German modals is marked similarly for first and third person singular involving a zero allomorph which makes it impossible for the researcher to distinguish such forms from any bare stems learners use instead of *-n* forms as Root Defaults. In that modals are associated with IP in UG (Steele 1981), we can assume that UG-driven L2 acquisition will result in their being in an IP-level projection. This would explain why data from both L1 children and L2 adults learning German point to their base-generation outside the VP. In the acquisition of German (and other languages) modals and auxiliaries occur only in their finite form when at the same point in time main verbs occur either in finite form (when raised) or in non-finite form in the VP (see Clahsen, Penke and Parodi 1993/4, Rizzi 1993/4; Wexler 1994). Table 5.21 provides the suppliance of modals in the earliest (cross-sectional) data that has been collected from naturalistic learners of German.

Table 5.21 Modal suppliance by the Heidelberger Pidgin Projekt learners

<i>Group</i>	<i>können</i> 'can'	<i>wollen</i> 'want'	<i>müssen</i> 'must'	<i>sollen</i> 'should'	<i>mögen</i> 'desire'
I	1	3	0	0	0
II	3	9	13	0	0
III	6	12	75	1	0
IV	19	26	19	5	3

The speaker Tomá, who produced the examples in (5.23) in the main text above falls in Group II, a point at which modals are emerging, and agreement inflection has not been acquired. According to OG, the TP projection is acquired between the bare VP and the AgrP projections; the Heidelberg data are in accord with this projection, if we take the modal overgeneralization to indicate an early stage in the acquisition of the TP.

Chapter 6

Differences in triggering between children and adults

6.0. Introduction

The ten assumptions of Organic Grammar spell out the mechanisms provided by Universal Grammar – the child’s or the adult’s pre-wiring – to undertake the task of acquiring a language. In Chapters 3 through 5, discussion has revolved around the evidence for involvement of these mechanisms in both first and second language acquisition, for the projection of IP-level projections. It is all well and good to claim that all the child (or L2 learner, given little reliance on the L1) requires to acquire a specific language are these mechanisms and input from speakers of this language. Yet beneath this simple formula and the more detailed assumptions of Organic Grammar lie a considerable amount of unknowns. Between initial receipt of auditory stimuli and detection of something in the input that triggers further development, there is a considerable amount going on in the learner’s mind/brain. For starters, the child brings more than purely linguistic mechanisms to the task of language acquisition. Involved are various aspects of on-line processing which interface with but do not belong to UG; these range from working memory capacity (see Baddeley 2003) to segmentation of the sound wave (see Jusczyk 1997).

In second language acquisition, Carroll noted in 2001 that the material from which learners learn is “one of the most under-researched and under-theorized aspects of second language acquisition” (Carroll 2001: 1), pointing out the lack of consensus on how L2 learners process raw acoustic material and how they then encode this to construct a grammar. However, new work in this area – much of which is experimental – is promising (see Dussias 2010 on the recent use of eye-tracking in research, and for use of this and other techniques in psycholinguistic research see Hopp 2006; Marinis 2003; Towell and Hawkins 2004; Wright 2010). In what follows, we will follow neither of these two fruitful lines of inquiry as our oral production data point us in directions other than memory and processing. What we will instead consider in this chapter and then in Chapter 8 is how the linguistic charac-

teristics of the input can account for two observations whose explanation continues to elude researchers. The first observation is that naturalistic and instructed learners differ. In that much of the data from child L2 learners and most of the data adult L2 learners is collected in a classroom context, it is incumbent on us to include such a chapter in this book, and how naturalistic and instructed learners appear to differ so and why they do is the topic of Chapter 8. The second observation has been the focus of the preceding chapters in this book, namely that learners progress from one stage to another stage. To explain precisely how learners do this, the now established research tradition is to look at what in the primary linguistic data triggers further development.

6.1. Segmenting the stream of speech

What do we know about how children acquiring their mother tongue make use of the input they receive? It is clear from the moment at which children's behavior can first be observed that they already have some tools for dissecting the stream of speech. When the child starts to utter his or her first words, these words are typically nouns and main verbs; this shows that the child can at some subconscious level distinguish nouns and verbs from other frequently occurring elements such as articles and auxiliaries. Once the child strings her first words together, she further reveals uncanny knowledge of the head-complement order of the ambient language. How does the child figure these things out? UG provides the child with the direction in which to look (e.g. Principles and Parameters of UG, Chomsky 1981). However, the child must also know *how* to look. From Slobin's Operating Principles to more linguistically-oriented proposals such as Pinker (1984), Gleitman (1990) and Jusczyk (1997) there have been various approaches to this problem. A window on the first steps is provided by the high amplitude sucking and head-turning techniques designed to determine what the growing infant comes to be aware of, earlier studies of which are reported in Jusczyk (1997). This awareness, as signalled by the infant's increased rate of sucking in response to a stimulus (or turning towards a stimulus) which it perceives to be novel, is of course neither conscious nor volitional. Findings such as those discussed in Jusczyk and shown in Table 6.1 indicate that the child amasses a good deal of information about its language before words are produced between the ages of 10

and 12 months, and even before words are comprehended between 8 and 10 months.

Table 6.1. Infants' attention to speech signals based on work discussed in Jusczyk (1997)

<i>Age</i>	<i>Perceptual sensitivity to:</i>
newborns	-own mother's prosody
2 months	-word boundaries (night rate vs. nitrate)
4 1/2 months	-prosodic pattern of own name
6 months	-own language prosody (American English distinguished from Norwegian)
7 1/2 months	-able to pick out words from fluent speech using phonotactic cues (not main stress) -selective attention to speech directed to them, even with background noise
6-9 months	-own language phonetic and phonotactic cues (Dutch distinguished from English)
8- 10 months	-first words are comprehended
9 months	-own language stress (English trochaic strong-weak stress)
10 1/2 months	-word boundary detection overrides pretonic unstressed syllables (guitar)
10-12 months	-first recognizable words are produced

That these findings don't merely represent the unfolding of perceptual skills is suggested by the results of studies on infant retention shown in the table. One study by Jusczyk and colleagues reported that the details of various syllables presented to two-month-old babies were retained over delays of up to two minutes. In a second study, a story was read to eight-month-old babies daily for ten days, and when tested, they recognized words presented in isolation. The results indicated their recall was based on adult-like storage of the words because (i) the majority of the words in the recall test did not have sentential stress in the story sentences, and (ii) recall words which were altered by their initial consonant failed to elicit a response from the children.

Findings indicate a high level of activity in response to the input during the child's first year of life. But we know very little about how naturalistic adults (or children) segment the stream of speech during the early period of exposure to L2 input. We must therefore discuss things in somewhat more general terms.

In addition to just perceiving the linguistic input, we assume that the learner is able to (subconsciously) make use of the segmented input for

propelling linguistic development forward, or to isolate aspects of the input for use as cues or triggers for positing further syntactic structure. After some further discussion of triggers and parameters, we review in this chapter literature on the L2 acquisition of German IP-level projections by children. We then consider the similarities and differences between children and adults that have become apparent, especially in terms of what may act as triggers for functional projections. One of the main differences involves the raising of Root Default verb forms by adults, but typically not by children (L2 or L1). The possible reasons for such a difference will then be discussed; our solution will also involve the idea of triggers.

6.2. Triggers and parameters

The idea of crosslinguistic variation being captured as parameters was developed in the 1990s (based on Chomsky 1981), and while it is less clear today whether such traditional parameters exist – but see Holmberg (2009) for an argument in favor of “deep” parameters – a clear alternative that is also usable within language acquisition research has not been put forth. We continue to assume some form of parameters; cf. discussion below.

There have been various proposals which see the language learner as conservative, only positing those positions and projections which are needed to account for the relevant input (e.g. Grimshaw 1993); Speas 1993). Organic Grammar builds on this idea in the form of the Assumptions in Chapter 1.¹⁶⁵ However, in all of these proposals some form of a trigger for acquisition is assumed. The idea of trigger comes from Principles and Parameters Model (Chomsky 1981) under which crosslinguistically varying parameters are set by the child on the basis of the primary linguistic data (PLD), whose role in this case is simply to provide positive evidence. Lightfoot (1999) reiterates the Logical Prob-

165. One might also include the following three steps – the first of which is crucial – taken by the learner in response to primary linguistic data relevant at a given stage of development, for a single functional projection:

- a) head is identified in the primary linguistic data and X'- Theory results in a maximal projection (i.e. V is identified, and projects VP)
- b) a complement position (to the right or left) is posited
- c) a specifier position is posited.

lem/Plato's Problem (Hornstein and Lightfoot 1981), that children literally attain infinitely more than they experience; the input children receive underdetermines their resulting competence. For example, there is no positive evidence that informs the children that pronouns do not invariably co-refer. There is indeed evidence in the input that pronouns following a noun can refer back to it, as shown in (6.1a), but the input contains no information regarding the fact that the pronoun in (6.1b) cannot refer to Phil.

- (6.1) a. *Phil's_i dad congratulated him_i*
 b. **Phil_i congratulated him_i*.

Lack of co-reference in this example involves pre-wired structural information relating to the two syntactic configurations in which *him* is found and which children possess as soon as they can be tested (in e.g. studies by Crain and colleagues of children from three years old; Crain 1993), that is, when they have projected the relevant syntax.

Parameters can be assumed to designate what type of input will cause a particular change in the learner's grammar (e.g. Clark and Roberts 1993; Dresher 1999; Gibson and Wexler 1994; J.D. Fodor 1998; Lightfoot 1991), and according to Lightfoot, a trigger consists only of the kinds of things children routinely experience in the input. Under his model, the child scans the linguistic environment for cues found in simple syntactic domains. However, these aren't necessarily salient elements though position, e.g. initial or final, can be important; in fact, Lightfoot proposes that children are programmed to scan for clitic-like, unstressed and highly assimilable inflectional morphemes. Lightfoot also argues that children are sensitive to statistical shifts in the input. This would be along the lines of what Newport, Gleitman and Gleitman (1977) found when comparing mothers' input to their young daughter's linguistic development: one of the few correlations found was between some mothers' more frequent use of yes/no questions and negative imperatives and children's more rapid acquisition of verbal auxiliaries. Note that this effect is indirect; what appears to correlate here is not children's acquisition of questions or imperatives.

Lightfoot points out how statistical shifts in the input operate in the history of a language; for example, in English, verb second was lost when preverbal non-subject constituents declined to a frequency of only 17%. Variation in the input may initially give rise to situations in which two grammars exist side-by-side, and the success of one is what we

refer to as language change (cf. also Kroch 1989). For Lightfoot, the optionality regularly observed during the child's development is a function of co-existing grammars, and what then forces the child to choose a grammar is Aronoff's Blocking Effect (Aronoff 1976). The Blocking Effect also explains the child's elimination of morphological doublets such as overgeneralized forms ('goed' alongside 'went') where their occurrence is generally unattested in adult languages (except across register, style or dialect, Kroch 1994). Here one must still explain why children converge on the grammar of their speech community and many adult second language learners fail to do so. Some possibilities are that interlanguages allow competing options as a result of whatever permits them to allow doublets across register, style or dialect, perhaps as a result of the weakening of the Blocking Effect. Vulnerability at the syntax-discourse pragmatics interface (see Sorace 2003) is currently considered to be another possibility.

Exactly what in the primary linguistic data counts as evidence for the learner to posit a syntactic projection remains an open question. At opposite extremes of the range of possibilities are two views: either no overt evidence is required since everything is provided by UG, where learning does not occur through enumeration of probabilities or hypotheses about previous grammars (see e.g. Bertolo 2001: 5), or everything comes from the input, with no relevant information being provided by any sort of pre-wired linguistic mechanisms (i.e. UG). The former represents the Strong Continuity Hypothesis (see Chapters 3 and 4) which entails the full UG-provided CP tree being present at the outset of acquisition. The latter extreme represents certain non-generativist views of language acquisition (e.g. work by Brian MacWhinney or Michael Tomasello for first language acquisition and Susan Gass or Michael Long or Merrill Swain for second language acquisition). When it comes to stages of acquisition, a Strong Continuity approach must either dismiss as trivial the appearance of successive grammars in the child's or second language learner's production or explain them.

A Weak Continuity Hypothesis such as Organic Grammar, however, falls in between the two extremes: what provides mechanisms for positing projections is UG, but language-specific instantiations of projections are based on evidence in the primary linguistic data. Of course in second language acquisition, the existence of another grammar (the learner's L1) comes into play, and thus one could maintain (as some do e.g. Clahsen 1991) Weak Continuity for first language acquisition, but not for second language acquisition (Clahsen and Muysken 1986,

1989). We have argued against this view in the preceding chapters; while the adult L2 learner already has functional projections in his/her native language grammar, these are typically not reused in the acquisition of a second language. While Schwartz (1996) points out that it is "equally plausible" to assume that at early stages of acquisition, functional projections are present but empty, as we have seen in this book, the great advantage in assuming they are absent is that an explanation for the stages observed can be based on the learner's positing of specific projections.

In proposing stages of acquisition (as we do, corresponding to specific functional projections), one is saddled with the task of explaining how the learner moves from one stage to the next. To begin to solve this problem, we propose that each functional projection can be thought to correspond to a specific parameter; we leave open the specific formulation of these parameters (but see Chapter 3, *Extensions 4* for a proposal). To the extent that functional projections correspond to parameters, explaining progression from one structure-building stage to the next translates into explaining what triggers the setting of each parameter; this is precisely what we attempt to do in this chapter, for L1 and L2 acquisition.

Gibson and Wexler (1994) and Lightfoot (1991) proposed a single sentence type to enable the child to uniquely determine a set of parameter settings, but in Vainikka and Young-Scholten (1998b), we opted to instead take further Janet Fodor's (1998) idea of a designated trigger, according to which parameters (or projections) designate the input that causes a non-end-state grammar to restructure. Given that functional projections contain inflectional morphemes which abstractly represent the features under a particular head, it follows that such morphemes are good candidates for designated triggers for the projections in which they are found. Functional projections for which there is no morphosyntactic evidence are not posited by the learner. This presupposes a stronger link between the input and acquisition than is the case under Strong Continuity approaches as it excludes the possibility of abstract functional projections in the learner's grammar.

Given the requirement that triggers be robust, we have suggested that elements acting as triggers occur in their production data prior to their influence on the learner's underlying grammar. It is natural to expect that production data from L1 acquisition do not invariably mirror the competence of the child (and indeed this has been shown empirically; see e.g. Gerken, Landau and Remez 1990). Simply because a

particular element is acquired earlier than another does not, however, entail its function as a trigger; here we make the reasonable assumption that a necessary condition for an element to function as a trigger is that it be detected by the learner in the input earlier than related elements are detected.

The idea of triggered parameter resetting or grammar restructuring suggests its instantaneous occurrence. The preceding chapters in this book, particularly those on L2 acquisition, have shown considerably blurred stage boundaries. If acquisition is not solely dictated by a single vast tree provided by UG (as under Strong Continuity), but instead involves the interaction of primary linguistic data with X'-Theory and the mechanisms of OG, it is unsurprising that stage seepage occurs. Sharwood Smith and Truscott (2006: 205) point out the misguided expectations of work focusing on the properties of interlanguage grammar of learners to "jump neatly from one discrete stage to another", noting that research points instead to "periods of optionality, sometimes quite long ones, where both new and old forms occur in learner performance".

In the remainder of this chapter we first review literature on the L2 acquisition of German IP-level projections by children. We then consider the similarities and differences between children and adults that have become apparent, especially in terms of what may act as triggers for functional projections. One of the main differences involves the raising of Root Default verb forms by adults, but typically not by children (L2 or L1). The possible reasons for such a difference will then be discussed.

6.3. L2 acquisition of German by children

Pienemann's (1981) longitudinal study of three Italian-speaking children learning German as a second language is a good starting point as he applied implicational scaling and found much the same pattern of development as discussed in the preceding (and following) chapters; for further earlier studies on child L2 German, see Molony (1977) (L1 English) and Kuhberg (1990) (L1 Turkish and Polish). Pienemann's study involved the collection of data for 62 weeks from the three children, Concetta, Eva and Luigina, who were eight years old at the start of the study. Data were collected every three to six weeks from initial exposure using game playing, puppets and conversation. The children

were attending a German preparatory class and had limited contact with German children in school; contact outside school varied.

The order of acquisition for all three children was the following: first main verbs, then the copula, then auxiliaries and/or modals, and finally subject-verb agreement. (Note that this order is largely explained by OG, with the order of acquisition VP [main verbs] → TP [auxiliaries] → AgrP [subject-verb agreement].) Eva's acquisition was most rapid; she produced multi-word utterances from the start, while Concetta and Luigina produced mostly single word utterances until week 21.

Lack of subject-verb agreement (and the Root Default use of *-n*) declined gradually over time: the 3rd person suffix *-t* came in at week 39, but the 2nd person *-st* did not emerge until week 62. As argued in Clahsen (1991) for L1 acquisition, the acquisition of the *-st* suffix signals the acquisition of the full German paradigm and the AgrP projection. Before week 62, Concetta used *-t* for 2nd singular: *Kannt du lesen?* 'Can you read?' *Wollt du spielen?*¹⁶⁶ 'Do you want to play?' Like the American teenagers (Chapter 5), these children also overgeneralized the *-st* suffix:

- (6.2) a. *Ischt verstehst.* [Concetta 29]
 I understand*-2SG
 'I understand.'
- b. *Der Vater sagst nicht.* [Concetta 39]
 the father say*-2SG not
 'The father isn't speaking/doesn't say/isn't saying anything.'

Under our analysis, such examples would involve an IP-level projection not yet specified for agreement – thus, either a TP or an FP depending whether tense marking has been acquired.

Pienemann observes that his "particle" stage (*aux [XP] v-fin*) occurs when subject-verb agreement starts to occur. This is the stage at which those frequent particle verbs in German such as *anfangen* 'begin' or *ankommen* 'arrive' are analyzed, with the main verb component raising

166. It is worth considering whether overgeneralization of *-t* for second person singular is due to teachers' frequent use of 2nd plural (with the *-t* suffix) in the classroom.

while the particle remains in the VP, *Klaus kommt sofort an* ‘Klaus is arriving immediately’ vs. *Er möchte später ankommen* ‘He wants to arrive later.’ Pienemann concludes that this stage in child L2A is dependent on the acquisition of inflection, comparing this to Clahsen’s conclusions in his 1982 L1A study. This is what is also expected under Organic Grammar:

- (6.3) a. *Un sie soll da auch gehn.* [Concetta 58]
 and she should there also go
 ‘And she should also go there.’
- b. *Der hat geh-weg gemacht.* [Concetta 58]
 he has ‘go away’ made
 ‘He said go away.’

Pienemann rejects Italian influence on these children’s missing subjects, such as in (6.4), because the children varied considerably in their suppli-ance of pronominal subjects. He suggest that what occurs is “individual variation in the omission of subject NPs in connection with the acquisition of permutation” (1981: 47; translation MYS), i.e. a structural explanation somewhat similar to Clahsen’s.

- (6.4) *Dann gehn in de Wasser.* [Concetta 58]
 then go into the water
 ‘Then he/she goes into the water.’

Since this example involves the Root Default (infinitival) verb form, under a bare VP analysis of subjects, DP would be expected to be optional (as was discussed in Chapters 3 and 4 for early acquisition). Note that while Concetta has the possibility of positing more structure at this point (as seen by the earlier examples in [6.1]), the VP-structure from this appears to still be available. Alternatively, (6.4) involves an under-specified FP projection with the specifier position filled by an XP (cf. the Full House discussion in Chapter 5).

As far as complex sentences are concerned, multiple clauses con-joined with ‘and’ come in from week 36. WH-words appear in succes-sion and are all used by week 62. However, according to Pienemann questions are not productive and not inverted throughout the entire corpus; note here that Luigina uses *warum* rather than *weil* for ‘be-cause’.

- (6.5) a. *Warum machen Aua?* [Concetta 53]
 why make*-INF ouch
 ‘Why are you saying ouch?’
- b. *Warum du schlafen?* [Luigina 55]
 why you sleep*-INF
 ‘Why are you sleeping?’
- c. *Warum du nich bezahl.*
 why you not pay*-INF
 ‘Because you aren’t/don’t pay(ing).’
 [Luigina 85; post-study follow-up]

Pienemann also concludes that child L2 and adult L2 acquisition are similar (he compares his data to the ZISA data) on the basis (among other things) of L2 structure having a stronger influence on acquisition than the learner’s L1, and he uses structure building phraseology: “*construction* of an interlanguage system” (1981: 94; translation and emphasis MYS), citing Felix 1976.

Prévost (2003) reanalyzed Pienemann’s data from Concetta and Luigina in terms of Root Defaults.¹⁶⁷ In Luigina’s data Root Default utterances are plentiful (50% of her utterances at month 6, 100% at month 9 and over 30% at month 13), while the frequency of Concetta’s RD utterances is lower (the highest figure being 30% at month 12). According to Prévost, these children undergo a period of Root Defaults and truncated structures (where RDs and finite declaratives have different structures), and the infinitival marker is not used as a finite marker.

As Prévost points out, the finding of clear Root Defaults in child L2A presents various problems for the Full Transfer/Full Access approach of Schwartz and Sprouse (1994). First, given that these children are eight years old, the Root Principle (Rizzi 1993/4) should be fully operational and RDs should not occur at all. Second, if functional categories are available via UG, verb movement should be obligatory. Finally, if the initial state involves transferring strength of agreement from Italian (which has a full, strong agreement paradigm), why are

167. Prévost (1993) also discusses RDs in the data of an English-speaking child acquiring German from the second week of exposure onwards. There is an initial RD stage; non-finites almost never appear in finite contexts, and finite elements and bare stems occur in finite positions.

there RDs in Italians' L2 German? These problems do not arise under Organic Grammar where the starting point for all learners is a bare VP.

Rothweiler (2006) discusses longitudinal data from three Turkish children acquiring German (aged 2;10, 3;0 and 4;5). Data collection for the two older children began at 9th month of exposure, and thus the earliest stages were not captured. We return to consider one of these children, Melisa (age 4;5) and her acquisition of the CP projection in Chapter 7. The data from the youngest child is the most relevant, as data collection started early, in his third month of exposure to German in kindergarten for at least four hours a day (he was solely exposed to Turkish otherwise). Overall, there was a distinction between finite V2 elements and non-finite elements at the end of the utterance. Verb-final utterances without subjects were rare and nearly always occurred with infinitives or bare stems. Non-finite verbs (RDs) in the V2 position were rare. There was no productive main verb agreement until six to eight months of exposure. Framed in an Organic Grammar analysis, the AgrP would be posited 6–8 months after exposure; before that point, infinitives/bare stems occurred in bare VP constructions (although these were not common), and finite verb forms occurred in a raised position, in FP or TP. In terms of more complex constructions, the CP projection began to develop at 15th month of exposure: no subordinate clauses were produced until the 15th month of exposure, and there were no object topicalizations with V2 in the data. Questions were either formulaic or occurred without a WH-word. Rothweiler concludes – contra Haznedar, whose claims we discussed in Chapter 3 – that the L2 children she herself studied “did not deliver evidence for [such] a dissociation of verbal inflection and sentence structure” (2006: 109).

As also discussed in Chapter 5 *Extensions*, Haberzettl (2003, 2005) analyzed data from Wegener's (1992) four-year longitudinal study of 12 Polish, Russian and Turkish children (six to eight years of age) learning German; here we focus on the Turkish children. Data collection from Turkish speaker AN began in her first month of contact with German in Augsburg, Bavaria. Main verbs are produced from the start; only 23% of these are inflected at this point, but by month five, 98% are. That subjects are not obligatory is suggestive of a functional projection lower than AgrP. Similar to adult data discussed in Chapter 5, the two other Turkish children, ME and NE, make considerable early use of *ist*, doing so in a raised position. In *Extensions* in Chapter 5 we note that this potential evidence for a functional projection can be

treated with caution since both were receiving most of their input in a instructed setting and frequently heard presentational sentences with *ist*.

Considering the schedule of development in child L2 acquisition of German, it appears from the data that functional projections at the AgrP and CP level were probably only posited around weeks 58–62, or after more than one year of data collection for Luigina and Concetta (L1 Italian; Pienemann 1981, Prévost 2003); recall that in the VYSA data the AgrP projection emerged about 4–5 months after exposure, and we will see (Chapter 7) that the CP will emerge around the 7-month point. The youngest of the L1 Turkish children Rothweiler (2006) studied appeared to acquire the AgrP around months 6–8, and the CP around the 15th month. While development in the VYSA data is very rapid, there is one child L2 study with comparable data. Bongartz and Schneider (2003) collected data from two English-speaking brothers, Martin and Perry, (aged 5 and 7) acquiring German. Collection of the relevant data began 6 months after arrival in Germany and lasted about 4 months, and while the study does not provide details of morphosyntactic development, it is clear from the examples that both boys are already quite advanced during the data collection period. Based on the authors' Table 3 (p.30) and the corresponding discussion, Martin has definitely acquired subordinate clauses by Time 3 (9 months after exposure), as he produces 25 dependent clauses during this recording (the total number of sentences was 237). Perry lags behind slightly, but according to the authors "Perry was well on his way to mastery of dependent clauses" (p.31) before Time 4 (also around the 9-month point). Thus, it appears that the CP projection has been acquired by around month 9 by these children. Like the VYSA test subjects, Martin and Perry attended German school/kindergarten, with a good amount of German input – but unlike the VYSA learners, Martin and Perry lived at home where English was also spoken.

6.4. A triggering difference between children and adults

Summarizing research on the acquisition of phonology, morphology, syntax and the lexicon, Herschensohn (2007) concludes that the inter-language grammars of L2 learners resemble those of native speakers, and result in qualitatively similar knowledge. In this book we have pursued an approach where structure develops similarly across child L1 and (naturalistic) adult or child L2 acquisition. In this section we

present our proposal about a difference in triggering of functional projections between children (whether L1 or L2) and adults. We return below to the question of the age at which children ‘become adults’ as far as acquisition of syntax is concerned.

We consider each of the IP-level projections in turn to determine to what extent positing a particular projection is similar or different between adults and children. However, there is one potential difference that may not be associated with a particular projection, namely, so-called stage seepage, where adults retain previous grammars (and not just the grammar immediately prior to their current stage) in their grammar. On the other hand, we may be dealing with a difference of degree rather than category, as this has also been attested in children’s data, but to a lesser extent (see Clahsen and Penke 1992). In Chapter 3, we discussed comparable stage seepage in L1A of German (as well as grammar competition in historical syntax), and above in Concetta’s data we saw an example (in [6.4]) of such stage seepage in child L2A. Under stage seepage, a VP-grammar for example is still used at later stages when one or more functional projections have already been acquired. Similarly, an underspecified functional projection (FP) may at times be used even by a speaker who has already acquired the AgrP projection and the corresponding agreement paradigm of German.

We argue that the main difference between children and adults in acquiring functional projections is in terms of the availability of two types of triggers. In Vainikka and Young-Scholten (1998b), we reviewed data from adult L2A and child L1A which revealed that for children bound morphemes (such as inflectional affixes) first occur in their production as reflexes of a particular projection, while free morphemes do so for adults. Consider Table 6.2 (to be revised below):

Table 6.2 Triggers for projections (Vainikka and Young-Scholten 1998b: Table 6)

<i>Projection</i>	<i>Trigger in L1A</i>	<i>Trigger in L2A</i>
VP	stress pattern	L1 bootstrapping
FP	3SG <i>-t</i>	modals
AgrP	agreement paradigm	copular paradigm
CP	object clitics	complementizers

We proposed that the early appearance of a particular morpheme is associated with its status as a trigger for a particular projection (see also Hawkins 2001 on this idea, but for L2 English). Following this reason-

ing, bound morphemes act as triggers for children, while free morphemes tend to do so for adults. Newport (1990) suggests that acquisition of complex morphology undergoes a major shift around puberty, and perhaps a minor shift between age four and six; the prior shift appears to be relevant for our discussion, as we shall see. Neurobiological factors lead to different processing of bound morphemes; such elements may thus become unavailable as triggers, resulting in a slightly different pattern in the acquisition of functional projections between adult L2 acquisition and child L1 or L2 acquisition.¹⁶⁸

Our (1998b) proposal was based on the data and discussion of Zobl and Licerias (1994), who in searching for what was heretofore an elusive explanation for the slightly different order of morphemes in studies of first vs. second language learners of English (Brown 1973 and deVilliers and deVilliers 1973 vs. Dulay and Burt 1973 and Bailey, Madden and Krashen 1974) proposed that functional projections are first realized as bound morphemes in L1 acquisition and as free morphemes in L2 acquisition. For example, for the IP in English, past and third person singular *-s* are acquired first for L1 children, followed by auxiliaries, while the order for L2 learners is just the opposite. However, they argue that these differences point to structure building for first but not for second language acquisition, while we argue that the structure building of Organic Grammar can be maintained for both groups if there is a difference in what can act as a trigger. Our approach is in line with Herschensohn's (2000) discussion of age differences in acquisition: "The thoroughness and rapidity of L1 acquisition of phonology gives children an advantage in the development of certain aspects of morphology and syntax such as clitics or suffixation." (2000: 189–190)

Based on the reported child L2 German data, there appears to be a qualitative shift at some point after age 4 in terms of morphosyntactic and syntactic development. Rothweiler (2006) in her study of L1 Turkish/L2 German children concludes that early successive bilingual acquisition by these children – who were 3 to 4 years old at the time of

168. One of the traditional observations concerning acquisition of tense marking is that morphology is acquired early in L1A and adverbials are late, while the reverse seems to hold for L2 acquisition. However, Gretsch (2003) challenges this pattern based on L1 German data, stating that "the assumed bifurcation between the processes of L1 and L2 acquisition is to some extent a surface phenomenon which is not based on a priori differences in the possible gateways to grammar". (2003: 116)

initial exposure – is equivalent to L1 acquisition of German in terms of V2, subject-verb agreement, and subordinate clauses, but distinct from L2 adults. A similar conclusion is reached by Bonnesen and Kroffke (2007) who examine Rothweiler's data as well as data from two other children acquiring German from age three onwards, and compare it to the ZISA data (Ana and Zita, Romance L1s). Furthermore, Meisel (2008) concludes that the cut-off point for child L2A vs. bilingual first language acquisition is around age three or four, based on patterns of finite and nonfinite verb production by children learning French and German. Kroffke and Rothweiler (2006) also found that Turkish children exposed to German at age three did not produce Root Default verbs in a raised position (V2 or V3) – corresponding to a lacking FP-stage, as we will see – while children exposed to German at age six did produce a certain amount of such raised Root Default verbs. We take these results to mean that before the age of four, bound morphemes act as triggers both in L1 and L2 acquisition, but at some point after age four, they cease to be as readily available as triggers (and free morphemes tend to act as triggers).

A recent study by Dimroth (2008) sheds further light on the age question. She analyzed data from two Russian sisters aged 8 and 14 acquiring German. The data concern the acquisition of negation and the morphosyntax of verbs. According to Dimroth, the pattern of development by the 14-year-old is similar to the L2 adults, with postverbal negation first acquired with auxiliary verbs (rather than lexical verbs), as we saw in Chapter 5; under OG, the auxiliary or modal verb that precedes negation early on has either been base-generated in or raises to the first functional head beyond Neg (either F or T, as we have discussed). However, the data from the 8-year-old girl shows that postverbal negation is acquired with *lexical* verbs before the auxiliary system is in place, suggesting that verb raising of lexical verbs to a functional head (and the corresponding inflection) is acquired very early. Dimroth (p.147) cautions that this is a tentative conclusion in that there are only two learners, and given the dearth of any earlier studies where test subjects differ in age but not in input conditions.¹⁶⁹ However, if Dimroth's results are upheld in further studies, we would conclude (i)

169. These differences are, however, reminiscent of the patterns found in one of the earlier studies that compared younger and older L2 learners, namely Cancino, Rosanksy and Schumann's (1975) longitudinal study of six Spanish learners of English (two children, two teenagers and two adults).

that her study provides further evidence for the idea that bound morphemes (i.e. finiteness marking on lexical verbs) are acquired earlier than the corresponding free morphemes (auxiliaries) in child L2 acquisition, supporting the feasibility of bound morphemes acting as triggers for the projection into which the finite verb is raised (such as the TP); and (ii) the point at which bound morphemes start to cease acting as 'natural' triggers begins somewhere between 4 and 8 years (combining the Kroffke and Rothweiler data and the Dimroth data) and completely ceases by 14 years of age, presumably the onset of puberty, as in Newport (1990). Clearly much more work is required before we can be more precise.

What we wish to claim is that any grammatical element (or set of elements, as in a paradigm) associated in the target grammar with a particular functional projection may act as a trigger for the projection during acquisition. It appears that in Universal Grammar bound morphemes are the unmarked trigger for a functional projection, and this is what children in L1 and L2 acquisition typically use as triggers. However, if there are no bound morphemes associated with the projection in the target grammar, free morphemes must equally well be able to act as triggers for children, as we will suggest for the NegP below. For adults acquiring a second language, bound morphemes typically cannot act as triggers. We will see below how much of the IP-level data can be explained based on this proposed difference between children and adults.

Why should children and adults differ in their choice of trigger? There could be a variety of reasons for this (some of which we will discuss in Ch.8 in relation to the sort of input older learners receive). One possibility is that initial processing of the input is more efficient for young children. The attested cases of exceptionally successful L2 acquisition (Oblor 1989; Ioup et al. 1994) and of exceptionally slow L1 acquisition (see chapters in Bishop and Mogford 1988) indicate that verbal memory capacity may play an important role. Perhaps this can be related to choice of triggers: Newport's (1990), study of ASL revealing two declines in children's processing of complex morphology, after age four and (a more major shift) around puberty (this tallies with Rothweiler 2006 where bilingual kids and L2 kids differ).

The phonological distinction between bound and free morphemes contributes to their accessibility in L2 acquisition. In German, free morphemes such as auxiliaries usually constitute at least a phonological foot, but verbal suffixes involve sub-foot units. Sharwood Smith and Truscott (2006) point out that the L2 learner's initial state with respect

to phonology is relevant in that the learner's processing of auditory environmental stimuli will naturally be followed by the learner's assignment of their native language phonological structures to these stimuli. That the learner's L1 phonology has a long lasting effect on their interlanguage phonology is attested in numerous studies from those in the edited volumes of Ioup and Weinberger (1987) through to Hansen Edwards and Zampini (2008) and contributes to their (in)ability to process sub-foot constituents as triggers. Yet research on the relationship between the acquisition of morphology and prosodic phonology is still very much in its infancy; see Goad, White and Steele (2003, 2004) for more recent directions.

We now turn to consideration of what triggers the projections posited for L2 German syntax.

6.5. Triggering syntactic projections

How would triggering work in detail? Beginning with the core of a sentence, the VP, Mazuka (1994) notes a paradox in first language acquisition where in order to figure out head directionality, the child has first to identify the head and its complements, but being able to do so requires the child to have already figured out head directionality. Mazuka (1994), Christophe, Nespoulet, Guasti and van Ooyen (2003) consider how prosody assists the child. Nespoulet and Vogel's (1986) prosodic hierarchy kick starts acquisition whereby constituents in the VP (Verb and Object) map directly onto a prosodic phrase with a stress pattern that identifies the head, V. Pre-linguistic infants have been shown to be sensitive to stress, as discussed above, (Jusczyk, Cutler and Redanz 1993) and to constituents of the prosodic hierarchy such as syllable, foot, prosodic word, etc. (Gerken, Jusczyk and Mandel 1994). If second language learners possess a similar sensitivity to stress and constituents of the prosodic hierarchy, then the VP will be isolated from the input stream in a similar manner, and its headedness determined. But the first step in acquisition is segmentation of the stream of speech into bits that turn out to be meaningful, typically free morphemes (see Jusczyk 1997). There is evidence that adults retain this, as demonstrated in Al-Jasser's (2007) study of intermediate-level Arabic-speaking adult learners of English in their sensitivity to phonotactics and probability of sound sequences in various positions. Potentially compromising the usability of this information in second language acquisition is the learn-

er's initial state with respect to their phonology which could well act as a filter on the input, including for stress, which has been shown to transfer (see e.g. Archibald 1992; Pater 1997). However, L2 learners can dispense with the need for a trigger for their initial projection of VP given that they transfer their native language VP. L2 learners must still reorganize their VP headedness to match that of the target language, and the evidence discussed in Chapter 4 indicates they do so.

6.5.1. Triggering NegP

What is the trigger for the first functional projection in German, the NegP? The only candidate is the morpheme *nicht* 'not'; we presume that the sentence-external *nein* 'no' is not a possible trigger for syntax. Note that since *nicht* is a free morpheme, we would predict that there is no difference in the acquisition of the NegP between children and adults. To the best of our knowledge (see Chapter 5), this is exactly the case – there is no discernable difference between the L1 acquisition of German negation and the naturalistic (adult) L2 acquisition of German. Thus, it appears that the beginning of the general acquisition mechanism that posits functional projections is provided by Universal Grammar, and is applicable regardless of the age at acquisition (and whether a first or second language is involved).

6.5.2. Triggering FP and TP

In Vainikka and Young-Scholten (1998b), we considered modals as the trigger for the FP. We had two reasons for this. First, modals, particularly the modal *will* 'want' is often the first INFL-related element learners acquire, and second, we assumed that modals occur considerably more frequently in raised positions than VP-internally (*Ich kann Motorrad fahren* 'I can ride a motorcycle' vs. *Ich will Motorrad fahren können*. 'I want to be able to ride a motorcycle'). However, this required assuming – contrary to analyses of German – that modals are base-generated in a functional head, at least in learners' interlanguage (and as in English). Modals then act as robust triggers for a functional head in which base-generated elements such as auxiliaries also occur. One scenario for L2 development, then, would involve modals as triggers for FP, and the auxiliary verb *haben* 'have' as the trigger for speci-

fying the FP as a TP. In Table 3 we provide a revision of the earlier Table 2 based on this proposal:

Table 6.3 Triggers for syntactic projections (revised)

<i>Projection</i>	<i>Trigger in child German</i>	<i>Trigger in L2 German</i>
VP	stress pattern	L1 bootstrapping
FP	(3SG <i>-t</i>)	modals
TP	participle affixes (<i>ge-</i> or <i>-t</i>)	auxiliary <i>haben</i> 'have'
AgrP	agreement paradigm (2SG <i>-st</i>)	copula paradigm
CP	object clitics ¹⁷⁰	complementizers

As was discussed in Chapter 4, Prévost and White (2000a/b/c) showed that the L2 children's data were akin to L1 children's regarding the role played by verb morphology. Root Default verbs ending in *-n* followed negation, were not found in auxiliaries or modals, did not occur in CP constructions, and disappeared when null subjects disappear. As shown in Table 6.3, we predict that both L1 and L2 children would treat either the bound morpheme prefix *ge-* or the co-occurring suffix *-t* – both being components of past tense in German – as the trigger for TP, while adults would presumably treat the corresponding auxiliary *haben* 'have' as the trigger for TP (recall Chapter 1).¹⁷¹

170. Object clitics as triggers for the CP in L1 acquisition work well under the traditional structure for German, where the finite verb raises to C; for both matrix and embedded clauses the clitic form for *es*, 's' 'it' adjoins to the traditional C head. (Vainikka and Young-Scholten 1998b) We leave the analysis of object clitics and their potential status as triggers for future research.

a) *Ulrike kauft's heute in der Stadt.*
 Ulrike buy-3SG+it today in the city
 (Ulrike kauft es heute in der Stadt.)
 'Ulrike is buying it today in the city'

b) *Er fragte, ob's Ulrike heute in der Stadt kauft.*
 he ask-PAST/3SG if+it Ulrike today in the city buy-3SG
 (Er fragte, ob Ulrike es heute in der Stadt kaufen würde.)
 'He asked if Ulrike is buying it today in the city'

171. Blom (2008) in her study of school-age and adult Dutch L2 learners whose native languages were Turkish, Arabic and Tarifit, found that the adult learners had more problems with the suffix *-t*, omitting it, and unlike the children, they overgeneralized *-en*. Both groups used dummy auxiliaries (cf. *Extensions*, Ch.5).

While the standard assumption about L1 German assumes an early, underspecified, functional projection (FP), we would actually predict that in L1A of German (and child L2A) there is no such underspecified stage, but a stage with a head-*initial* TP (given our headedness generalization) at which the present/past distinction can be observed. Completely consistent with this prediction is the finding that children's first raised verbs in L1 German occur with the suffix *-t*, which according to Clahsen (1991) is the trigger for his head-initial FP projection (our head-initial TP; cf. the parentheses in the FP-row in Table 6.3). However, matters are complicated by the fact that the *-t* suffix is also the 3rd person singular suffix; its status as a possible past tense marker during acquisition has not been established (see footnote 172). Matters are further complicated if the TP is in fact head-initial, as we predict; this would mean that a verb with the *-t* suffix might be marking past tense, and it may have raised to a head-initial T, making it very difficult to distinguish from a raised 3rd person singular verb (recall, however, the interesting examples by Joan in Chapter 5 where a *ge*-marked verb appeared to have been raised). While we do not have conclusive information on children's data in terms of the components of past tense marking¹⁷² (either L1A or L2A), the available data are consistent with an early head-initial TP in child German.

For adults, the bound morphemes *ge-* and *-t* would typically not be available as triggers. We would then expect that past tense is acquired at the same time that *haben* 'have' is used productively (to mark past tense), and that this is the point at which a TP is posited. Note, however, that since the agreement paradigm (or AgrP) has not yet been acquired, a non-agreeing form of *haben* would be expected to occur. This is exactly what we found in the overgeneralization of the *-st* suffix to various persons/numbers in the VYSA data (Chapter 5). Thus, the heavy use of *-st* indicates a lower functional projection, such as TP, but no AgrP yet.

172. For example, Dimroth (2008) indicates that the 3rd sg. suffix *-t* is present early on for both children (p.128 and 138) but that it is overextended to other persons "mostly due to a confusion of this person marking suffix with the past tense marker" (2008: 128; details not provided); past tense auxiliaries are acquired at a later point for both children. Without a psycholinguistic experiment it may not be possible to tease apart the early instances of *-t* in terms of a 3rd person singular marker or a past tense marker.

Furthermore, we take the intermediate FP-stage that is common in adult L2A to be an indirect result of the difficulty in using bound morphemes as triggers for the TP. Since there are a number of modals and auxiliaries in German that behave syntactically similarly to *haben* 'have' (in that they typically occur in the V2 position in main clauses), it would be difficult for the learner to ascertain what the next functional projection beyond the NegP is in the target grammar. It appears that the set of auxiliaries and modals in German is a sufficient trigger to posit a functional projection, but it takes more exposure to determine that the relevant projection is, in fact, a TP, associated the auxiliary *haben* 'have' and the tense distinction. This in-between period corresponds to the often protracted FP-stage in adult L2A we discussed at length in Chapter 5, for the Turkish, Korean, and Romance speakers. However, in discussing the L1 English VYSA data we found that in Joan's and George's data the evidence for a TP projection was already present at the same point at which there was evidence of any functional projection at all beyond the NegP, namely in File 2 for Joan and in Files 2–3 for George. In contrast, for the third teenager (Paul), an in-between FP stage could be observed (in File 3), before the development of the TP (File 4).

It appears that Joan and George were able to use bound morphemes as triggers for the TP, like we have suggested that children do; we see three possible explanations for this, or perhaps some combination of them: (1) these speakers were immersed in an extremely rich input situation as exchange students studying and living with Germans; (2) they were teenagers, perhaps still young enough to have some (neurobiological) access to bound morphemes as triggers; and (3) their L1, English, shares phonological properties with German such as readily allowing syllable-final consonant clusters (in contrast to the Turkish, Korean, or Romance language speakers we have considered).

6.5.3. *AgrP*

We suggested above that the overgeneralization of the 2nd person suffix *-st* attested in L2A involves a default form used for a lower projection (TP) before the *AgrP* and the agreement paradigm has been acquired. That is, contrary to what Clahsen (1991) has argued for L1 German, the *-st* suffix is not a trigger for the *AgrP* for adults; this is not surprising as we argued that bound morphemes typically do not act as triggers for

functional projections for adults. In L1 acquisition – but not in adult L2 acquisition – agreement errors stop once the *-st* suffix appears, and occurrence of null subjects drops to nearly zero. Overall, the agreement paradigm appears to play a less clear role for adults than it does for children (at least for children acquiring their L1), for whom the acquisition of agreement, the obligatory status of verb raising and non-Pro-Drop all coincide. Furthermore, the overgeneralization of the *-st* by the three American high school students has not been reported in the L1 German literature (but we did see examples in the child L2A data).

If bound morphemes are not typically available for adults as triggers for TP or AgrP, we expect extended periods during development where TP is underspecified (as FP), and where AgrP is underspecified, or not even posited. This is exactly what we find – there is a protracted FP-stage in the data of many L2 learners; for AgrP, it appears that rather than it having an underspecified counterpart, the projection is not posited at all until the agreement paradigm has been acquired.

An “FP equivalent” of the AgrP has not been attested, presumably because all the potential evidence for the AgrP beyond the agreement paradigm (modals, auxiliaries, and verb raising) has already been analyzed as evidence for the FP, and no further projection is needed for it. The other possible triggers for AgrP are the requirement that finite clauses have an overt subject (non-Pro-Drop) and the requirement that finite verbs always raise in German (V2) – both are difficult to conceptualize as triggers (this would involve analysis that the learner is not yet capable of), and are more likely consequences of the AgrP projection. We offer the conjecture that the only possible free morpheme triggers for adults acquiring German are the forms of the copula/auxiliary *sein* ‘be’ and the auxiliary *haben* ‘have’. Until the irregular agreement of these verbs has been acquired (and this knowledge is extended to the regular person agreement paradigm of main verbs), a fully specified AgrP cannot be posited. (We return to the possibility of the head-final finite verb as a trigger for AgrP in connection with the CP discussion in Chapter 7).

Finally, we turn to perhaps the clearest difference between children and adults in terms of the acquisition of German, namely the frequent raising of Root Default forms by adults, even at stages where functional projections are already evident. Is this difference derivable from what we have discussed so far, from a difference in triggering between adults and children?

6.6. Why do L2 adults raise non-finite forms?

The proposal of a triggering difference predicts the attested correlation in children's (L1) data between raised verbs and agreement, while there is expected to be a lack of such a correlation in the adult data; we will propose that this is at the heart of adults' raising of non-finite verbs. Interestingly, it appears not only to be L2 learners who make use of different triggers, but also L1 learners, under exceptional circumstances, e.g. German Down Syndrome first language learners investigated by Schaner-Wolles (1994) follow the same patterns.

Non-finite forms in raised positions are rare in children's data, but not at all unusual in L2 adults' data. Unlike in the data from learners with head-initial VPs, in the Korean and Turkish data learners' projection of a head-final VP from the very start of acquisition makes it possible to determine with a high degree of confidence when verbs are raised. In these data we find the following percentages of raised, non-agreeing *-n* forms:

Table 6.4 Korean and Turkish learners' **-n* on raised main Vs

<i>Stage/number of learners¹</i>	<i>Raised verbs w/-n and % of which are incorrect</i>
VP n=3	160 (52%)
FP n=6	201 (38%)
AgrP n=6	278 (16%)

¹Excluding Aysel and Changsu (see V and V-S 1994, Table F)

Note that it is problematic to refer to such forms as non-finite if finiteness is what motivates verb raising. If finiteness includes Agreement, and if this feature is associated with nominative case, then verbs which raise ought to be marked for agreement, and subjects should be obligatory. But neither is the case. This reasoning has led to the proposal that learners' first functional projection (FP) is not fully specified, and does not contain the feature Agreement. Similarly, as per our discussion above, if the FP is not specified for Tense, there is even less reason to treat these forms as having raised due to finiteness.¹⁷³ Rather than refer-

173. As mentioned earlier, OG does not contain a worked-out theory of movement; however, contrary to movement being motivated by feature checking as in Minimalism (Chomsky 1995, 2001), we will pursue in future work movement based on filling syntactic positions higher in the

ring to *-n* forms as non-finite forms, we prefer to refer to them as Root Defaults. We now turn to a number of possible solutions for the discrepancy between adults and children in terms of raising RD verbs in German.

6.6.1. Processing and prosodic explanations

Could the problem involve a processing difference between children and adults, in terms of converting the raw acoustic signal into evidence for learning a linguistic feature, category, structure, rule or principle (see Carroll 1999, 2001)? Since the morphosyntactic status of words is not instantiated in the signal, is it possible that sub-optimal processing by adults, similar what is found in exceptional L1A populations, is the source of the difference? For example, Pharr, Ratner and Rescola (2000) looked at two-year olds with less than a 50-word lexicon who were not stringing two words together and thus dubbed 'late talkers', with a diagnosis of Expressive Specific Language Impairment (SLI-E). They comprise an estimated 15% of low-income and 7% of middle class children. Such children may catch up in vocabulary development but other language delays, e.g. in morphosyntax, are observed. In 10-minute play sessions with their mothers, 15 typically developing children produced more initial and especially final consonant clusters at 24 and 36 months than did the 20 SLI-E children. The 36-month-old SLI-E children patterned like 24-month-old TD children. SLI-E children's phonological delays echo findings from studies where later delays in morphosyntax for an estimated 50–80% of such children involve final consonant deletion in inflectional morphology including plurals, third person singular and regular past tense.

Related to a processing explanation, Klein et al. (2004) argue for the Perceptual Salience Hypothesis, according to which a second language learner will better perceive and produce an inflectional suffix that constitutes a syllable than one that does not, i.e. *-ing* is easier than regular past tense, and [Id] is easier than [t/d]. Klein et al. gave 66 L2 English adults from a range of L1 backgrounds at two proficiency levels a perception task requiring them to produce written single verb responses. Performance was more accurate for regular past tense verbs that in-

tree, as suggested in Vainikka and Young-Scholten (1994) and Vainikka and Levy (1995).

volved the [Id] allomorph. They note that the data do not support the Aspect Hypothesis (where *-ing*, associated with atelic verbs, in particular activity verbs during acquisition is expected to be easier than *-ed*); the sole determinant of low proficiency learners' responses was phonological salience.

However, learners' difficulty with final consonant clusters cannot be the whole explanation, as pointed out by O'Grady (2006). Agreement and past tense marking in English involve suffixes low in perceptual salience, yet the observation is that difficulties apply to *suffixes*, not the final consonants in monomorphemic words or inflectional suffixes; furthermore, difficulty with suffixes for classroom learners for whom instruction and written exposure increase salience (and recruit use of declarative memory) suggests there is more to the story. O'Grady argues that the computational system – a linear processor – is involved. Subject-verb agreement in English does not exist *per se*; rather there are dependencies involving person and number features (see O'Grady's [2005] *Syntactic Carpentry: An Emergentist Approach to Syntax*). Acquisition of tense is dependent on prior determination of aspect; e.g. accomplishment verbs are more difficult than achievement verbs due to the former requiring syntactic computation (Gavruseva 2003). The ability of procedural memory to support these computational operations is held to diminish with age (Paradis 2009; Ullman 2001), where older learners may rely on declarative memory for morphosyntactic phenomena. Input frequency and frequency of usage plays some role, (e.g. copula forms are more frequent than specific thematic verb forms), especially if declarative memory is the starting point. (O'Grady assumes that computational routines are transferred from the learner's L1; this would correspond to the transfer of functional projections, contrary to our approach.)

Relating to O'Grady's idea that the computational system (i.e. syntax) is involved, we will propose below that the difference between adults and children in terms of raising Root Defaults is derivable from adults having an FP projection and children not positing such an underspecified projection. Before elaborating, we consider in some detail the Missing Surface Inflection proposal. It will turn out that part of the difference between adults and children has to do with a performance difficulty derivable from transfer of phonological properties from the learner's L1.

6.6.2. Missing Surface Inflection and raising of RDs

Learners' use of raised Root Default forms has by other linguists been described as missing surface inflection (Haznedar and Schwartz 1997), where the learner has acquired the relevant functional features, but does not consistently produce the associated morphology. In general, this approach has been used to argue against structure building, in particular in L2 acquisition; we address here this argument against our approach.

As we conclude in Vainikka and Young-Scholten (2007a), it is clear that some proportion of omission of inflectional affixes in fact involves missing inflection – that is, although the learner has acquired a particular functional projection, performance limitations prevent the learner from producing the relevant inflectional affixes in every instance. In this paper, we suggested that about 10% of the L2 data from speakers of various L1 backgrounds involved such performance-related missing inflection. However, it appears that the proportion for some L1 speakers, e.g. for Chinese speakers acquiring English, may be much higher.

Just what does missing surface inflection entail? Surface realization is phonetic realization, where the L2 learner's native language phonology can be expected to influence their production. We find that the tight coupling of inflectional morphology and syntax is disguised by the gradual – and incomplete – acquisition of the prosodic phonology of the L2.¹⁷⁴

Data from L2 English from Lardiere (1998) points to a pattern where the grammar appears to contain functional projections, yet inflection is rare, and the pattern persists over decades. Lardiere argues that Chinese-speaking Patty's English grammar contains an IP-level projection in part on the basis of her presence of correct subjects and high frequency of (correct) 3rd person singular copulas and auxiliaries (overall accuracy is 93% for copula/auxiliary *be*, *have* and *do*). Yet in Patty's data, both 3rd singular *-s* and past tense are rare on main verbs, even after 18 years in the USA. Furthermore, the target-like non-raising of the verb and consistent nominative marking argue for the presence of

174. Prosodic factors to consider are the sonority hierarchy/distance (on L2 English Broselow and Finer 1991): stops-fricatives-nasals-liquids-glides-VOWEL-glides-liquids-nasals-fricatives-stops and the developmentally early unmarked (and for example highly ranked under Optimality Theory) trochee in Germanic languages (e.g. Pater 2004 on L2A perception and production).

an IP, according to Lardiere. Patty's data seem to present a problem for Organic Grammar in terms of its assumption of strong coupling between morphology and syntax.

In responding to Lardiere's argument,¹⁷⁵ we wish to first point out that the problems with treating either the lack of verb raising or the presence of nominative marking as evidence of a functional projection. Particularly because neither the L1, Chinese, nor the L2, English, has verb raising, the lack of verb raising is only sufficient to argue for the presence of a bare VP that has been transferred from the L1 Chinese to the L2 English, according to Organic Grammar. Similarly, nominative marking (in a language without an overt affix) does not by itself – not as part of a paradigm – tell us anything more than that a DP occurs in its lexical entry form.¹⁷⁶ Although the evidence for the acquisition of an AgrP is not very clear, we follow Lardiere (2003) and accept that Patty has acquired the TP projection (cf. the English Master tree in Chapter 2); a TP would allow Patty to produce tense marking, and even modals and auxiliaries. In Patty's oral production, irregular verbs are nearly always correct for past, whereas when suffixation of regular past *-ed* creates a coda cluster, omission rockets to 94%. Because this pattern of omission is also found in monomorphemic words (also see Hawkins and Liszka [2003] and Bayley [1996] who observe that omission is higher when *-d* is a suffix than when [t] or [d] are monomorpheme-final) and because Patty's written omission of *-ed* is only around 18%, Lardiere (2003) concludes that what is responsible is prosody rather than failure to acquire the English feature +/- past. Goad, White and Steele (2003) propose the Prosodic Transfer Hypothesis, which Lardiere (2003) argues accounts for the transfer of constraints against final clusters in Patty's native Mandarin and Hokkien Chinese dialects.

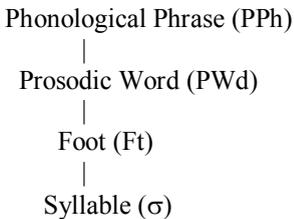
While the Missing Surface Inflection analysis of Patty's tense marking would account for her omission of the past tense suffix in phono-

175. Franceschina (2001: 223) claims that Lardiere's argument is confusing and does not fit the morphological assumptions she makes (see also Davies 1996). We might also point out that Patty's data are relatively sparse, involving three recordings with a total of less than three hours of speech (although with quite a lot of utterances).

176. As we discuss in Chapter 3, Vainikka (1993/4) argues in L1A of English that non-nominative subjects occur in the Spec(VP) position. However, Powers (1995) argues that such a stage cannot be observed for all English-speaking children. See Mobaraki et al. (2008) for a recent discussion in terms of child L2 development of subject case marking.

logically complex (and non-L1-like) syllables¹⁷⁷, such an analysis fails to provide a deeper explanation of the types of patterns discussed in this book. In point of fact, two patterns of omission have been observed in Mandarin learners of English. In Bliss' (2006) study, ten Mandarin learners of English with six months to five years' residence in the US described two sets of pictures and took a grammaticality judgment task. The judgment task data and oral production of IP-related free morphemes (nominative case, copular/auxiliary *be*, *have* and *do*) point to presence of tense and agreement features in these L2ers' interlanguage grammars. While the speakers in general omitted bound morphemes, the test subjects ended up in two groups depending on their pattern of omission: (1) across-the-board inflection omission and (2) variable omission, where omission occurs when the suffix cannot be incorporated into the prosodic word, as it is in English, through (1) postlexical resyllabification, (2) target language epenthesis or (3) foot incorporation (preferred strategy). This result makes it clear that pattern (2) involves Missing Surface Inflection due to performance limitations, while the speaker has acquired the relevant inflectional morphemes. However, crucially, pattern (1) indicates that something more than missing inflection is at play: under OG, pattern (1) learners would presumably

177. Selkirk's (1997) version of the relevant (partial) prosodic hierarchy (Nespor and Vogel 1986; Selkirk 1986) allow constituents to be dominated by the same node, such as in English tense and agreement below, where there is both a lower (with the stem) and a higher (with stem and suffix), adjoined prosodic word. The structure of irregular past forms and monomorphemic forms is the same (adjunctionless) as the Chinese.



Prosodic structure mirrors (though is not necessarily isomorphic with) morphosyntactic structure: functional and lexical material are represented distinctly in each component. The language learner can use prosodic structure to bootstrap the syntax or use syntactic structure to bootstrap the prosodic structure; this might be what is happening with missing inflection.

still be at the FP-stage (i.e. a stage earlier than Patty), allowing for some early evidence of a developing TP projection (but we would expect the AgrP not to have been acquired by such speakers).

The status of the AgrP in Patty's data is less than clear. On main verbs, Patty typically omits the 3rd person singular *-s* (correct 17% of the time). As pointed out above, neither nominative marking (without an analysis of the full paradigm) nor the lack of verb raising can be used to argue for an AgrP in English. The only evidence for an AgrP appears to be a high occurrence of correctly marked 3rd person copula (i.e. the word *is*) and auxiliaries (i.e. *is* and *has*). Since the copula is acquired early, with the word *is* most likely the lexical entry of the English copula in early acquisition, correct usage of the copula *is* turns out not to be very revealing (cf. also *Extensions* 1). If it can be shown that Patty has acquired (and productively uses) the full agreement paradigm of the verb *be* in English, we would accept that she has posited an AgrP projection, in which case her omission of the 3rd person singular *-s* would in fact involve Missing Inflection, similarly to what Lardiere argued for in the tense domain. However, we claim that while a prosodic explanation is the likely one for certain well-defined types of data, a more general process of positing functional projections is also needed to account for syntactic development.

6.6.3. *Our analysis of raised Root Defaults*

Note that while Missing Inflection plays a role in some of the L2 production data, the raised Root Defaults in German do not fall in that category. If a phonological production problem were the basis of the RD form, we might expect omission of the suffix, rather than production of the infinitival suffix *-n*. Thus, a raised *-n* form in L2 German cannot be explained as being a raised form with a missing finite suffix.

Earlier we proposed that what appears to be an FP-stage in children's data may actually be a (head-initial) TP stage, while L2 adults typically go through an extended FP-stage. Such a difference would also result in a difference in verb raising. Children would tend to only raise verbs that are marked either for tense or agreement (to T or Agr), while at the FP-stage adults have not yet determined what the features of the functional head F are, and thus verb raising of underspecified forms might occur. This is exactly what we find with the raising of the RD forms, which is much more prevalent in adult L2A than in L1A or

child L2A. Recall that Kroffke and Rothweiler (2006) found that Turkish children exposed to German at age three did not produce any RD verbs in a raised position (V2 or V3), while children exposed to German at age six did produce a certain amount of such raised RD verbs.

6.7. Summary

After a general discussion of triggers and parameters, we have compared in this chapter the development of children's and adults' IP-level projections, using the idea that children tend to use bound morphemes as triggers whereas adults tend to use free morphemes. As expected, the NegP develops similarly for both groups. The TP projection may be triggered by bound tense morphology for children, resulting in quick specification of the functional projection as a TP, but for adults an intermediate stage FP occurs due to unavailability of the bound tense morphemes as triggers. We also propose that it is the presence of an FP that gives rise to the raising of Root Default (infinitival) verb forms to the V2 position. Finally, the difficulty for adults in positing an AgrP, given the paucity of free morpheme evidence for the projection would further extend the FP and TP stages.

Extensions

1. Early 'ist' in instructed children's data

Haberzettl (2003; see also 2005) discusses the word order and use of *ist* by two Turkish children (NE and ME) she studied (see also Ch. 4 notes – the Turkish children in her study were in German as a second language classes, and had little contact with German children). The children produce copula *ist* before auxiliary + V. (In the examples, number = month since start of data collection.)

- (6.6) *Ein Junge ist die Fussball spielen.* [ME9]
 a boy is the football play*-INF
 'A boy plays/is playing football.'

She claims that the *ist* pattern shows children's reliance on "certain syntactic and prosodic surface structures of the L2, or parts of struc-

tures, which are learned, and automatized as such because they are frequent or salient” (2003: 46). Haberzettl assumes that the learners frequently encounter *Das ist ein X, Da ist ein X. X ist Y. Wo ist X.* (pp. 59–60) Myles (2005) also found such patterns in the L2 French of young instructed learners, and L2 children’s use of chunks is found in Wagner-Gough (1978) and in Lakshmanan (1993) as well. What does *ist* mark? It cannot be a Turkish calque since while aspect is marked in Turkish, it takes the form of a suffix (*-Iyor*, which undergoes vowel harmony).

Non-target use of a similar form, *is*, has been found in L2 Dutch (Starren and van Hout 1997: 456; see also van de Craats and van Hout 2010) where learners use constructions that separate the marking of tense and aspect: *Die was bij Charlie is gestaan* /she was by Charlie is stand-PAST, ‘She was standing beside Charlie’ and *Dan is hij heft werk aanvragen*/then is he has work asked/‘Then he has asked work’. However, Haberzettl’s Turkish NE and ME varied in that they did not use both auxiliary forms nor did *ist* seem to mark aspect as it might do in Dutch. The reason Haberzettl gives is that auxiliaries in German do not mark perfect but instead perfective/preterite. Haberzettl claims that that the function of morphemes (e.g. *ist*) follows their use.

- (6.7) a. *Quack ist nicht Geld kommt.* [NE14]
 Quack is not money receive
 ‘Quack didn’t get money.’
- b. *Der is so gemacht.* [ME10]
 he is so done
 ‘He did it like that.’

2. Early ‘*ist*’ in Paul’s data – a potential trigger?

In section 6.5.2 above we noted that Paul went through an intermediate FP-stage, in contrast to Joan and George, who appeared to posit a TP-projection directly (similarly to the L1 children). Thus, Paul’s situation is similar to the general L2 adult pattern, where an FP-state is attested (albeit a short one for Paul). It appears that the free morpheme trigger for Paul’s FP may be the copula *ist* ‘is’. (Note that the table covers all data, from conversation and from the various elicitation tasks.) The FP first occurred in Paul’s file 3, where verb raising over negation oc-

curred; in file 3, the copula *ist* 'is' is rampant and overgeneralized (more often incorrect than correct), as shown in Table 6.5 and exemplified in (6.8):

Table 6.5 Paul's copula distribution (Vainikka and Young-Scholten)

<i>Session</i>	<i>ist</i> 'is'		<i>Other sein</i> 'be' forms	
	<i>correct</i>	<i>incorrect</i>	<i>correct</i>	<i>incorrect</i>
1	0	0	0	0
2	2	0	1	1
3	22	35	1	3
4	69	2	2	4

- (6.8) *Da ist nicht Leute.* [Paul, file 3]
 there is not people
 (Da/das sind keine Leute.)
 'Those aren't people/there aren't any people there.'

By Paul's file 4, the copula is used correctly, and the TP has been acquired by file 5 for tense marking (as we saw in Chapter 5).

Chapter 7

The second language acquisition of the CP projection

7.0. Introduction

In Chapter 5 we saw how all L2 learners regardless of their native language posit head-initial IP-level projections and produce in a common order the functional morphology associated with these projections. On the basis of these learners' lack of production of CP-relevant syntax (i.e. embedded clauses, subject-verb inversion in questions) as well as the morphology associated with CP (complementizers), we claimed in each previous chapter that CP had not yet been projected at that stage by the learners discussed.

While production data reveal to a large extent what a grammar enables a learner to say, such data do not and cannot reveal what the learner's grammar rules out. However, longitudinal data can reveal systematic emergence of structure over time, and, as we shall see in this chapter, these data (along with selected cross-sectional data) indeed show systematic progression in the questions and bi-clausal utterances for which a CP is required. Where learners project only a VP, then IP-level projections and then a CP, we should observe both the syntactic and morphological patterns typical of each stage.

It is somewhat problematic to claim that absence of evidence for CP material is indeed evidence of absence, as noted earlier. In considering questions, one could assume that young children do not yet know their discourse functions and therefore do not produce them early on, but second language learners certainly do know such things about questions. If second language learners do produce questions (and we have already seen in previous chapters that they do), issues regarding the location in learners' interlanguage grammars of the universal semantic and pragmatic information involved must be addressed. In the literature, the assumption is typically made that children's early WH-questions always involve CP, yet even in the adult grammar (see e.g. deVilliers 1990; Rizzi 1990; Radford 1995) WH-questions need not always involve a CP. The child language data are replete with instances of children's WH-question truncations, pointing to non-projection of

CP. For example, children acquiring English produce questions without tensed auxiliaries and without finite verbs, producing only the bare stem of thematic verbs. Roeper and Rohrbacher (1995) note that only 5% (4 out of 82) of the WH-questions Adam (from the Brown 1973 study) produces between the ages of 2;3 and 2;8 contain a finite verb, but by age 2;8–2;11, the percentage rises to 46% (108/234). An illustration of the tight coupling of syntax and morphology Organic Grammar entails is Vainikka's (1993/4) analysis (also discussed in Chapter 3) of the acquisition of English by five children (including Adam along with Eve, Sarah, Nina and Naomi) where their early use of oblique rather than nominative subject pronouns indicates their projection of only a VP. These oblique subjects disappear when (based on additional morphological evidence) the children project an IP. However, oblique subjects re-emerge in the children's WH-questions when they start to increase in frequency, despite the children's use of nominative subjects elsewhere, i.e. for declaratives, which do not require new syntactic structure (CP). The data thus point to the interaction of an emerging CP projection and subject case marking, and reveal an early stage in the production of WH-questions that does not yet involve the target CP projection.

If the structure of questions (i.e. those found in the data prior to the point at which we claim the learner projects a CP) does not necessarily entail a CP projection in syntax, what then is the connection between the syntax of questions and the semantics of questions in Universal Grammar? In his introduction to a comprehensive volume on questions, Hiz (1978) refers to Ajdukiewicz (1935) who described questions as consisting of a sentential matrix (which contains a variable – that is, an understood element that is missing from its expected location) preceded by an interrogative operator (i.e. what makes the sentence a question, and binds the variable), an approach assumed over the years by many philosophers of language and linguists studying questions. This would be consistent with the standard approach in generative syntax whereby questions always involve a question operator associated with CP projections. However, Vainikka and Roeper (1996) argue – based on spontaneous and experimental L1 data – that an abstract operator occurring at the beginning of the sentence (in purpose clauses such as *to eat* – with an understood missing object – in *The chicken gave it to Bozo to eat* (Adam age 3;4, Vainikka and Roeper 1996, ex. [23c]) becomes available for children at the same time that there is evidence for a CP projection in the production data. Even before this point, however, re-

duced WH-questions of the type discussed in Chapter 3 are produced. This pattern suggests that it is possible to represent at least some aspects of a question without a CP projection (and perhaps without a question operator). Such a possibility would also allow for analysis of adult questions that do not contain a variable (i.e. a gap associated with the fronted WH-phrase), such as ‘why’ questions (e.g. *Why should I worry about it? Why worry?* cf. Rizzi’s [1990] proposal that *pourquoi* ‘why’ questions in French do not involve a CP projection), questions of the “Huh?” type discussed by Radford (1995), and perhaps yes/no questions, especially reduced ones indicated with just question intonation, such as ‘That one?’ While we would accept that claim that in the unmarked case questions are universally associated with the CP projection, it appears that there is a way to produce and comprehend questions that involves less structure, both in adult syntax and during acquisition. As suggested in Vainikka and Roeper (1996), it may be that the semantics (i.e. Logical Form) of a question always involves a CP projection, but that in surface syntax such a CP may be mapped to a reduced structure;¹⁷⁸ such an approach would be comparable to assuming that children’s Root Defaults (i.e., a bare VP in overt syntax) can have the semantics of a finite clause (i.e. IP or CP level projections at LF). A similar approach is adopted in Wakabayashi (1997) for L2 acquisition by Japanese speakers, using Minimalism. While we have not undertaken a study of the semantics of questions in L2 German, we will continue to assume that a reduced structure is possible for questions; whether such L2 adult questions have a reduced semantics as well will remain a topic for further research.

Since Rizzi (1993/4) and Wexler (1994) there has been general acknowledgement by those favoring Strong Continuity in first language acquisition that projection of CP is optional for children; this line of thinking is also applied in L2 acquisition where the question is whether the CP projected can be traced to L1 influence. In Chapter 6, we mentioned evidence from studies of children learning French and English as a second language. Vainikka and Young-Scholten (1996a) discuss Grondin and White’s (1996) account of two five-year old English

178. To account for the data in Vainikka and Roeper (1996), we suggested that an *abstract* operator in purpose clauses can only be posited in the CP projection, in surface syntax. While the semantics of such a construction would presumably be available earlier, there would be no *syntactic* position for an abstract operator until the CP projection is posited.

speakers acquiring French as a second language where there is development from AgrP to CP which – according to Grondin and White – does not involve reliance on the children's L1. The evidence for this is that unlike in English where only auxiliaries, modals and the copula can occupy Agr, in their acquisition of French the children correctly raised main verbs to Agr. In addition, when the children produced embedded clauses in French, complementizers were correctly obligatory, despite their optionality in English. Lakshmanan's ([1993]; see also Lakshmanan and Selinker 1994) data from a four-year old Spanish and a four-year old French girl acquiring English also reveal emergence of a non-transferred CP, from the point at which the children had acquired the AgrP. In these two children's earliest files, there were no embedded clauses, and when they did emerge, they were often produced without complementizers, unlike in (the L1) Spanish and French.

As noted in Chapter 5, data from a good many of the naturalistic learners studied confirm that (at least at the time of the data collection) these learners do not project CP; the most advanced Turkish, Korean, and Romance speakers discussed in Chapter 5 projected either a head-initial FP/TP projection or a (head-initial) AgrP projection.¹⁷⁹ This chapter will therefore not be able to show how most the learners discussed in previous chapters converge on the target language with respect to AgrP and CP; data from other researchers will, however, be discussed. The VYSA data are an exception; all three learners projected a CP towards the end of their year-long stay in Germany. In this chapter, we also address potential counterexamples to our approach to the acquisition of CP, and to structure building in general.

7.1. The German CP and the headedness of AgrP

Recall from Chapter 2 that the position of the finite verb varies in adult German depending on clause type. In questions, the finite verb raises to initial position in yes/no questions (7.1), second position in WH-questions (7.2), with the verbal material (participle, particle, infinitival) remaining in the head-final VP, and in embedded clauses, whether questions (7.3a–b) or declaratives (7.3c) in final position at the very end of the sentence:

179. While Jose progressed further, we did not include an analysis of the later data in our (1996) publication, but see e.g. Eubank (1992).

- (7.1) a. *Isst Hans heute abend bei uns?*
 eat-2SG Hans today evening at us
 ‘Is Hans eating with us tonight?’
- b. *Hat Hans schon gegessen?*
 has-3SG Hans already eat-PST
 ‘Has Hans already eaten?’
- c. *Fährt er morgen ab?*
 drive-3SG he tomorrow off
 ‘Is he leaving tomorrow?’
- (7.2) a. *Was isst Hans zum Abendessen?*
 what eats Hans for-the dinner
 ‘What does Hans eat for dinner?’
- b. *Wo hat er gegessen?*
 where has he eat-PST
 ‘Where did he eat?’
- c. *Wann möchte er abfahren?*
 when want-3SG he off-drive-INF
 ‘When does he want to leave?’
- (7.3) a. *Maria möchte wissen, ob Hans heute
 Abend bei uns isst.*
 Maria want-3SG know-INF whether Hans today
 evening by us eat-1SG
 ‘Maria wants to know whether Hans is eating with us to -
 night.’
- b. *Maria möchte wissen, wer morgen
 abfahren kann.*
 Maria want-3SG know-INF, who tomorrow
 off-drive-INF can-3SG
 ‘Maria wants to know who can leave tomorrow.’

- c. *Maria sagt, dass Hans morgen abfahren
 Maria say-3SG that Hans tomorrow off-drive-INF
 kann.
 can-3SG
 ‘Maria says that Hans can leave tomorrow.’*

Early studies of L2 German (Clahsen and Muysken 1986, 1989) suggest that learners at intermediate stages from various L1 backgrounds use the finite verb in the second position (or sometimes in third position), as in target matrix clauses, in both questions and embedded clauses. An example is provided in (7.4), from the VYSA data (L1 English):

- (7.4) *Ja, ich denke, dass ich habe ja vielleicht
 yes I think-1SG that I have-1SG yes perhaps
 Freunden schon gemacht.
 Friends already make-PST
 (Ja, ich denke, dass ich ja vielleicht Freunden schon gemacht
 habe.)
 ‘Yes, I think that I have perhaps already made friends.’*
 [Joan, file 7]

Such a pattern for embedded clauses is distinct from what is generally attested at a comparable stage for children; German children’s AgrP is head-final, given data from their earliest embedded clauses, where the finite verb is always final (Clahsen 1991; Rothweiler 1993; but see among others Schönenberger 2001 and Brandt, Lieven and Tomasello 2010 on children learning German who do not follow this pattern). In Chapter 3, the L1 pattern was accounted for by the German(ic) Headedness Generalization (the GHG, defined in Chapter 2) whereby the AgrP is head-initial whenever the CP is not posited (or has not yet been acquired), but the moment a head-initial CP is posited, the AgrP becomes head-final. (That is, only the first projection is head-initial.) While the GHG accounts for the headedness patterns in L1 German (and in the target grammar), it appears that adults acquiring German have trouble positing the GHG (which – since it is language-specific – cannot be automatically provided by Universal Grammar and therefore must be induced from the input). They instead continue to assume that the AgrP is head-initial (as it was at the previous stage). However, as we shall see in the VYSA data, the headedness of the embedded AgrP

can and does eventually switch to the target value, in compliance with the GHG. Note that a difference in headedness between adults and children does not detract from the general pattern in both types of acquisition whereby functional projections are posited one at a time. We return to discuss this in more detail below.

The persistence in the adult data of a head-initial AgrP represents a striking difference between children and adults and we will see below that young children learning German as an L2 pattern like L1 children. Schwartz and Sprouse's (1996) Full Transfer/Full Access Hypothesis is at a loss to explain a pattern of acquisition also found for learners whose native language functional projections are all head-final: why don't Korean and Turkish speakers transfer their head-final IP-level projections when there is ample evidence in the input for a head-final AgrP in German? Hawkins' (2001) Modulated Structure Building similarly fails: under this hypothesis, learners would first need to project a CP before transfer of an L1 head-final functional projection becomes possible, and as we will see, there is little evidence that the Korean and Turkish learners do so. Epstein, Flynn and Martohardjono's (1996) No Transfer/Full Access view also offers no explanation. If adult L2 learners have full access to UG, why should their acquisition take a different trajectory from L1 children's?

We propose that the difficulty that adults appear to have in employing bound morphemes as triggers accounts for the difference between adults and children in analyzing the input data (as was discussed in Chapter 6). Once children have mastered the agreement paradigm, it is clear that finite verbs in embedded clauses have to be analyzed as being sentence-final. Thus a head-final functional projection is required, resulting in a head-final AgrP (while matrix clauses involve raising of the verb to a head-initial AgrP). For adults, if a head-initial functional projection has been posited based on matrix clauses only, the data from embedded clauses would not provide clear counterevidence for such a projection, since the agreement marker of the sentence-final main verb is not (fully) analyzed. Note that here we have a second difference between children's and adults' acquisition of the projection relating to agreement. Not only do L2 adults acquire agreement after they have begun to raise verbs (the latter occurring already at the FP-stage), but they also stick with the headedness of the original projection when they project AgrP. In Chapter 8 we return to AgrP headedness in terms of the input that the learners receive.

7.2. CP and speakers of head-final languages

Two of the languages of the speakers whose data are covered in Chapters 4 and 5, namely Korean and Turkish, are head-final languages without WH-movement. The examples in Chapter 5, repeated here in example (7.5a) for Korean and (7.5b) for Turkish illustrate this.

- (7.5) a. (*Tangsin-un*) *eti-ese* *hankwuke-lul*
 (you-TOP) where-in Korean-OBJ
paywu-ess-supnikka?
 learn-PAST-Q
 ‘Where did you learn Korean?’
- b. (*Sen*) *Türkçeyi* *nerede* *öğrendin?*
 (You) Turkish-ACC where learn-PAST-2SG
 ‘Where did you learn Turkish?’

However, under OG, movement (or lack of it) is not predicted to transfer, and it does not. For example, with respect to A'-movement, we do not observe transfer of WH-in situ in the data of our Korean or Turkish speakers. In general, we would predict that A-movement, A'-movement, and head movement develop in L2 acquisition in a fashion similar to L1 acquisition, as the appropriate functional projections become available in the syntax.

We saw in Chapter 5 that Korean and Turkish adults at the earliest functional projection stages posit head-initial projections unavailable in their native languages. The persistence of these projections as head-initial turns out to result in non-target interlanguage syntax when it comes to embedded clauses. If there were, however, early transfer (in keeping with Full Transfer/Full Access) of head-final functional projections, followed by switching to head-initial, it is a mystery why learners do not immediately – in the face of considerable evidence – switch back to a head-final AgrP (in the German embedded clause).

Recall that the learners whom we determined were at the first functional projection stage demonstrated no evidence of having acquired a CP. While they produced multi-clausal utterances, these were solely with coordinating conjunctions such as *und* ‘and’, *aber* ‘but’, *oder* ‘or’ and *ama* ‘but’ (in Turkish) and they produced no yes/no-questions or WH-questions involving a raised verb and an overt subject that was otherwise not a formulaic chunk. The data from the AgrP stage learners

– Mine, Gabho, Samran, Emine, Harva and Ensook – discussed in Chapter 5 clearly show progression, but the data do not point to fully target-like syntax, i.e. to projection of CP. The learners produced between one and seven WH-questions and yes/no-questions, although the verb does not always precede the subject, as in the complex, clearly non-formulaic questions (7.6e) and (7.6f):

- (7.6) a. *Was ist er denn?*
 What is-3SG he then
 (Was ist er denn?)
 ‘What is he then?’ [Gabho/K]
- b. *Wie gefällt mir oder?*
 how like-3SG me or
 (Wie gefällt Dir mein Deutsch?)
 ‘How do you like my (German)?’ [Samran/K]
- c. *Wohin kommen Sie?*
 where-to come-2SG formal you
 (Woher kommen Sie?)
 ‘Where do you come from?’ [Harva/T]
- d. *Ah, was machst du?*
 ah, what do-2SG you
 (Ah, was machst du?)
 ‘Ah, what are you doing?’ [Ensook/K]
- e. *Warum de ich gehen so heute später so
 why (then) I go*-INF so today later so
 Schule?*
 school
 (Warum gehe ich denn heute später zur Schule?)
 ‘Why am I going to school later today?’ [Mine/T]
- f. *Warum du hast mir viele gefragt?*
 why you have-2SG me much ask-PST
 (Warum hast du mir so viele Fragen gestellt?)
 ‘Why have you asked me so many (questions)?’
 [Emine/T]

There were a few occurrences of embedded clauses with complementizers in these learners' data. While neither Gabho, Emine nor Ensook produced such examples, Samran produced one instance and Mine produced two instances of an embedded clause with *weil* 'because' and Harva three instances of *wenn* 'when', all with the V2 word order of the matrix clause; that is, contrary to what would be predicted by a transfer account, the early embedded clauses involve a head-initial AgrP. These and the bi-clausal utterances of the sort produced by Emine in (7.7) show some progress beyond the bulk of the data by the speakers at the AgrP stage, but do not yet indicate complete and target-like German syntax. Note that Emine's agreement is target-like, and she has raised the main verb to C as is required in German yes/no questions. However, she opts for a direct quotation which does not require a complementizer and which has matrix word order:

- (7.7) *Er hat gesagt, nimmst du Lokomotive?* [Emine]
 he has said, take-2SG you train?
 (Er hat gesagt, "Nimmst du den Zug?" =Er hat gefragt, ob ich den Zug nehme/ob ich mit dem Zug fahre.)
 'He said/asked, "Are you taking the train?"/whether I would go by train.'

The data from Melisa, a Turkish child acquiring German, also reveal CP development (Rothweiler 2006). At the twelfth month of exposure (Rothweiler 2006: 106), Melisa produces examples such as (7.8):

- (7.8) *So gewonn hast*
 because won have
 (Weil du gewonnen hast.)
 'Because you have won.'

For Melisa, verb-final Root Default sentences co-occur with V2 sentences, subject-verb agreement, object topicalization and incomplete or non-target subordinate clauses such as (7.8). Rothweiler suggests that features may be underspecified in CP or that the necessary lexical items may simply not yet have been acquired (sometimes the obligatory complementizer is omitted or replaced by a dummy form). We would treat Melisa's data as involving the beginning of the acquisition of the CP projection, with stage seepage from earlier stages (in particular, Root Defaults). Overall, however, the three children studied by Rothweiler

never produced subordinate clauses with non-finite verbs (i.e. no Root Defaults in a subordinate clause), and subordinate clauses with V2 errors were rare. Thus, while the naturalistic adults have difficulty positing a head-final AgrP in embedded clauses (even if their L1 has a corresponding head-final structure), young L2 learners do posit one – as in (7.8), similarly to what is found in L1 acquisition. As was discussed in Chapter 6, Rothweiler concludes that the three children she studied – including Melisa – were exposed to German at a young enough age (3–4 years) to render their acquisition equivalent to L1 acquisition.

Does recruitment of L1 syntactic knowledge distinguish younger and older L2 learners? Schwartz and Sprouse (1994) argue that Turkish-speaking Cevdet, whose longitudinal (ESF study) data they examined, transferred the Turkish CP. That Turkish (or Korean) has influenced learners' projection of functional syntax would be plausible if there were an indication of functional material at the ends of the utterances produced by these learners; we find virtually no such evidence. Given Strong Continuity and FT/FA (with a transferred, full CP from the beginning of acquisition), Schwartz and Sprouse treat Cevdet's raised verbs as having raised to a head-initial CP (their Stage I), as opposed to a head-initial FP/TP, as we claim); overt complementizers emerge at their Stage II. Schwartz and Sprouse point out that Turkish has the possibility of a head-initial CP, and they maintain that it is such a head-initial CP that has been transferred from L1 Turkish to L2 German. However, this analysis only applies to the Turkish data since the Korean CP is exclusively head-final. Moreover, Full Transfer does not account for the systematic lack of functional elements associated with AgrP and with CP in the Turkish or Korean speakers' German data. If one were to adopt a view under which functional projections transferred and then switched their headedness, we would expect to see clearer morphological evidence of transfer of learners' head-final projections. Furthermore, we might also expect learners to have few problems with projection of the German head-final AgrP in embedded clauses, but in fact Korean and Turkish adults do not show any signs of being able to make use of their native language head-final functional projection in this instance. Despite Turkish being a head-final language with subject-verb agreement, Turkish adults appear to be no better at positing a head-final AgrP in the German embedded clause than speakers of head-initial language are.

In an experimental study of the L2 acquisition of English by speakers of another head-final language (Hindi) acquiring a head-initial CP

(in English), Bhatt and Hancin-Bhatt (2002) provide strong evidence that the English CP is not available at the early stages of acquisition. They note that “although all proponents of L2 strong continuity propose that functional projections are available at the onset of adult L2 acquisition, the evidence for the presence of the CP is scant.” (2002: 382). They argue for the presence of an IP-projection in these speakers’ data when we would question this conclusion; we address this in more detail in *Extensions 1*. To collect their data, Bhatt and Hancin-Bhatt (2002: 355) presented learners with sentences of the type in (7.9):

- (7.9) a. *Peter said [last week] he had been to Chicago.*
 b. *Peter said [last week] [that] he had been to Chicago.*
 c. *Peter said [that] [last week] he had been to Chicago.*

The rationale for this comprehension experiment was the following: when presented with examples such as (7.9b) or (7.9c), there should be no confusion about the attachment of the adverb if the CP projection is posited by the learner. However, if the learner does not project a CP, the attachment of the adverb is expected to be ambiguous, as it would be in (7.9a), without the overt complementizer. The results are as predicted by our approach, with a missing CP projection at earlier stages: at school grades 7 and 9 (ages 12 and 14), the adverb was interpreted correctly at close to chance rates (56–60% of the time, Table 8 of Bhatt and Hancin-Bhatt 2002: 375), while at school grades 11 and 13 (ages 16 and 18), the correct interpretation was obtained 85–93% of the time, suggesting that the CP projection is present at the later stages of acquisition.

In addition to the comprehension experiment, the authors gave the students a question formation (production) task, on yes/no questions and WH-questions. In this task, the 12 year olds almost never inverted the auxiliary in yes-no questions (1% of the time), while for the 14, 17 and 18 year olds inversion took place 70%, 80% and 95% of the time, respectively (Table 10 of Bhatt and Hancin-Bhatt 2002).¹⁸⁰ This result suggests to us that the C position was already available at grade 9 for

180. In a production task of WH-questions, DO-insertion was not reliably acquired until Grade 11 in Bhatt and Hancin-Bhatt’s data (Table 12), suggesting that a full CP may be required before full WH-questions with DO-insertion can be produced.

the 14 year olds, although the full CP was not present until grade 11/age 16, given the adverb results.

We now turn to the development of the CP projection in the L2 German of speakers of head-initial languages, beginning with Romance learners.

7.3. The head-initial (Romance) learners

Recall from Chapter 5 that in the Romance languages studied, AgrP and CP are head-initial, as shown in the Spanish (7.10a–c) examples in (5.20) from that chapter, repeated here, and the Italian examples (7.10d–f) below. Moreover, both languages have WH-movement, the main verb is fronted in questions and a complementizer is obligatory in embedded clauses.

- (7.10) a. *Hablas (tu) español?*
 speak-2sg (you) Spanish?
 ‘Do you speak Spanish?’
- b. *Dónde aprendiste (tu) español?*
 where learned-2sg (you) Spanish?
 ‘Where did you learn Spanish?’
- c. *(Ella) piensa que su español no es muy bueno.*
 (she) think-3sg that her Spanish no is very good
 ‘She thinks that her Spanish isn’t very good.’
- d. *Parli (informal) italiano?/ Parla (formal) italiano?*
 speak-2SG Italian Speak-2SG Italian
 ‘Do you speak Italian?’
- e. *Dove hai imparato l’italiano?*
 Where have-2SG learned the Italian?
 ‘Where did you learn Italian?’
- f. *Pensa di non parlare molto bene l’italiano.*
 think-3SG of no speak-INF very good the-Italian
 ‘She thinks (her own) Italian isn’t very good.’

As discussed in Chapter 5, there was little evidence for a CP projection at the FP or AgrP stages; the four Spanish speakers (i.e. Jose, Agapita, Nieves, and Maria) produce few or no embedded clauses with overt complementizers despite the fact that they are obligatory both in Spanish (and Italian) and in German. Some examples are provided in (7.11):

- (7.11) a. *Aber wann komm einmal.* [Jose/7]
 but when come*-INF once
 ‘But when he/she comes once...’
- b. *Und wenn sie alleine kommen.* [Nieves]
 and if she alone come*-INF
 ‘And if she alone comes/she comes alone...’

Additional evidence is mentioned by Meisel (1977) according to whom subordinate clauses emerge in the following order for Spanish and Italian learners of German (the 48 Heidelberger Pidgin Projekt Spanish and Italian adults): adverbial clauses > nominal clauses > relative clauses. The early subordinate examples in (7.11) would be adverbial clauses, and they do not involve an overt matrix clause.

However, Parodi (1991) in discussing the development of TP and AgrP for Italian learners of German argues that – contrary to the predictions of structure building – adults have a CP projection before the AgrP projection, based on examples such as (7.12):

- (7.12) *Wenn meine padre ne fertig arbeiten*
 when my father (Italian) no finished work*-INF
Deutschland.
 Germany
 ‘when my father wasn’t finished working in Germany.’
 [Giovanni, week 9]

We suggest that early examples such as those in (7.11) and (7.12) do not actually involve a CP projection. All three examples seem to involve a Root Default verb form instead of a finite verb marked for tense or agreement; the infinitival (or bare stem, in [7.11a]) verb appears to head a head-initial VP in (7.11a) and (7.12) and a head-final VP in (7.11b). In addition, there is an overt subject in (7.11b) and (7.12) that presumably occupies the Spec,VP position. What we would have to say about the apparent overt complementizer *wenn/wann* ‘when’ in each

- Type 1:* L2 data from the earliest stage which indicate that a lexical projection has not been transferred from the speaker's L1.
- Type 2:* L2 data from the earliest stage which show that a functional projection has been transferred at the beginning of L2 acquisition.
- Type 3:* L2 data from any stage which show that a functional projection has been transferred at some point during the L2 acquisition process.
- Type 4:* Data showing that functional projections develop in some other order than the predicted one, namely one where the syntactic tree develops from the bottom up.

7.4.1. Type 1 data

Data of Type 1 have not been reported in the literature, apart from Klein and Perdue (1997) and Pienemann (1998) none of whom assume direct access to UG by adult L2 learners, as we have seen; rather, it is now commonly accepted that the headedness of the VP projection is transferred from the L1, as we showed in Vainikka and Young-Scholten (1994) for Turkish and Korean learners of German.

7.4.2. Type 2 data

Various authors have argued that the CP projection is transferred from the L1 at the beginning of L2 acquisition, representing Type 2 counterevidence. As already mentioned, Grondin and White (1996) and White (1996) discuss data from L1 English children acquiring French, and argue that the data reveal an early CP projection; a similar argument is made by Lakshmanan and Selinker (1994) and Lakshmanan (1994), with data from Spanish and French children acquiring English. Above we discussed our claim in Vainikka and Young-Scholten (1996a) that these data do not represent the earliest stage of L2 acquisition; in addi-

tion, the functional projections discussed (IP and CP) have L2 characteristics (rather than L1, as would be expected under transfer).¹⁸¹

Another attempt to argue that the CP has been transferred at the beginning of L2 acquisition is Schwartz (2005). (Two of Schwartz' arguments may not involve the initial stage – based on Hulk 1991 and Grüter and Conradie 2004 – and will thus be discussed in the next section.) Schwartz uses Garcia's (1998) comprehension data in an experiment similar to Bhatt and Hancin-Bhatt's (see example [7.9]) on early L2 English by L1 Arabic and Chinese speakers, and argues that the presence of a complementizer matters to these early L2 learners, thus indicating that they have a CP projection. However, she does not actually claim for these data that the L1 determines what kind of CP the learners have, and whether the CP is based on the L1. What would be critical for Schwartz's argument to work would be learners at the earliest stage of syntactic acquisition – our VP-stage; if they cannot be shown to represent the VP-stage, and if their CP is not necessarily based on the L1, then any evidence of a CP can involve an emerging (L2-based) projection, as Organic Grammar predicts. The problem with Garcia's data is that although the learners are probably at a fairly early stage, one cannot determine their stage, or even whether all of them are indeed at same stage. Garcia's data therefore offer nothing conclusive.

Schwartz (2005) also discusses a study by Bohnacker (2004, 2006) on Swedish learners acquiring German, with production data collected at two points in time (from instructed learners, after four and nine months exposure). Schwartz points out that for those three learners in the sample who had not previously learned English or any other foreign language, there is immediate convergence on the V2 word order (found in both Swedish and German).¹⁸² This is particularly crucial because

181. See also Epstein, Flynn and Martohardjono (1996), on Japanese (instructed) learners of English. These authors also argue that functional projections are posited from the beginning of acquisition, but their adult data come from learners who have presumably studied English for several years.

182. In distinguishing between learners who have or have not previously studied English, Bohnacker (2004) argues against the earlier results of Håkansson (1994), and Sayehli (2001), both of whom argue that the V2 word order – while required in both the L1 and the L2 – is not transferred from L1 Swedish to L2 German. In Sayehli's (2001) data, 6th-graders (11-year-olds) with 8 months of instruction did not produce any inverted V2 structures in a test involving 49 topicalized sentences, while 7th-

studies on L2 German by speakers of non-V2 languages (all previous studies) do not show such immediate convergence. However, there is a serious flaw in Bohnacker's analysis: she considers the *first verb* in an utterance to be finite, even if it is lacking any tense or agreement morphology (and she mentions that verbs often lack such morphology). While such a verb might in some sense be thought of as finite (since it may have raised; recall that adult L2 learners raise Root Default verb forms), it is next to impossible in the absence of tense/agreement morphology to distinguish between a raised (Root Default) finite (main) verb and a non-finite verb in a head-initial VP. In the event that both the L1 and the L2 have a head-*final* VP, it is possible to argue that a verb preceding the object has raised (even if it does not carry finite morphology); this was what we argued for the L1 Turkish/Korean data in Chapters 4 and 5. However, crucially for Bohnacker's data, when the L1 has a head-*initial* VP, as does Swedish, it takes more than word order to show that a verb that precedes the object occurs in the (head-initial) V2 position, as opposed to being a Root Default verb in a (transferred) head-initial VP. Thus, although Bohnacker's data appear convincing at first glance, her evidence fails to be conclusive.

To summarize the Type 2 evidence: while various authors have claimed that a CP is transferred at the beginning of L2 acquisition, the data in general end up supporting a view that the CP attested in the data has target L2 properties, rather than those expected under a view of L1 transfer of the CP (whereas transfer of VP can be observed). Furthermore, we can conclude that in the earliest production data there is no conclusive evidence of any kind of a CP projection; note that such evidence would have to show a CP with L1 characteristics. Perhaps the most promising potential evidence of a CP transferred from the L1, Bohnacker's (2004) data, suffers from conflation of finite and non-finite verbs, and thus even her evidence for an early CP is inconclusive.

graders (12-year-olds) with 17 months of German instruction produced some V2 inversion. If this result can be maintained, taking into account Bohnacker's counterargument (i.e. that the surprising V3 pattern could be transferred from the earlier L2, English), it would support lack of transfer as predicted by OG.

7.4.3. *Type 3 data*

Type 3 counterevidence would involve evidence of a functional projection having been transferred by learners, but not necessarily at the beginning of acquisition. Schwartz (1996) and Schwartz and Sprouse (1996) originally argued based on White's (1991a/b) adverb data that verb raising (and the related functional projection) is transferred at some point during L2 acquisition. According to Schwartz, based on the data from White (1990/91, 1991, 1992), French learners of L2 English tend to produce sentences in which the main verb appears to have been raised, as in the L1 French (but not in English; see Emonds 1976 and Pollock 1989). White (1991a/b) shows that verb raising sometimes occurs in L2 English when the sentence contains an adverb such as *often* – that is, the finite verb precedes the adverb as in the L1 French (but not in the target language: **John reads often this book.*). Thus, in producing such constructions it appears that the L2 English learners are raising the verb from the VP to a position higher in the tree, preceding the adverb, as in the L1 French but not in the L2 English.

In Vainikka and Young-Scholten (2009) we presented our most recent response to this argument, given new developments in the syntactic analysis of adverbs, whereby adverbs are analyzed as occupying a specifier position (Cinque 1999; Alexiadou 1997; Laenzlinger 1998; Vainikka, submitted). Having adverbs occupy various specifier positions makes Iatridou's (1990) original argument against using adverbs as diagnostic for verb raising perhaps more relevant. However, even under the OG-based analysis of English adverbs – with a small number of functional projections – in Vainikka (submitted), with adverbs occupying specifier positions, Schwartz's (1996) original argument still turns out to hold.

After considering various possible solutions (see Vainikka and Young-Scholten 2009 for details), we now suggest that, in effect, verb raising may be unmarked in certain situations during acquisition, namely, when a new projection has been posited and the learner has not yet determined what is going to occupy the new head position (this idea uses Vainikka and Young-Scholten's [1994] Full House Principle and Vainikka and Levy's [1999] Principle of Obligatory Occupant Licensing [POOL]). For example, in a situation where the learner has acquired a TP but not the AgrP projection, if the speaker were to – somewhat prematurely – posit an AgrP position, the grammar would attempt to fill the empty Agr position by moving a verb from below to into that posi-

tion, regardless of whether the L1 or the L2 have verb raising. An experimental situation such as White's might be likely to involve positing projections that are not fully acquired, thus naturally resulting in verb movement in order to fill a higher syntactic head position. Under this approach, rather than providing evidence for transfer of verb raising, White's data may provide evidence for a stage at which not all functional projections have been acquired yet. In addition, this approach explains – and the transfer approach does not – why the verb raising pattern that White observed was different from French (the L1) verb raising (White 1992; Eubank 1994): it only occurred adverb constructions, not with negation or questions; the latter would involve different functional projections, and may thus behave differently in the interlanguage.

In a further argument of Type 3 that deals with adverbs and verb position, Schwartz (2005) discusses results from an acceptability judgment task reported in Hulk (1991), from Dutch speakers studying French in high school or college. According to Hulk (1991), the learners accepted those adverb-initial word order patterns that are possible in Dutch, while typically rejecting the orders not found in their L1 Dutch. There are two problems with the argument as a counterargument to Organic Grammar: (i) the data are collapsed across stages, and therefore it is impossible to determine which functional projections might be involved in which structure accepted by the informants – for example, 1/5 of the 131 informants are beginners with perhaps just a transferred VP projection, while the other speakers may posit more structure;¹⁸³ and (ii) the data come from instructed learners, making it possible that the results involve word-for-word translation perhaps practiced in the

183. If it turned out that these informants overall were not very advanced syntactically in the L2, the results from three of the six word order patterns could readily be explained by transfer of headedness of the VP from the L1 Dutch to L2 French, at early stages (as we do): (1) the high acceptance (92%) of Adv Aux SOV, (2) the low acceptance (38%) of Adv Aux SVO and (3) the low acceptance (38%, as well) of Adv SVO. The low acceptance rates (19% and 30%) of the orders in which an auxiliary follows the subject could also be explained if the speakers posited mostly a bare VP projection (Adv S Aux VO; Adv S Aux OV). However, the data from one of the orders, the high acceptance rate (92%) of Adv VSO cannot be explained by positing a bare VP projection, but verb raising must be involved, with at least an FP projection.

classroom, which is not revealing in terms of transfer of functional projections.¹⁸⁴

In a volume already discussed, Hawkins (2001) develops an approach to structure building in L2A that differs from Organic Grammar in that transfer of functional projections can occur at the point at which a particular projection is acquired. In Vainikka and Young-Scholten (2003b) we categorize Hawkins' arguments as follows:

- i) arguments which support structure building in general, whether our approach or Hawkins' revision of our approach, this category covers most of the data Hawkins (2001) presents;
- ii) data revealing interlanguage grammars that differ both from L1 and L2, suggesting influence by UG – the two arguments in this category (on resumptive pronouns and null subjects) were outlined in Chapter 5;
- iii) arguments that appear to support transfer of functional elements; two of the three arguments in this category involve the DP projection, and one has to do with IP.

According to one of the two DP-level arguments, the English possessive -'s may be easier for Japanese L1 speakers to acquire than for Spanish L1 speakers; as discussed in Vainikka and Young-Scholten (2003b), the difference is a small one and obtained across different studies by different researchers and experimental situations, and thus may not be reliable. The second DP-related argument deals with the general observation that elements such as plural marking and the English articles appear to be difficult for speakers of languages lacking these morphemes, such as Japanese (Wakabayashi 1997) or Korean (Parodi, Schwartz and Clahsen 1997).

In an important new study that sheds light on the question of transfer of DP-level information, Ko, Ionin and Wexler (2010) present experimental results from the L2 acquisition of English articles by L1 Korean speakers. They show that the overuse of the article *the* is systematic and

184. We would have to posit that acceptance of the Adv VSO order (cf. previous footnote) involves word-for-word translation from Dutch for these classroom learners.

represents the same type of error (of overusing the article with partitive indefinites) as found in L1 acquisition of English. They allow for the possibility that this may not be the case for L2 learners whose L1 has overt articles (such as Spanish). We believe it is premature to draw firm conclusions about transfer of functional material in the nominal domain. This is a topic we wish to address in future work.

The third argument is the only sentential-level argument for transfer of functional material in Hawkins' volume, as pointed out in Chapter 5 where we discussed the problematic circularity in this argument (based on Stauble's (1984) data on acquisition of the copula and subject-verb agreement). Note that no such transfer is argued for in terms of any other IP-level projections, nor in terms of the CP, such as Hawkins' discussion of the development of questions or other CP-level phenomena.

In addition to her arguments discussed above, Schwartz (2005) uses Grüter and Conradie's (2004) comprehension data on L2 German by Afrikaans and English speakers to argue that a full CP has been transferred from L1 English to L2 German, in particular as it concerns tense marking. Since Afrikaans and German are closely related languages, transfer between these two languages might be expected even under Organic Grammar (see discussion in Chapter 1); with respect to the relevant grammatical construct, both the native German speakers and the Afrikaans L2 German learners treated the two task conditions similarly (present-tense condition and present-perfect condition). This is not surprising under any approach to transfer or development, since both the L1 and the L2 have the same construction (which in the L2 may have been transferred, or possibly acquired based on the input). However, according to Grüter and Conradie, the English speakers acquiring German interpreted WH-questions in the two conditions differently, with practically all of the WH-questions in the complex present-perfect condition being treated as object questions.¹⁸⁵ While a structure building approach does not predict an object bias in the perfect tense, ac-

185. German WH-questions of the type *Was hat die Katze gebissen* are ambiguous (because *die* can either be nominative or accusative) between the subject question reading 'What has bitten the cat?' vs. the object question reading 'What has the cat bitten?' While the L2 learners prefer the object reading in Grüter and Conradie's results, the control group also preferred the object reading (p.36: 47% object questions vs. 7% subject questions), revealing an unexpected object bias in the task.

According to Grüter, Schwartz and Sprouse's (1996) Full Transfer/Full Access approach would predict such a bias (in the present tense, the prediction of both FT/FA and the earlier version of our approach, Minimal Trees, is the same). Grüter and Conradie's results thus appear to support FT/FA. However, Grüter and Conradie (2004) point out that the experiment suffers from an object bias, which would give rise to the results in the perfect tense. Since the purported support for transfer of functional projections from L1 English involves the object interpretation – given the bias in the experiment – the results are inconclusive and do not distinguish between FT/FA and our approach.

In sum, then, the current status of Type 3 evidence depends on the status of the future results on potential transfer at the DP-level, as well as the original adverb argument of Schwartz (1996a) and our response to it (summarized above from Vainikka and Young-Scholten 2003b).

7.4.4. Type 4 data

Finally, the potential Type 4 evidence in the literature argues that the CP projection is acquired earlier than some of the IP-level projections. (In Chapter 6, we already addressed Lardiere's [1998] argument based on Patty's data.) Such an argument is presented in Gavrusseva and Lardiere (1996), who argue that the Russian speaker Dasha acquires a CP before an IP in her L2 English, based on data collected over the first six months of exposure to English. It appears clear from their data that the IP projection is present from File 6 on (4 ½ months after exposure), given that in this file 30 modals and auxiliaries are produced (as opposed to a total of three in all previous files). Gavrusseva and Lardiere suggest that the CP projection has clearly been acquired from File 3 on, based on the following examples uttered by Dasha:

- (7.14) a. *Look what she doing.* [File 3]
 b. *Mama know that we go outside.* [File 4]

Despite these two examples, we question whether the CP projection is productive before File 6. Before file 6, there are few questions: only three WH-questions and seven yes/no questions in Files 4–5. File 6, on the other hand, contains 18 embedded clauses with overt complementizers, and the number of yes/no questions increases, but the number of WH-questions remains small until the end of data collection (six

months after exposure). We suggest that Dasha has acquired both IP and CP (or at least the C position) by File 6, but neither is clearly present before this point; thus, CP is not acquired before IP. While we predict IP before CP, it is not uncommon in rapid acquisition to find a quick succession of stages, some of which might occur between data collection sessions.

The second argument that Gavruseva and Lardiere (1996) present against our approach, based on Dasha's data, is that there are utterances in the data that clearly involve CP-material but are lacking IP-material (as shown in their Table 7). Recall, however, the discussion based on Prévost and White (2000a/b/c), according to which it was clear that some proportion of finite sentences have missing surface inflection, perhaps about 10% of the finite utterances in the data they discuss. Some of Dasha's utterances involving CP material could then involve a CP and IP, but the inflection in the IP would be missing due to performance limitations.¹⁸⁶

Following the argumentation in Lardiere (1998) – as discussed in Chapter 6 – White (2003a) presents end-state data from an adult L1 Turkish speaker (SD) acquiring English. Although it seems clear that SD has the functional projections IP and CP, and uses them consistently, tense and agreement inflection (i.e. the suffixes *-s* and *-ed*) are omitted from lexical verbs that behave like finite verbs about 20% of the time (tense and agreement are almost always present on auxiliaries). Articles are omitted even more frequently, about 1/3 of the time. Given that SD's syntactic performance is otherwise advanced (for example, null subjects or objects are not used; verb raising in questions is mostly target-like; no case errors), it seems reasonable to assume that omission of verbal and nominal inflectional morphology is perhaps most of the time a matter of performance, as White argues. Recall that the speakers Prévost and White (2000a/b/c) discussed had missing surface inflection less than 10% of the time. SD's data would be comparable if it can be

186. The proportion of Dasha's utterances with a missing inflection would be higher than 10%, given the figures in their Table 7. However, we think that not all of the utterances counted as CP utterances by Gavruseva and Lardiere actually involve a CP, such as *I don't know where this little piece* [their example 7b], nor do we agree that all of the examples are missing the IP-elements, such as *It means that you should come out* [their example 11a, presumably with deficient finite elements]. Thus, the figures in Table 7 need to be adjusted somewhat.

argued that about 10% of her utterances (with missing IP-material) were to actually involve a bare VP projection, under stage seepage.

The studies just discussed represent Type 4 potential counterevidence in that the CP projection is claimed to have been acquired prior to IP-level projections, or that there are utterances in the data representing a CP but not IP-level projections. While we accept that some of the utterances involve performance factors resulting in the omission of tense or agreement morphemes, we believe it is nevertheless possible to observe the development of the grammar for a particular speaker while allowing a fairly small proportion of such performance errors (perhaps about 10%, although recall the much higher proportions of omitted morphemes due to Chinese phonology, as discussed in Chapter 6).

We now turn to the development of the CP in the VYSA data, from the three American teenagers immersed in a German secondary school environment for a year.

7.5. CP in the VYSA data (L1 English)

In Chapter 5 we established that the AgrP projection had been acquired by the three VYSA learners of German at around File 5, which was recorded during their sixth month in Germany (File 4 for George, File 5 for Paul, and by File 6 – but probably earlier – for Joan). Under Organic Grammar, we predict that the CP projection develops after this point, and we will see this prediction to hold for all three speakers (we have also addressed this topic in earlier publications, i.e. Vainikka and Young-Scholten 2001, 2002). Let us first consider WH-questions.

7.5.1. Matrix WH-questions and the CP projection

Some WH-questions are attested in the VYSA data even before the first functional projection (apart from NegP) develops around File 3. However, the data come from a narrow elicitation task where learners were given a WH-word and an infinitive and asked to form questions; the segments given to the learner in the task are in italics:

- (7.15) a. *Warum sprechen* Deutsch? [Joan, file 2]
 why speak*-INF German
 (Warum spricht man Deutsch?)
 ‘Why does one speak German?’
- b. *Wo du fahren?* [Paul, file 2]
 where you drive*-INF
 (Wo fährst du hin?)
 ‘Where are you driving?’
- c. *Wann wir trinken* Tee? [Paul, file 3]
 when we drink*-INF tea?
 (Wann trinken wir Tee?)
 ‘When do we drink tea?’
- d. *Wer sprechen* Deutsch? [Paul, file 3]
 who speak*-INF German
 (Wer spricht Deutsch?)
 ‘Who speaks German?’

To the extent that these examples are representative of the learner’s grammar, these very early WH-questions can be taken to involve adjunction of the WH-phrase to the VP, similar to what Radford (1990: 134) proposes for early L1 acquisition, as was discussed at the beginning of this chapter; example (7.15d) would presumably involve a reduced question with the subject WH-phrase in the Spec, VP position, as we claim for other overt subjects at the earliest stage.

The WH-questions that next emerge occur when learners have posited a head-initial IP-level projection beyond the NegP, starting around File 3 (either an FP, TP, or AgrP, depending on the stage of development – see Chapter 5). We will present the analysis in terms of a TP projection (prior to the development of the AgrP or the CP), but the earlier FP stage or the later AgrP stage would work the same way. Some representative examples are given in (7.16–17). The examples in (7.16a–b) were questions produced during a 20 Questions game played in German by the researcher and the learner, sometimes along with another German speaker, and (7.16.c) was produced spontaneously, in conversation. The participants were instructed to ask information questions, not just the typical yes-no questions:

- (7.16) a. *Wo kannst du kaufen?*
 Where can you buy
 (Wo kannst du das kaufen?)
 ‘Where can you buy (that)?’ [Joan, file 4]
- b. *Was arbeitet ihm?*
 what works him
 (Als was arbeitet er?)
 ‘What does he do for work?’ [Joan, file 4]
- c. *Warum hast ich in Deutschland gehen?*
 why have*-2SG I to Germany go*-INF?
 (Warum bin ich nach Deutschland gegangen/gekommen?)
 ‘Why did I go (come) to Germany?’ [Paul, file 4]

Similar examples are found in the two WH-questions contained in the on-line English-to-German translation task:

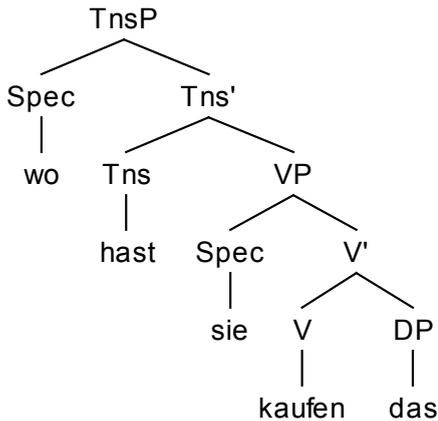
- (7.17) a. *Wo hat das Buch gekauft? oh no, Wo hat*
 where has the book bought-PST where has
sie Buch kaufen?
 she book buy*-INF
 (Wo hat sie das Buch gekauft?)
 ‘Where did she buy the book?’ [Joan, file 4]
- b. *Wo uh hast sie kaufen das or das*
 where have*-2SG she buy*-INF that or that
kaufen?
 buy*-INF
 (Wo hat sie das gekauft?)
 ‘Where did she buy that?’ [Paul, file 4]

At this stage, however, there are still basically no embedded clauses with overt complementizers (apart from some instances of *weil* ‘because’, the status of which is unclear – see below). What then is the structure of early WH-questions, i.e. those that occur prior to the development of CP such as the questions shown in (7.16)? The commonly appearing early questions occur during the intermediate stage at which we claim that learners have posited a head-initial functional projections,

but not yet a CP projection, starting around session 2 or 3, and extending to the point at which an AgrP was posited about two sessions later.

We propose that the questions in (7.16–7.17) can be accounted by the structure in (7.18), for (7.17b):

(7.18)



Rather than involving typical WH-movement to Spec(CP), we take these questions to be instances of topicalization or scrambling to Spec(TP) – or in later examples, Spec(AgrP) – along the lines of topicalization in Yiddish as proposed in Diesing (1990); recall the earlier discussion on reduced WH-questions in acquisition (and in adult syntax). The structure of (7.17b) is particularly clear, as shown in the tree in (7.18): the WH-word *wo* ‘where’ occupies the Spec(TP) position, and the finite verb with overgeneralized *-st* suffix occurs in T (and the overt subject in Spec[VP]); the same structure would hold for (7.16c). The sentences in (7.17a) probably also have the same structure (with a missing subject in the first utterance, and an overt subject in Spec[VP] in the second utterance). While (7.16a) might be an early instance of an AgrP structure (with the WH-word in Spec[AgrP] and the subject in Spec[TP]), (7.16b) shows a case pattern similar to that observed in Vainikka (1993/4) for L1 English WH-questions, where the subject pronoun occurs in non-nominative case. As discussed earlier, Vainikka (1993/4) argued that such oblique subjects with early WH-questions reflect a situation where the subject pronoun has not raised from the

Spec(VP) to its usual nominative position, due to the presence of the WH-phrase in the usual subject position.¹⁸⁷

Given the lack of a WH-operator at the pre-CP stages in the data under consideration here, there are a number of complex syntactic constructions which we would not expect to occur in our learners' data, and in fact they do not occur at these stages. Such constructions include the parasitic gap construction ("Which book did John return to Mary without reading -?"), the multiple WH-question with a paired reading interpretation ("Who brought what to the party?" "A brought a, B brought b, etc.") or the long distance WH-construction across clause boundaries ("Where do you think Mary hid the key?" *Wo denkst du dass Mary den Schlüssel versteckt hat?*). Although we can draw some conclusions from the fact that such constructions are not found in the data collected, experimental data would be required to conclusively establish the unavailability of operator constructions at the TP/AgrP-stage.

At what point in the learners' acquisition do matrix WH-questions with a full CP emerge in the VYSA data? An object-WH-question with the WH-word *was* 'what' (and with an overt non-copula verb with finiteness marking, together with an overt subject) would be a good indication of such a full CP projection. We searched both Paul's spontaneous and broad elicitation task data for the WH-word *was* 'what', and there was just one relevant example prior to File 8, as given in (7.19):

- (7.19) *Und was haben ich machen hier?*
 and what have*-INF I make*-INF here
 (Und was habe ich hier gemacht?)
 'And what did I do here?'

[Paul, file 5; during a task, but spontaneous]

Given the lack of correct agreement, even this example might involve less than a full CP projection. On the other hand, in File 8 there are several relevant WH-questions with correct agreement, pointing to a full-fledged CP projection at this point:

187. Note that it is this type of non-nominative example that in our view distinguishes between the WH-phrase actually occupying the subject position and it being adjoined to the VP, TP, or AgrP. If the WH-phrase were adjoined, the regular subject position would be available for the subject to raise to, and nothing would explain the unusual non-nominative case marking.

- (7.20) a. *Was machst du [in dein] mit dein Leben in*
 what make-2SG you in your with your life in
zehn Jahr oder etwa?
 ten year or so
 (Was machst du mit deinem Leben in etwa zehn Jahren?)
 ‘What will you be doing in more or less ten years?’
 [Paul, file 8]
- b. ... *Europ(a)...* *was hast du gesagt?*
 Europe what have-2SG you say-PST
 (...Europa...was hast du gesagt?)
 ‘...Europe...what did you say?’
 [Paul, file 8]
- c. *Und was macht die dann?*
 and what make-3SG the then
 (Und was macht die/sie dann?)
 ‘And what is she doing then?’
 [Paul, file 8]

Considering Paul’s performance in the translation task – as shown in (7.21–7.24) – he is able to translate the object WH-questions from File 5 on, without hesitation; however, in Files 5 and 6 there are still agreement errors. A full WH-question with correct subject-verb agreement first appears in File 7 in the translation task. (Paul was asked to translate “What did the man drink?” and “Where did they buy the book?”) (7.22b = 7.17b above)

- (7.21) a. *Was uh hast er getrunken?* [Paul, file 4]
 what has*-2SG he drunk
 (Was hat er getrunken?)
 ‘What did he drink?’
- b. *Wo uh hast sie kaufen das or das*
 where has*-2SG she buy*-INF that that
kaufen?
 buy-INF
 (Wo hat sie das gekauft?)
 ‘Where did she buy that?’
 [Paul, file 4]

- (7.22) a. *Was hast der Mann getrunken?*
 What has*-2SG the man drunk
 (Was hat der Mann getrunken?)
 ‘What did the man drink?’ [Paul, file 5]
- b. *Wo um wo haben sie die Buch kaufen?*
 where where have*-INF they the book buy*-INF
or das Buch kaufen?
 the book buy*-INF
 (Wo haben sie das Buch gekauft?)
 ‘Where did they buy the book?’ [Paul, file 5]
- (7.23) a. *Was has der Mann getrunken?*
 what has*-2SG the man drunk-PST [Paul, file 6]
- b. *Wo haben sie die Buch gekauft?*
 where have they the book buy-PST [Paul, file 6]
- (7.24) a. *Was hat der Mann getrunken, getrinken?*
 what has-3SG the man drunk-PST drunk-PST
 [Paul, file 7]
- b. *Wo haben sie die Buch gekauft?*
 where have they the book bought-PST [Paul, file 7]

Combining the results from the translation task with Paul’s spontaneous data, it appears that Paul has acquired the full CP projection by Files 7–8, at least as far as matrix WH-question formation indicates, but prior to File 7 his WH-questions seem to involve something less than a full CP. Given that Paul acquired the AgrP projection around File 5, his data are in accordance with the predictions of Organic Grammar.

Joan in her Files 4–8 did not produce any spontaneous matrix WH-questions of the relevant type, but there was one WH-question in these files that probably involves a full CP projection, given in (7.25):

- (7.25) *Wer bist du?* [Joan, file 7]
 who are you
 (Wer bist du?)
 ‘Who are you?’

Joan's data from the translation task are also not very revealing; in File 4, she still struggled with the two sentences (as we saw above in example [7.17a]), but from File 5 her sentences were perfect. Joan's data from the 20 Questions game, however, are more revealing. We saw some of her reduced WH-questions in File 4 above in (7.16a–b), and some further examples from this task in File 4 are listed in (7.26); note especially the non-nominative subject in (7.26c). Similar WH-questions with a Root Default (infinitival) verb form still occur in File 5, as shown in (7.27):

- (7.26) a. *Was machen/ was macht sie?*
 what make*-INF/ what make-3SG she
 (Was macht sie?)
 'What does she do?' [Joan, file 4]
- b. *Wo wohnen sie? (=singular)*
 where live*-INF she
 (Wo wohnt sie?)
 'Where does she live?' [Joan, file 4]
- c. *Was machen ihr at ihr/ Was machst ihm*
 what make*-INF her her what make-2SG him
at his job?
 (Was macht sie auf ihrer Arbeit?)
 'What does she do at her job?' [Joan, file 4]
- (7.27) a. *Was machen – was macht sie? (= singular)*
 what make-INF what make-3SG she
 (Was macht sie?)
 'What does she do?' [Joan, file 5]
- b. *Wo wohnen sie? Wo wohnt sie? (= singular)*
 where live*-INF she where live-3SG she
 (Wo wohnt sie?)
 'Where does she live?' [Joan, file 5]
- c. *Was arbeitet ihm, him?*
 what work-3SG him
 (Was macht er beruflich?)
 'What's his job?' [Joan, file 5]

In File 6, however, a different pattern of WH-questions emerges in the 20 questions task, with representative examples provided in (7.28) (and in File 7 only embedded WH-questions occur):

(7.28) a. *Woher kommt es?*
 where-from come-3SG it
 (Woher kommt es/Wo kommt es her?)
 ‘Where does it come from?’ [Joan, File 6]

b. *Was macht es?*
 what make-3SG it
 (Was macht es/Was tut es?)
 ‘What does it do?’ [Joan, File 6]

Combining the data in (7.28) with Joan’s spontaneous example in File 7 above in (7.25) we suggest that Joan has acquired the CP projection probably already in File 6 – but in any case by File 7 – but not yet in File 5. Recall that while Joan’s data revealed some evidence of a TP projection already in Files 2–3, technical problems meant that not enough data were collected in File 4 to determine whether the AgrP may have been acquired by Joan by that point. However, in File 5 it appears that Joan’s AgrP is fully developed, as suggested by the spontaneous examples in (7.29):

(7.29) a. *Und er macht viele Probleme in Gotham City.*
 and he make-3SG many problems in
 (Und er macht viele Probleme in Gotham City)
 ‘And he creates many problems in Gotham City.’
 [Joan, file 5]

b. *Ich habe alles gesehen.*
 I have-1SG everything see-PST
 (Ich habe alles gesehen.)
 ‘I’ve seen everything.’ [Joan, file 5]

c. *Ja, es war sehr langweilig.*
 yes it was very boring
 (Ja, es war sehr langweilig.)
 ‘Yes, it was very boring.’ [Joan, file 5]

Thus, Joan's WH-question data also fulfill the prediction of OG in that the AgrP projection is acquired prior to the CP projection (AgrP by File 5, and CP by Files 6–7).

Finally, in George's data we saw that he had acquired the AgrP projection already in File 4, and his WH-questions in the translation task are close to target-like from File 4 on. George's questions in the 20 Questions task, however, reveal a developmental pattern. In File 4, he did not produce any WH-questions with a main verb. In File 5, there are two instances of WH-questions with a main verb other than *ist* 'is', provided in (7.30); however, both of these involve a past tense form of the copula, with some agreement trouble (recall that George acquired the TP in Files 2–3):

(7.30) a. *Wo warst du?*
 where were-2SG-PST you
 (Wo warst du?)
 'Where were you?' [George, file 5]

b. *Wann warst/ war das? Wie spät?*
 when was*-2SG/ 3SG that how late
 (Wann war das? Wie spät?)
 'When was that? How late?' [George, file 5]

George's first main verb WH-questions occur in File 6 (these are all of his relevant examples from this file); note that he overgeneralizes the *-st* suffix in (7.31b–c) although in general George's data showed acquisition of AgrP by File 4:

(7.31) a. *Was macht er für Arbeit?*
 what does-3SG he for work
 (Was macht er beruflich?)
 'What's his job?' [George, file 6]

b. *Wo wohnt er?*
 where live*-2SG he
 (Wo wohnt er?)
 'Where does he live?' [George, file 6]

- c. *Was für Musik sings sie?*
 what for music sing*-2SG she
 (Was für Musik singt sie?)
 ‘What kind of music does she sing?’ [George, file 6]

Since in File 7 George already produces embedded WH-questions, we suggest that his CP is emerging in File 6, and in any case by File 7 (we will return to embedded clauses below). As predicted, George’s CP emerges after the AgrP projection, similarly to the other two VYSA speakers.

7.5.2. *Embedded clauses and the CP projection*

In this section we examine embedded clauses in the VYSA data, concentrating on the emergence of *dass* ‘that’ clauses. All of the early embedded clauses have a non-target V2 word order, typical in L2 acquisition of German. We will consider the development of word order in a separate section.

In the first three files of the VYSA data, there are virtually no spontaneously produced embedded clauses or overt complementizers. Several task-induced instances of complementizers occur, in particular *weil* ‘because’ (along with the conjunctions *und* ‘and’ and *aber* ‘but’); the status of *weil* as a complementizer rather than a conjunction is not clear, especially given matrix word order in clauses beginning with *weil* in current spoken German.

A search of the complementizer *dass* ‘that’ – obligatory in German – in Paul’s spontaneous data (files 4–8) yielded only one embedded clause with *dass* in Files 4–6, given in (7.32), produced spontaneously during a task. In File 7 we find three such instances, in (7.33), but note that each of the three sentences involves hesitation and lack of completion. In File 8, however, the embedded *dass*-clause is clearly productive, with a total of nine fluent instances, one of them provided in (7.34) (containing two *dass*-clauses). All of these utterances still involve the non-target V2 word order in the embedded clause:

- (7.32) *Ich wunst, dass dir kannst mir helfen.*
 I wish*-2SG that you can me help
 (Ich wünschte, dass du mir helfen könntest.)
 ‘I wish that you could help me.’ [Paul, file 5]

- (7.33) a. *Ich denke, dass das Woche [euh] vor unser
I think that the week before our
Urlaub ist [euh] ein Bisschen mit alles...
vacation is a bit with everything
(Ich denke, dass die Woche vor unserem Urlaub ein
Bisschen mit allem ist.)
'I think that the week before our vacation is a little bit of
everything.'* [Paul, file 7]
- b. *Weil (ich hab) – ich habe gewunst, dass du
because I have-1SG I have wish-PST that you
hat...
has*-3SG
(Weil ich wünschte, das du [...] hättest.)
'Because I wished that you had...'* [Paul, file 7]
- c. *Ich habe gewunst – gewunst, dass [euh] du hast
I have wished wished that you have-2SG
gefragt...
asked- PST
(Ich wünschte, dass du gefragt hättest/du hättest gefragt...)
'I wished that you asked...'* [Paul, file 7]
- (7.34) *Sie hat was gehört – dass ich gehe mit
She has-3SG something heard that I go with
mein andern Englischlehren für Coffee und sie
my other English teacher for coffee and she
hat gesagt, dass das geht nicht in Deutschland.
has said that that go not in Germany.
(Sie hat gehört, dass ich mit meinem anderen Englisch-
lehrer Kaffee trinken gehe und sie hat gesagt, dass das in
Deutschland nicht geht.)
'She heard – that I go with my other English teacher for
coffee and she said that that's not accepted in Germany.'*
[Paul, File 8]

Based on the embedded *dass*-clause data, then, we conclude that Paul has acquired the CP by Files 7–8. Let us now briefly consider Paul's embedded WH-questions. To address this question, we searched Paul's spontaneous data for forms of the verb *fragen* 'ask', probably the most

common matrix verb for embedded questions. There were no utterances in the earlier files (4–7) containing the matrix verb *fragen* ‘ask’ and an embedded WH-question, but the following two utterances were attested in File 8:

- (7.35) a. *Oder vielleicht ich frage meine Eltern, wenn sie
or perhaps I ask my parents when they
kaufen für mich Alkohol kaufen.
buy for me alcohol buy.
(Oder vielleicht frage ich meine Eltern, wenn sie für mich
Alkohol kaufen.)
‘Or perhaps I’ll ask my parents when they’ll buy alcohol for
me.’* [Paul, file 8]
- b. *Ich frage meine Eltern, wenn ich kann Alkohol
I ask my parents when I can alcohol
trinken.
drink
(Ich frage meine Eltern, wann ich Alkohol trinken kann/
darf.)
‘I’ll ask my parents when I can drink alcohol.’* [Paul, File 8]

To summarize Paul’s data: matrix WH-questions emerged in Files 7–8, *dass*-clauses emerged in File 7–8, and in File 8 we find productive instances of embedded WH-questions. All of these data reveal that Paul has acquired the CP projection by Files 7–8.

A search of Joan’s spontaneous data for embedded *dass*-clauses revealed no instances in Files 4–5, whereas *dass*-clauses were clearly productive already in File 6. In this file, there were six spontaneously uttered embedded *dass*-clauses, exemplified in (7.36):

- (7.36) a. *Und sie möchtest – ich denke – dass ich gehe
and she want*-2SG I think that I go
nicht zu Parties.
not to parties
(Und sie möchte – ich denke, dass ich nicht zu Parties gehe.)
‘And I think she doesn’t want me to go to parties.’*
[Joan, file 6; *sie* = mother]

- b. ... *und sie denken, dass ich bin ein Kind und so.*
 and she think*-INF that I am a child and so
 (Und sie denkt, dass ich ein Kind bin und so.)
 ‘And she pretty much thinks I’m a child.’
 [Joan, file 6; *sie* = mother]
- c. *Und allen Deutsches denken, dass wir haben genug*
 and all Germans think that we have enough
Freunden jetzt.
 friends now
 (Und alle Deutsche denken, dass wir jetzt genug Freunde
 haben.)
 ‘And all Germans now think that we have enough friends.’
 [Joan, file 6]

Concerning embedded WH-questions, there were no matrix *fragen* ‘ask’ clauses with an embedded WH-question in Files 4–5, but one was attested in File 6 – provided in (7.37); Joan’s spontaneous data from Files 7–8 were not available for computer searches (but as noted above, embedded WH-questions occurred in File 7 in the 20 Questions game).

- (7.37) *Und gestern ich habe gefragt, ob ich gehe...*
 and yesterday I have asked, whether I go
 (Und gestern habe ich gefragt, ob ich [...] gehe.)
 ‘And yesterday I asked whether I go...’ [Joan, file 6]

Recall that based on matrix WH-questions it was clear that Joan’s CP was emerging in File 6, and definitely acquired by File 7. Joan’s embedded clause data also support the acquisition of the CP in Files 6–7.

In George’s spontaneous data, embedded *dass*-clauses emerge in File 8. Prior to this file (in Files 4–7 no embedded *dass*-clauses were attested in a computer search (Table 7.1 below; from Vainikka and Young-Scholten [2003a, Table 12]):

Table 7.1 Finite verbs in George's embedded clauses (excluding *weil*, *aber*, 0)

<i>Spontaneous Embedded Clauses</i>			<i>Elicited Embedded Clauses</i>			
<i>File</i>	<i>Finite-End</i>	<i>Finite-V2/V3</i>	<i>Other</i>	<i>Finite-End</i>	<i>Finite-V2/V3</i>	<i>Other</i>
7	0	0	0	0	11	2
8	2	13	1	0	12	1
9	1	23	7	2	8	1
11	0	23	12	6	8	4

In File 8, the following examples were spontaneously uttered by George:

- (7.38) a. *Und die Tiere glauben, dass wenn sie die Bauer*
 and the animals believe that when they the farmer
 [euh] ...
 (Und die Tiere glauben, dass wenn sie den/m Bauern...)
 'And the animals believe, that when they ...the farmer'
- b. *Wir haben beschlossen, dass wir wollen in die*
 we have decided that we want in the
Ferien irgendwo treffen.
 vacation somewhere meet
 (Wir haben beschlossen, dass wir uns in den Ferien
 irgendwo treffen wollen.)
 'We've decided that we want to meet somewhere during the
 vacation.'
- c. *Aber viele Leute hat gesagt, dass ich habe*
 but many people has*-3SG said that I have
kein Permission for – von mein Eltern.
 no from my parents
 (Aber viele Leute haben gesagt, dass ich von meinen Eltern
 keine Erlaubnis hätte.)
 'But many people have said that I don't have permission
 from my parents.'

Based on embedded clauses with the complementizer *dass* 'that' George has clearly acquired the CP projection by File 8. However, in File 7 he produced elicited embedded clauses, as we saw in Table 7.1. While we mentioned embedded WH-questions in File 7 in the 20 Ques-

tions task earlier, no spontaneous instances of matrix *fragen* ‘ask’ with an embedded WH-question were found in Files 4–8. Based on embedded clauses, we would conclude that George has acquired the CP by Files 7–8.

Recall, however, that given George’s matrix WH-questions, we concluded that he had acquired the CP by Files 6–7. Unlike with Paul and Joan, for whom matrix WH-questions and embedded *dass*-clauses emerged at the same time, George’s CP development appears to be more protracted, covering Files 6–8 (a period of three months), with matrix WH-questions being acquired before embedded clauses. In Vainikka and Young-Scholten (2003a) we argued that George differs from the other two speakers in being more metalinguistically aware, and that this awareness appeared to, in fact, *delay* his syntactic development compared to the other two speakers, recall from Ch. 4 that George had a slight delay in the switching of VP headedness compared to the other two. This is particularly striking when we consider his more rapid progress with respect to inflectional morphology. For the CP, George’s delay might mean that he has figured out how to form matrix WH-questions before having actually acquired the full syntax for the CP (where the emergence of the spontaneous *dass*-clauses in File 8 would truly indicate the emergence of the CP). The delay in George’s development was especially apparent in the word order of the embedded clause, a topic to which we now turn.

7.5.3. Headedness of the CP and the AgrP

In terms of the emergence of specific functional projections, the predictions of Organic Grammar are upheld in the naturalistic VYSA data. We are now in a position to summarize the acquisition of each projection, for the three speakers, as shown in Table 7.2:

Table 7.2 The development of functional projections in the VYSA data

<i>Projection acquired</i>	<i>Paul</i>	<i>Joan</i>	<i>George</i>
Bare VP	1-2	1	1
NegP	1-2	1	1-2
FP/TP	3-4	2-3	2-3
AgrP	5	5	4
CP	7-8	6-7	6-8

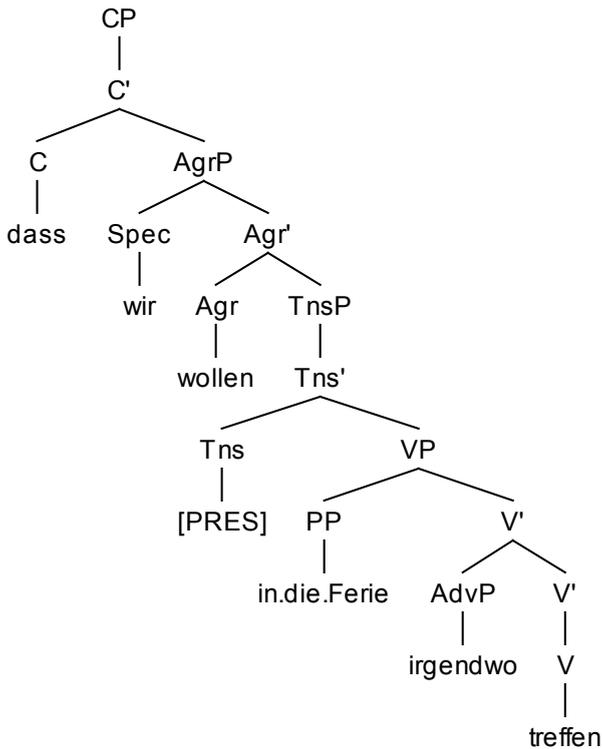
However, while each of the projections emerges as predicted, the word order within each projection – in particular, the headedness of the projection – appears to be somewhat of an independent issue from whether a projection has been acquired or not. As we saw in Chapter 4, the headedness of the VP is transferred from the speaker's L1; if the L1 and L2 differ in VP-headedness – as in the case of L1 English/L2 German of our American high school students – the headedness of the VP switches early on. In Chapter 4, we determined that the headedness of the VP switched around File 3–4 for each of the three speakers. While in earlier work (e.g. Vainikka and Young-Scholten 1994, 1996b) we have argued that the switching of headedness takes place prior to the development of any functional projections, it is now clear from the more detailed analysis developed in this book that the acquisition of functional projections begins *before* headedness of the VP is switched.

According to the analysis of German syntax presented in Chapter 2, the initial functional projection in German is head-initial, while the remaining projections are head-final. This allowed us to account for the V2 word order in the matrix clause without a CP projection – the AgrP is head-initial, if there is no CP projection. In the embedded clause, the CP is head-initial, and the AgrP ends up being head-final. This analysis accounts both for the target word order and the developmental word order patterns observed in L1 acquisition, as described in Chapter 3. In L2 acquisition, however, we run into a problem: given the observed word order in the early embedded clauses, *both* the AgrP and the CP projection are head-initial at this stage. While the same headedness analysis that works for adult German and for L1 acquisition of German also worked at the earlier stages of L2A, it becomes clear at the CP stage that the learner has most likely not followed the GHG throughout, but rather, has concluded that the functional projections are head-initial.¹⁸⁸ That is, while determining early on that the lexical projection VP in German is head-final, Paul, Joan and George appear to have assumed that *all of the German functional projections are head-initial*.

188. Recall from Chapter 2 (Koopman's argument) that it is actually difficult to determine the headedness of the intermediate projections between the VP and the projection containing the finite verb, even in the target syntax. It is for this reason that the GHG appeared to work for the earlier stages of L2 development, and only at the CP-stage does it become apparent that the speakers are likely assuming consistently head-initial functional projections.

This can be seen in the tree in (7.39), for the embedded clause in George's utterance (7.38b):

(7.39)



Thus, we arrive at a point where the learners have acquired all of the German functional projections, but they have built the grammatical system on a faulty assumption: rather than assuming GHG, they have assumed that all functional projections are head-initial. We now turn to the question of whether – and if so, when – the L2 learners acquire the target word order, including GHG.

In an extensive study (combining experimental and free production data) on the acquisition of finite verb position both in main and embedded clauses, Nimmrichter (1997) found four substages in the acquisition of the target sentence-final position for the finite verb in embedded clauses in German (L1 English, 17 university students); she, in fact,

associated each of these grammars with other Germanic languages, provided in brackets (CP recursion at Stage 3 allows for head-initial complement clauses only, but not for adjunct clauses); note that her IP is our AgrP.¹⁸⁹

Stage 1: head-initial IP (Modern Yiddish)

Stage 2: both head-initial IP and head-final IP (Early Yiddish)

Stage 3: head-final IP with CP recursion (Frisian)

Stage 4: head-final IP (German)

All of the embedded clauses in the previous section from the three VY-SA speakers' files 6–8 involved the non-target V2 position of the finite verb in the embedded clause, suggesting a head-initial AgrP projection below the CP projection, or Nimmrichter's Stage 1. In fact, George maintains the non-target structure until the end of data collection (File 11); Table 7.1 (above) showed that all 23 of George's spontaneous embedded clauses in this file occurred with the finite verb in the non-target V2/V3 position. Altogether, George spontaneously produced 59 embedded clauses in the files represented by Table 7.1 with the non-target (V2/V3) word order, while only producing three such embedded clauses with the target word order ("finite-end").

The other two speakers, however, begin to exhibit sensitivity to the headedness of German in file 9, i.e. the head-final AgrP and head-initial CP, and they produce some head-final embedded clauses such as the one in (7.40) – note the lack of agreement in the embedded clauses in (7.40), perhaps actually involving an 'experiment' with a head-final TP:

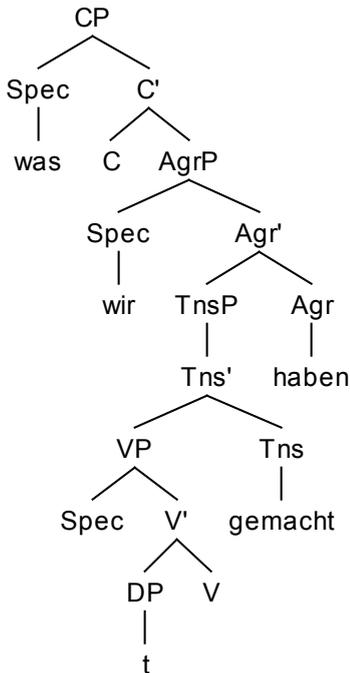
189. Nimmrichter (1997: 218) also concludes that the development of V2 in matrix clauses is independent of the development of Verb-End in embedded clauses. This conclusion fits with our data – since the VYSA speakers have acquired the matrix clause AgrP well before the target word order in the embedded clause – and it supports the view that the CP projection is not involved in word order of the matrix clause (also contra Clahsen for L1 acquisition), as we proposed in Chapter 2 (contrary to the standard view in Germanic syntax).

- (7.40) a. *Ich möchte wissen, wenn ich flussig Deutsch sprechen können.*
 I want-3SG know-INF when I fluently German speak-INF can-INF
 (Ich möchte wissen, wann ich fließend Deutsch sprechen kann.)
 ‘I want to know when I’ll be able to speak German fluently.’
 [Joan, file 9]
- b. *Meinst du, wenn ich zurück gekommen hat, oder?*
 mean you when I back come-PST has*-3SG
 oder?
 or
 (Meinst du, als ich zurück gekommen bin, oder?)
 ‘Do you mean when I came back, or?’
 [Paul, file 9]

By the end of the twelve months of her stay in Germany, Joan’s German is typically target-like: her CP is head-initial and her AgrP head-final, as shown in (7.41), with the corresponding tree in (7.42). She produces finite verbs in the target, final position, in both embedded declarative clauses and WH-questions:

- (7.41) a. *Und ich habe mit M. geredet, so weil K. schon ins Bett war.*
 and I have-1SG with M. speak-PST, so because K. already into bed was-3SG
 (Und ich habe mit M. geredet, weil K. schon im Bett war.)
 ‘And I spoke with M. because K. was already in bed.’
 [Joan, file 11]
- b. *Willst du es wirklich wissen, was wir gemacht haben?*
 want you it really know-INF what we done have-INF
 (Willst du wirklich wissen, was wir gemacht haben?)
 ‘Do you really want to know what we did?’
 [Joan, file 11]

(7.42)



Paul's slightly lagging development is shown to contrast with Joan's in following table. Table 7.3 shows data from the final session, a week prior to their return to the USA. (During this session only seven embedded clauses were produced for which verb position was ambiguous, and one verb-initial clause was produced.) Paul's data suggest he continues to make use of two CP projections, corresponding to the trees in (7.39) and (7.42). (See Vainikka and Young-Scholten 2002).

Table 7.3 Joan's and Paul's final finite verbs in embedded clauses session 11

<i>Learner</i>	<i>Embedded declaratives</i>					<i>WH-</i>	<i>Relative clauses</i>
	<i>weil</i>	<i>dass</i>	<i>als, ob</i>	<i>wenn</i>	\emptyset^1	<i>Qs</i>	
Joan 11	9/18 (50%)	7/11 (64%)	3/3 (100%)	13/16 (81%)	0/25 (0%)	34/34 (100%)	4/4 (100%)
Paul 11	2/13 (15%)	1/7 (14%)	1/1 (100%)	1/6 (17%)	0/17 (0%)	37/40 (93%)	4/4 (100%)

¹Note for such clauses, the finite verb is in second position in German.

Based on this breakdown of embedded clause types, we can determine that Paul is at Nimmrichter's Stage 2 (allowing both initial and final AgrP, although initial preferred), while Joan is at the final Stage 4. If we exclude *weil*-clauses (which in spoken German may in fact be AgrP-initial) and the embedded clauses without an overt complementizer, 90% (61 of 68) of Joan's embedded clauses have the finite verb in the target, final position. Thus, just before her source of German input is cut off with their return to the USA, Joan has acquired the target German word order in the embedded clause, and Paul has the target structure as one of the two options that he employs. George, however, appears not to have progressed beyond the structural point of having posited a head-initial CP in addition to the earlier head-initial AgrP.

7.6. Summary

In this chapter we examined the development of the CP by speakers of head-final languages (Turkish/Korean, with some discussion of L1 Hindi) and by speakers of the head-initial Romance languages and English. The CP is posited for the three VYSA speakers in Files 6–8, clearly at a point past the acquisition of the previous projection, AgrP (see the summary in Table 7.2). However, in contrast with what happens in children's first language acquisition of German, the AgrP remains head-initial when the CP is posited; this results in non-target position of the finite verb in embedded clauses for quite a while. The switching of AgrP-headedness occurs at a later point (by File 11 for Joan), if at all (George). In this chapter we also addressed purported counterevidence to our approach (Section 7.4) and demonstrated that this evidence is not conclusive.

Extensions

1. IP vs. CP in Bhatt and Hancin-Bhatt's (2002) data

Although Bhatt and Hancin-Bhatt (2002) are convinced that their results show a later development of the CP projection in the L2 acquisition of English, they argue that there are three problems with their data that a structure building approach cannot address (BHB 2002: 364–365). As an alternative, they propose that an IP projection is present

from the beginning of acquisition (what they term “Structural Minimality”). We address each of the three problems here, and show that our approach works as well as theirs.

- When learners reach the CP-stage – “presumably when WH-phrases appear clause-initially” (in their words, p.365) – the auxiliary does not yet occur in C. They propose that early initial WH-phrases are adjoined to IP; we claim that such WH-questions may involve just an IP-projection (and thus the learners may not truly be at the CP-stage).
- The advanced learners (i.e. grades 11 and 13) for some reason do well on the adverb interpretation task, but are unable to invert in the question formation task. It is not clear what the authors’ solution to this problem is, but we do not see this as counterevidence to our approach.
- An early stage in the learners’ WH-questions in BHB’s production data (in the preliminary study) involves WH-in-situ, as in the L1 Hindi. Since we expect a transfer of a VP-projection only, this result is unexpected, according to BHB. However, according to BHB the early structure of the WH-in-situ questions is not one involving a CP projection (with a WH-phrase as an Operator), but rather they involve an IP-projection with the WH-phrase as a quantifier; this might be the analysis of the L1 Hindi, as well (Mahajan 1990). If the WH-in-situ questions do not involve a CP projection, then such examples are not relevant for the question of whether the CP transfers. The data in our view are too sparse to distinguish between the transfer of an IP vs. the transfer of a VP (which might also be a possible structure for WH-in-situ questions and other early WH-questions).¹⁹⁰

We conclude that BHB’s study strongly support Organic Grammar in that the data show a developing CP projection in the acquisition of L2 English (as discussed in the text). While the authors propose that as-

190. This solution hinges on the question of whether WH-questions in syntax and acquisition always involve a full CP projection or not; see our discussion at the beginning of this chapter. (See also Hawkins and Chan 1997 on the argument that WH-in-situ transfers from Chinese to English.)

suming an IP projection (present from the beginning of acquisition) accounts for the three residual problems just discussed, we claim that BHB's data provide no evidence for the presence of an IP from the beginning of acquisition, although the WH-in-situ examples are interesting and might potentially involve transfer (although the syntactic consequences of such transfer are far from clear – see fn. 11). We accept their analysis of a stage with an IP projection prior to the development of the CP, but for us the IP stage is an intermediate stage.

2. More than one CP-level projection

Following the Split-INFL proposal of Pollock (1989), Rizzi (1997) has proposed that the CP-level also consists of more than one functional projection; an exposition of the proposal is provided in the textbook of Haegeman and Gueron (1999: 330–347), with evidence from e.g. English and Hungarian. Under this approach, embedded WH-questions and relative clauses may involve the highest projection (CP), while fronting a topicalized phrase without inversion may involve a lower projection, Topic Phrase. A yet lower projection would be Focus Phrase which involves root (matrix) WH-questions, negative inversion, and fronting of focalized phrases.

Examples of the application of the Split-CP idea to L2 acquisition include Prévost (1997, 1999) [L1 Spanish, L2 German]. As has been described for the IP-level in this book, the OG approach would predict that any CP-level projections that can be identified in the target language based on overt morphosyntactic evidence as separate projections correspond to separate stages during acquisition, developing from the bottom up. However, given the assumptions of OG, evidence from the syntax of one language does not automatically mean that the projections exist in another language; the language learner must be able to extract evidence for any such subprojections of the CP from the language to which s/he is exposed.

Chapter 8

Naturalistic learners and unsolved problems in SLA

8.0. Introduction

The three learners whose ab initio German acquisition has been the main focus of this book were indeed naturalistic learners, but they come from a sub-population rarely studied by researchers: university-bound educated naturalistic learners. While these learners' acquisition resembles that of the less educated/less academically inclined naturalistic learners we and other researchers have studied, George patterns differently and, as we shall see below, this can be attributed to the meta-linguistic knowledge he accumulated through various means. George's case raises a range of issues, first and foremost of which is learners' application of meta-linguistic knowledge. We therefore devote a good portion of this final chapter to this topic. In this chapter we will move beyond the observation on triggers in the introduction to Chapter 6 - that naturalistic and instructed learners appear to differ in how they move from one stage to the next - and attempt to shed more light on the operation of triggering input. We will suggest that there are not only inter-group (child L2A vs. adult L2; naturalistic vs. instructed) but also intra-group differences in the extent to which learners recruit general cognitive mechanisms in addition to purely linguistic mechanisms. General cognitive mechanisms which function alongside language-specific mechanisms allow the learner to develop communication strategies in the course of which memorized, unanalyzed chunks are used, word-for-word translation is used and learned rules (in the sense of Krashen 1985) are applied. These strategies are not necessarily inaccessible to younger second language learners, but are certainly far more accessible to educated, older learners. For us these strategies do not comprise a system, but rather what we term Grammar Lite – neither a real (e.g. UG-driven) grammar nor any sort of (*interlanguage*) system. It is generally agreed that knowledge that results from instruction has no influence on route of acquisition, and Grammar Lite essentially just works in parallel to the learner's linguistic competence to produce utterances. George's alternative route requires us to reconsider this consensus, and affords the opportunity to reconsider whether the acquisi-

tional pathway of any given metalinguistically aware learner (pre- or post-puberty) under scrutiny might take a different route due to use of alternative triggering data made available through instruction. Consideration of individual differences in learners' use of general cognitive mechanisms may be what is required to move beyond description in child-L2 adult differences in the acquisition of L2 morphosyntax. In the final section of this chapter, and indeed this book, we offer our ideas on how future studies that include naturalistic learners might investigate what in the input (as considered in its entirety) prompts the learner to project more syntax.

We begin this chapter by taking a closer look at input, from the perspective of child L1, child L2 and naturalistic and instructed adult L2 learners of German.

8.1. The role of input

“Input” is perhaps not the best choice of terminology; Carroll (2001), for example, remarks that if what we mean is the physical entity affecting the visual and auditory perceptual systems – the “stuff out there” (2001: 8) – the word *stimuli* should instead be used. We agree, but the issues addressed in this chapter do not require a more exact term than input.

What happens in a given classroom is dictated by the teachers' approach (e.g. traditional or communicative) and hence the sort of input instructed actually learners receive. While some classroom learners maybe receive fewer explanations of grammar than others, receipt of any input not in the form of primary linguistic data has the potential to interact with the operation of linguistic mechanisms. As we have noted earlier in this book, This complicates the task of the researcher wishing to compare either L1 and L2 acquisition or child L2 and adult L2 acquisition. Many researchers collect data from younger and older classroom learners, and while the advantage is their ready availability and ease of control by the researcher of certain variables, it is inevitable that some input will not come in the form of primary linguistic data. Where type of input in second language acquisition is likely to differ from first language acquisition, thus precluding a straightforward comparison between the two, some researchers in the 1980s turned to the collection of data from naturalistic adult learners to increase the validity of such comparisons. However, we now know that this creates another prob-

lem: when it comes to adults, those who do not avail themselves of classroom instruction and who are accessible to researchers in post-industrialized countries have tended to be low-skilled immigrants with at best some secondary schooling. Such individuals are unlikely to be integrated into mainstream society and therefore have reduced opportunities to interact with native speakers of the target language. If these non-classroom learners also receive very little primary linguistic data, they will make little progress beyond the lowest stages of acquisition. Input quantity and perhaps also “quality” (as considered from several perspectives) seem to be responsible for such learners’ slow acquisition and perhaps also for the differences typically observed between first language learners and younger and older naturalistic second language learners’ development.

In generative linguistics-based acquisition studies, input remains under-examined. Kempen in 1998 called for an examination of input characteristics before conclusions are reached about the source of differences between L1, L2 child and L2 adults’ syntactic development but in the ensuing years, this has largely been ignored. In this section we attempt to motivate more serious discussion of input, albeit in a less detailed way that would ultimately be desirable. We consider input from several vantage points the most important of which will be quantity and intensity. The section then addresses the nature of explicit information about language as being typical of what learners receive in a classroom context. We will claim that when learners receive this sort of input, it has the potential to complicate the function of triggers (see Chapter 6). The aim of this discussion is on the one hand to start to shed some light on why some immigrant learners never progress beyond positing a bare VP, and on the other hand to try to explain some of the differences between young successive bilingual children, L2 school-age children and L2 adults. Much of the discussion will necessarily be speculative due to the fact that generative second language acquisition researchers do not usually collect (or make available) relevant information, and hence we know nearly nothing about the details of their exposure to German. However, in section 8.3, we will provide details of Joan, Paul and George’s exposure to German, which (along with information on their meta-linguistic awareness) will shed light on George’s divergent path of development.

Before proceeding, we note the prevailing disagreement on the role of input in SLA where fiercely-held beliefs about its role have increasingly divided the field over the last four decades (for discussion see

Young-Scholten and Piske 2009). On one side of this division are the generativists for whom the acquisition of syntax is UG-driven, with the contribution of input largely viewed as triggering syntactic development on one way or another. On the other side of the divide are those for whom input plays an active role, where acquisition is driven by input features such as frequency and salience (see e.g. DeKeyser 2000) and learner-initiated behaviors that occur during interaction such as negotiation of meaning (Gass and Madden 1985) and attention/noticing when input is taken in by the learner (Robinson 1996; Robinson and Ellis 2008; Schmidt 1990). There is still too little known about the relative contribution of the learner and the environment to dismiss any legitimate ideas about the operation of input. It is not helpful when findings are sometimes prematurely generalized beyond specific aspects of language (e.g. the lexicon or morphology) about which conclusions have been reached. Acquisition of vocabulary involves mechanisms that lie outside of the language module, of syntax (and Organic Grammar). We typically think of the lexicon as containing words, in the second language learner's lexicon we also find unanalyzed, holistic chunks or formulae (Myles, Hooper and Mitchell 1999; Myles 2004). The length of these is subject to working memory capacity as well as to conditions under which memorization is encouraged, i.e. the classroom. The lexicon, for example, contains in addition to words constructions under some theories of language and its acquisition, where OG-type mechanisms would clearly be superfluous (e.g. Goldberg 1995, 2007).

If second language acquisition is like first language acquisition in that it "is by its nature a self-regulatory process" (Jordens 1996: 407), are there external influences that do not fall under this process?

8.1.1. Input quantity

Recall Sharwood Smith's (1994) estimate (from Chapter 6) that the five-year old child will have received 9,000 hours of active input. Do second language learners require the same amount of primary linguistic data to converge on the target language? We do not know (Carroll 2001) because apart from learners who receive their input only in classrooms, little is known about how much input second language learners receive. Certainly learners in (non-school) immersion settings will have far more contact with target language speakers than classroom foreign language learners, but those studies that address age of initial exposure

and eventual attainment in immersion settings typically adopt frequently misleading length of residence as a proxy for amount of exposure.

8.1.2. Input quality

Native speakers have long been observed to modify their output when talking to language learners; these learner-directed registers are known variably as caretakerese or child-directed speech in first language acquisition and in second language acquisition, foreigner talk and teacher talk (see Wesche 1994 for a description). With respect to the former, there have been a number of studies looking at how older speakers/adults might influence children's acquisition, including Newport, Gleitman and Gleitman's (1977) classic study of the form of mothers' speech to their young daughters and its general (non-) effect on their acquisition and Marcus's (1993) study of the (non-) usefulness of parental correction of children's errors. With respect to L1 German data, discussion in Haberzettl (1998: 69–71) points to input from mothers to children – and perhaps also in foreigner talk – where the frequency with which non-subjects occur in initial position was low: subjects were in initial position 63% of the time, followed by *da* 'there' and *dann* 'then' in that position in (in Mills' [1985] data from 15 monolingual German six and seven year olds; elicited narrative, 30 minutes each). In L2 acquisition, research has not yet revealed how these and other modifications of the input might account for certain patterns in the acquisition of syntax.

In addition to being exposed to learner-directed speech by native speakers, immigrants who interact mostly with other non-native speakers will be exposed to a substantial amount of non-native-accented and ungrammatical or interlanguage input which is likely to lead to slower or even different development (Piske et al. 2001). A further consideration that affects input for L2 adults is literacy. For some adult L2 learners, the end state may be the bare VP; this seems to be typical of the low socio-economic stratum/low-educated immigrant adults studied in the various projects referred to in this book. As noted above, low-skilled immigrant adults are likely to be found on the fringes of mainstream society, where they have little contact with speakers of the language they are attempting to acquire. For the least educated of such learners, lack of literacy will result in even less input (in the form of books, newspapers, magazines, websites etc).

Thus worth considering is the effect that lack of schooling and in turn lack of literacy per se might have on the acquisition of a second language, as do van de Craats (2011) and Bigelow, Tarone and colleagues (Bigelow et al. 2006; Tarone and Bigelow 2005; Tarone 2008; and Tarone, Bigelow and Hansen 2007, 2009). Van de Craats argues that the patterns of development found in her Low-educated Second Language and Literacy Acquisition (LESLLA) adult corpus are distinct from those found for younger learners and for instructed learners.

Tarone and colleagues present a detailed argument that revolves around variation in the morphosyntactic development of educated and uneducated, non-literate L2 learners which, they argue, differs fundamentally from literates' acquisition due to changes in the brain that occur in response to learning to read and write. Drawing on data from low-educated adult immigrants in the USA, Tarone et al. (2009) argue that alphabetic literacy affects how learners process input to directly result in slower progress. The low-literate group of L2 English adult refugees they studied produced fewer relative clauses, noun clauses, *when*, *because* and *so* clauses and their performance was worse when repeating oral recasts than the performance of a moderately literate group. Such differences could also be the result of differences in complexity between oral and written language, both of which serve as input for the literate learner. Miller (2002: 473), for example, points out that oral language is held to be relatively simple and it is only through schooling that complexities mostly present in written language are acquired. Alternatively, these differences could relate to cognitive mechanisms connected with alphabetic literacy. While much attention over the last several decades has been focused on how instructed L2 learners deal with functional morphology in the input (see overviews in Ellis 1999; Robinson 1996; VanPatten et al. 2004), Tarone et al. (2009: 25) admit it is still unknown how literacy affects learners' noticing of these forms. Are certain forms simply easier to read than to hear? We do know that awareness of phonemes occurs only in conjunction with the development of literacy in an alphabetic script. This conclusion is based on an important set of studies in three categories (1) pre-school vs. school-age children (Goswami and Bryant 1990), (2) adult monolinguals who never attended school and never became literate (Morais, Cary, Alegria and Bertelson (1979) and (3) readers of a logographic writing system (Chinese) with some exposure to an alphabetic orthography (Pinyin) vs. those with no such exposure (Read, Zhang, Nie and Ding 1986). Studies have shown that pre-school children, adults not literate in their

native language and adults without exposure to alphabetic Pinyin demonstrate all aspects of phonological awareness apart from phonemic awareness. For the non-literate second language learner, this entails the inability to notice verbs and their suffixes, to consciously segment the individual phonemes that, for example, make up a third person singular form in German such as *trinkt* 'drinks'. In Schmidt (1990) where noticing is a necessary for input to become intake, non-literate learners would be unable to acquire such forms.

Tarone et al. (2009) consider the Multi-Dimensional Model proposed to account for variation in development among the learners in the ZISA study (Clahsen et al. 1983), noting that the study included only measurement of amount of education but not literacy, and they speculate that where learners varied in the extent to which they accurately supplied morphological features, literacy (not simply education) may have been the underlying factor. The situation does not appear to be that simple. First, there is also variation in children's L1 acquisition that could well be considered comparable to the interlanguage variation under the Multi-Dimensional Model (e.g. d'Avis and Gretsch 1994). Drawing on our longitudinal data allows us to consider literacy per se. If literacy alone is the culprit, we would expect Joan, Paul and George to behave similarly to each other (and they do not). Amount of input in written form is another possibility, and if this is the source of differences among these three learners, we would also expect Joan to behave like George. Their self-reported amount of reading is similar and Joan's amount of self-reported writing is greater than George's (see Table 8.3); Young-Scholten (2002). Note, too, that influence of written input is not limited to adult L2 learners. Kail (2002), for example, suggests that changes found in processing by the older French children studied could be attributed to their increasing literacy which entails exposure to a written code that provides clearer and more regular morphological cues than what is provided in aural primary linguistic data. In another study, of two eight- and nine-year old Farsi-speaking siblings learning English over 20 months, Mobaraki (2007) presents similar findings. The child who read much more (in Farsi and then in English) demonstrated significantly more rapid progress in his production of regular past *-ed* and third person singular *-s* than his sister. Higher frequency of exposure to these suffixes could well have been responsible. However, his performance on tasks measuring working memory and processing was also significantly better. This in turn may have led to better reading

skills and thus more time spent reading. This makes it difficult to know the actual cause of accelerated development.

In their discussion of low-literates' morphosyntactic progress, Vainikka and Young-Scholten (2007b) agree with van de Craats and Tarone and colleagues that there is a relationship between morphosyntactic development and literacy, noting the strong, positive correlations found between Organic Grammar stage and decoding skills in Young-Scholten and Strom's (2006) cross-sectional study of 17 Somali and Vietnamese adults with little or no native language schooling/literacy. Vainikka and Young-Scholten point out that causality is unclear; while all the unschooled immigrants who were non-readers were at the bare VP stage (despite ESL instruction ranging from four months to two years and US residence of under a year to 20 years), one unschooled Somali with two years' residence and two weeks of ESL classes was able to read and had projected an AgrP in his syntax.

We return to this matter below, as it bears on learners' use of triggers. It is not clear that data from socially marginalized immigrants provide the best evidence for the role of literacy in second language acquisition. Ideally one should study learners who receive sufficient aural input, and while it is likely that one could find plentiful post-puberty L2 learners fitting this description in multi-lingual sub-Saharan Africa, there have been few, if any systematic studies of the acquisition of morphosyntax by such learners (but see Hill 1970 on the impressive phonological achievements by adults in non-literate cultures). Nor do we know how input from written text affects the acquisition of morphosyntax. Those second language learners who read or are read to (by parents or teachers) have an additional source of input in which the salience (in terms of position) of elements can differ from and the frequency of complex constructions be considerably higher than in spoken language (see e.g. Biber 1988; Halliday 1994).

8.2. Meta-linguistic awareness and meta-linguistic knowledge

As discussed earlier in this book, there are views of L2 acquisition that take the critical period seriously in assuming fundamental differences between younger and older learners, where the latter are seen to rely only on general rather than domain-specific mental mechanisms. For non-generative acquisitionists who do not view language as a separate module, age differences revolve around children's ability to learn

implicitly and adults' ability to learn explicitly (e.g., DeKeyser 2000) or adults' ability to only amass declarative rather than procedural knowledge (Paradis 2004, 2009). While the operation of general cognitive mechanisms need not necessarily do so, their operation at least allows the second language learner to consciously attend to discrete characteristics of the input. Since Schmidt (1990) and Robinson (1995), researchers have attempted to determine whether a learner *notices* forms in the input that represent grammatical functions. Whether or not a learner actually does so, there is nonetheless overwhelming evidence that when L2 learners receive input that is not in the form of primary linguistic data, i.e. some form of instruction that raises learners' conscious awareness of language, this alters their linguistic behavior in some way; see Ellis' (1990) overview of earlier research and both Krashen (1985) and Schwartz (1993) on learning/learned linguistic knowledge. While studies of the effect of instruction typically assume that any sort of conscious processing will at least enhance development, various researchers (e.g. Ellis and Laporte 1997) have concluded that instruction has little influence on route of development.¹⁹¹ Several decades ago, Felix (1985) went a step further and proposed that older instructed L2 learners' use of general cognitive mechanisms blocks the operation of Universal Grammar. Felix's Competing Cognitive Structures proposal has, for various reasons, received scant empirical attention, but we will see below that he was on the right track. We will also see – in the case of George – that general cognitive mechanisms can be recruited and learned linguistic knowledge accumulated without the ongoing external influence of instruction.

It is the adult's ability to reflect on language that sets up the irresistible temptation to attribute all adult L2 learning to use of meta-linguistic skills and accumulation of learned or declarative knowledge. Yet we noted earlier in Chapter 4 that the nature of the involvement of general cognitive mechanisms in L2 acquisition remains far from clear. Certainly more possibilities exist for their use by older learners, and thus we need to consider just what contribution the meta-linguistic skills deployed in formal instruction might make in the acquisition of the morphosyntax of German. But it should be kept in mind that adults' ability to apply meta-cognitive strategies does not mean these have an

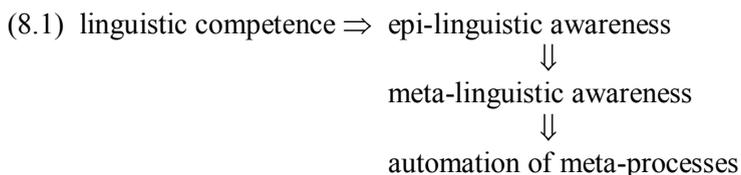
191. In fact, Ellis (1989) specifically looked at the classroom vs. naturalistic acquisition of word order in German and concluded that while the former appear to be faster, route of development does not differ.

effect on their acquisition of linguistic competence (Jordens 1996). Thus when White (1991a) entertains the possibility that explicit evidence provided as error correction can reset parameters, this possibility should be excluded if parameters can only be set by positive evidence from primary linguistic data. This is the gist of Schwartz (1993), who invokes Jerry Fodor's (1983) modularity to claim that the encapsulation of the human mind with respect to language means that only primary linguistic data are relevant to the acquisition of linguistic competence; for the building up of learned linguistic knowledge, what is instead relevant is the type of input typically present in instructed contexts, i.e. explicit explanation, presentation by the teacher and the textbook of paradigms to memorize and his/her provision of corrective feedback. Under this view, there is also no interface possible: learned linguistic knowledge cannot become linguistic competence (see also Krashen 1985). Considerably complicating the picture is the observation that learned knowledge can become automatized (see Sharwood Smith and Truscott 2006 for how this might occur and work together with linguistic competence). The L2 learner's production of an utterance can thus be the result of general cognitive mechanisms or linguistic mechanisms, and it is up to the researcher to determine the knowledge source of a given learner's linguistic performance. Taking this challenge seriously, we return to this point below.

For older – and by extension more cognitively sophisticated – second language learners, the acquisition of another language always involves the possibility that general cognitive mechanisms will be recruited for the task of language mastery. In the process of acquiring their first language children begin to develop meta-cognitive awareness of language as an object. Schooling results in considerable elaboration of this awareness as sets of various language-based skills. In order to understand this better, let us consider the nature of meta-linguistic knowledge and skills, starting with childhood. One of the ways in which the adult's mind differs from the child's is the higher degree of conscious awareness and control adults have of their own behavior. In Flavell's (1976: 232) definition, meta-cognitive awareness involves:

“One's knowledge concerning one's own cognitive processes and products or anything related to them, e.g. the learning-relevant properties of information or data. Metacognition refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to cognitive objects.”

Gombert's (1992) view, based on his comprehensive treatment of the emergence of meta-linguistic awareness and skills, is that meta-linguistic ability develops *after* linguistic competence has been established, essentially piggybacking on it: one cannot become aware of or manipulate knowledge which one does not yet have. Among children's earliest stirrings of meta-linguistic awareness are their self-corrections. While children start to engage in these as young as two years old, such awareness does not drive acquisition; there is scant evidence that children engage in a process of first noticing then understanding and finally acquiring a particular phenomenon along the lines of what Schmidt (1990) claims for second language learners. Rather, these self-corrections reflect children's meta-linguistic awareness that their grammar is changing, that they are, in Foster-Cohen's words, at "stage of development that can now be improved upon" (1999: 184). Gombert sees the child as passing through three stages in his/her meta-linguistic development, starting with an initial stage of epi-linguistic awareness which does not yet involve conscious awareness or intentional manipulation of language as an object. The second stage is meta-linguistic awareness and the final stage is where these meta-processes become automatic.



Gombert's review of studies of children's meta-phonological, meta-syntactic, meta-lexical, meta-semantic, meta-pragmatic and meta-textual development all seem to point to early subconscious epi-linguistic awareness of some aspects of language once the relevant linguistic competence has been established, as shown in Table 8.1. The first row shows the precursors to epi-linguistic awareness, revealing children's responses during tasks designed to measure their syntactic competence. Epi-linguistic awareness emerges prior to schooling, although this conclusion is somewhat problematic, given that the source of most data in these studies is children in literate societies who are read to by their parents.

Table 8.1 Children's development of epi- and meta-linguistic skills

<i>Age in years</i>	<i>Skills</i>
2–3	Children reject ill-formed sentences on the basis of comprehension failure; responses on grammaticality judgment tasks reflect tapping of tacit knowledge
Up to 5	Children reject ill-formed sentences based on semantic content; Awareness of syllables and sub-syllabic units
6–7	Form and content begin to be separated. E.g. for syntax, phonology, semantics

We do have plentiful evidence that cognitively mature individuals can treat language purely as an object is the observation that meta-linguistic knowledge can exist without accompanying linguistic competence. Certainly linguists – and linguistics students – attain such knowledge when undertaking in-depth analyses of specific aspects of a language or languages or when learning a language no longer spoken. Young children demonstrate no ability to do so. Importantly, there is no evidence that such activity leads to linguistic competence. Thus while we might observe epi- and meta-linguistic behavior to accompany the acquisition of linguistic competence, the causal relationship between noticing and intake or acquisition proposed under the Noticing Hypothesis in L2 acquisition (Robinson 1995; Schmidt 1990) has not been found for first language acquisition.

If we were to conclude that adult second language acquisition is fundamentally different from first language acquisition due to non-operation of UG as do Bley-Vroman (1989, 1990, 2009) and Clahsen and Muysken (1986, 1989) then there would be no alternative but to conclude that older learners recruit other abilities for the task of mastering a second language, however ill-suited these abilities might be for the acquisition of morphosyntactic competence. Bearing in mind the consensus that instruction is powerless to influence route of acquisition and the now widely-held view that first and second language acquisition do not differ fundamentally with respect to interlanguage properties, we turn to the observation that many older learners also develop meta-linguistic knowledge in a second language. Whether this knowledge can be harnessed to result in linguistic competence is a matter of debate. If we were to find that this is possible, this would indeed indicate a fundamental difference between younger and older language learners. Yet (as noted in Ellis and Laporte 1997) it has been demonstrated repeatedly that the explicit learning and application of rules, paradigm memorization and response to error correction do not influ-

ence the learner's route of acquisition of morphosyntax. Experimental studies that manipulate the input in various ways indeed show that performance is affected in some manner – omission and suppliance patterns change; word order changes. However, delayed post-tests tend to show learners revert to pre-test performance (Lightbown 1986b; White 1991). Furthermore, learners master only simple things in the short-term, suggesting that production/test-responses are based on (incompletely) learned knowledge, Pica (1985). When the object of an experiment is syntax, changes in learners' performance turn out to be superficial, without reorganization of their grammar (Schwartz and Gubala-Ryzak 1992; White 1991). There is, however, a good possibility that acquisition of structure about to be acquired may be accelerated in response to certain types of manipulation of input, e.g. exposure to input from the next stage of development (Pienemann 1987; White, Spada, Lightbown and Ranta 1991). Given the consensus that while instruction does not influence route of development, but does influence rate (see e.g. Ellis 1990), this is a topic that deserves considerably more attention from generative acquisitionists. Our learners have all been uninstructed and thus this topic lies beyond our reach. We now return to the L1English/L2 German data to explore what might result in George's altered pattern of development.

8.3. Input and meta-linguistic awareness in the data of Joan, Paul and George

In considering the data from Joan, Paul and George, we are dealing with learners who, while they fit into the category of naturalistic learners differ from most other naturalistic adults studied. They had regular and plentiful access to written text through their participation in a full load of secondary school classes. That they had at the time of data collection experienced more schooling than most of the naturalistic learners studied (in the Heidelberg, ESF, ZISA, LexLern, von Stutterheim and more recent studies) suggests that their meta-cognitive skills will be relatively more developed than those of the other L2 learners we have discussed. As university-bound secondary school students, they can be placed at Gombert's final stage where they can effortlessly reflect on their own thought processes among which is use of and acquisition of language. We shall shortly see that things are not this simple; individual differences come to the fore.

8.3.1. The VYSA learners' exposure to German

As discussed in Chapter 4, Joan, Paul and George took a four-week language (and culture) course when they first arrived and lived with initial host families. This was likely to have heightened their awareness of German as an object. In their morning classes, the teacher (a local university student who spoke fluent English) used the textbook, *Neugierig auf Deutschland* 'Curious about Germany' which combined the notions and functions of the European Communicative Approach with grammar explanations and translation. (The rest of the time they learned about German culture from an American teacher.) In this book, all grammar points – including various verbal paradigms – were presented in visually salient pink-shaded boxes. Table 8.2 shows the content of these boxes for Lessons 1 and 2.

Table 8.2 Grammar points in pink boxes in *Neugierig auf Deutschland*

Lesson 1	
p.3	<i>sein</i> paradigm (present tense)
p.4	explanation of <i>du</i> , <i>ihr</i> and <i>Sie</i> forms of address
p.5	nominative definite articles; the five types of plural
p.6	word order in declarative and WH-Qs (<i>Ich heie Paul. Wie heit du?</i>) – use of term 'position two'
p.7	<i>haben</i> paradigm (present tense), with direct object example
p.9-16	main verbs <i>machen</i> ; <i>essen</i> , <i>nehmen</i> and <i>sehen</i> present tense paradigms, with direct object example
Lesson 2	
p. 20-21	explanation of case and articles: definite and indefinite, accusative
p.23	negation with <i>kein</i>
p.25	yes/no questions
p.26	<i>antworten</i> paradigm

Later lessons during these four weeks introduced the dative (pp. 34–35), separable prefixes in declarative main clauses (p. 41), the genitive (p. 51), all pronouns (p. 53), modals with non-finite verbs in declarative main clauses (p. 58) and negation with *nicht* 'not' (p. 59). Thus while the vast majority of input these learners received during the year they spent in Germany constituted primary linguistic data, their language course made available to them specific tools for the meta-cognitive processing of German. Students were not motivated to seek benefits from the language classes; there was no exit test of proficiency; and at

least one person in each host family could communicate with them in English. They were in a group of their American exchange student peers, and observation by the second author of the students during their orientation classes suggested socializing with their new friends was their primary focus.

At the end of their course, Joan, Paul and George moved to new towns to live with new host families and they began attending local secondary schools as fully matriculated students. Their exposure to German for the remainder of their eleven months in Germany occurred in the context of their daily lives as German secondary school students; there were no special German-as-a-second-language classes provided for them. Once they had begun to acquire some German, their new host families began to converse in German with them; this had not been the case with the host families they lived with during the orientation course. However, this did not mean immersion in German was total. The three learners confessed to sitting in the back of the classroom while they, for example, wrote letters to the American exchange students they had met during orientation. To get a rough idea of exactly how much time each of them spent using German, the learners were given a questionnaire and asked to gauge what percentage of their waking time per week they used German, based on a maximum 100% possible across a range of activities in which they were engaged at school and outside of school (also see Freed et al.'s [2004] Language Contact Profile). The self-rating data represented in Table 8.3 show that their use of German increased over time, and that by their ninth month (March) in Germany at least their aural-oral interaction (listening and speaking) in/use of German was at a high rate, between 67% and 100%. This table confirms that they received considerable primary linguistic data during their year in Germany.

Table 8.3 Self-rated German interaction (from Young-Scholten 2002, Table 1)

<i>Month</i>	<i>Listening</i>			<i>Reading</i>		
	<i>Joan</i>	<i>Geo</i>	<i>Paul</i>	<i>Joan</i>	<i>Geo</i>	<i>Paul</i>
July	28%	44%	28%	8%	8%	8%
Aug	50%	61%	33%	0%	8%	17%
Sept	22%	72%	33%	0%	17%	25%
Oct	28%	66%	61%	8%	25%	25%
Nov	55%	66%	66%	8%	25%	25%
Dec	78%	72%	78%	17%	33%	25%
Jan	78%	78%	78%	42%	67%	33%
Feb	78%	89%	83%	58%	75%	33%
Mar	83%	100%	83%	83%	83%	33%
Apr	83%	83%	89%	92%	83%	33%
May	78%	44%	61%	75%	33%	58%
June	94%	50%	39%	83%	42%	67%
Mean	63%	69%	61%	40%	42%	32%
<i>Month</i>	<i>Speaking</i>			<i>Writing</i>		
	<i>Joan</i>	<i>Geo</i>	<i>Paul</i>	<i>Joan</i>	<i>Geo</i>	<i>Paul</i>
July	17%	25%	0%	22%	0%	11%
Aug	8%	33%	0%	0%	0%	11%
Sept	8%	33%	8%	0%	0%	0%
Oct	33%	42%	33%	0%	0%	0%
Nov	42%	58%	42%	11%	11%	11%
Dec	67%	58%	52%	11%	11%	11%
Jan	50%	58%	58%	22%	33%	33%
Feb	75%	92%	58%	56%	33%	44%
Mar	92%	83%	67%	56%	44%	44%
Apr	92%	83%	67%	56%	44%	44%
May	75%	33%	33%	56%	33%	22%
June	83%	42%	33%	56%	33%	33%
Mean	54%	49%	38%	29%	20%	18%

8.3.2 Meta-linguistic awareness in the VYSA data

What might constitute evidence that Joan, Paul and George were applying meta-linguistic processing during their acquisition of German? (An earlier version of some of these ideas appears in Vainikka and Young-Scholten 2007b). As the study unfolded, the three learners made comments on their German interlanguage. One of the tasks, the grammaticality judgment task, required them to do so.

At first glance, it does not appear to be the case that the four-week induction course had much of an effect on these learners' acquisition of

German; as suggested above, they appeared to be unmotivated to seek any benefits from this course. Moreover, the preceding chapters in this book have shown that they follow the same path of development of the many other, less educated naturalistic learners of German studied. During the period of observation, all three of them go further than most other naturalistic adult learners of German studied. There are few indications that this is anything but the result of their getting an ample amount of input in the form of primary linguistic data on a daily basis for 11 months rather than their level of education/relatively greater cognitive sophistication than others studied. Yet because these university-bound secondary school students were cognitively sophisticated, we cannot rule out their accumulation and application of meta-linguistic knowledge during their acquisition of German. In what follows, we will take a look at the evidence we have for this, and after taking a careful look at what underlies George's slightly different and in the end less successful progression through OG stages of acquisition, we will see that he has indeed invoked learned linguistic knowledge to the detriment of the operation of UG. This turns out to support Felix's (1981) Competing Cognitive Structures Hypothesis.

It is to be expected that young, educated adults who are aware their language is being observed and who have had some exposure to foreign language instruction (recall from the table in Chapter 4 that they had all had some, but none in German) will be concerned about their production and at least some of the time will display signs of monitoring (in the sense of Krashen 1985) their output during data collection sessions. Spontaneous comments, examples of which are shown below, which the learners made during data collection, are one indication of the extent to which they engaged in meta-linguistic processing. Paul's comments also indicate that he directs little conscious attention to forms, at least when in his school classes. Rather, he is more focused on comprehending the content (recall from Chapter 4 that all students wanted to avoid falling behind a year while in Germany). Joan is slightly more aware of language an object than Paul is, and one of her comments shows she is consciously aware (and recalled this from the orientation classes) of the difference in use in the past between auxiliaries *sein* 'be' and *haben* 'have' with certain main verbs and that she notices when other American exchange students she meets at national exchange organization events misuse these; this also suggests a piggybacking of her awareness on her competence because at the point in her acquisition when she makes this comment, she has already acquired auxiliaries.

However, Joan's and Paul's comments reveal little conscious understanding of grammar, not unlike what young children learning their first language might exhibit, albeit with terms like 'grammar' and 'verb' and 'noun' used where children would not use such terms. Unlike comments from the other two, George's spontaneous comments reveal he knows specific terminology and suggest that he may therefore be adept at accumulating and applying meta-linguistic knowledge as it relates to German. He uses terms such as 'accusative' and also can recount accurately (at least some of) the content of the German course book and the orientation lessons. This may be the result of his longer exposure to classroom foreign language instruction, i.e. to French, and his self-reported positive attitude towards this experience at the time (which may, of course be why he stuck with foreign language study longer than the other two). It should be noted here that the researcher took considerable care to avoid providing any sort of feedback to learners about the accuracy of their utterances; when the occasional direct request was made for such feedback, the response was that they could get this information after the final data collection session. In all samples below, learners' production is given in italics, and the target German is only included when relevant; M = the second author.

(8.2) M: How do your teachers speak?

P: *Sie sprechen so schnell und es ist wie ein lang they speak-1PL so fast and it is like a long deutsch Wort. Es ist like they speak so fast und German word. It is schnell and it is like a long German word. it is like mlamlamlam-lamlamlam. Schnell. Vielleicht ich verstehen ein fast. Perhaps I understand a bisschen in ein sentence. bit in a (Sie sprechen so schnell und wenn es ein langes deutsches Wort. Es ist wie – sie sprechen so schnell und wenn es ein langes deutsches Wort ist, hört es sich an wie mlamlamlamlamlamlam. Schnell. Ich verstehe vielleicht ein bisschen von jedem Satz.)*
 'They speak so fast and it is like a long German word. It's like they speak so fast and it's like a long German word. It's like mlamlamlamlamlamlam. Fast. Perhaps I understand a bit of every sentence.'
 [Paul 5, during conversation]

(8.3) J: *We studied it in X's (intensive course teacher). Some things stuck and then most of it kinda...*

M: Why do you suppose that stuck?

J: *Well, I remember the worksheet was typed and she did it on computer...and all the other worksheets were written and they were cruddy and you couldn't read it.*

M: So you think you remember this because it was typed?

J: *Well, maybe not because it was typed, but because it was different from the other ones.*

[Joan 2, conversation about clauses with dass during task]

(8.4) J: *Sie kauft Saft am Bahnhof oder am Bahnhof*
she buys juice at-the station or at-the station
sie kauft Saft. Immer, OK. I don't know.

she buys juice. always

(*Sie kauft Saft am Bahnhof/Am Bahnhof kauft sie Saft.*)

'She buys juice at the station or at-the station she buys juice always, OK. I don't know.'

J: *I think it's bad, but...*

M: You don't know why.

J: *I mean, the verb second. 'Cause der Hund (next sentence) it's, like the subject.*

M: How do you know the verb is second in German? Maybe it shouldn't be?

G: *We were taught that.*

J: *X (the teacher) said it.*

M: Did she say it, like, everyday?

J: *I don't know. I never listened.*

G: *She said there's, like, a lot of different clauses, but most of the time it's second.*

M: So you remembered that.

J: *Before we habe gekommen, alles haben gesagt.*
have come everyone has said
'the verb second'.

(*Bevor wir angekommen sind, haben alle 'the verb second' gesagt.*)

'Before we came, everyone said 'the verb second.'

M: Before you came to Germany?

J: *Yeah, everybody's 'The verb's second'.*

[Joan 6, during first administration of gj task; w/ George present]

- (8.5) *Ich meine, wenn jemand etwas falsch sagt, dann ich merk das.*
 I think-1SG when someone something wrong say-3SG, then I notice that
 (Ich meine, wenn jemand etwas Falsches sagt, dann merke ich das.)
 ‘I think, when someone says something wrong, then I notice it.’
 [Joan 11 (during general conversation)]
- (8.6) *G: Was hast du getrunken? Ooh, I’m doing these what have-2SG you drunk-PST wrong.*
 (Was hast du getrunken?)
 ‘What did you drink? Ooh, I’m doing these wrong.’
 M: Why?
G: I could use different forms and they’d be easier. I don’t remember all the forms with grammar. I just put them all in the past tense.
 M: Oh, ok. Is that easier?
G: For me it is, yeah.
 M: Why?
G: I don’t know. That’s the only thing I really got was the perfect.
 [George 2, during word combining task]
- (8.7) *G: Four verbs in a sentence. What do I do?*
 M: Yeah
G: Then I think for about a minute and I don’t know. And then that’s it.
 M: So, do you ever, like, listen?
G: I played around with the verbs when I’d look at people, when they scowl their eyes or something like they don’t understand. Then I think that’s wrong.
G: Writing helped a little, too. I had to write a few reports. And seeing them on paper. Just seeing patterns on paper where verbs oughta go.
I still haven’t figured out with three or four verbs but I think if I write another three or four reports I’ll probably figure it out.
 [George 11, during GJ task]

Children have a far more restricted range of vocabulary for describing language and a more restricted range of experience to refer to, but the nature of Joan's, Paul's and George's meta-linguistic awareness does not appear to be fundamentally different from adults' when linguistic environment is controlled for (as is the case for naturalistic learners). The next set of data further confirms this, at least for Joan and Paul. Recall that self-correction is one of the first signs of young, pre-school children's awareness of the language they are acquiring, and thus this behavior does not entail a high level of cognitive maturity; indeed it falls under the epi-linguistic category in Gombert (1992). This sort of monitoring of their output by learners does not, however, result in target language forms being produced; it is clear from the data that our three L2 learners have not acquired them. Self-correction could be an indication for some (e.g. Noticing Hypothesis) proponents of intake which will eventually lead to acquisition. And surely these learners had extensive opportunities for the negotiation of meaning or focus on form (Long 1991) often assumed to drive acquisition.¹⁹² Alternatively self-corrections reveal that learners become more consciously aware of what they are in the process of acquiring.

- (8.8) a. *Wo hat sie das Buch gekauft? Wo hat
 where has-3SG she the book bought where has
 sie uh Buch kaufen?
 she book buy*-INF
 (Wo hat sie das Buch gekauft?)
 'Where did she buy the book?' [Joan 3, WH-Q task]*
- b. *Die Frau trink, drink, trinken.
 the woman drink*-INF drink*-INF
 (Die Frau trinkt.)
 'The woman drinks.' [Paul 3, picture prompt]*

192. Nicholas (1991:79) connects awareness and negotiation of meaning in noting that second language learners are aware of their conversational interaction. He claims that learners can therefore deliberately manipulate it in a second language, albeit with varying degrees of success.

- c. *Denken* (= think). Would it be at the end?
Sie ist about das denken? See, it's somehow, somehow
 she is about that thinking
the verb. But they switch the verbs around funny, and I
don't know.
 (Sie denkt gerade darüber nach.)
 'She is thinking about it.'
 [Paul 3, during picture prompt task]
- d. P: *Ein Mann wills, willst jetzt mein*
 a man want*-2SG want*-2SG now my
Stuhl um sit, sitzen.
 chair to sit sit*-INF
 (Ein Mann will jetzt meinen Stuhl, um zu sitzen.)
 'A man wants my chair to sit.'
 P: *Can you say this? Like to sit? Set. Sitz. I don't know. I've*
never heard it. I never heard it used that way.
 M: How've you heard it used?
 P: *Sitzt. Like to sit. But I don't know if you can add an -en*
to make it –
 M: To make it what?
 P: *Whatever. To make it whatever they do. I don't know.*
 [Paul 5, during picture prompt task]
- e. J: *Ich weiss nicht, wo ich das spiele.*
 I know-1SG not where I that play
Spiele. Aber es ist nicht 'spielen'. I don't know.
 play-1SG But it is not play*-INF.
 (Ich weiss nicht, wo ich das spiele. Spiele. Aber es ist
 nicht 'spiele'. Ich weiss es nicht.)
 'I don't know where I play it. Play. But it is not *spielen*. I
 don't know.'
 M: *Warum nicht?*
 why not
 'Why not?'
 J: *Weil 'ich', 'ich spiele'.*
 because I I play-1SG
 'Because "I, I play".'
 [Joan 11, embedded clause task]

Some of the learners' comments on their own production further point to the idea that conscious awareness of forms bubbles to the surface when learners' grammars are undergoing revision. In session 8, Joan and Paul still produce mostly non-target embedded clauses in which the verb is not in final position, as shown in the examples in (8.9) and (8.10).

- (8.9) *Ich denke, dass das ist nicht eine schöne Stadt.*
 I think-1SG, that that is not a beautiful city
 (Ich denke nicht, dass das eine schöne Stadt ist.)
 'I don't think that's a beautiful city.'
 [Joan 8, during conversation]

- (8.10) *Weisst du, dass in eine Stunde ich muss uh X*
 Know you that in one hour I must-1SG X
sein?
 be*-INF
 (Weisst du, dass ich in einer Stunde in X sein muss?)
 'Do you know that I have to be at X in an hour?'
 [Paul 8, during conversation]

During session 9, both Joan and Paul react in an emotional manner when they spontaneously utter target-like verb-final embedded clauses (verbs in non-target positions are underlined here and illicit verb placement is asterisked). It is in this session that finite verb placement becomes target-like for Joan, and is developing for Paul: in session 8 utterances reflecting a head-final AgrP were 20% for Joan and 14% for Paul, while in session 9, the figure jumps to 90% for Joan and 43% for Paul (George does not project a head-final AgrP during the duration of the study).

- (8.11) P: ... *dass ich nicht gut da bin, ich *bin nicht –*
 that I not good there am, I am not
nevermind.
 (...dass ich nicht gut da bin.)
 '...that I am not good there. Nevermind'
 M: Was hast du gesagt?
 what have you said
 'What did you say'
 P: *I don't know. Ich höre nicht.*

- I hear-1SG not
(Ich weiss es nicht. Ich höre nicht zu.)
'I don't know. I don't listen.'
- M: Hast du gesagt 'weil ich nicht gut da bin?'
have you said because I not good there am
'Did you say "weil ich nicht gut da bin"?'
- P: *Es ist peinlich. Ich will das nicht.*
it is embarrassing. I want-1SG that not
'It is embarrassing. I don't want that.'
- M: Willst du nicht darüber reden, oder willst du
want you not that-about talk, or want you
diese Sätze nicht sagen?
these sentences not say
- P: *Ja, das ist peinlich.*
yes, that is embarrassing
(Ja, das ist peinlich.)
'Yes, this is embarrassing.'
- M: Was? Die Grammatik ist peinlich?
what the grammar is embarrassing
- P: *Ja.*
yes
'Yes'
- M: Findest du diesen Satz komisch?
find you this sentence odd
'Do you find this sentence odd?'
- P: *Ja.*
yes
'Yes'
- M: Dann warum hast du den Satz gesagt?
Then why have you the sentence said
- P: *Ich weiss es nicht. Ist es richtig?*
I know-1SG it not is it correct
(Ich weiss es nicht. Ist es richtig?)
'I don't know. Is it correct?'

[Paul 9, during conversation]

- (8.12) J: *Der Mann hat gefragt, wo wir Kaffee*
 the man has-3SG asked, where we coffee
getrunken haben. (laughs) *Ne.* (laughs)
 drunk have-1PL no
- M: Was, ne?
 what, no
- J: *S' ist so komisch, weil 'getrunken haben', aber*
 it is so odd because drunk-PST have-1PL but
ich weiss nicht, ob es –
 I know not whether it
- M: Meinst du, dass es richtig ist?
 think you, that it correct is
 'Do you think it's correct?'
- J: *Naja, ich weiss nicht, ob es richtig ist.*
 well, I know-1SG not whether it correct is
 'Well, I don't know whether it is correct.'
- M: Dann warum hast du das gesagt?
 then why have you that said
 'Then why did you say it?'
- J: *Es war erst in mein Kopf.*
 it was first in my head
 (Es war das Erste was mir einfiel.)
 'It was the first thing that came to my mind'.
- M: Gut.
 'Good.'
- J: *Die Mädchen hat gefragt, ob sie*
 the girl has-3SG asked-PST whether she
darf Bier trinken.
 may-3SG beer drink [trinkt]
 (Das Mädchen hat gefragt, ob sie Bier trinken dürfe.)
 'The girl has asked whether she may drink beer.'
- J: *Ich sehe der Mann, der das Buch*
 I see-1SG the man who the book
gekauft hatte.
 Bought-PST had
 (more laughter and giggles)
 (Ich sehe den Mann, der das Buch gekauft hatte.)
 'I see the man who had bought the book.'
- M: mmmmm
- J: (more laughter)

M: Warum meinst du dass –
 why think you that
 ‘Why do you think that –?’

J: *Sie kling, klingen so komisch.*
 they sound*-1SG, sound-3PL so odd
 (Sie klingen so komisch.)
 ‘They sound so odd.’

[Joan 9, during on-line translation task]

What can we make of this? Some forms and patterns appear to prick the learner’s consciousness when processing is most intense, when acquisition is taking place or shortly thereafter. Clearly, these naturalistic L2 learning adults are vaguely conscious of *some* forms and constructions. In some instances these will be forms or constructions which have been brought to their attention by others. In such instances, learners’ understanding of the elements they notice is not only unsophisticated but may also be wrong, and in such instances a causal relationship between noticing these and their successful acquisition is not logical. Awareness of forms and constructions learners are in the process of acquiring seems to arise naturally, as it does for children. If Pienemann’s (1987) Teachability Hypothesis is borne out, i.e. that learners only benefit from instruction on particular points of grammar when ready (when they are at a stage just preceding what is the focus of instruction), it may simply be that learners appear to benefit from instruction because their consciousness of what is being taught is already automatically heightened when reorganization of their interlanguage grammar is underway.

Case and gender, perhaps because they received a good amount of coverage in the four-week orientation course (see above extracts from the textbook in Table 8.2) and because their surface forms are readily accessible, are self-corrected by all three learners, from their first to their last month in Germany. Despite this instruction and plentiful exposure to spoken and written German, there is no real progress here.

8.3.3. Case, gender, and meta-linguistic awareness

During a grammaticality judgment task on verb second that was administered on a monthly basis, Joan’s comments in (8.13) on the accusative masculine pronoun *ihn* and the accusative masculine article *den* (neither of which she has acquired at that point) reveal awareness of the

existence of these forms (naturally prompted by the nature of the task), but lack of meta-cognitive understanding of the function of these forms. What is remarkable is Joan's inability to notice that 'him' in English is a cognate of *ihn* to determine the status of *ihn* as an object rather than a subject. What prevents her from doing so? Her level of acquisition at month seven (session 6) appears not to allow a constituent other than a subject to precede the finite verb, and she is forced by her interlanguage grammar to analyze *ihn* as a subject.

- (8.13) J: *Ihn kennt der Sportlehrer. It's OK.*
 him know-3SG the sports teacher (subject).
 (Ihn kennt der Sportlehrer.)
 'The sports teacher knows him.'

M: What does it mean?

- J: *It means 'He knows the Sportlehrer. The Sportlehrer he know, the man knows the Sportlehrer.'*

[Joan 6, during GJ task]

- (8.14) M: Weisst du was 'den Mann' ist?
 know you what the (acc.) man is (means)?
 'Do you know what 'den Mann' means?'

- J: *Etwas mit Grammatik. Oder ich weiss nicht.*
 something with grammar or I know-1SG not
Ich kenne überhaupt nichts mit Grammatik
 I know-1SG absolutely nothing with grammar.
 (Das hat etwas mit Grammatik zu tun. Oder ich weiss es nicht. Ich kenne mich überhaupt nicht mit Grammatik aus.)
 'Something with grammar. Or I don't know. I know absolutely nothing about grammar.'

[Joan 9, during GJ task]

The table below shows learners' accuracy some two months after the course ended (early October), on the forms that they were taught in the initial lessons of the orientation course. By this time they had received considerable primary linguistic data. We take early, (perhaps premature) accurate use of case and gender and irregular agreement to be evidence of application of meta-linguistic knowledge, particularly given plentiful past studies showing that case and irregular agreement do not emerge at the early stages of naturalistic acquisition. In both case and gender and irregular agreement, George turns out to perform better

than do Joan and Paul; not only is he more accurate, but the variety of forms he produces is greater. In session 3, George also produces post-preposition articles correctly 37% of the time (in three out of eight instances), while Joan only does so once. Paul produces none of these correctly. However, little progress seems to be made during the rest of the year.

Table 8.4 Early vs. final file correct article use (adapted from Vainikka and Young-Scholten 2003a)

	<i>Joan</i> 3	<i>Paul</i> 3	<i>George</i> 3	<i>Joan</i> 11	<i>Paul</i> 11	<i>George</i> 11
<i>ein</i>	100% 1/1	54% 6/11	45% 5/11	60% 4/15	31% 8/26	36% 8/22
<i>eine</i>	20% 1/5	100% 1/1	0% 0/0	86% 6/7	20% 1/5	0% 0/3
<i>der</i>	40% 3/5	36% 4/11	33% 3/9	0% 0/4	0% 0/0	50% ½
<i>die</i>	44% 4/9	25% 3/12	50% 7/14	31% 4/13	8% 2/24	38% 10/26
<i>das</i>	0% 0/0	33% 3/9	100% 3/3	50% 1/2	0% 0/0	100% 2/2
<i>den</i>	0% 0/1	0% 0/0	100% 1/1	0% 0/0	0% 0/0	100% 2/2
<i>dem</i>	100% 1/1	0% 0/0	0% 0/0	0% 0/0	0% 0/0	0% 0/0
<i>uh</i>	0	0	0	0	0	0
*omitted	11	2	1	0	0	0
Mean	29%	37%	49%	36%	20%	40%
correct	10/35	17/46	19/39	15/41	11/55	23/57

(Raw numbers are given for 'uh' and omitted articles since no obligatory context exists for these, i.e. it was not possible to determine what intended use was.)

There is little acquisition of case and gender, as shown by data collected during the 11th and final session. This is in stark contrast to learner's progress with verbal morphosyntax. George's (and Paul's) production of case and gender seems to have even declined somewhat by the end of the year.

Thus, while it may appear that the acquisition of articles and their role in case and gender marking might benefit from the application of meta-linguistic knowledge, there are no signs in their data that Joan and

Paul are able to accumulate or apply such knowledge. George's data show an initial advantage, but this is lost by the end of the year.

Like articles, pronouns are also discrete entities amenable to conscious noticing and conscious learning, and as we see in Table 8.5, George is slightly better than the other two in terms of his accuracy in producing possessive pronouns (from Vainikka and Young-Scholten 2003a). As with articles, George's early advantage disappears during the course of the year.

Table 8.5 2nd person plural nominative and non-nominative pronoun forms

	<i>Joan</i> 3	<i>Paul</i> 3	<i>George</i> 3
2 nd nom plural	-	-	<i>ihr</i> 'you'
Accusative	<i>mich</i> 'me'	-	-
Dative	-	-	-
Genitive	-	-	-
Possessive	<i>mein</i> 'my' <i>ihre</i> 'her' <i>*ihm</i> (for <i>sein</i>) 'his'	<i>mein</i> 'my' <i>*sie</i> (for <i>ihr</i>) 'her' <i>*du</i> (for <i>dein</i>) 'your' <i>*sits/es</i> (for <i>sein</i>) 'his'	<i>ihr</i> 'her' <i>ihre</i> 'her' <i>*meinem</i> (for <i>mein/e</i>) 'mine'

We have established that after the orientation course and once the three learners had begun to acquire German, George demonstrates more meta-linguistic knowledge which he can then apply than do the other two. This knowledge not only fails to translate into successful acquisition, but it seems to adversely affect the course of his acquisition of morphology.

8.4. George's meta-linguistic baggage

George differs from Paul and Joan in two main ways: early on, he is more advanced in his production of inflectional morphology, and he engages in more meta-linguistic behavior than they do. Table 8.6 shows that, in addition to the more advanced article use early on that we have just discussed, George has already in the first two sessions mastered considerably more of the irregular paradigm for *haben* (which he uses as a main verb and auxiliary) than the other two: 86% (37/43) of his

instances of *haben* 'have' carry correct agreement while only half of Joan's do (9/18) and almost none of Paul's do (1/6).

Table 8.6 *haben* paradigm in sessions 1 and 2 (Vainikka and Young-Scholten 2007b)

	<i>habe</i> 1sg		<i>hast</i> 2sg		<i>hat</i> 3sg	
	correct	wrong	correct	wrong	correct	wrong
Paul	0	5	1	0	-	-
Joan	3	3	4	5	1	0
George	5	0	9	4	10	0
	<i>haben</i> 1 and 3pl		<i>habt</i> 2pl			
	correct	wrong	correct	wrong		
Paul	-	-	-	-		
Joan	1	1	-	-		
George	8	2	5	0		

Learners' comments and their accuracy with respect to case and gender and the *haben* paradigm reveal that in comparison to George, Joan and Paul do not notice, they do they understand nor do they accurately (or plentifully) produce certain forms. From this perspective, George is quite a bit more advanced in terms of morphology than the other two speakers. Given a tight coupling in syntactic theory between inflectional morphology and syntactic structure, we might expect George's development to proceed at a more rapid clip than that of the other two. However, we saw in earlier chapters that George lags behind them on certain aspects of syntax. We argue that this is due to the "meta-linguistic baggage" that he carries, which interferes with the UG-based unconscious mechanism of Organic Grammar; his cognitive structures compete.

In our discussion of the development of syntactic projections in the VYSA data in Chapters 4, 5 and 7, a general pattern can be observed in George's syntactic projections. In terms of actually positing a new functional projection, he is comparable to the other two learners, as summarized in Table 8.7 (repeated from Chapter 7):

Table 8.7 The development of functional projections in the VYSA data

<i>Projection acquired</i>	<i>Paul</i>	<i>Joan</i>	<i>George</i>
Bare VP	1–2	1	1
NegP	1–2	1	1–2
FP/TP	3–4	2–3	2–3
AgrP	5	5	4
CP	7–8	6–7	6–8

However, crucially for the present discussion, George differs from the other two in terms of *headedness* of syntactic projections. Note that this aspect of German syntax – involving the word order possibilities of the various sentence types in the L2 – would be particularly difficult to figure out meta-linguistically, for one, because it differs considerably from the L1. On the other hand, the functional projections, shown in the leftmost column in Table 8.7, are similar in the L1 and the L2 (see discussion in Chapter 2). Thus, their acquisition of the headedness of German projections – namely when they switch the VP to head-final, and when they figure out the Germanic Headedness Generalization – is particularly revealing in terms of how L2 acquisition happens. When it comes to the headedness of the VP, George – like the others – transfers his head-initial English VP. In his first three files, this VP dominates, as shown in Table 8.8. From file 4 on, it is head-final in his spontaneous data, and from file 5 the modal task also reveals the head-final VP. Yet despite his early apparent advantage, George switches his VP to head-final one recording (i.e. one month) later than the Paul and Joan.

Table 8.8 George's VP headedness

<i>File</i>	<i>VO in Modal Task</i>	<i>VO in spontaneous two-verb utterances</i>	<i>% of VO</i>	<i>Headedness of VP</i>
1	5/6	0/0	83%	initial
2	9/9	6/8	88%	initial
3	7/7	14/17	87%	initial
4	6/8	2/23	26%	final
5	0/7	[no tape]	0%	final
6	0/9	0/26	0%	final

In addition to the difference in headedness of the VP projection, the L2, German, and the L1, English, differ in terms of the pattern of headedness of the functional projections. In English, all projections are head-initial, but in German we have proposed that the first functional projection is initial and the rest are final (Chapter 2, the Germanic Headed-

ness Generalization/GHG). As we saw in Chapter 7, once the learner has acquired both the AgrP projection and the CP projection, it can be observed whether the learner has acquired the GHG, or is using a different pattern.

We have seen in the earlier chapters that the German AgrP projection is problematic for L2 learners for two reasons. First, its obvious trigger is the agreement paradigm, which involves bound morphemes, which are difficult for adult L2 learners to use (see Chapter 6). Secondly, the headedness of the AgrP is difficult for learners to pin down, due to the varying position of the finite verb in matrix and embedded clauses (see Chapter 2). While George does not have trouble positing the head-initial AgrP that all three speakers posit around Files 4–5, he is the only learner who is not able to reorganize his grammar in the face of conflicting evidence about the headedness of the AgrP, as summarized in Table 8.9:

Table 8.9 Headedness of AgrP and CP for Joan, Paul, and George

<i>Description</i>	<i>Joan's file</i>	<i>Paul's file</i>	<i>George's file</i>
Head-initial AgrP	5	5	4
Head-initial CP	6–7	7–8	6–8
AgrP switches to final	9	11	[never]
AgrP final throughout	11	[never]	[never]

In Joan's data, we in fact find two sub-stages in her acquisition of the target headedness of the AgrP: an earlier stage (in her File 9) where the finite verb occurs in the sentence-final position in embedded WH-questions and relative clauses, and a later stage (File 11) where the finite verb is final in all embedded clauses. Paul lags slightly behind Joan: the earlier sub-stage is clearly evidenced in File 11 (although there are already some hints earlier, in File 9). A second sub-stage would be expected to have occurred had Paul continued to live in Germany, but all students returned to the USA shortly after the final data collection session. In George's data, however, there is no hint of even the earlier sub-stage; throughout the recording sessions his spontaneous data reveal that he has consistently kept the head-initial setting for the AgrP. This, in fact, is consistent with the L1 English pattern of head-initial projections throughout the grammar.

8.5. Grammar Lite

Clearly, for the L2 adult learner, multiple sources of knowledge can underlie their production. Towell, Hawkins and Bazergui (1996) note that this can also include transfer of L2 surface structures (transliterations) as does Herschensohn (2000) in her ‘coalition of resources’ learners bring with them to the task of acquiring a second language. Comparing the three VYSA learners, we see that George is more meta-linguistically aware than Joan and Paul, as reflected in early memorization of paradigms; this, however, appears to hamper his grammatical development at the advanced stage of switching the headedness of AgrP. We propose that rather than following the more natural, fully UG-driven route that is evidenced in the data of Joan and Paul, George’s acquisition partly reflects *Grammar Lite*, our term for a set of communication tools that does not implicate a linguistic system. George’s Grammar Lite consists of at least two strategies: (i) use of meta-linguistic skills and (ii) memorization. Grammar Lite can be used on its own (e.g. by learners who never receive any primary linguistic data), but will typically be used alongside a bona fide interlanguage, i.e. a UG-constrained syntax. The extent to which various strategies contribute to a given learner’s Grammar Lite is not strictly dependent on age, but with age comes education. However, there is likely to be a much more limited use of meta-linguistic skills by learners who have not formally studied the L2 (or their own L1, for that matter).

With respect to memorized, particularly that of longer sequences or so-called formulaic chunks – the second strategy above – when learners produce words or longer sequences that do not fit at the stage the rest of their production indicates, the possibility exists that they are typically making use of unanalyzed chunks (see Myles, Hooper and Mitchell 1999; Myles 2004). Carroll (1999, 2001) notes that while the output of a learner’s internal processing is not accessible to noticing and conscious awareness, superficial elements are. As a surface phenomenon, morphology, and in turn its acquisition, is particularly susceptible to application of general cognitive mechanisms, including memorization.

The transfer of lexical categories from the L1 to the L2 (Chapter 4) is a form of borrowing, but it turns out that the UG-governed syntactic process throughout L2 acquisition is bootstrapped by such borrowing. Grammar Lite can also involve as a strategy relexification, i.e. use of words from the target language lexicon with the native language grammar, thus giving the appearance of transfer (at a deeper level). Schwartz

(2006a), for example, mentions Lefebvre's (1998) evidence for Haitian Creole having involved relexification in French of substratum language Fongbe grammar with its determiners, tense/mood/aspect morphology and complementizers. An earlier reference to relexification in second language acquisition is Butterworth (1972) who suggested that the Spanish-speaker, Ricardo, whose development was studied longitudinally, was employing this strategy for English.¹⁹³ Superficial transfer of *functional* projections (as in Grammar Lite) may also occur between cognates, such as German and English or German and Dutch. Evidence of our three English-speaking learners of German treating certain German words as cognates is their initial pronunciation of German *kann*, *Mann* and *Problem* as segmentally and suprasegmentally indistinguishable from English 'can', 'man' and 'problem'.

There are indications that the matter is more complicated; Ribbert (2004) shows in a study of the attrition of 52 German speakers living in the Netherlands that between the two neighboring languages, the more syntactic an item, the less susceptible it will be to transfer. If George were a native speaker of Dutch acquiring German, we suspect that the two languages' similarities in headedness of functional projections and inflectional morphology in the two languages, he would have converged on the target grammar, and his use of Grammar Lite would have gone undetected. Furthermore, when two languages are so closely related that the functional morphemes are either the same (as are some copula forms in Dutch, German and English) or recognizably related, there is potential for the L1 Master Tree to be used by the learner. Thus we cannot dismiss the possibility that in closely related languages, learners will attempt to use their native language morphosyntax to meet communicative demands. At the early stages of development, the three strategies of Grammar Lite mentioned here would normally be expected to occur in a classroom context.

193. There might well be cases of relexification – use of words from the target language lexicon with the native language grammar – involved here. Schwartz (2006a), for example, mentions Lefebvre's (1998) evidence for Haitian Creole having involved relexification in French of substratum language Fongbe grammar with its determiners, tense/mood/aspect morphology and complementizers. (See also Butterworth 1972 on Spanish/English learner Ricardo who was claimed to do so.).

8.6. Inflectional morphology in adult L2 acquisition

Recall from Chapter 7 the requirement that triggers be robust in the input data. While the triggers we propose are indeed robust in the primary linguistic data, George appears not to be waiting around to subconsciously extract the inflectional morphology from the PLD surrounding him; rather, he is keen to give himself a head-start by focusing on what he can consciously learn. Thus while he is indeed *acquiring* syntactic structure, he appears to be *learning* some of the crucial morphology. This is a mismatch which prevents language-specific mechanisms – Organic Grammar – from operating naturally, revealed in the failure of the grammar to be reorganized, despite the input data requiring such reorganization. With respect to the interaction of input and the headedness of the German AgrP, while most older naturalistic learners of German in other studies do reach the stage of development that Paul and Joan did (but not George), it is possible that immigrant adults fail to receive the critical mass of intensive input required to trigger the head-final AgrP in German, pointing to a *Critical Mass Hypothesis*. That is, the human mind expects an abundance of primary linguistic data at the start of exposure. The relative frequency of morphemes in the input may also turn out to be important, as appears to be the case in language change (see discussion in Ch.6 on Lightfoot and Kroch), pointing to a *Relative Frequency Hypothesis*. For further discussion, see Piske and Young-Scholten's (2009) *Input Matters*, in particular the chapters by Flege and Moyer.

What should we make of the difference between George and the other two learners? A challenge to Organic Grammar's close coupling of morphology and syntax discussed earlier is Prévost and White (2000a/b/c), who claim that child L2 learners pattern like L1 children, but adult L2 learners do not. For the first two groups, morphology and syntax are developmentally related. Under this view, adults use different mechanisms than children. However, the data just discussed present a challenge to Prévost and White's approach. If George's pattern is explained based on application of meta-linguistic knowledge which in turn means an *absence* of close coupling between morphology and syntax, then only Joan and Paul's data will reflect a pattern similar to L1 and L2 children; this is what we have claimed in this book (Joan's and Paul's data differing from L1A in terms of the headedness of the AgrP notwithstanding).

The studies discussed in this chapter indicate that rate of development of inflectional morphology is influenced by language-module external factors for *both* children and adults. Our analysis of data from educated young adult George reveals that route of morphosyntactic development can also be influenced by application of general cognitive mechanisms. The relative speed of George's mastery of inflectional morphology can be traced to his meta-cognitive processing of German, but the resulting knowledge constitutes learned linguistic knowledge, not linguistic competence. Where we find that George's morphological speed results in an atypical syntactic route, we have evidence of the indirect effect on syntactic acquisition of meta-cognitive processing, and this is explained by how we take triggering data to typically operate.

George's case shows that adult L2 learners can develop meta-cognitive/meta-linguistic strategies and amass learned linguistic knowledge with only a little instruction; Joan's and Paul's cases demonstrate lack of a one-to-one relationship between learned linguistic knowledge and instruction. Such variation is expected; unlike linguistic competence, general cognitive abilities exhibit considerable variation across individuals. What the particular meta-cognitive mechanisms are and how they are applied will vary considerably where consciousness and control are factors; e.g. as noted above, Gombert distinguishes pre-school children's *epi*-linguistic knowledge from their later (subject to control, volition/intention) *meta-linguistic* knowledge. Our study of George vs. Joan and Paul shows that use of meta-linguistic processing varies even for older learners in naturalistic situations; we might conclude that Joan and Paul only develop *epi*-linguistic knowledge in German. This is likely to hold to a greater extent for younger second language learners and older second language learners with little native language education. Younger second language learners however are either instructed (in foreign language classrooms) or typically receive far more input (if they are immigrants) than do non-literate immigrant adults. It is this set of factors that need investigation in future research.

Note that if general cognitive mechanisms can be involved in L2 acquisition, as with George, the acquisition of inflectional morphology is indeed subject to the influence of instruction, level of education and/or literacy. There are indications from the studies referred to above that age differences are related to all three. Yet these factors do not exclude younger L2 learners; recall discussion above of how Moba-

raki's more avid reader progressed more rapidly. This suggests that any conclusions regarding child-adult L2 differences are still premature. There is a need to devote considerably more attention to the roles played by literacy, written language exposure, education and the application of meta-linguistic knowledge during the acquisition of morphosyntax in a second language, as demonstrated in work by van de Craats Tarone, Bigelow and colleagues on previously non-literate adult immigrant populations.

George's development revives Felix's (1985) *Competing Cognitive Structures*, providing support for Meisel's re-statement of Felix's ideas that while resorting to meta-linguistic processing can be advantageous in the learning of lexical items, the result for the L2 learner may be "increased competition of domain-specific and general cognitive resources, ultimately causing problems in grammatical development." Meisel (2008: 74). George's results present a challenge to Ellis's (1990) conclusions on the effect of instruction in that meta-cognitive processing can alter the route of L2 development. This raises the question of how this is possible. If there is an interface between general cognitive mechanisms and language-specific mechanisms with respect to the influence of morphology (in its triggering function) on the acquisition of syntax, should the influence solely be negative due to misuse of triggers? The reported effect of instruction on rate (Ellis 1990) might be examined more carefully by prompting learners with appropriate triggers to move on to the next non-target-grammar stage/project more syntax. This is akin to Pienemann's (1987) proposal regarding the usefulness to learners only of exposure to input relating to the next stage up. The challenge for the L2 learner or teacher would be to access or provide positive influence in such a way that it conforms to the true (unconscious) acquisition of syntax, rather than to the more superficial pattern followed by George.

8.7. Conclusion

This book has addressed similarities one can observe across learners in their acquisition of morphosyntax regardless of their age, environment and social class. We have argued that these similarities are not happenstance but due to a language instinct that remains available across the lifespan. Our final chapter has, however, focused on differences. Considerably more research incorporating previously less-examined factors

such as literacy, exposure to written input, working memory capacity, quality and intensity of early exposure remains ahead of us. We have seen in the previous four chapters of this book that older naturalistic L2 learners progress rapidly in the acquisition of verbal morphosyntax when they are in an input-rich environment where not only production but also considerable listening is required (as in a subject classroom). In this final chapter, it has become apparent that if such learners can retain a child-like unawareness of their lack of comprehension and inaccurate production their acquisition will even more closely resemble children's.

References

- Ajdukiewicz, Kazimierz
 1935 Die syntaktische Konnexität. *Studia Philosophica* 1: 1-27.
- Alexiadou, Artemis
 1997 *Adverb Placement. A case study in Antisymmetric Syntax*. Amsterdam: John Benjamins.
- Al-Jasser, Faisal
 2008 The effect of teaching English phonotactics on the lexical segmentation of English as a foreign language. *System* 36 (1): 94-106.
- Andersen, Roger W.
 1978 An implicational model for second language research. *Language Learning* 28: 221-282.
- Andersen, Roger W.
 1984 *Pidginization and creolization as language acquisition*. London: Newbury House.
- Antinucci, Francesco, and Ruth Miller
 1976 How children talk about what happened. *Journal of Child Language* 3: 167-189.
- Archibald, John
 1992 Transfer of L1 parameter settings: Some empirical evidence from Polish metrics. *Canadian Journal of Linguistics* (37) 3: 301-339.
- Aronoff, Mark
 1976 *Word Formation in Generative Grammar*. Cambridge, MA: MIT Press.
- Bailey, Nathalie, Carolyn G. Madden and Stephen D. Krashen
 1974 Is there a 'natural sequence' in adult second language learning? *Language Learning* 24: 235-243.
- Baddeley, Alan D.
 2003 Working memory: Looking back and looking forward. *Nature Reviews: Neuroscience* 4: 829-839.
- Baker, Mark
 1985 *Incorporation: A Theory of Grammatical Function Changing*. Ph.D., Massachusetts Institute of Technology. [Published 1988, Chicago: University of Chicago Press.]
- Baker, Mark
 2003 *Lexical Categories: Verbs, Nouns and Adjectives*. Cambridge: Cambridge University Press.

- Baker, Mark
2008 *The Syntax of Agreement and Concord*. Cambridge: Cambridge University Press.
- Bardel, Camilla
2000 Negation in the Italian of Swedes: Developmental sequences and Cross-Linguistic Influence. Unpublished Ph.D., Lund University
- Bayley, Robert J.
1996 Competing constraints on variation in the speech of adult Chinese learners of English. In *Second Language Acquisition and Linguistic Variation*, Robert J. Bayley and Dennis R. Preston (eds.), 96–120. Amsterdam: John Benjamins.
- Becker, Angelika, Norbert Dittmar, Margit Gutmann, Wolfgang Klein, Bert-Olaf Rieck, Gunter Senft, Ingeborg Senft, Wolfram Steckner and Elisabeth Thielicke
1974 *Heidelberger Forschungsprojekt 'Pidgin-Deutsch'. Untersuchungen zum Pidgin-Deutsch spanischer und italienischer Arbeiter in der BRD*. Arbeitsbericht I. Heidelberg.
- Becker, Angelika, Norbert Dittmar, Margit Gutmann, Wolfgang Klein, Bert-Olaf Rieck, Gunter Senft, Ingeborg Senft, Wolfram Steckner and Elisabeth Thielicke
1975 *Heidelberger Forschungsprojekt 'Pidgin-Deutsch'. Sprache und Kommunikation ausländischer Arbeiter*. Arbeitsbericht II. Heidelberg.
- Becker, Angelika, Norbert Dittmar, Margit Gutmann, Wolfgang Klein, Bert-Olaf Rieck, Gunter Senft, Ingeborg Senft, Wolfram Steckner and Elisabeth Thielicke
1976 *Heidelberger Forschungsprojekt 'Pidgin-Deutsch'. Untersuchungen zur Erlernung des Deutschen durch ausländische Arbeiter*. Arbeitsbericht III. Heidelberg.
- Becker, Angelika, Norbert Dittmar, Margit Gutmann, Wolfgang Klein, Bert-Olaf Rieck, Gunter Senft, Ingeborg Senft, Wolfram Steckner and Elisabeth Thielicke
1977 *Heidelberger Forschungsprojekt 'Pidgin-Deutsch spanischer und italienischer Arbeiter in der Bundesrepublik': Die ungesteuerte Erlernung des Deutschen durch spanische und italienische Arbeiter; eine soziolinguistische Untersuchung*. Osnabrücker Beiträge zur Sprachtheorie, Beihefte 2. Osnabrück: Universität Osnabrück.

- Becker, Angelika, Norbert Dittmar, Margit Gutmann, Wolfgang Klein, Bert-Olaf Rieck, Gunter Senft, Ingeborg Senft, Wolfram Steckner and Elisabeth Thielicke
1978 *Heidelberger Forschungsprojekt 'Pidgin-Deutsch'. Untersuchungen zum Spracherwerb ausländischer Arbeiter. Arbeitsbericht IV.* Frankfurt/Main: Deutsches Seminar.
- Becker, Misha K.
2000 The development of the copula in child English: The lightness of *be*. Unpublished Ph.D., University of California at Los Angeles.
- Becker, Misha K.
2005 The semantic knowledge base for the acquisition of negation and the acquisition of finiteness. In *The Structure of Learner Varieties*, Henriëtte Hendriks (ed.), 263–314. Berlin: Mouton de Gruyter.
- Becker, Misha K.
2005 Learning verbs without arguments: The case of raising verbs. *Journal of Psycholinguistic Research* 34 (2): 165–191.
- Belletti, Adriana
1990 *Generalized Verb Movement: Aspects of Verb Syntax*. Turin: Rosenberg and Sellier.
- Benmamoun, Elabbas
1992 Functional and inflectional morphology: Problems of projection, representation and derivation. Unpublished Ph.D., University of Southern California.
- Berko, Jean
1958 The Child's Learning of English Morphology. *Word* 14: 150–177.
- Bertolo, Stefano (ed.)
2001 *Language Acquisition and Learnability*. Cambridge: Cambridge University Press.
- Bhatt, Rakesh, and Barbara Hancin-Bhatt
2002 Structural minimality, CP and the initial state in second language acquisition. *Second Language Research* 18: 348–392.
- Bialystok, Ellen, and Kenji Hakuta
1999 Confounded age: linguistic and cognitive factors in age differences for second language acquisition. In *Second Language Acquisition and the Critical Period Hypothesis*, David Birdsong (ed.), 161–181. London: Lawrence Erlbaum.
- Biber, Douglas
1988 *Variation Across Speech and Writing*. Cambridge: Cambridge University Press.

- Biberauer, Theresa, and Ian Roberts
 2010 Subjects, tense and verb-movement. In *Parametric Variation: Null Subjects in Minimalist Theory*, Theresa Biberauer, Ian Roberts, Anders Holmberg and Michelle Sheehan (eds.), 263–302. Cambridge: Cambridge University Press.
- Bickerton, Derek
 1981 *The Roots of Language*. Ann Arbor, MI: Karoma.
- Bickerton, Derek
 1984 The language bioprogram hypothesis. *Behavioral and Brain Sciences* 7: 173–221.
- Bickerton, Derek
 1995 *Language and Human Behavior*. Seattle, WA: University of Washington Press.
- Bierwisch, Manfred
 1967 *Grammatik des deutschen Verbs*. 5th edition. Studia Grammatica II. Berlin: Akademie Verlag.
- Bigelow, Martha, Robert Delmas, Kit Hansen and Elaine Tarone
 2006 Literacy and the processing of oral recasts in SLA. *TESOL Quarterly* 40 (4): 665–689.
- Bishop, Dorothy V. M, and Kay Mogford (eds.)
 1988 *Language Development in Exceptional Circumstances*. Edinburgh: Churchill Livingstone.
- Bittner, Dagmar, Wolfgang U. Dressler and Marianne Kilani-Schoch (eds.)
 2000 First verbs: On the way to Mini-Paradigms. *ZAS Papers in Linguistics* 18.
- Bley-Vroman, Robert
 1989 What is the logical problem of foreign language learning? In *Linguistic Perspectives on Second Language Acquisition*, Susan M. Gass and Jacquelin Schachter (eds.), 41–68. Cambridge: Cambridge University Press.
- Bley-Vroman, Robert
 1990 The logical problem of foreign language learning. *Linguistic Analysis* 20 (1-2): 3-49.
- Bley-Vroman, Robert
 2009 The evolving context of the Fundamental Difference Hypothesis. *Studies in Second Language Acquisition* 31 (2): 175–198.

- Bliss, Heather
2006 L2 acquisition of inflectional morphology: Phonological and morphological transfer effects. In *Proceedings of the 8th Generative Approaches to Second Language Acquisition Conference (GASLA 2006)*, Mary Grantham O'Brien, Christine Shea and John Archibald (eds.), 1-8. Somerville, MA: Cascadilla Proceedings Project.
- Blom, Elma
2008 Testing the domain-by-age model: Inflection and placement of Dutch verbs. In *Current Trends in Child Second Language Acquisition*, Belma Haznedar and Elena Gavrusseva (eds.), 271–300. Amsterdam: John Benjamins.
- Bohnacker, Ute
1999 Icelandic plus English: Language differentiation and functional categories in a successively bilingual child. Unpublished Ph.D, University of Durham.
- Bohnacker, Ute
2004 Is V2 really that hard to acquire for second language learners? On current universalist L2 claims and their empirical underpinnings. *Working Papers in Scandinavian Syntax* 74: 43–79.
- Bohnacker, Ute
2006 When Swedes begin to learn German: From V2 to V2. *Second Language Research* 22 (4): 443–486.
- Bongartz, Christiane, and Melanie L. Schneider
2003 Linguistic development in social contexts: a study of two brothers learning German. *The Modern Language Journal* 87 (1): 13–37.
- Bonnesen, Matthias
2005 The acquisition of questions by two German-French bilingual children. Hamburg: *Arbeiten zur Mehrsprachigkeit/Working Papers in Multilingualism*. Series B. Universität Hamburg.
- Bonnesen, Matthias, and Solveig Kroffke
2007 The acquisition of questions in L2 German and French by children and adults. Hamburg: *Arbeiten zur Mehrsprachigkeit/Working Papers in Multilingualism*. Series B. Universität Hamburg.
- Boser, Katharina, Barbara C. Lust, Lynn M. Santelman and John Whitman
1992 The syntax of CP and V-2 in early child German (ECG): The Strong Continuity Hypothesis. In *Proceedings of the North East Linguistic Society Annual Meeting (NELS 22)*, Kimberly Broderick (ed.), 51–65. Amherst, MA: GLSA.

- Braine, Martin
1963 The ontogeny of English phrase structure: The first phase. *Language* 39: 1–14.
- Brandt, Margareta, Marga Reis, Inger Rosengren and Ilse Zimmermann.
1992 Satztyp, Satzmodus und Illokution. In *Satz und Illokution*, Vol. 1, Inger Rosengren (ed.), 1–90. Tübingen: Niemeyer.
- Brandt, Silke, Elena Lieven and Michael Tomasello
2010 Development of word order in German complement clause constructions: Effects of input frequencies, lexical items, and discourse function. *Language* 86: 583–610.
- Brandt-Kobele, Oda-Christina, and Barbara Höhle
2010 What asymmetries within comprehension reveal about asymmetries between comprehension and production. The case of verb inflection in language acquisition. *Lingua* 120 (8): 1910–1925.
- Brattico, Pauli
2007 Causatives and the empty lexicon: A minimalist perspective. Ms., University of Helsinki. (A shortened version of his unpublished [2003] Ph.D., University of Helsinki.)
- Brattico, Pauli
2009 Long-distance case assignment in Finnish and the Theory of Phases. *Biolinguistica Fennica Working Papers* 1: 79–104.
- Brattico, Pauli
2010 Multiple long distance case assignment and its syntax. Ms., University of Jyväskylä.
- Brattico, Pauli, and Saara Huhmarniemi
2006 Finnish negation, the EPP feature and the valuation theory of morphosyntax. *Nordic Journal of Linguistics* 29 (1): 5–44.
- Brattico, Pauli, and Taija Saikkonen
2010 Sandwich EPP Hypothesis: Evidence from child Finnish. *Nordic Journal of Linguistics* 33: 5–29.
- Brattico, Pauli and Anne Vainikka
subm. The Finnish accusative: Long distance case assignment by theta-agreement.
- Bresnan, Joan
1970 On complementizers: Toward a syntactic theory of complement types. *Foundations of Language* 6: 297–321.
- Broselow, Ellen, and Daniel Finer
1991 Parameter setting in second language phonology and syntax. *Second Language Research* 7: 35–59.
- Brown, Roger
1973 *A First Language: The Early Stages*. Cambridge, MA: Harvard University Press.

- Bütow, Wilfried, and Gerhard Schreinert
1986 *Kurze Deutsche Grammatik*. 3rd edition. Berlin: Volkseigener Verlag
- Butterworth, Guy A.
1972 A Spanish-speaking adolescent's acquisition of English syntax. Unpublished MA, University of California at Los Angeles.
- Cancino, Herlinda, Ellen J. Rosansky and John H. Schumann
1975 The acquisition of the English auxiliary by native Spanish speakers. *TESOL Quarterly* 9 (4): 421–430.
- Carroll, Susanne
1999 Putting 'input' in its proper place. *Second Language Research* 15: 319–334.
- Carroll, Susanne
2001 *Input and Evidence: The Raw Material of Second Language Acquisition*. Amsterdam: John Benjamins.
- Castro, Damaris, and Elena Gavruseva.
2003 Finiteness and aspect in Spanish/English bilingual acquisition. *First Language* 23: 171–192.
- Chien, Yu-Chin, and Kenneth Wexler
1990 Children's knowledge of locality conditions in binding as evidence for the modularity of syntax and pragmatics. *Language Acquisition* 1: 225–295.
- Choe, Jae-Woong
1988 Anti-quantifiers and a Theory of Distributivity. Unpublished Ph.D., University of Massachusetts at Amherst.
- Chomsky, Noam
1957 *Syntactic Structures*. Amsterdam: Mouton.
- Chomsky, Noam
1965 *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press.
- Chomsky, Noam
1981 *Lectures on Government and Binding*. Dordrecht: Foris.
- Chomsky, Noam
1995 *The Minimalist Program*. Cambridge, MA: MIT Press.
- Chomsky, Noam
2001 Derivation by Phase. In *Ken Hale: A Life in Language*, Michael Kenstowicz (ed.), 1–52. Cambridge, MA: MIT Press.
- Chomsky, Noam
2004 Beyond explanatory adequacy. In *Structures and Beyond: The Cartography of Syntactic Structures*, Volume 3. Adrianna Belletti (ed.), 104–131. Oxford: Oxford University Press.

- Chomsky, Noam
 2008 On phases. In *Foundational Issues in Linguistic Theory*, Carlos P. Otero, Robert Freidin and Maria Luisa Zubizarreta (eds.), 133–166. Cambridge, MA: MIT Press.
- Christophe, Anne, Marina Nespov, Maria Teresa Guasti and Brit van Ooyen
 2003 Prosodic structure and syntactic acquisition: The case of the head-direction parameter. *Developmental Science* 6: 211–220.
- Cinque, Guglielmo
 1994 On the evidence for partial N-movement in the Romance DP. In *Paths toward Universal Grammar: Studies in Honor of Richard S. Kayne*, Guglielmo Cinque, Jan Koster, Jean-Yves Pollock, Luigi Rizzi and Raffaella Zanuttini (eds.), 85–110. Washington, D.C.: Georgetown University Press.
- Cinque, Guglielmo
 1999 *Adverbs and Functional Heads: A Cross-Linguistic Perspective*. New York: Oxford University Press.
- Clahsen, Harald
 1976 *Die Profilanalyse. Ein linguistischer Verfahren für die Sprachdiagnose im Vorschulalter*. Berlin.
- Clahsen, Harald
 1980 Variation in early child language development. *Michigan Germanic Studies* 6 (2): 219–246.
- Clahsen, Harald
 1983 Some more remarks on the acquisition of German negation. *Journal of Child Language* 10 (2): 465–469.
- Clahsen, Harald
 1985a *Profiling Second Language Development: A Procedure for Assessing L2 Proficiency*. Clevedon: Multilingual Matters.
- Clahsen, Harald
 1985b Profiling second language development: A procedure for assessing L2 proficiency. In *Modeling and Assessing Second Language Acquisition*, Kenneth Hyltenstam and Manfred Piennemann (eds.), 283–331. San Diego, CA: College-Hill Press.
- Clahsen, Harald
 1988 Kritische Phasen der Grammatikenwicklung. Eine Untersuchung zum Negationserwerb bei Kindern and Erwachsenen. *Zeitschrift für Sprachwissenschaft* 7: 3–31.
- Clahsen, Harald
 1990 The comparative study of first and second language development. *Studies in Second Language Acquisition* 12: 135–153.

- Clahsen, Harald
1991 Constraints on parameter setting: A grammatical analysis of some acquisition stages in German child language. *Language Acquisition* 1: 361–391.
- Clahsen, Harald, Sonja Eisenbeiss and Martina Penke
1996 Lexical learning in early syntactic development. In *Generative Perspectives on Language Acquisition*, Harald Clahsen (ed.), 129–159. Amsterdam: John Benjamins.
- Clahsen, Harald, Sonja Eisenbeiss and Anne Vainikka
1994 The seeds of structure: A syntactic analysis of the acquisition of case marking. In *Language Acquisition Studies in Generative Grammar – Papers in honor of Kenneth Wexler from the 1991 GLOW Workshops*, Teun Hoekstra and Bonnie D. Schwartz (eds.), 85–118. Amsterdam: John Benjamins.
- Clahsen, Harald, Claudia Kursawe and Martina Penke
1996 Introducing CP: Wh-questions and subordinate clauses in German child language. In *Proceedings of the Groningen Assembly on Language Acquisition*, Charlotte Koster and Frank Wijnen (eds.), 5–22. Center for Language and Cognition: Groningen.
- Clahsen, Harald, Jürgen Meisel and Manfred Pienemann
1983 *Deutsch als Zweitsprache: Der Spracherwerb ausländischer Arbeiter*. Tübingen: Gunter Narr.
- Clahsen, Harald, and Pieter Muysken.
1986 The availability of Universal Grammar to adult and child learners – A study of the acquisition of German word order. *Second Language Research* 2: 93–119.
- Clahsen, Harald, and Pieter Muysken
1989 The UG paradox in L2 acquisition. *Second Language Research* 5: 1–29.
- Clahsen, Harald, and Martina Penke
1992 The acquisition of agreement morphology and its syntactic consequences: New evidence on German child language from the Simone-Corpus. In *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Acquisition*, Jürgen Meisel (ed.), 181–223. Dordrecht: Kluwer.
- Clahsen, Harald, Martina Penke and Teresa Parodi
1993/4 Functional categories in early child German. *Language Acquisition* 3: 395–429.

- Clahsen, Harald and Klaus-Dirk Smolka
 1986 Psycholinguistic evidence and the description of V2 phenomena in German. In *V2 Phenomena in Germanic Languages*, Hubert Haider and M. Prinzhorn (eds.), 137–167. Dordrecht: Foris.
- Clahsen, Harald, Anne Vainikka and Martha Young-Scholten
 1991 Lernbarkeitstheorie und lexikalisches Lernen. *Linguistische Berichte* 130: 466–477.
- Clark, Robin, and Ian Roberts
 1993 A computational model of language learnability and language change. *Linguistic Inquiry* 24 (2): 299–345.
- Clyne, Michael
 1968 Zum Pidgin-Deutsch der Gastarbeiter. *Zeitschrift für Mundartenforschung* 35: 130–139.
- Comrie, Bernard
 1981 *Language Universals and Linguistic Typology*. Chicago, IL: University Press.
- Cook, Vivian J., and Mark Newson
 2007 *Chomsky's Universal Grammar: An Introduction*. Malden, MA: Blackwell Publishing.
- Cox, Melisma
 2005 L2 English morpheme acquisition order: The lack of consensus examined from a case study of four L1 Chinese Pre-School Boys. *Working Papers in Educational Linguistics* 20 (2): 59–78.
- Crago, Martha B., and Shanley E. M. Allen
 2001 Early finiteness in Inuktitut. The role of language structure and input. *Language Acquisition* 9: 59–111.
- Crain, Stephen
 1993 Language acquisition in the absence of experience. In *Language Acquisition: Core Readings*, Paul Bloom (ed.), 364–409. London: Harvester Wheatsheaf.
- Culicover, Peter W., and Ray Jackendoff
 2005 *Simpler Syntax*. Oxford: Oxford University Press.
- Curtiss, Susan
 1977 *The Case of Genie, A Modern Day "Wild Child"*. New York: Academic Press.
- Curtiss, Susan, and Stella de Bode
 2001 Language after hemispherectomy: If neither side nor age matters, what does? In *Proceedings of the 25th Annual Boston University Conference on Language Development (BUCLD)*, Anna H.-J. Do, Laura Dominguez and Aimee Johansen (eds.), 202–213. Somerville, MA: Cascadilla Proceedings Project.

- Curtiss, Susan, and Jeannette Schaeffer
 1997 Syntactic development in children with hemispherectomy: The INFL-System. In *Proceedings of the 21st Annual Boston University Conference on Language Development (BUCLD)*, Elizabeth Hughes, Mary Hughes and Annabel Greenhill (eds.), 103–114. Somerville, MA: Cascadilla Proceedings Project.
- Cztinglar, Christine, Antigone Katičić, Katharina Köhler and Chris Schaner-Wolles
 2008 Strategies in the L1 acquisition of predication: The copula construction in German and Croatian. In *The Acquisition of Verbs and their Grammar: The Effect of Particular Languages*, Natalia Gagarina and Insa Gülzow (eds.), 71–104. Berlin: Springer.
- Davies, William
 1996 Morphological uniformity and the null subject parameter in adult SLA. *Studies in Second Language Acquisition* 18: 475–493.
- d’Avis, Franz-Josef, and Petra Gretsch
 1994 Variations on “variation”: On the acquisition of complementizers in German. In *How Tolerant is Universal Grammar? Essays on Language Learnability and Language Variation*, Rosemarie Tracy and Elsa Lattey (eds.), 59–109. Tübingen: Niemeyer.
- deKeyser, Robert
 2000 The robustness of critical period effects in second language acquisition. *Studies in Second Language Acquisition* 22: 499–533.
- Dekydtspotter, Laurent, Bonnie.D. Schwartz, Rex A. Sprouse and Audrey Liljestrand
 2005 Evidence for the c-domain in early interlanguage. In *EuroSLA Yearbook 5*, Susan H. Foster-Cohen, Maria del Pilar García Mayo and Jasone Cenoz (eds.), 7–34. Amsterdam: John Benjamins.
- Demuth, Katherine
 2007 Acquisition at the prosody-morphology interface. In *Proceedings of the 2nd Conference on Generative Approaches to Language Acquisition in North America*, Alyona Belikova, Luisa Meroni and Mari Umeda (eds.), 84–91. Somerville, MA: Cascadilla.
- Den Besten, Hans
 1982 On the interaction of root transformations and lexical deletive rules. *Groninger Arbeiten zur Germanistischen Linguistik* 20: 1–78.

- Deprez, Viviane, and Amy Pierce
1993 Negation and functional projections in early grammar. *Linguistic Inquiry* 24: 25–67.
- deVilliers, Jill
1990 Why questions? In *UMOP Special Edition – Papers in the Acquisition of Wh*, Thomas L. Maxfield and Bernadette Plunkett (eds.), 155–174. GLSA, University of Massachusetts, Amherst.
- deVilliers, Jill, and Peter deVilliers
1973 A cross-sectional study of the acquisition of grammatical morphemes in child speech. *Journal of Psycholinguistic Research* 2: 267–278.
- deVilliers, Jill, and Peter deVilliers
1985 The acquisition of English. In *The Crosslinguistic Study of Language Acquisition*, Vol. 1, Dan Slobin (ed.), 27–139. London: Lawrence Erlbaum.
- Diesing, Molly
1990 The syntactic roots of semantic partition. Unpublished Ph.D., University of Massachusetts at Amherst.
- Dimroth, Christine
2002 Topics, assertions and additive words: How L2 learners get from information structure to target language syntax. *Linguistics* 40: 891–923.
- Dimroth, Christine
2008 Age effects on the process of L2 acquisition? Evidence from the acquisition of negation and finiteness in L2 German. *Language Learning* 58 (1): 117–150.
- Dimroth, Christine, Petra Gretsche, Peter Jordens, Clive Perdue and Marianne Starren
2003 Finiteness in Germanic languages. A stage-model for first and second language development. In *Information Structure and the Dynamics of Language Acquisition*, Christine Dimroth and Marianne Starren (eds.), 65–93. Amsterdam: John Benjamins.
- Dittmar, Norbert, Magdalena Schumacher, Romuald Skiba and Heiner Terborg.
1990 Die Erlernung modaler Konzepte des Deutschen durch erwachsene polnische Migranten. *InFo DaF* 17: 125–172.
- Döpke, Susanne (ed.)
2000 *Cross-Linguistic Structures in Simultaneous Bilingualism*. Amsterdam: John Benjamins.
- Dresher, Elan B.
1999 Charting the learning path: Cues to parameter setting. *Linguistic Inquiry* 30: 27–67.

- Drozdz, Kenneth F.
1995 Child English pre-sentential negation as metalinguistic exclamatory sentence negation. *Journal of Child Language* 22: 583–610.
- Dulay, Heidi and Marina Burt
1973 Should we teach children syntax? *Language Learning* 23: 245–258.
- Dulay, Heidi and Marina Burt
1974 Natural sequences in child second language acquisition. *Language Learning* 24: 37–53.
- DuPlessis, Jean , Doreen Solin, Lisa Travis and Lydia White
1987 UG or not UG, that is the question: A reply to Clahsen and Muysken. *Second Language Research* 3: 56–75.
- Dussias, Paola, E.
2010 Uses of eyetracking data in second language sentence processing research. *Annual Review of Applied Linguistics* 30: 149–166.
- Ellis, Rod
1985 *Understanding Second Language Acquisition*. Oxford: Oxford University Press.
- Ellis, Rod
1989 Are classroom and naturalistic acquisition the same? A study of the classroom acquisition of German word order rules. *Studies in Second Language Acquisition* 11: 305–328.
- Ellis, Rod
1990 *Instructed Second Language Acquisition*. Oxford: Blackwell.
- Ellis, Rod (ed.)
1999 *Form-focused Instruction and Second Language Learning*. London: Lawrence Erlbaum.
- Ellis, Rod and Nadine Laporte
1997 Contexts of acquisition: Effects of formal instruction and naturalistic exposure on second language acquisition. In *Tutorials in Bilingualism: Psycholinguistic Perspectives*, Annette M. B. de Groot and Judith F. Kroll (eds.), 53–83. London: Lawrence Erlbaum.
- Emonds, Joseph E.
1970 *Root and Structure Preserving Transformations*. MIT Ph.D. Bloomington: Indiana University Linguistics Club.
- Emonds, Joseph E.
1976 *A Transformational Approach to English Syntax: Root, Structure Preserving, and Local Transformations*. New York: Academic Press.

- Emonds, Joseph E.
1985 *A Unified Theory of Syntactic Categories*. Dordrecht: Foris.
- Emonds, Joseph E.
2009 Newcastle workshop on syntax and morphology, Newcastle upon Tyne, May 30 to 3 June.
- Epstein, Samuel D., Suzanne Flynn and Gita Martohardjono
1996 Second language acquisition: Theoretical and experimental issues in contemporary research. *Behavioral and Brain Sciences* 19: 677–758.
- Eubank, Lynn
1992 Verb movement, agreement, and tense in L2 acquisition. In *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Development*, Jürgen Meisel (ed.), 225–244. Dordrecht: Kluwer.
- Eubank, Lynn
1994 Optionality and the initial state in L2 development. In *Language Acquisition Studies in Generative Grammar – Papers in honor of Kenneth Wexler from the 1991 GLOW Workshops*, Teun Hoekstra and Bonnie D. Schwartz (eds.), 369–388. Amsterdam/Philadelphia: John Benjamins.
- Eubank, Lynn
1996 Negation in early German-English interlanguage: More valueless features in the L2 initial state. *Second Language Research* 12: 73–106.
- Eubank, Lynn and Bonnie D. Schwartz (eds.)
1996 Special Issue (on the L2 Initial State) of *Second Language Research* 12 (1).
- Felix, Sascha
1976 Linguistische Untersuchungen zum englisch-deutschen Zweitsprachenerwerb unter natürlichen Bedingungen. *Arbeitspapiere zum Spracherwerb* 18, Englisch Seminar der Universität Kiel.
- Felix, Sascha
1985 More evidence on competing cognitive systems. *Second Language Research* 1: 47–72.
- Flavell, John H.
1976 Metacognitive aspects of problem solving. In *The nature of intelligence*, Lauren B. Resnick (ed.), 231–235. London: Lawrence Erlbaum.
- Flege, James E.
2009 Give input a chance! In *Input Matters in SLA*, Thorsten Piske and Martha Young-Scholten (eds.), 175–190. Bristol: Multilingual Matters.

- Flynn, Suzanne
1984 A universal in L2 acquisition based on a PBB typology. In *Universals of Second Language Acquisition*, Fred R. Eckman, Lawrence H. Bell and Diane Nelson (eds.), 75–87. London: Newbury House.
- Flynn, Suzanne
1987 Contrast and construction in a parameter-setting model of L2 acquisition. *Language Learning* 37: 19–62.
- Flynn, Suzanne
1996 A parameter-setting approach to second language acquisition. In *Handbook of Language Acquisition*, William C. Ritchie and Tej K. Bhatia (eds.), 121–158. London: Academic Press.
- Flynn, Suzanne, Claire Foley, James Gair and Barbara Lust
2005 Developmental primary of free relatives in first, second and third language acquisition: Implications for their syntax and semantics. Paper presented at the Linguistic Association of Great Britain conference, September 2005. Cambridge, England.
- Fodor, Jerry A.
1975 *The Language of Thought*. Cambridge, MA: Harvard University Press.
- Fodor, Jerry A.
1983 *The Modularity of Mind: An Essay on Faculty Psychology*. Cambridge, MA: MIT Press.
- Fodor, Janet D.
1998 Unambiguous triggers. *Linguistic Inquiry* 29: 1–36.
- Foster-Cohen, Susan
1999 SLA and First Language Acquisition. In *Annual Review of Applied Linguistics 19*, William Grabe (ed.), 3–21. Cambridge: Cambridge University Press.
- Foucart, Alice, and Cheryl Frenck-Mestre
(in press) Grammatical gender processing in L2: Electrophysiological evidence of the effect of L1 – L2 syntactic similarity. *Bilingualism: Language and Cognition*.
- Franceschina, Florencia
2001a Against an L2 morphological deficit as an explanation for the differences between native and non-native grammars. In *EUROSLA Yearbook*, Susan H. Foster-Cohen and Anna Nizegorodcew (eds.), 143–158. Amsterdam: John Benjamins.
- Franceschina, Florencia
2001b Morphological or syntactic deficits in near-native speakers? An assessment of some current proposals. *Second Language Research* 17 (3): 213–247.

- Fritzenschaft, Agnes, Ira Gawlitzek-Maiwald and Rosemarie Tracy
 1990 Wege zur komplexen Syntax. *Zeitschrift für Sprachwissenschaft* 9: 52–134.
- Freed, Barbara, Dan P. Dewey, Norman Segalowitz and Randall Halter
 2004 The language contact profile. *Studies in Second Language Acquisition* 26: 349–356.
- Fromkin, Victoria, Stephen Krashen, Susan Curtiss, David Rigler and Marilyn Rigler.
 1974 The development of language in Genie: A case of language acquisition beyond the ‘Critical Period’. *Brain and Language* 1: 81–107.
- Fukui, Naoki
 1986 A theory of category projection and its applications. Unpublished Ph.D., Massachusetts Institute of Technology.
- Fukui, Naoki, and Hiromu Sakai
 2003 The visibility guideline for functional categories: Verb raising in Japanese and related issues. *Lingua* 113: 321–375.
- Gagarina, Natalia
 2003 The early verb development and demarcation of stages in three Russian-speaking children. In *Development of Verb Inflection in First Language Acquisition. A Cross-Linguistic Perspective*, Dagmar Bittner, Wolfgang Dressler and Marianne Kilani-Schoch (eds.), 131–169. Berlin: de Gruyter.
- Garcia, Barbara
 1998 The L2 Initial State: Minimal Trees or Full Transfer/Full Access? MA, University of Durham.
- Gass, Susan, and Carolyn G. Madden (eds.)
 1985 *Input in Second Language Acquisition*. Rowley, MA: Newbury House.
- Gavrusseva, Elena
 2003 Aktionsart, aspect and finiteness in early child grammar. *Linguistics* 41: 723–755.
- Gavrusseva, Elena, and Donna Lardiere
 1996 The emergence of extended phrase structure in child L2 acquisition. In *Proceedings of the 20th Annual Boston University Conference on Language Development (BUCLD)*, Andy Stringfellow, Dalia Cahana-Amitay, Elizabeth Hughes and Andrea Zukowski (eds.), 225–236. Somerville, MA: Cascadia Proceedings Project.

- Gawlitzek-Maiwald, Ira, Rosemarie Tracy and Agnes Fritzenschaft
 1992 Language acquisition and competing linguistic representations: The child as arbiter. In *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Acquisition*, Jürgen Meisel (ed.), 139–179. Dordrecht: Kluwer.
- Gerbault, Jeannine
 1978 The acquisition of English by a five year old French speaker. Unpublished MA, University of California at Los Angeles.
- Gerken, LouAnn., Barbara Landau and Robert E. Remez
 1990 Function morphemes in young children's speech perception and production. *Developmental Psychology* 27: 204–216.
- Gerken, LouAnn, Peter W. Jusczyk and Denise R. Mandel
 1994 When prosody fails to cue syntactic structure: 9-month-olds' sensitivity to phonological versus syntactic phrases. *Cognition* 51 (3): 237–265.
- Gibson, Edward, and Kenneth Wexler
 1994 Triggers. *Linguistic Inquiry* 25: 405–454.
- Gilkerson, Jill, Nina Hyams, and Susan Curtiss
 2003 'No I understand negation': A preferential looking paradigm study of early knowledge of sentential and anaphoric negation. Ms., University of California, Los Angeles.
- Giorgio, Alessandra, and Fabio Pianesi
 1997 *Tense and Aspect: From Semantics to Morphosyntax*. Oxford: Oxford University Press.
- Glinsky, Anne, and Marianne Löschmann
 2006 *Neugierig auf Deutschland?* Deutsches YFU Komitee e.V. Hamburg.
- Goad, Heather, Lydia White and Jeff Steele
 2003 Missing inflection in L2 acquisition: defective syntax or L1-constrained prosodic representations? *Canadian Journal of Linguistics* 48: 243–263.
- Goldberg, Adele E.
 1995 *Constructions: A Construction Grammar Approach to Argument Structure*. Chicago: University of Chicago Press.
- Goldberg, Adele E.
 2007 *Constructions at Work: The Nature of Generalizations in Language*. Oxford: Oxford University Press.
- Goldin-Meadow, Susan, and Carolyn Mylander
 1990 Beyond the input given: The child's role in the acquisition of language. *Language* 66 (2): 323–355. [Reprinted in *Language Acquisition: Core Readings*, Paul Bloom (ed.), 1993. London: Harvester Wheatsheaf.]

- Goldschneider, Jennifer, and Robert deKeyser
 2001 Explaining the “natural order of L2 morpheme acquisition” in English: A meta-analysis of multiple determinants. *Language Learning* 51: 1–50.
- Gombert, Jean Émile.
 1992 *Metalinguistic Development*. London: Harvester Wheatsheaf.
- Goswami, Usha, and Peter Bryant
 1990 *Phonological Skills and Learning to Read*. London: Lawrence Erlbaum.
- Grewendorf, Günther
 1995 German. In *Syntax: Ein Internationales Handbuch Zeitgenössischer Forschung / An International Handbook of Contemporary Research*, Vol. 2, Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld and Theo Vennemann (eds.), 1288–1319. Berlin: Walter de Gruyter.
- Grewendorf, Günther, and Joachim Sabel
 1999 Scrambling in German and Japanese: Adjunction vs. multiple specifiers. *Natural Language and Linguistic Theory* 17 (1): 1–65.
- Grimshaw, Jane
 1986 A morphosyntactic explanation for the mirror principle. *Linguistic Inquiry* 17: 745–749.
- Grimshaw, Jane
 1997 Projection, heads, and optimality. *Linguistic Inquiry* 28: 373–422.
- Grondin, Nathalie, and Lydia White
 1996 Functional categories in child L2 acquisition of French. *Language Acquisition* 5: 1–34.
- Grüter, Theres, and Simone Conradie
 2004 Full transfer at the L2 initial state: Evidence from Afrikaans learners of German. Generative Approaches to Language Acquisition North America (GALANA), University of Hawai‘i, Honolulu, HI, December 2004.
- Grüter, Theres
 2005/6 Another take on the L2 initial state: Evidence from comprehension in German. *Language Acquisition* 13: 287–317.
- Guasti, Maria Teresa
 1993/4 Verb syntax in Italian child grammar: Finite and nonfinite verbs. *Language Acquisition* 3: 1–40.
- Christophe, Anne, Marina Nespors, Maria Teresa Guasti and Brit van Ooyen
 2003 Prosodic structure and syntactic acquisition: The case of the head-direction parameter. *Developmental Science* 6: 211–220.

- Guilfoyle, Eithne, and Marie Noonan
 1992 Functional categories in language acquisition. *Canadian Journal of Linguistics* 37: 241–272.
- Haberzettl, Stefanie
 1998 FHG in der Lernsprache, oder: Gibt es ein diskursfunktionales Strukturierungsprinzip im L2-Syntaxerwerb? In *Eine zweite Sprache lernen*, Heide Wegener (ed.), 117–141. Tübingen: Narr.
- Haberzettl, Stefanie
 2003 “Tinkering” with chunks: Form oriented strategies and idiosyncratic utterance patterns without functional implications in the IL of Turkish speaking children learning German. In *Information Structure and the Dynamics of Language Acquisition*, Christine Dimroth and Marianne Starren (eds.), 45–63. Amsterdam: John Benjamins.
- Haberzettl, Stefanie
 2005 *Der Erwerb der Verbstellungsregeln in der Zweitsprache Deutsch durch Kinder mit russischer und türkischer Muttersprache*. Tübingen: Niemeyer.
- Haegeman, Liliane
 1995 Root infinitives, tense and truncated structures in Dutch. *Language Acquisition* 4: 205–255.
- Haegemann, Liliane, and Jacqueline Gueron
 1999 *English Grammar: A Generative Perspective*. Oxford: Blackwell.
- Haider, Hubert
 1993 The basic branching parameter. Ms., University of Stuttgart.
- Haider, Hubert
 1997 Projective economy: On the minimal functional structure of the German clause. In *German: Syntactic Problems – Problematic Syntax*, Werner Abraham and Elly van Gelderen (eds.), 83–103. Tübingen: Niemeyer.
- Haider, Hubert
 2005 How to turn German into Icelandic and derive the OV-VO contrasts. *Journal of Comparative Germanic Linguistics* 8 (1–2): 1–53.
- Håkansson, Gisela
 1994 Verb-initial sentences in the development of Swedish. *Working Papers* 42: 49–65. Lund University, Department of Linguistics.
- Håkansson, Gisela
 2001 Against full transfer: evidence from Swedish learners to German. Lund University, Department of Linguistics. *Working Papers* 48: 67–86.

- Håkansson, Gisela, Manfred Pienemann and Susan Sayehli
 2002 Transfer and typological proximity in the context of second language processing. *Second Language Research* 18: 250–273.
- Hakuta, Kenji
 1974 A preliminary report on the development of grammatical morphemes in a Japanese child learning English as a second language. *Working Papers in Bilingualism* 3: 18–38.
- Halliday, Michael A. K.
 1994 *Introduction to Functional Grammar*, 2nd edition. London: Edward Arnold.
- Hallman, Peter
 1997 Reiterative Syntax. In *Clitics, Pronouns and Movement*, James R. Black and Virginia Motapayane (eds.), 87–131. Amsterdam: John Benjamins.
- Hamann, Cornelia
 1996 Negation and truncated structures. In *Child Language*, Michelle Aldridge (ed.), 72–83. Clevedon: Multilingual Matters.
- Hamann, Cornelia, Zvi Penner and Katrin Lindner
 1998 German impaired grammar: The clause structure revisited. *Language Acquisition* 7 (2-4): 193–245.
- Hamann, Cornelia, and Kim Plunkett
 1998 Subjectless sentences in child Danish. *Cognition* 69 (1): 37–72.
- Hamburger, Henry, and Stephen Crain
 1982 Relative acquisition. In *Language Development: Syntax and Semantics*, Vol. 1, Stan A. Kuczaj (ed.), 245–274. London: Lawrence Erlbaum.
- Hansen Edwards, Jette G., and Mary L. Zampini (eds.)
 2008 *Phonology and Second Language Acquisition*. Amsterdam: John Benjamins.
- Hawkins, Roger
 2000 Persistent selective fossilization in second language acquisition and the optimal design of the language faculty. *Essex Research Reports in Linguistics* 34: 75–90.
- Hawkins, Roger
 2001 *Second Language Syntax: A Generative Introduction*. Oxford: Blackwell.
- Hawkins, Roger, and Cecilia Chan
 1997 The partial availability of Universal Grammar in second language acquisition: the ‘failed functional features hypothesis’. *Second Language Research* 13: 187–226.

- Hawkins, Roger, and Sarah Liszka
2003 Locating the source of defective past tense marking in advanced L2 English speakers. In *The Lexicon-Syntax Interface in Second Language Acquisition*, Roeland van Hout, Aafke Hulk, Folkert Kuiken and Richard Towell (eds.), 21–44. Amsterdam: John Benjamins.
- Haznedar, Belma
1997a Child second language acquisition of English: A longitudinal case study of a Turkish-speaking child. Unpublished Ph.D., University of Durham.
- Haznedar, Belma
1997b L2 acquisition by a Turkish-speaking child: evidence for L1 influence. In *Proceedings of the 21st Annual Boston University Conference on Language Development (BUCLD)*, Elizabeth Hughes, Mary Hughes and Annabel Greenhill (eds.), 245–256. Somerville, MA: Cascadilla Proceedings Project.
- Haznedar, Belma
2001a The acquisition of the IP system in child L2 acquisition. *Studies in Second Language Acquisition* 23: 1–39.
- Haznedar, Belma
2001b The Acquisition of the CP system in Child L2 English. In *Proceedings of the 25th Annual Boston University Conference on Language Development (BUCLD)*, Anna H.-J. Do, Laura Domínguez, and Aimee Johanse (eds.), 331–342. Somerville, MA: Cascadilla Proceedings Project.
- Haznedar, Belma, and Bonnie D. Schwartz
1997 Are there optional infinitives in child L2 acquisition? In *Proceedings of the 21st Annual Boston University Conference on Language Development (BUCLD)*, Elizabeth Hughes, Mary Hughes and Annabel Greenhill (eds.), 257–268. Somerville, MA: Cascadilla Proceedings Project.
- Hendriks, Henriëtte (ed.)
2003 *The Structure of Learner Varieties*. Berlin: Mouton de Gruyter.
- Herschensohn, Julia
1999 *The Second Time Around: Minimalism and L2 Acquisition*. Amsterdam: John Benjamins.
- Herschensohn, Julia
2007 *Language Development and Age*. Cambridge: Cambridge University Press.
- Hill, Jane
1970 Foreign accents, language acquisition and cerebral dominance revisited. *Language Learning* 20: 237–248.

- Hinterhölzl, Roland
 2009 A phase-based comparative approach to modification and word order in Germanic. *Syntax* 12 (3): 242–284.
- Hirsch-Pasek, Kathy, and Roberta Golinkoff
 1996 *The Origins of Grammar: Evidence from Early Language Comprehension*. Cambridge, MA: MIT Press.
- Hiz, Henry
 1978 *Questions*. Dordrecht: D. Reidel.
- Hoekstra, Teun, and Peter Jordens
 1994 From adjunct to head. In *Language Acquisition Studies in Generative Grammar – Papers in honor of Kenneth Wexler from the 1991 GLOW Workshops*, Teun Hoekstra and Bonnie D. Schwartz (eds.), 119–149. Amsterdam: John Benjamins.
- Holmberg, Anders
 2009 Parameters in Minimalist Theory: The case of Scandinavian. *Theoretical Linguistics* 36: 1–48.
- Holmberg, Anders, Urpo Nikanne, Irmeli Oraviita, Hannu Reime and Trond Trosterud
 1993 The structure of INFL and the Finite Clause in Finnish. In *Case and Other Functional Categories in Finnish Syntax*, Anders Holmberg and Urpo Nikanne (eds.), 177–206. Berlin: Mouton de Gruyter.
- Hopp, Holger
 2006 Syntactic features and reanalysis in near-native processing. *Second Language Research* 22: 369–397.
- Hornstein, Norbert, and David Lightfoot (eds)
 1981 *Explanation in Linguistics: The Logical Problem of Language Acquisition*. London: Longman.
- Huhmarniemi, Saara
 (in prep.) Islands and Edges. Unpublished Ph.D., University of Helsinki.
- Hulk, Aafke
 1991 Parameter setting and the acquisition of word order in L2 French. *Second Language Research* 7: 1–34.
- Hyams, Nina
 1992 The genesis of clausal structure. In *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Acquisition*, Jürgen Meisel (ed.), 371–400. Dordrecht: Kluwer.
- Hyams, Nina
 1996 The Underspecification of Functional Categories in Early Grammar. In *Generative Perspectives on Language Acquisition*, Harald Clahsen (ed.), 91–128. Amsterdam: John Benjamins.

- Hyams, Nina
2002 Clausal structure in Child Greek. *The Linguistic Review* 19: 225–269.
- Hyams, Nina
2007 Aspectual effects on interpretation in early grammar. *Language Acquisition* 14: 231–268.
- Iatridou, Sabine
1990 About AgrP. *Linguistic Inquiry* 21: 551–577.
- Ingham, Richard
1998 Tense without agreement in early clause structure. *Language Acquisition* 7: 51–81.
- Ingram, David, and William Thompson
1996 Early syntactic acquisition in German: evidence for the Modal Hypothesis. *Language* 72: 97–120.
- Ioup, Georgette, and Steven H. Weinberger (eds.)
1987 *Interlanguage Phonology*. London: Newbury House.
- Ioup, Georgette, Elizabeth Boustagui, Manal El Tigi and Martha Moselle
1994 Reexamining the critical period hypothesis: A case study in a naturalistic environment. *Studies in second language acquisition* 16: 73–98.
- Ito, Masuyo
2001 *Case Marking and Verb Morphology in Early Syntactic Development*. Fukuoka: Kyushu University Press.
- Jackendoff, Ray
1972 *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT Press.
- Jackendoff, Ray
1977 *X-Bar Syntax: A Study of Phrase Structure*. Cambridge, MA: MIT Press.
- Jagtman, Margriet, and Theo Bongaerts
1994 Verb placement in L2 Dutch. Paper presented at the American Association for Applied Linguistics, Baltimore, Maryland, 8 March.
- Jansen, Bert, Josine Lalleman and Pieter Muysken
1981 The Alternation Hypothesis: Acquisition of Dutch word order by Turkish and Moroccan foreign workers. *Language Learning* 31: 315–336.
- Jansen, Louise
2008 Acquisition of German word order in tutored learners: A cross-sectional study in a wider theoretical context. *Language Learning* 58: 185–231.

- Jordens, Peter
1996 Input and instruction in second language acquisition. In *Investigating Second Language Acquisition*, Peter Jordens and Josine A. Lalleman (eds.), 407–449. Berlin: Mouton de Gruyter.
- Jordens, Peter
2001 Constraints on the shape of second language learner varieties. *International Review of Applied Linguistics in Language Teaching* 39 (1): 51–74.
- Jordens, Peter
2008 The development of finiteness from a lexical to a functional category. In *EUROSLA Yearbook 8*, Leah Roberts, Florence Myles and Annabelle David (eds.), 191–214. Amsterdam: John Benjamins
- Jordens, Peter
2009 The acquisition of functional categories in child L1 and adult L2 Dutch. In *Functional Categories in Learner Language*, Christine Dimroth and Peter Jordens (eds.), 45–96. Berlin: Mouton.
- Jusczyk, Peter W.
1997 *The Discovery of Spoken Language*. Cambridge, MA: MIT Press.
- Jusczyk, Peter W., Anne Cutler and Nancy Redanz
1993 Preference for the predominant stress patterns of English words. *Child Development* 64: 675–687.
- Kail, Michelle
2002 Sentence processing studies and linguistic literacy. *Journal of Child Language* 29: 463–466.
- Kallestinova, Elena
2007 Three stages of root infinitive production in early child Russian. *First Language* 27 (2): 99–131.
- Kauffman, Göz
2007 The verb cluster in Mennonite Low German: A new approach to an old topic. *Linguistische Berichte* 210: 147–207.
- Kayne, Richard
1994 *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.
- Kempen, Gerard
1998 Comparing and explaining the trajectories of first and second language acquisition: In search of the right mix of psychological and linguistic factors. *Bilingualism: Language and Cognition* 1: 29–30.

- Kitagawa, Yoshihisa
 1986 Subjects in Japanese and English. Ph.D., University of Massachusetts at Amherst [Published 1994, New York: Garland.]
- Klein, Elaine C., Iglia Stoynezhka, Kent Adams, Yana Pugach, Stephanie Solt and Tamara Rose
 2004 Past tense affixation in L2 English. In *Proceedings Supplement of the 28th Boston University Conference on Language Development (BUCLD)*, Alejna Brugos, Linnea Micciulla and Christine E. Smith (eds.), 553–564. Somerville, MA: Cascadilla Proceedings Project.
- Klein, Wolfgang, and Norbert Dittmar
 1979 *Developing Grammars: The Acquisition of German Syntax by Foreign Workers*. Berlin: Springer.
- Klein, Wolfgang, and Clive Perdue (eds.)
 1992 *Utterance Structure: Developing Grammars Again*. Amsterdam: John Benjamins.
- Klein, Wolfgang, and Clive Perdue
 1997 The Basic Variety (or: Couldn't natural languages be much simpler?) *Second Language Research* 13: 301–347.
- Ko, Heejeong, Tania Ionin and Kenneth Wexler
 2010 The role of presuppositionality in the second language acquisition of English articles. *Linguistic Inquiry* 41 (2): 213–254.
- Köpcke, Klaus-Michael
 1987 Der Erwerb morphologischer Ausdrucksmittel durch L2 Lerner. *Zeitschrift für Sprachwissenschaft* 6: 186–205.
- Koopman, Hilda
 1984 *The Syntax of Verbs*. Dordrecht: Foris.
- Koopman, Hilda
 1995 On verbs that fail to undergo V-second. *Linguistic Inquiry* 26 (1): 137–163.
- Koopman, Hilda, and Dominique Sportiche
 1991 The position of subjects. *Lingua* 85: 211–258.
- Koskinen, Päivi
 1996 The structure of negation in young children's grammar. *Toronto Working Papers in Linguistics* 15 (1): 83–122.
- Koskinen, Päivi
 1998 Features and categories: Non-finite constructions in Finnish. Unpublished Ph.D., University of Toronto.
- Koster, Jan
 1975 Dutch as an SOV language. *Linguistic Analysis* 1: 111–136.
- Krashen, Stephen
 1985 *The Input Hypothesis: Issues and Implications*. London: Longman.

- Kroch, Anthony
1989 Reflexes of grammar in patterns of language change. *Language Variation and Change* 1: 199–244.
- Kroch, Anthony
1994 Morphosyntactic variation. In: Proceedings of the thirtieth annual meeting of the Chicago Linguistics Society vol. 2, Beals, Katharine (ed.), 180–201. Chicago: Chicago Linguistic Society.
- Kroffke, Solveig, and Monika Rothweiler
2006 Variation im frühen Zweitspracherwerb des deutschen durch Kinder mit türkischer Erstsprache - Akten des 39. Linguistischen Kolloquiums in Amsterdam 2004. In *Variation in Sprachtheorie und Spracherwerb*, Maurice Vliegen (ed.), 145–153. Berlin: Peter Lang.
- Kuhberg, Heinz
1990 Zum L2-Erwerb zweier elfjähriger Kinder mit Türkisch und Polnisch als Ausgangssprachen: Eine Longitudinalstudie unter besonderer Berücksichtigung kontrastivlinguistischer Gesichtspunkte. *Deutsch Lernen* 15: 25–43.
- Lado, Robert
1957 *Linguistics Across Cultures. Applied Linguistics for Language Teachers*. Ann Arbor: University of Michigan Press.
- Laenzlinger, Christopher
1998 *Comparative Studies in Word Order Variation*. Amsterdam: John Benjamins.
- Laka Mugarza, Miren Itzlar
1990 Negation in syntax: On the nature of functional categories and projections. Unpublished Ph.D., Massachusetts Institute of Technology.
- Lakshmanan, Usha
1993 'The boy for the cookie' – some evidence for the nonviolation of the case filter in child second language acquisition. *Language Acquisition* 3: 55–91.
- Lakshmanan, Usha
1994 *Universal Grammar in Child Second Language Acquisition*. Amsterdam: John Benjamins.
- Lakshmanan, Usha, and Larry Selinker
1994 The status of CP and the tensed complementizer *that* in the developing L2 grammars of English. *Second Language Research* 10: 25–48.
- Lardiere, Donna
1998 Dissociating syntax from morphology in divergent end-state grammars. *Second Language Research* 14: 359–375.

- Lardiere, Donna
2003 Second Language Knowledge of [\pm Past] and [\pm Finite]. In *Proceedings of the Generative Approaches to Second Language Acquisition Conference*, Juana Liceras, Helmut Zobl and Helen Goodluck (eds.), 176–189. Somerville, MA: Cascadilla Press.
- Larsen-Freeman, Diane, and Michael Long
1991 *An Introduction to Second Language Acquisition Research*. London: Longman.
- Laurence, Stephen, and Eric Margolis
2001 The poverty of the stimulus argument. *The British Journal for the Philosophy of Science* 52: 217–276.
- Lebeaux, David
1988 Language acquisition and the form of the grammar. Ph.D., University of Massachusetts at Amherst. [Published 2000, Amsterdam: John Benjamins.]
- Lefebvre, Claire
1998 Creole Genesis and the Acquisition of Grammar: The Case of Haitian Creole. Cambridge: Cambridge University Press.
- Legendre, Géraldine, Paul Hagstrom, Anne Vainikka and Marina Todorova
2002 Partial Constraint Ordering in Child French Syntax. *Language Acquisition* 10 (3): 189–227.
- Legendre, Géraldine, Isabelle Barriere, Louise Goyet and Thierry Nazzi
(in press) Comprehension of infrequent subject-verb agreement forms: Evidence from French-learning children. *Child Development*.
- Lenneberg, Eric
1967 *The Biological Foundations of Language*. New York: Wiley.
- Leonard, Laurence B.
2000 Specific language impairment across languages. In *Speech and Language Impairments in Children*, Dorothy V. M. Bishop and Laurence B. Leonard (eds.), 155–184. Hove: Psychology Press.
- Letts, Carolyn
1993 Do explanatory theories of language acquisition have any practical value? In *Proceedings of the Child Language Seminar*, John Clibbens and Brian Pendleton (eds.), 93–107. University of Plymouth.
- Liceras, Juana, Aurora Bel and Susana Perales
2006 Living with optionality: Root Infinitives, bare forms and inflected forms in child null subject languages. In *Selected Proceedings of the 9th Hispanic Linguistics Symposium*, Nuria Sagarra and Almeida J. Toribio (eds.), 203–216. Somerville, MA: Cascadilla Press.

- Lightbown, Patsy M.
1977 Consistency and variation in the acquisition of French: A study of first and second language development: Unpublished Ph.D., Columbia University.
- Lightbown, Patsy M.
1986a Great expectations: Second-language acquisition research and classroom teaching. *Applied Linguistics* 6: 173–189.
- Lightbown, Patsy M.
1986b Input and acquisition for second language learners in and out of classrooms. *Applied Linguistics* 7: 263–273.
- Lightfoot, David
1991 *How to Set Parameters: Arguments from Language Change*. Cambridge: Cambridge University Press.
- Lightfoot, David
1999 *The Development of Language*. Oxford: Blackwell.
- Lindner, Katrin
2002 Finiteness and children with specific language impairment: an exploratory study. *Linguistics* 40: 797–847.
- Ling, Margarete
1999 Topics in the acquisition of complex constructions in German. Unpublished Ph.D., University of Ottawa.
- Loeb, Diane F., and Laurence Leonard
1991 Subject case marking and verb morphology in normally developing and specifically language impaired children. *Journal of Speech and Hearing Research* 34: 340–346.
- Long, Michael H.
1990 Maturational constraints on language development. *Studies in Second Language Acquisition* 12: 251–285.
- Long, Michael H.
1991 Focus on form: A design feature in language teaching methodology. In *Foreign Language Research in Cross-Cultural Perspective: Studies in Bilingualism 2*, Kees de Bot, Ralph B. Ginsberg and Claire Kramsch (eds.), 39–52. Amsterdam: John Benjamins.
- Louden, Mark L.
1999 Incomplete L1 acquisition: The morphosyntax of Kaspar Hauser. In *Proceedings of the 23rd Annual Boston University Conference on Language Development (BUCLD)*, Annabel Greenhill, Heather Littlefield, and Cheryl Tano (eds.), 419–430. Somerville, MA: Cascadilla Proceedings Project.
- Lust, Barbara
2006 *Child Language – Acquisition and Growth*. Cambridge: Cambridge University Press.

- Mahajan, Anoop Kumar
1990 The A/A-bar distinction and Movement Theory. Unpublished Ph.D., Massachusetts Institute of Technology.
- Makino, Taka-Yoshi
1980 Acquisition order of English morphemes by Japanese secondary school students. *Journal of Hokkaido University of Education* 30: 101–48.
- Marantz, Alec
1988 Clitics, morphological merger, and the mapping to phonological structure. In *Theoretical Morphology: Approaches in Modern Linguistics*, Michael Hammond and Michael Noonan (eds.), 253–70. London: Academic Press.
- Marcus, Gary F.
1993 Negative evidence in language acquisition. *Cognition* 46: 53–85.
- Marinis, Theodoros, Leah Roberts, Claudia Felser and Harald Clahsen
2005 Gaps in second language sentence processing. *Studies in Second Language Acquisition* 27: 53–78.
- Marinis, Theodoros
2003 Psycholinguistic techniques in second language acquisition research. *Second Language Research* 19: 144–161.
- Mazuka, Reiko
1994 How can a grammatical parameter be set before the first word? Unpublished ms., Duke University.
- McGuckian, Maria, and Alison Henry
2003 Grammatical morpheme omission in children with hearing impairment acquiring spoken English. In *Proceedings of the 27th Annual Boston University Conference on Language Development (BUCLD)*, Barbara Beachley, Amanda Brown and Frances Conlin (eds.), 519–530. Somerville, MA: Cascadilla Proceedings Project.
- McNeill, David
1966 Developmental psycholinguistics. In *The Genesis of Language: A Psycholinguistic Approach*, Frank Smith and George Miller (eds.), 15–84. Cambridge, MA: MIT Press.
- McWhinney, Brian, and Catherine Snow
1985 The Child Language Data Exchange System. *Journal of Child Language* 12: 271–96.
- Meinunger, Andre
2007 About object *es* in the German Vorfeld. *Linguistic Inquiry* 38: 553–563.

- Meisel, Jürgen
1977 The Language of Foreign Workers in Germany. In *Deutsch im Kontakt mit anderen Sprachen [German in Contact with other Languages]*, Carol Molony, Helmut Zobl, Wilfried Stölting (eds.), 184–212. Kronberg/Ts.: Scriptor.
- Meisel, Jürgen (ed.)
1994 *Bilingual First Language Acquisition: French and German Grammatical Development*. Amsterdam: John Benjamins.
- Meisel, Jürgen
1997 The acquisition of the syntax of negation in French and German: Contrasting first and second language development. *Second Language Research* 13: 227–263.
- Meisel, Jürgen
2003 Results in language acquisition research. The developmental problem. *Lingue e Linguaggio* II: 321–339.
- Meisel, Jürgen
2008 Child second language acquisition or successive first language acquisition? In *Current Trends in Child Second Language Acquisition*, Belma Haznedar and Elena Gavruseva (eds.), 55–82. Amsterdam: John Benjamins.
- Meisel, Jürgen, Harald Clahsen and Manfred Pienemann
1981 On determining developmental stages in natural second language acquisition. *Studies in Second Language Acquisition* 3: 109–135.
- Meisel, Jürgen, and Natascha Müller
1992 Finiteness and Verb Placement in Early Child Grammars. In *The Acquisition of Verb Placement: Functional categories and V2 phenomena in language acquisition*, Jürgen Meisel (ed.), 109–138. Dordrecht: Kluwer.
- Miller, Max
1976 *Zur Logik der frühkindlichen Sprachentwicklung*. Stuttgart: Klett.
- Miller, Jim
2002 Questions about constructions. *Journal of Child Language* 29: 470–474.
- Mills, Anne E.
1985 The acquisition of German. In *The Cross-linguistic Study of Language Acquisition, Vol. 1: The Data*, Dan Slobin (ed.), 141–254. London: Lawrence Erlbaum.
- Mitchell, Erika
1991 Evidence from Finnish for Pollock's Theory of IP. *Linguistic Inquiry* 22(2): 373–379.

- Mobaraki, Mohsen
 2007 The acquisition of English by two Farsi-speaking children. Unpublished Ph.D., Durham University.
- Mobaraki, Mohsen, Anne Vainikka and Martha Young-Scholten
 2008 The status of subjects in early child L2 English. In *Current Trends in Child Second Language Acquisition*, Belma Haznedar and Elena Gavruseva (eds.), 209–236. Amsterdam: John Benjamins.
- Molony, Carol
 1977 ‘Ich bin sprechen Deutsch aber’: The sequence of verb and word order acquisition of an American child learning German. In *Deutsch im Kontakt mit anderen Sprachen*, Carol Molony, Helmut Zobl and Wilfried Stölting (eds.), 274–295. Königstein/Ts.: Scriptor.
- Montalbetti, Mario
 1984 After binding: On the interpretation of pronouns. Unpublished Ph.D., Massachusetts Institute of Technology.
- Morais, Jose, Luz Cary, Jesus Alegria and Paul Bertelson
 1979 Does awareness of speech as a sequence of phones arise spontaneously? *Cognition* 7: 323–331.
- Moyer, Alene
 2009 Input as a critical means to an end: Quantity and quality of experience in L2 phonological attainment. In *Input Matters in SLA*, Thorsten Piske and Martha Young-Scholten (eds.), 159–174. Bristol: Multilingual Matters.
- Müller, Natascha
 1998 UG access without parameter setting. A longitudinal study of (L1 Italian) German as a second language. In *Morphology and its interfaces in second language knowledge*, Marie-Luise Beck (ed.), 115–164. Amsterdam: John Benjamins.
- Müller, Natascha, and Zvi Penner
 1997 Early subordination: The acquisition of free morphology in French, German and Swiss German. *Linguistics* 34: 133–165.
- Muysken, Pieter
 2008 *Functional Categories*. Cambridge: Cambridge University Press.
- Myles, Florence
 2004 From data to theory: The over-representation of linguistic knowledge in SLA. *Transactions of the Philological Society* 102: 139–168.

- Myles, Florence
 2005 The emergence of morphosyntax in classroom learners of French. In *Focus on French as a Foreign Language: Multidisciplinary Approaches*, Jean-Marc Dewaele (ed.), 88–113. Clevedon: Multilingual Matters.
- Myles, Florence, Janet Hooper and Rosamond Mitchell.
 1999 Interrogative chunks in French L2: A basis for creative construction? *Studies in Second Language Acquisition* 21: 49–80.
- Nespor, Marina, and Irene Vogel
 1986 *Prosodic Phonology*. Dordrecht: Foris.
- Newport, Elissa L., Henry Gleitman, and Lila R. Gleitman
 1977 Mother, I'd rather do it myself: Some effects and noneffects of maternal speech style. In *Talking to Children: Language Input and Acquisition*, Catherine Snow and Charles A. Ferguson (eds.), 109–149. Cambridge: Cambridge University Press.
- Newport, Elissa
 1990 Maturational constraints on language learning. *Cognitive Science* 14: 11–28.
- Nicholas, Howard
 1991 Language awareness and second language development. In *Language Awareness in the Classroom*, Carl James and Peter Garrett (eds.), 78–95. Harlow: Longman.
- Nimmrichter, Susanne
 1997 The role of Universal Grammar in second language acquisition: Explaining variability of verb placement in L2 German. Unpublished Ph.D., University of Pennsylvania.
- Ninio, Anat
 2006 *Language and the Learning Curve. A New Theory of Syntactic Development*. Oxford: Oxford University Press.
- Oblor, L. K.
 1989 Exceptional second language learners. In *Variation in Second Language Acquisition: Psychological Issues*, Susan Gass, Carolyn G. Madden, Dennis R. Preston, and Larry Selinker (eds.), 141–159. Avon: Multilingual Matters.
- O'Grady, William
 2005 *Syntactic Carpentry: An Emergentist Approach to Syntax*. London: Lawrence Erlbaum.

- O'Grady, William
2006 The problem with verbal inflection in second language acquisition. Paper presented at the 11th PAAL Conference, Chuncheon, Korea, July.
- Ouhalla, Jamal
1993 Functional categories, agrammatism and language acquisition. *Linguistische Berichte* 143: 3–36.
- Paradis, Johanne C., and Martha Crago
2001 The morphosyntax of specific language impairment in French: Evidence for an extended optional default account. *Language Acquisition* 9 (4): 269–300.
- Paradis, Johanne C., and Martha Crago
2003 What Can SLI Tell Us about Transfer in SLA? In *Proceedings of the 6th Generative Approaches to Second Language Acquisition Conference (GASLA 2002)*, Juana M. Liceras, Helmut Zobl and Helen Goodluck (eds.), 219–226. Somerville, MA: Cascadilla Proceedings Project..
- Paradis, Michel
2004 *A Neurolinguistic Theory of Bilingualism*. Amsterdam: John Benjamins.
- Paradis, Michel
2009 *Declarative and Procedural Determinants of Second Languages*. Amsterdam: John Benjamins.
- Paradis, Johanne C.
2010 The interface between bilingual development and specific language impairment. *Applied Psycholinguistics* 31: 227–252.
- Park, Tschang-Zin
1979 Some facts on negation: Wode's four-stage developmental theory of negation revisited. *Journal of Child Language* 6: 147–151.
- Parodi, Teresa
1990 The acquisition of word order regularities and case morphology. In *Two First Languages – Early Grammatical Development in Bilingual Children*, Jürgen Meisel (ed.), 157–190. Dordrecht: Foris.
- Parodi, Teresa
1991 Funktionale Kategorien im bilingualen Erstspracherwerb und im Zweitspracherwerb. In *Spracherwerb und Grammatik: Linguistische Untersuchungen zum Erwerb von Syntax und Morphologie*, Monika Rothweiler (ed.), 152–165. Opladen: Westdeutscher Verlag.

- Parodi, Teresa
2000 Finiteness and verb placement in second language acquisition. *Second Language Research* 16: 355–381.
- Parodi, Teresa, Bonnie D. Schwartz and Harald Clahsen
1997 On the L1 acquisition of the morphosyntax of German nominals. *Essex Research Reports in Linguistics* 15: 1–44.
- Pater, Joseph
1997 Metrical parameter missetting in second language acquisition. In *Focus on Phonological Acquisition*, S. J. Hannahs and Martha Young-Scholten (eds.), 235–262. Amsterdam: John Benjamins.
- Pater, Joseph
2004 Bridging the gap between receptive and productive development with minimally violable constraints. In *Constraints in Phonological Acquisition*, Rene Kager, Joseph Pater and Wim Zonneveld (eds.), 219–244. Cambridge: Cambridge University Press.
- Penner, Zvi, and Thomas Roeper
1998 Trigger theory and the acquisition of complement idioms. In *Essays in Language Acquisition – Festschrift in Honor of Jürgen Weissenborn*, Norbert Dittmar and Zvi Penner (eds.), 77–111. Bern: Peter Lang.
- Penner, Zvi, Rosemarie Tracy and Karin Wymann
1999 Die Rolle der Fokuspartikel AUCH im frühen kindlichen Lexikon. In *Das Lexikon im Spracherwerb*, Jörg Meibauer and Monika Rothweiler (eds.), 229–251. Tübingen: Francke Verlag.
- Pharr, Aimee B., Nan Bernstein Ratner and Leslie Rescorla
2000 Syllable structure development of toddlers with expressive specific language impairment. *Applied Psycholinguistics* 21 (4): 429–449.
- Phillips, Colin
1995 Syntax at age two: Cross-linguistic differences. In *Papers on Language Processing and Acquisition: MIT Working Papers in Linguistics* 26, Carson T. Schütze, Jennifer B. Ganger and Kevin Broihier (eds.), 225–282. Cambridge, MA: MIT Press.
- Pica, Theresa
1988 Interactive adjustments as an outcome of NS-NNS negotiated interaction. *Language Learning* 38: 45–73.
- Pienemann, Manfred
1981 *Der Zweitspracherwerb ausländischer Arbeiterkinder*. Bonn: BouvierVerlag.

- Pienemann, Manfred
1987 Psychological constraints on the teachability of languages. In *First and Second Language Acquisition Processes*, Carol Pfaff (ed.), 143–168. London: Newbury House.
- Pienemann, Manfred
1998 *Language Processing and Second Language Development: Processability Theory*. Amsterdam: John Benjamins.
- Pienemann, Manfred
2003 Language processing capacity. In *The Handbook of Second Language Acquisition*, Catherine J. Doughty and Michael H. Long (eds.), 679–715. Oxford: Blackwell.
- Pienemann, Manfred, and Malcolm Johnston
1987 Factors influencing the development of language proficiency. In *Applying Second Language Acquisition Research*, David Nunan (ed.), 45–141. Adelaide: National Curriculum Research Centre.
- Pierce, Amy
1992 *Language Acquisition and Syntactic Theory. A Comparative Analysis of French and English Child Grammars*. Dordrecht: Kluwer.
- Pinker, Steven
1982 A theory of the acquisition of lexical interpretive grammars. In *The Mental Representation of Grammatical Relations*, Joan Bresnan (ed.), 655–726. Cambridge, MA: MIT Press.
- Pinker, Steven
1984 *Language Learnability and Language Development*. Cambridge, MA: Harvard University Press.
- Pinker, Steven
1994 *The Language Instinct: How the Mind Creates Language*. London: William Morrow.
- Pinker, Steven, and Ray Jackendoff
2005 The faculty of language: What's special about it? *Cognition* 95: 201–236.
- Piske, Thorsten, Ian R. A. MacKay, James E. Flege
2001 Factors affecting degree of foreign accent in an L2: a review. *Journal of Phonetics* 29: 191–215.
- Piske, Thorsten, and Martha Young-Scholten (eds.)
2009 *Input Matters in SLA*. Bristol: Multilingual Matters.
- Platzack, Christer
1990 A Grammar without functional categories: A syntactic study of early child language. *Nordic Journal of Linguistics* 13: 107–126.

- Platzack, Christer
 1996 The initial hypothesis of syntax: a minimalist perspective on language acquisition and attrition. In *Generative Perspectives on Language Acquisition*, Harald Clahsen (ed.), 369–414. Amsterdam: John Benjamins.
- Plunkett, Kim, and Sven Strömquist
 1990 The acquisition of Scandinavian languages. *Gothenburg Papers in Theoretical Linguistics*, University of Gothenburg.
- Poeppl, David, and Kenneth Wexler
 1993 The Full Competence Hypothesis of clause structure in early German. *Language* 69: 1–33.
- Pollock, Jean-Yves
 1989 Verb movement, UG and the structure of IP. *Linguistic Inquiry* 20: 365–424.
- Powers, Susan
 1995 The acquisition of pronouns in Dutch and English: The case for continuity. In *Proceedings of the 19th Annual Boston University Conference on Language Development (BUCLD)*, Dawn MacLaughlin and Susan McEwen (eds.), 439–450. Somerville, MA: Cascadilla Proceedings Project.
- Powers, Susan
 2001 A Minimalist Account of Phrase Structure Acquisition. In *The Minimalist Parameter. Selected Papers from the Open Linguistics Forum: Ottawa 21-23 March 1997*, Galina M. Alexandrova and Olga Arnaudova (eds.), 33–50. Amsterdam: John Benjamins.
- Prévost, Philippe
 1997 Truncation in second language acquisition. Unpublished Ph.D., McGill University.
- Prévost, Philippe
 1999 The Second Language Acquisition of Split CP structure. In *The Development of Second Language Grammars: A Generative Approach*, Elaine C. Klein and Gita Martohardjono (eds.), 45–79. Amsterdam: John Benjamins.
- Prévost, Philippe
 2003 Truncation and missing inflection in initial child L2 German. *Studies in Second Language Acquisition* 25: 65–97.
- Prévost, Philippe, and Lydia White
 2000a Missing surface inflection or impairment in second language acquisition. Evidence from tense and agreement. *Second Language Research* 16: 103–134.

- Prévost, Philippe, and Lydia White
 2000b Finiteness and variability in SLA: More evidence for missing surface inflection. In *Proceedings of the 23rd Annual Boston University Conference on Language Development (BUCLD)*, Annabel Greenhill, Heather Littlefield, and Cheryl Tano (eds.), 575–586. Somerville, MA: Cascadilla Proceedings Project.
- Prévost, Philippe, and Lydia White
 2000c Missing surface inflection or impairment in second language acquisition? Evidence from tense and agreement. *Second Language Research* 16: 103–134.
- Prince, Alan, and Paul Smolensky
 2003 Optimality Theory in phonology. In *International Encyclopedia of Linguistics*, William J. Frawley (ed.), 212–222. Oxford: Oxford University Press.
- Radford, Andrew
 1988 Small children's small clauses. *Transactions of the Philological Society* 86: 1–43.
- Radford, Andrew
 1990 *Syntactic Theory and the Acquisition of English Syntax*. Oxford: Blackwell.
- Radford, Andrew
 1995 Children: Architects or brickies? In *Proceedings of the 19th Annual Boston University Conference on Language Development (BUCLD)*, Dawn MacLaughlin and Susan McEwen (eds.), 1–19. Somerville, MA: Cascadilla Proceedings Project.
- Read, Charles, Yun-Fei Zhang, Hong-Yin Nie, Bao-Qing Ding.
 1986 The ability to manipulate speech sounds depends on knowing alphabetic spelling. *Cognition* 24: 31–44.
- Ribbert, Anne
 2004 Changes in the complementizer phrase among Germans living in the Netherlands: Influence of a second language on the first language. Unpublished MA, University of Amsterdam.
- Rice, Mabel L., and Kenneth Wexler
 1996 Toward tense as a clinical marker of specific language impairment in English-speaking children. *Journal of Speech and Hearing Research* 39: 1239–1257.
- Rice, Mabel L., Kenneth Wexler and Patricia Cleave
 1995 Specific language impairment as a period of extended optional infinitive. *Journal of Speech and Hearing Research* 38: 850–863.
- Rispoli, Matthew
 1998 Patterns of pronoun case error. *Journal of Child Language* 25: 533–554.

- Ritchie, William C.
1978 The Right Roof Constraint in an Adult-Acquired Language. In *Second Language Acquisition Research: Issues and Implications*, William C. Ritchie (ed.), 33–63. London: Academic Press.
- Rizzi, Luigi
1990 *Relativized Minimality*. Cambridge, MA: MIT Press.
- Rizzi, Luigi
1993/4 Some notes on linguistic theory and language development: The case of root infinitives. *Language Acquisition* 3: 371–393.
- Rizzi, Luigi
1997 The fine structure of the left periphery. In *Elements of Grammars*, Liliane Haegeman (ed.), 281–337. Dordrecht: Kluwer.
- Rizzi, Luigi
1998 Remarks on early null subjects. In *Proceedings of the 22nd Annual Boston University Conference on Language Development (BUCLD)*, Annabel Greenhill, Mary Hughes, Heather Littlefield, and Hugh Walsh (eds.), 14–38. Somerville, MA: Cascadia Proceedings Project.
- Rizzi, Luigi
2000 Remarks on early null subjects. In *The Acquisition of Syntax*, Marc-Ariel Friedemann and Luigi Rizzi (eds.), 269–292. Harlow: Longman.
- Rizzi, Luigi
2004 Locality and left periphery. In *The Cartography of Syntactic Structures: Structures and Beyond*, Vol. 3, Adriana Belletti (ed.), 223–251. Oxford: Oxford University Press.
- Robinson, Peter
1996 *Consciousness, Rules and Instructed Second Language Acquisition*. Bern: Peter Lang.
- Robinson, Peter, and Nick C. Ellis (eds.)
2008 *Handbook of Cognitive Linguistics and Second Language Acquisition*. London: Routledge.
- Roeper, Thomas
1996 The role of merger theory and formal features in acquisition. In *Generative Perspectives on Language Acquisition*, Harald Clahsen (ed.), 415–450. Amsterdam: John Benjamins.
- Roeper, Thomas
1999 Universal bilingualism. *Bilingualism: Language and Cognition* 2 (3): 169–186.

- Roeper, Thomas, and Bernhard Rohrbacher
 1995 Null subjects in early child English and the Theory of Economy of Projection. University of Pennsylvania, *Working Papers in Linguistics* 2: 83–119.
- Rohrbacher, Bernhard, and Anne Vainikka
 1994 Verbs and subjects before age 2: The earliest stages in Germanic L1 acquisition. In *Proceedings of the 25th Annual Meeting of the North-East Linguistic Society (NELS)*, Vol. 2., Jill Beckman (ed.), 55–69. Amherst, MA: GLSA.
- Rojina, Nina
 2004 Acquisition of wh-questions in Russian. *Nordlyd* 32: 68–87.
- Romano, Francesco
 2011 Adult second language development of INFL related properties: Contributions from UG, the L1 and input. Unpublished Ph.D., University of Essex.
- Rothweiler, Monika
 1993 *Der Erwerb von Nebensätzen im Deutschen*. Tübingen: Narr.
- Rothweiler, Monika
 2006 The acquisition of V2 and subordinate clauses in early successive acquisition of German. In *Interfaces in Multilingualism: Acquisition and Representation*, Conxita Lléo (ed.), 91–113. Amsterdam: John Benjamins.
- Salustri, Manola, and Nina Hyams
 2003 Is there an analogue to the RI Stage in the null subject languages? In *Proceedings of the 27th Annual Boston University Conference on Language Development (BUCLD)*, Barbara Beachley, Amanda Brown and Frances Conlin (eds.), 692–703. Somerville, MA: Cascadilla Proceedings Project.
- Santorini, Beatrice
 1992 Variation and change in Yiddish subordinate clause word order. *Natural Language and Linguistic Theory* 10: 595–640.
- Sayehli, Susan
 2001 Transfer and syntax: a study on the acquisition of German word order by Swedish native speakers. Unpublished MA, Lund University.
- Schachter, Jacqueline
 1988 Second language acquisition and its relationship to Universal Grammar. *Applied Linguistics* 9: 219–235.
- Schachter, Jacqueline
 1989 Testing a proposed universal. In *Linguistic Perspectives on Second Language Acquisition*, Susan Gass and Jacqueline Schachter (eds.), 73–88. Cambridge: Cambridge University Press.

- Schaner-Wolles, Chris
 1994 Intermodular synchronization: On the role of morphology in the normal and impaired acquisition of a verb-second language. In *How Tolerant is Universal Grammar? Essays on Language Learnability and Language Variation*, Rosemarie Tracy and Elsa Lattey (eds.), 205–224. Tübingen: Niemeyer.
- Schimke, Sarah.
 2011 Variable verb placement in second-language German and French: Evidence from production and elicited imitation of finite and nonfinite negated sentences. *Applied Psycholinguistics, First View Articles*: 1–51. 19 May 2011.
- Schmidt, Richard W.
 1990 The role of consciousness in second language learning. *Applied Linguistics* 11: 129–158.
- Schönenberger, Manuela
 2001 *Embedded V-to-C in Child Grammar. The Acquisition of Verb Placement in Swiss German*. Dordrecht: Kluwer.
- Schütze, Carson T.
 1997 INFL in child and adult language: Agreement, case and licensing. Unpublished Ph.D., Massachusetts Institute of Technology.
- Schütze, Carson T.
 2001 On the nature of default case. *Syntax* 4: 205–238.
- Schütze, Carson T., and Kenneth Wexler
 1996 Subject case licensing and English Root Infinitives. In *Proceedings of the 20th Annual Boston University Conference on Language Development (BUCLD)*, Andy Stringfellow, Dalia Cahana-Amitay, Elizabeth Hughes and Andrea Zukowski (eds.), 670–681. Somerville, MA: Cascadilla Proceedings Project.
- Schwartz, Bonnie D.
 1992 Testing between UG-based and problem-solving models of L2A: Developmental sequence data. *Language Acquisition* 2: 1–19.
- Schwartz, Bonnie D.
 1993 On explicit and negative data effecting and affecting competence and linguistic behavior. *Studies in Second Language Acquisition* 15: 147–163.
- Schwartz, Bonnie D.
 1996 On two hypotheses of ‘transfer’ in L2A: Minimal Trees and absolute L1 influence. In *The Generative Study of Second Language Acquisition*, Suzanne G. Flynn, Gita Martohardjono and Wayne O’Neil (eds.), 17–34. London: Erlbaum.

- Schwartz, Bonnie D.
1997 On the basis of the Basic Variety. In Peter Jordens (ed.), Special Issue: Introducing the Basic Variety. *Second Language Research* 13: 386–403.
- Schwartz, Bonnie D.
1999 ‘Transfer’ and L2 acquisition of syntax: Where are we now? (‘Transfer’: Maligned, realigned, reconsidered, redefined). In *Newcastle and Durham Working Papers in Linguistics* 5, Kyoko Oga and Geoff Poole (eds.), 211–34.
- Schwartz, Bonnie D.
2005 L2 postcards from the edge. Presentation at the 17th International Symposium on Theoretical and Applied Linguistics, Aristotle University of Thessaloniki (April 16th).
- Schwartz, Bonnie D.
2006a Transfer as bootstrapping. In *L2 Acquisition and Creole Genesis: Dialogues*, Claire Lefebvre, Lydia White and Christine Jourdan (eds.), 183–204. Amsterdam: John Benjamins.
- Schwartz, Bonnie D.
2006b What's left in early L2 architecture? *Second Language* 5: 3–26.
- Schwartz, Bonnie D., and Magda Gubala Ryzak
1992 Learnability and grammar re-organization in L2A: Against negative evidence causing the unlearning of verb movement. *Second Language Research* 8: 1–38.
- Schwartz, Bonnie D., and Rex A. Sprouse
1994 Word order and nominative case in non-native language acquisition: A longitudinal study of (L1 Turkish) German interlanguage. In *Language Acquisition Studies in Generative Grammar: Papers in Honor of Kenneth Wexler from the 1991 GLOW Workshops*, Teun Hoekstra and Bonnie D. Schwartz (eds.), 317–368. Amsterdam: John Benjamins.
- Schwartz, Bonnie D., and Rex A. Sprouse
1996 L2 cognitive states and the Full Transfer/Full Access model. *Second Language Research* 12: 40–72.
- Schwartz, Bonnie D., and Rex A. Sprouse
2000 When syntactic theories evolve: Consequences for L2 acquisition research. In *Second Language Acquisition and Linguistic Theory*, John Archibald (ed.), 156–186. Oxford: Blackwell.
- Schwartz, Bonnie D., and Alessandra Tomaselli
1990 Some implications from an analysis of German word order. In *Issues in Germanic Syntax*, Werner Abraham, Wim Kosmeijer and Eric Reuland (eds.), 251–274. Berlin: Mouton de Gruyter.

- Schwartz, Bonnie D., and Sten Vikner
 1996 The verb always leaves IP in V2 Clauses. In *Parameters and Functional Heads: Essays in Comparative Syntax*, Adriana Belletti and Luigi Rizzi (eds.), 11–62. Oxford: Oxford University Press.
- Scott, Gary-John
 2002 Stacked adjectival modification and the structure of nominal phrases. In *The Cartography of Syntactic Structures, vol. 1: Functional Structure of the DP and IP*, Guglielmo Cinque (ed.), 91–120. Oxford: Oxford University Press.
- Seliger, Herbert W.
 1978 Implications of a multiple critical period hypothesis for second language learning. In *Second Language Research: Issues and Implications*, William C. Ritchie (ed.), 11–19. London: Academic Press.
- Selinker, Larry.
 1972 Interlanguage. *International Review of Applied Linguistics in Language Teaching* 3: 209–231.
- Selkirk, Elisabeth
 1986 *Phonology and Syntax: The Relation between Sound and Structure*. Cambridge, MA: MIT Press.
- Selkirk, Elisabeth.
 1996 The prosodic structure of function words. In *Signal to syntax: Bootstrapping from speech to grammar in early acquisition*, James L. Morgan and Katherine Demuth (eds.), 187–213. Mahwah, N.J.: Lawrence Erlbaum.
- Selkirk, Elisabeth
 1997 The prosodic structure of function words. In *Signal to Syntax: Bootstrapping from Speech to Grammar in Early Acquisition*, James L. Morgan and Katherine Demuth (eds.), 187–213. Mahwah, N.J.: Lawrence Erlbaum.
- Senghas, Ann, Sotaro Kita and Asli Özyürek
 2004 Children creating core properties of language: Evidence from an emerging sign language in Nicaragua. *Science* 305: 1779–1782.

- Sharwood Smith, Michael
 1994 *Second Language Learning: Theoretical Foundations*. London: Longman.
- Sharwood Smith, Michael, and John Truscott
 2006 Full Transfer, Full Access: A processing oriented interpretation. In *Paths of Development in L1 and L2 acquisition*, Unsworth, Sharon, Teresa Parodi, Antonella Sorace and Martha Young-Scholten (eds.), 201–206. Amsterdam: John Benjamins.
- Shirai, Yasuhiro, and Roger Andersen
 1995 The acquisition of tense-aspect morphology: A prototype account. *Language* 71: 743–762.
- Shopen, Timothy (ed.)
 2007 *Language Typology and Syntactic Description*. Vols. 1–3. 2nd ed. Cambridge: Cambridge University Press.
- Slobin, Dan I.
 1966 The acquisition of Russian as a native language. In *The Genesis of Language: A Psycholinguistic Approach*, Frank Smith and George A. Miller (eds.), 129–148. Cambridge, MA: MIT Press.
- Slobin, Dan I.
 1985/1992 *The Cross-Linguistic Study of Language Acquisition*. Vols. 1 and 3. London: Lawrence Erlbaum.
- Smith, Neil
 2005 *Language, Frogs and Savants: More Linguistic Problems, Puzzles and Polemics*. Malden, MA: Blackwell Publishing.
- Smolensky, Paul and Geraldine Legendre
 2006 *The Harmonic Mind: From Neural Computation to Optimality-Theoretic Grammar*. Vols. 1–2. Cambridge, MA: MIT Press.
- Sorace, Antonella
 2003 Near-nativeness. In *Handbook of Second Language Acquisition Theory and Research*, Michael Long and Catherine Doughty (eds.), 130–152. Oxford: Blackwell.
- Sorace, Antonella
 2005 Syntactic optionality at interfaces. In *Syntax and Variation: Reconciling the Biological and the Social*, Leonie Cornips and Karen Corrigan (eds.), 46–111. Amsterdam: John Benjamins.
- Speas, Margaret
 1990 *Phrase Structure in Natural Language*. Dordrecht: Kluwer.
- Speas, Margaret
 2001 Constraints on Null Pronouns. In *Optimality-Theoretic Syntax*, Geraldine Legendre, Jane Grimshaw and Sten Vikner (eds.), 393–425. Cambridge, MA: MIT Press.

- Starren, Marianne and Roeland van Hout.
 1997 Do temporal adverbs shape morpho-syntactic tense and aspect marking? In *Proceedings of the GALA 1997 Conference on Language Acquisition: Knowledge, Representation and Processing*, Antonella Sorace, Caroline Heycock and Richard Shillcock (eds.), 456–461. University of Edinburgh.
- Starren, Marianne
 2003 How temporal coherence pushes the development of grammatical aspect in French L2. *Marges Linguistiques* 5: 56–76.
- Stauble, Anne-Marie
 1984 A comparison of a Spanish-English and a Japanese-English second language continuum: negation and verb morphology. In *Pidginization and Creolization as Language Acquisition*, Roger W. Andersen (ed.), 232–353. London: Newbury House.
- Steele, Susan
 1985 Review Article: Auxiliaries and related puzzles. *Studies in Language* 9: 395–407.
- Stromswold, Karin
 2000 The cognitive neuroscience of language acquisition. In *The New Cognitive Neurosciences*, Michael S. Gazzaniga (ed.), 909–932. Cambridge, MA: MIT Press.
- Stromswold, Karin, and Kai Zimmermann
 1999/00 Acquisition of *nein* and *nicht* and the VP-internal subject stage in German. *Language Acquisition* 8: 101–127.
- Tarone, Elaine
 2008 A sociolinguistic perspective on interaction in SLA. In *Multiple Perspectives on Interaction in SLA*, Alison Mackey and Charlene Polio (eds.), 41–56. New York: Routledge.
- Tarone, Elaine, and Martha Bigelow
 2005 Impact of literacy on oral language processing: Implications for SLA research. *Annual Review of Applied Linguistics* 25: 77–97.
- Tarone, Elaine, Martha Bigelow and Kit Hansen
 2007 The impact of alphabetic print literacy on oral second language acquisition. In *Low-educated Second Language and Literacy Acquisition. Research Policy and Practice. Proceedings of the Second Annual Forum*, Nancy Faux (ed.), 99–122. Richmond: Literacy Institute at Virginia Commonwealth University.
- Tarone, Elaine, Martha Bigelow and Kit Hansen
 2009 *Literacy and Second Language Oracy*. Oxford: Oxford University Press.

- Thordardottir, Elin T., Robin S. Chapman and Laura Wagner
2002 Complex sentence production by adolescents with Down syndrome. *Applied Psycholinguistics* 23: 163–183.
- Thráinsson, Höskuldur
1996 On the (non-)universality of functional categories. In *Minimal Ideas: Syntactic Studies in the Minimalist Framework*, Werner Abraham, Samuel D. Epstein, Höskuldur Thráinsson and Jan-Wouter Zwart (eds.), 253–281. Amsterdam: John Benjamins.
- Tiphine, Ursula
1983 The acquisition of English statements and interrogatives by French-speaking children. Unpublished Ph.D., University of Kiel.
- Tiphine, Ursula
no date The acquisition of English negation by four French children. Ms., University of Kiel.
- Tomaselli, Alessandra, and Bonnie D. Schwartz
1990 Analyzing the acquisition stages of negation in L2 German: Support for UG in adult SLA. *Second Language Research* 6: 1–38.
- Tomasello, Michael
2003 *Constructing a Language: A Usage-Based Theory of Language Acquisition*. Cambridge, MA: Harvard University Press.
- Torrence, Harold, and Nina Hyams
2003 On the role of aspect in determining finiteness and temporal interpretations in early grammar. In *Proceedings of GALA 2003 (Generative Approaches to Language Acquisition), Vol. 2*, Jacqueline van Kampen and Sergio Baauw (eds.), Utrecht: LOT.
- Towell, Richard, Roger Hawkins and Nives Bazergui
1996 The development of fluency in advanced learners of French. *Applied Linguistics* 17: 84–119.
- Towell, Richard, and Roger Hawkins
2004 Empirical evidence and theories of representation in current research into second language acquisition. Special Issue of *Transactions of the Philological Society*. Volume 102: 2.
- Tracy, Rosemarie
2002 Growing (clausal) roots: all children start out (and may remain) multilingual. *Linguistics* 40: 653–685.

- Tran, Jennie
2005a Verb position and verb form in English-speaking children's L2 acquisition of German. In *Proceedings of the 29th Annual Boston University Conference on Language Development (BUCLD)*, Alejna Brugos, Manuella R. Clark-Cotton and Seungwan Ha (eds.), 592–603. Somerville, MA: Cascadilla Proceedings Project.
- Tran, Jennie
2005b Word order and verb inflection in English-speaking children's L2 acquisition of German V2. University of Hawai'i, *Working Papers in Linguistics* 36 (2).
- Travis, Lisa
1984 Parameters and effects of word order variation. Unpublished Ph.D., Massachusetts Institute of Technology.
- Truswell, Robert
2009 Attributive adjectives and nominal templates. *Linguistic Inquiry* 40: 525–533.
- Ullman, Michael T.
2001 The neural basis of lexicon and grammar in first and second language: The declarative/procedural model. *Bilingualism: Language and Cognition* 4: 105–122.
- Unsworth, Sharon
2005 Child L2, adult L2, child L1: Differences and similarities. A study on the acquisition of direct object scrambling in Dutch. Unpublished Ph.D., Utrecht University.
- Vainikka, Anne
1989 Deriving syntactic representations in Finnish. Unpublished Ph.D., University of Massachusetts at Amherst.
- Vainikka, Anne
1993 The three structural cases in Finnish. In *Case and Other Functional Categories in Finnish Syntax*, Anders Holmberg and Urpo Nikanne (eds.), 129–159. Berlin: Mouton de Gruyter.
- Vainikka, Anne
1993/4 Case in the development of English syntax. *Language Acquisition* 3: 257–325.
- Vainikka, Anne
1999 Structure building in acquisition. Lecture series presented at the University of Durham, April 1999.
- Vainikka, Anne
2003a Postverbal case realization in Finnish. In *Generative Approaches to Finnish and Saami Linguistics*, Diane Nelson and Satu Manninen (eds.), 235–266. Stanford, CA: CSLI Publications.

- Vainikka, Anne
2003b Adverb movement in English and Finnish. Presentation at the SKY Conference, November 2003, Helsinki, Finland.
- Vainikka, Anne
subm. Adverb movement in Organic Syntax. Ms. submitted for publication, Johns Hopkins University.
- Vainikka, Anne, and Yonata Levy
1999 Empty subjects in Hebrew and Finnish. *Natural Language and Linguistic Theory* 17: 613–671.
- Vainikka, Anne, and Thomas Roeper
1996 Abstract operators in early acquisition. *The Linguistic Review* 12: 275–310.
- Vainikka, Anne, Geraldine Legendre and Marina Todorova
1999 PLU-Stages: an independent measure of early syntactic development. Department of Cognitive Science Technical Report 99-#10, John Hopkins University.
- Vainikka, Anne, and Martha Young-Scholten
1994 Direct access to X'-Theory: Evidence from Korean and Turkish adults learning German. In *Language Acquisition Studies in Generative Grammar – Papers in honor of Kenneth Wexler from the 1991 GLOW Workshops*, Teun Hoekstra and Bonnie D. Schwartz (eds.), 265–316. Amsterdam: John Benjamins.
- Vainikka, Anne, and Martha Young-Scholten
1996a Gradual development of L2 phrase structure. *Second Language Research* 12:7–39.
- Vainikka, Anne, and Martha Young-Scholten
1996b Partial transfer, not partial access. Commentary on Samuel D. Epstein, Suzanne Flynn and Gita Martohardjono, *Second Language Acquisition: Theoretical and Experimental Issues in Contemporary Research. Behavioral and Brain Sciences* 19: 744–745.
- Vainikka, Anne, and Martha Young-Scholten
1996c The early stages in adult L2 syntax: Additional evidence from Romance speakers. *Second Language Research* 12: 140–176.
- Vainikka, Anne, and Martha Young-Scholten
1997 The interaction of initial transfer with principles of UG. AAAL Colloquium on Transfer. Orlando, Florida 9 March 1997.
- Vainikka, Anne, and Martha Young-Scholten
1998a The initial state in the L2 acquisition of phrase structure. In *The Generative Study of Second Language Acquisition*, Suzanne Flynn, Gita Martohardjono and Wayne O'Neil (eds.), 17–34. London: Lawrence Erlbaum.

- Vainikka, Anne, and Martha Young-Scholten
1998b Morphosyntactic triggers in adult SLA. In *Morphology and its Interfaces*, Marie-Luise Beck (ed.), 69–113. Amsterdam: John Benjamins.
- Vainikka, Anne, and Martha Young-Scholten
1998c Person Agreement in L2 Acquisition. *McGill Working Papers* 13 (1-2): 197–208.
- Vainikka, Anne, and Martha Young-Scholten
2001 The quirks of question acquisition in L2 German. Acquisition perspectives on interfaces workshop, Utrecht, 8 September 2001.
- Vainikka, Anne, and Martha Young-Scholten
2002 Restructuring the CP in L2 German. In *Proceedings of the 26th Annual Boston University Conference on Language Development (BUCLD)*, Barbora Skarabela, Sarah Fish, and Anna H.-J. Do (eds.), 712–722. Somerville, MA: Cascadilla Proceedings Project.
- Vainikka, Anne, and Martha Young-Scholten
2003a MAD about the LAD. Paper presented at the AAAL conference, Arlington, Virginia, 23 March 2003.
- Vainikka, Anne, and Martha Young-Scholten
2003b Review of Hawkins (2001) *Second Language Syntax: A Generative Introduction*. *Lingua* 113: 93–102.
- Vainikka, Anne, and Martha Young-Scholten.
2004 The universality of the bare VP. Presented at GALANA (Generative Approaches to Language Acquisition N. America), Honolulu, Hawai'i, 18 December.
- Vainikka, Anne, and Martha Young-Scholten.
2006 The roots of syntax and how they grow. Organic Grammar, the Basic Variety and Processability Theory. In *Paths of Development in L1 and L2 Acquisition*, Sharon Unsworth, Antonella Sorace, Teresa Parodi and Martha Young-Scholten (eds.), 77–106. Amsterdam: John Benjamins.
- Vainikka, Anne, and Martha Young-Scholten
2007a Minimalism vs. Organic Syntax. In *Clausal and Phrasal Architecture: Syntactic Derivation and Interpretation – Papers in Honour of Joseph Emonds*, Simin Karimi, Vida Samiian and Wendy Wilkins (eds.), 319–338. Amsterdam: John Benjamins.
- Vainikka, Anne, and Martha Young-Scholten.
2007b The role of literacy in the development of morphosyntax from an Organic Grammar perspective. In *Proceedings of the 2nd second annual LESLLA workshop*, Nancy Faux (ed.), 123–148. Virginia Commonwealth University: Literacy Institute.

- Vainikka, Anne, and Martha Young-Scholten
2009 Successful features: Verb raising and adverbs in L2 acquisition under an Organic Grammar approach. In *Representational Deficits in SLA: Studies in Honor of Roger Hawkins*, Neal Snape, Yan-Kit I. Leung and Michael Sharwood Smith (eds.), 53–68. Amsterdam: John Benjamins.
- Vainikka, Anne, and Martha Young-Scholten
2010 All acquisition begins with the projection of a bare VP. Reply to: The interface between bilingual development and Specific Language Impairment, by Johanne Paradis. *Applied Psycholinguistics* 31: 332–339.
- Van Craenenbroeck, Jeroen and Liliane Haegeman
2007 The derivation of subject-initial V2. *Linguistic Inquiry* 38: 167–178.
- Van de Craats, Ineke, Norbert Corver and Roeland van Hout
2000 Conservation of grammatical knowledge: on the acquisition of possessive noun phrases by Turkish and Moroccan learners of Dutch. *Linguistics* 38 (2): 221–314.
- Van de Craats, Ineke, and Roeland van Hout
2010 Dummy auxiliaries in the second language acquisition of Moroccan learners of Dutch: Form and function. *Second Language Research* 26 (4): 473–500.
- Van de Craats, Ineke
2011 A LESLLA corpus: L1 obstacles in the learning of L2 morphosyntax. In *Low-Educated Adult Second Language and Literacy Acquisition. Proceedings of the 6th symposium*, C. Schöneberger, Ineke van de Craats and J. Kurvers (eds.), 33–48. Nijmegen: Centre for Language Studies.
- VanPatten, Bill
1988 Review of Willem Kaper ‘Child Language: A Language Which Does not Exist?’ *Studies in Second Language Acquisition* 10: 76–77.
- VanPatten, Bill, Jessica Williams, Susanne Rott and Mark Overstreet (eds.)
2004 *Form-Meaning Connections in Second Language Acquisition*. London: Lawrence Erlbaum.
- Van Riemsdijk, Henk, C., and Edwin Williams
1986 *Introduction to the Theory of Grammar*. Cambridge, MA: MIT Press.
- Varlokosta, Spyridoula, Anne Vainikka and Bernhard Rohrbacher
1998 Functional projections, markedness and ‘root infinitives’ in early child Greek. *The Linguistic Review* 15: 187–207.
- Vendler, Zeno
1967 *Linguistics in Philosophy*. Ithaca: Cornell University Press.

- Verhagen, Josje
 2007 Proto-auxiliaries, auxiliaries and the acquisition of finiteness in L2 Dutch. Paper presented at the 29th Jahrestagung der Deutschen Gesellschaft für Sprachwissenschaften (DGfS), Siegen, February/March 2007.
- Verrips, Maaïke, and Jürgen Weissenborn
 1992 Routes to verb placement in Early German and French: The independence of finiteness and agreement. In *The Acquisition of Verb Placement: Functional Categories and V2 Phenomena in Language Acquisition*, Jürgen Meisel (ed.), 233–283. Dordrecht: Kluwer.
- von Stutterheim, Christiane
 1984 Der Ausdruck der Temporalität in der Zweitsprache. Unpublished Ph.D., Freie Universität Berlin.
- von Stutterheim, Christiane
 1987 *Temporalität in der Zweitsprache*. Berlin: de Gruyter.
- Wagner-Gough, Judy
 1978 Comparative studies in second language learning. In *Second Language Acquisition: A Book of Readings*, E.M. Hatch (ed.), 155–171. Rowley, MA: Newbury House.
- Wakabayashi, Shigenori
 1997 L1A and SLA of extended verbal constructions examined by Structure Building Approach. Unpublished Ph.D., Cambridge University.
- Wanner, Eric, and Lila Gleitman
 1982 *Language Acquisition: The State of the Art*. Cambridge: Cambridge University Press.
- Webelhuth, Gert
 1984/5 German is configurational. *The Linguistic Review* 4: 203–246.
- Webelhuth, Gert, and Hans den Besten
 1997 Remnant topicalization and the constituent structure of VP in the Germanic SOV languages (Abstract for the 10th GLOW Colloquium). In *GLOW Newsletter 18*, Hans Bennis and Jan Koster (eds.), 15–16. Dordrecht: Foris.
- Wegener, Heide
 1992 Kindlicher Zweitspracherwerb: Untersuchungen zur Morphologie des Deutschen und ihrem Erwerb durch Kinder mit polnischer, russischer und türkischer Erstsprache. Eine Längsschnittuntersuchung. Habilitationsschrift, Universität Augsburg.

- Weissenborn, Jürgen
 1990 Functional categories and verb movement: The acquisition of German syntax reconsidered. *Linguistische Berichte Special Issue* (3): 190–224.
- Wesche, Majorie B.
 1994 Input and interaction in second language acquisition. In *Input and interaction in Language Acquisition*, Clare Gallaway and Brian J. Richards (eds.), 219–249. Cambridge: Cambridge University Press.
- Wexler, Kenneth
 1991 On the Argument from the Poverty of Stimulus. In *The Chomskyan Turn*, Aka Kasher (ed.), 253–270. Basil: Blackwell.
- Wexler, Kenneth
 1994 Optional infinitives, head movement and the economy of derivations in child grammar. In *Verb Movement*, David Lightfoot and Norbert Hornstein (eds.), 305–350. Cambridge: Cambridge University Press.
- Wexler, Kenneth, Carson T. Schütze and Mabel Rice
 1998 Subject case in Children with SLI and Unaffected Controls: Evidence for the Agr/Tns Omission Model. *Language Acquisition* 7 (2-4): 317–344.
- White, Lydia
 1986 Implications of parametric variation for adult second language acquisition: an investigation of the pro-drop parameter. In *Experimental Approaches to Second Language Learning*, Vivian Cook (ed.), 55–72. New York: Pergamon Press.
- White, Lydia
 1989 *Universal Grammar in Second Language Acquisition*. Amsterdam: John Benjamins.
- White, Lydia
 1990/91 The verb-movement parameter in second language acquisition. *Language Acquisition* 1: 337–360.
- White, Lydia
 1991a Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom. *Second Language Research* 7: 133–161.
- White, Lydia
 1991b The verb-movement parameter in second language acquisition. *Language Acquisition* 1: 337–360.
- White, Lydia
 1992 Long and short verb movement in second language acquisition. *Canadian Journal of Linguistics* 37:273–286.

- White, Lydia
1996 Clitics in L2 French. In *Generative Perspectives on Language Acquisition*, H. Clahsen (ed.), 335-368. Amsterdam: John Benjamins.
- White, Lydia
2003a Fossilization in steady state L2 grammars: persistent problems with inflectional morphology. *Bilingualism: Language and Cognition* 6: 129-141.
- White, Lydia
2003b *Second Language Acquisition and Universal Grammar*. Cambridge: Cambridge University Press.
- White, Lydia, Nina Spada, Patsy M. Lightbown, and Leila Ranta
1991 Input enhancement and L2 question formation. *Applied Linguistics* 12: 416-432.
- Whong, Melinda and Clare Wright
to appear Scope and Methodology. In Julia Herschensohn and Martha Young-Scholten (eds.) *Handbook of Second Language Acquisition*. Cambridge: Cambridge University Press.
- Wijnen, Frank
1995 Incremental acquisition of phrase structure: A longitudinal analysis of verb placement in Dutch child language. In *Proceedings of the North East Linguistic Society Annual Meeting NELS 25*, Vol. 2, Jill.N. Beckman (ed.), 105-118. Amherst, MA: GSLA Publications.
- Williams, Edwin
1998 Review of *The Morphosyntax of Verb Movement: A Minimalist Approach to Dutch Syntax* (1997) by Jan-Wouter Zwart. *Journal of Comparative Germanic Linguistics* 1 (3): 263-272.
- Wittek, Angelika, and Michael Tomasello
2002 German children's productivity with tense morphology: The perfekt (present perfect). *Journal of Child Language* 29 (3): 567-589.
- Wode, Henning
1977 Four early stages in the L1 development of negation. *Journal of Child Language* 4: 87-102.
- Wode, Henning
1981 *Learning a Second Language. Vol 1: An Integrated View of Language Acquisition*. Tübingen: Narr.
- Wode, Henning
1996 The reacquisition of languages: some issues. Ms., English Department and Center for Bilingualism and Language Contact, University of Kiel.

- Wright, Clare
2010 *Role of Working Memory in SLA: Factors Affecting Development in L2 English Wh-Questions*. Saarbrücken: VDM Publishing.
- Yamada-Yamamoto, Asako
1993 The acquisition of English syntax by a Japanese-speaking child: With special emphasis on the VO-sequence acquisition. In *Proceedings of the Child Language Seminar*, John Clibbens and Barbara Pendleton (eds.), 109–120. University of Plymouth.
- Young-Scholten, Martha
2002 Orthographic input in L2 phonological development. In *An Integrated View of Language Development – Papers in Honour of Henning Wode*, Petra Burmeister, Thorsten Piske, and Andreas Rohde (eds.), 263–279. Trier: Wissenschaftlicher Verlag.
- Young-Scholten, Martha
2008 The acquisition of case and gender marking by naturalistic L1 English/L2 German adults. *CRILLS DP Workshop 24 June, Newcastle*.
- Young-Scholten, Martha, and Colleen Ijuin
2006 How can we best measure adult ESL student progress? TE-SOL Adult Education Interest Section Newsletter 4 (2), September.
- Young-Scholten, Martha, and Thorsten Piske (eds.)
2009 Introduction. In *Input Matters in SLA*, Thorsten Piske and Martha Young-Scholten (eds.), 1–28. Bristol: Multilingual Matters.
- Young-Scholten, Martha and Nancy Strom
2006 First-time L2 readers: Is there a critical period? In *Low Educated Adult Second Language and Literacy Acquisition. Proceedings of the Inaugural Symposium*, Jeanne Kurvers, Ineke van der Craats and Martha Young-Scholten (eds.), 7–24. Utrecht: LOT.
- Yuan, Boping
2004 Negation in French-Chinese, German-Chinese and English-Chinese interlanguages. *Transactions of the Philological Society* 102 (2): 169–197.
- Zagona, Karen T.
1982 Government and proper government of verbal projections. Unpublished Ph.D., University of Washington.
- Zanuttini, Raffaella
1991 Syntactic properties of sentential negation: a comparative study of Romance languages. Unpublished Ph.D., University of Pennsylvania.

- Zobl, Helmut
1980a Developmental and transfer errors: Their common bases and (possibly) differential effects on subsequent learning. *TESOL Quarterly* 14: 469–479.
- Zobl, Helmut
1980b The formal and developmental selectivity of L1 influence on L2 acquisition. *Language Learning* 30: 43–57.
- Zobl, Helmut
1989 Canonical typological structures and ergativity in English L2 acquisition. In *Linguistic Perspectives on Language Acquisition*, Susan Gass and Jacqueline Schachter (eds.), 203–221. Cambridge: Cambridge University Press.
- Zobl, Helmut, and Juana Liceras
1994 Review Article: Functional categories and acquisition orders. *Language Learning* 44: 159–180.
- Zwart, C. Jan-Wouter
1994 Dutch is head-initial. *The Linguistic Review* 11: 377–406.
- Zwart, C. Jan-Wouter
1997 *Morphosyntax of Verb Movement*. Dordrecht: Kluwer.
- Zwart, C. Jan-Wouter
2001 Object shift with raising verbs. *Linguistic Inquiry* 32: 547–554.

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