
Universal Grammar and language acquisition

1.1 Introduction

This book will be concerned with characterizing and explaining the linguistic systems that second language (L2) learners develop, considering in particular the extent to which the underlying linguistic competence of L2 speakers is constrained by the same universal principles that govern natural language in general. Following Chomsky (1959, 1965, 1975, 1980, 1981a, b, 1986b, 1999), a particular perspective on linguistic universals will be adopted and certain assumptions about the nature of linguistic competence will be taken for granted. In particular, it will be presupposed that the linguistic competence of native speakers of a language can be accounted for in terms of an abstract and unconscious linguistic system, in other words, a grammar, which underlies use of language, including comprehension and production. Native-speaker grammars are constrained by built-in universal linguistic principles, known as Universal Grammar (UG).

Throughout this book, non-native grammars will be referred to as *interlanguage grammars*. The concept of interlanguage was proposed independently in the late 1960s and early 1970s by researchers such as Adjémian (1976), Corder (1967), Nemser (1971) and Selinker (1972). These researchers pointed out that L2 learner language is systematic and that the errors produced by learners do not consist of random mistakes but, rather, suggest rule-governed behaviour. Such observations led to the proposal that L2 learners, like native speakers, represent the language that they are acquiring by means of a complex linguistic system.

The current generative linguistic focus on the nature of interlanguage has its origins in the original interlanguage hypothesis. Explicit claims are made about the underlying grammars of L2 learners and L2 speakers, the issues including a consideration of the role of UG and the extent to which interlanguage grammars exhibit properties of natural language. Such questions will be explored in detail in this book. It will be suggested that the linguistic behaviour of non-native speakers can be accounted for in terms of interlanguage grammars which are constrained by principles and parameters of UG. At the same time, it will be recognized

that interlanguage grammars differ in various ways from the grammars of native speakers, and some of these differences will be explored.

1.2 Universal Grammar in L1 acquisition

A major task for the first language (L1) acquirer is to arrive at a linguistic system which accounts for the input, allowing the child to build linguistic representations and to understand and produce language. UG is proposed as part of an innate biologically endowed language faculty (e.g. Chomsky 1965, 1981b; Pinker 1984, 1994), which permits the L1 acquirer to arrive at a grammar on the basis of linguistic experience (exposure to input). UG provides a *genetic blueprint*, determining in advance what grammars can (and cannot) be like. In the first place, UG places requirements on the form of grammars, providing an inventory of possible grammatical categories and features in the broadest sense, i.e. syntactic, morphological, phonological and semantic. In addition, it constrains the functioning of grammars, by determining the nature of the computational system, including the kinds of operation that can take place, as well as principles that grammars are subject to. UG includes invariant principles, that is, principles that are generally true across languages, as well as parameters which allow for variation from language to language.

Throughout this book it will be presupposed that UG constrains L1 acquisition, as well as adult native-speaker knowledge of language. That is, grammars of children and adults conform to the principles and parameters of UG. The child acquires linguistic competence in the L1. Properties of the language are mentally represented by means of an unconscious, internalized linguistic system (a grammar). As Chomsky (1980: 48) puts it, there is : ‘a certain mental structure consisting of a system of rules and principles that generate and relate mental representations of various types’.¹

UG constitutes the child’s initial state (S_0), the knowledge that the child is equipped with in advance of input. The primary linguistic data (PLD) are critical in helping the child to determine the precise form that the grammar must take. As the child takes account of the input, a language-specific lexicon is built up, and parameters of UG are set to values appropriate for the language in question. The grammar (G) may be restructured over the course of time, as the child becomes responsive to different properties of the input. In due course, the child arrives at a steady state grammar for the mother tongue (S_S). This model of acquisition is schematized in figure 1.1.

As linguistic theories such as Government–Binding (Chomsky 1981a), Minimalism (Chomsky 1995) or Optimality Theory (Archangeli and Langendoen 1997)

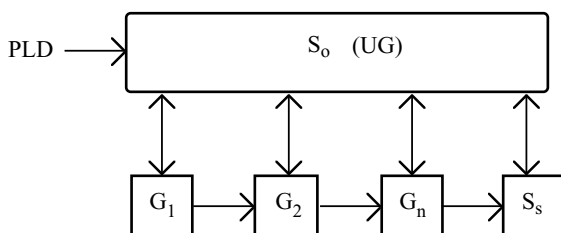


Figure 1.1 *Model of L1 acquisition*

have developed, there have been changes in how universal principles and parameters have been formalized, in other words, changes in what UG is assumed to consist of. For example, the numerous and very specific principles of the early days of generative theory, such as many of the original *Island Constraints* (Ross 1967), have been replaced with more general, invariant economy principles (e.g. Chomsky 1991), as well as computational operations, such as *Move* and *Merge* (see Marantz 1995). Parameters have gradually become more constrained, now being largely associated with the lexicon: properties of items that enter into a computation, for example, may vary in feature composition and feature strength, with associated syntactic consequences.

Such ongoing changes in the definition of UG are a reflection of development and growth within linguistic theory. Nevertheless, regardless of how UG is formalized, there remains a consensus (within the generative linguistic perspective) that certain properties of language are too abstract, subtle and complex to be acquired without assuming some innate and specifically linguistic constraints on grammars and grammar acquisition. Furthermore, there is fairly widespread agreement as to what these problematic phenomena are. This issue will be considered in more detail in the next section.

1.3 Why UG? The logical problem of language acquisition

The arguments for some sort of biological basis to L1 acquisition are well-known (e.g. Aitchison 1976; Chomsky 1959, 1965, 1981b, 1986b; O'Grady 1997; Pinker 1994): the language capacity is species specific; ability to acquire language is independent of intelligence; the pattern of acquisition is relatively uniform across different children, different languages and different cultures; language is acquired with relative ease and rapidity and without the benefit of instruction; children show creativity which goes beyond the input that they are exposed to. All of these observations point to an innate component to language acquisition. However, it

is conceivable that an innate capacity for language acquisition could be general rather than domain specific and that cognitive principles not unique to language might be implicated (for relevant proposals, see O'Grady 1987, 1996, 1997, 2003). Thus, it is important to understand the arguments in favour of an innate component that is specifically linguistic in character.

UG is motivated by learnability arguments: the primary linguistic data underdetermine unconscious knowledge of language in ways which implicate specifically linguistic principles. In other words, there is a mismatch between the input (the utterances that the child is exposed to), and the output (the unconscious grammatical knowledge that the child acquires). This mismatch gives rise to what is known as the problem of the *poverty of the stimulus* or the *logical problem of language acquisition*. Given such underdetermination, the claim is that it would be impossible to account for the L1 acquirer's achievement without postulating a built-in system of universal linguistic principles and grammatical properties (Baker and McCarthy 1981; Hornstein and Lightfoot 1981). UG, then, is proposed as an explanation of how it is that language acquirers come to know, unconsciously, properties of grammar that go far beyond the input in various respects. The idea is that such properties do not have to be learned; they are part of the 'advance knowledge' that the child brings to bear on the task of acquiring a language.

The child's linguistic experience includes what is known as *positive evidence*; that is, the primary linguistic data include utterances that in some sense reveal properties of the underlying grammar (but see chapter 5). *Negative evidence*, or information about ungrammaticality, is not (reliably) available. Nevertheless, children come to know that certain sentence types are disallowed; furthermore, they acquire knowledge that certain interpretations are permitted only in certain contexts (see section 1.3.1). This kind of knowledge is acquired even though children are not taught about ungrammaticality, explicitly or implicitly.

1.3.1 An example: the Overt Pronoun Constraint

As an example of abstract knowledge which children successfully acquire despite an underdetermination problem, we consider here subtle interpretive phenomena relating to subject pronouns. It will be suggested that these properties could not be acquired solely on the basis of input; rather, a universal linguistic principle is implicated.

Languages differ as to whether or not subject pronouns must be phonetically realized, that is whether pronouns are overt or null (Chomsky 1981a; Jaeggli 1982; Rizzi 1982). In languages like English, known as [–null subject] languages, pronouns must be overtly expressed, as can be seen by comparing (1a) and (1b).

However, in *null subject* or *prodrop* languages (in other words, [+null subject] languages), pronouns may be null, taking the form of an empty category, *pro*. Typical examples are Romance languages like Spanish and Italian, as well as East Asian languages such as Chinese, Japanese and Korean. The Spanish example in (1c) and the Japanese example in (1d) illustrate this point. (Spanish examples in this section are drawn from Montalbetti (1984); Japanese examples come from Kanno (1997).)

- (1)
- a. John believes that he is intelligent.
 - b. *John believes that _i is intelligent.
 - c. Juan cree que _i es inteligente.
John believes that _i is intelligent.
'John believes that (he) is intelligent.'
 - d. Tanaka-san wa _i kaisya de itiban da to itte-iru.
Tanaka-Mr TOP company in best is that saying-is
'Mr Tanaka says that (he) is the best in the company.'

It is not the case that null subject languages require all pronouns to be unexpressed: both overt and null subject pronouns are possible. However, as described below, overt and null pronouns do not occur in identical contexts and there are subtle restrictions on their distribution.

The particular restriction at issue here relates to pronominal subjects of embedded clauses, as in (1). There are interesting differences between [\pm null subject] languages in terms of what can serve as a potential antecedent for the pronoun, in other words, limitations on what the pronoun may refer to. In particular, there are restrictions on when it is possible for a pronoun to have a quantified expression (such as *everyone*, *someone*, *no one*) or a *wh*-phrase (e.g. *who*, *which*) as its antecedent.

In the following examples, the lower, or embedded, clause has a pronoun subject, with the main clause subject serving as a potential antecedent of that pronoun. In English, an overt pronoun in an embedded clause can be interpreted as coreferential with a referential NP in the main clause. As shown in (2), the subject of the embedded clause, *she*, refers to the matrix clause subject, *Mary*. (Where expressions are coindexed with the same subscripts, coreference is intended; different subscripts indicate disjoint reference.)

- (2) [Mary_i thinks [that she_i will win]]

It is also possible for the pronoun subject of the lower clause to have a quantified phrase in the main clause as its antecedent, as in (3a), or a *wh*-phrase, as in (3b).

- (3)
- a. [Everyone_i thinks [that she_i will win]]
 - b. [Who_i thinks [that she_i will win?]]

To get the relevant interpretations, imagine a room full of women about to take part in a race. In (3a), every person in the room thinks herself a likely winner: *she*, then, does not refer to a particular individual. The same thing applies in (3b): there can be many people, each of whom thinks herself a likely winner. In such cases, the pronoun is said to receive a *bound variable* interpretation.

In the examples so far, the pronoun in the embedded clause is interpreted in terms of some other NP within the same sentence, either a referential NP, as in (2), or a quantified expression or *wh*-phrase, as in (3). In addition, a pronoun can refer to some other person in the discourse altogether. This is true whether the matrix subject is a referring expression or a quantified expression, as shown in (4), where the pronoun subject of the lower clause refers to another individual, *Jane*.

- (4) a. Jane_j is a great athlete. [Mary_i thinks [that she_j will win]]
 b. Jane_j is a great athlete. [Everyone_i thinks [that she_j will win]]
 c. Jane_j is a great athlete. [Who_i thinks [that she_j will win?]]

Note that, in principle, a sentence like *Everyone thinks that she will win* is ambiguous, with *she* being interpretable either as a variable bound to the quantifier *everyone* (as in (3a)) or as referring to a particular person, such as *Jane*, as in (4b). Similarly, *Mary thought that she would win* is ambiguous, with *she* referring to *Mary* or to some other individual. Usually, the context will favour one of the potential interpretations.

To summarize so far, embedded subject pronouns in [−null subject] languages like English can have referential or quantified NPs within the same sentence as antecedents, as well as being interpretable with discourse antecedents. In [+null subject] languages, on the other hand, it is not the case that any embedded pronominal subject can take a quantified antecedent: overt and null pronouns behave differently in this respect, as described below.

Embedded null subjects in [+null subject] languages behave very similarly to English overt subject pronouns. That is, the null subject of an embedded clause can take either a referential or a quantified expression in the main clause as its antecedent; in other words, a null pronoun can be interpreted as a bound variable.² This is illustrated in (5) for Spanish and in (6) for Japanese; the (a) examples show referential antecedents and the (b) examples show quantified/*wh*-phrase antecedents.

- (5) a. [Juan_i cree [que pro_i es inteligente]]
 John_i believes that (he_i) is intelligent
 b. [Nadie_i cree [que pro_i es inteligente]]
 Nobody_i believes that (he_i) is intelligent

- (6) a. [Tanaka-san_i wa [pro_i kaisya de itiban da to] itte-iru]
 Tanaka-Mr_i TOP (he_i) company in best is that saying-is
 'Mr Tanaka says that (he) is the best in the company.'
 b. [Dare_i ga [pro_i kuruma o katta to] itta no?]
 Who_i NOM (he_i) car ACC bought that said Q
 'Who said that (he) bought a car?'

Overt pronouns in [+null subject] languages, on the other hand, are more restricted than null pronouns; furthermore, they are more restricted than overt pronouns in [−null subject] languages. In particular, while an overt pronoun subject of an embedded clause in Spanish or Japanese can take a sentence-internal referential antecedent, it cannot have a quantified expression or *wh*-phrase as its antecedent. In other words, an overt pronoun cannot receive a bound variable interpretation. This contrast is shown in (7) for Spanish and in (8) for Japanese.

- (7) a. Juan_i cree [que él_i es inteligente]
 John_i believes that he_i is intelligent
 b. *Nadie_i cree [que él_i es inteligente]
 Nobody_i believes that he_i is intelligent
- (8) a. Tanaka-san_i wa [kare_i ga kaisya de itiban da to] itte-iru
 Tanaka-Mr_i TOP he_i NOM company in best is that saying-is
 'Mr Tanaka is saying that he is the best in the company.'
 b. *Dare_i ga [kare_i ga kuruma o katta to] itta no?
 Who_i NOM he_i NOM car ACC bought that said Q
 'Who said that he bought a car?'

In both Spanish and Japanese, overt and null pronouns can refer to someone else in the discourse, just like overt pronouns in English.³ Thus, a sentence with a quantified expression as the main-clause subject and with a null subject in the embedded clause is potentially ambiguous; the null subject may either be bound to the quantifier, as in (5b) or (6b), or may refer to some other individual in the discourse. In contrast, a sentence with a quantified phrase as the main-clause subject and an embedded overt-pronoun subject is not ambiguous, since the bound variable interpretation is not available (see (7b) and (8b)); only an antecedent elsewhere in the discourse is possible.

The relevant differences between languages like Spanish and Japanese and languages like English are summarized in table . Crucially, overt subject pronouns in [+null subject] languages cannot take quantified antecedents, whereas null subjects can, as can overt pronouns in [−null subject] languages. In other respects, overt and null pronouns behave alike, permitting referential and discourse antecedents. Adult native speakers of [+null subject] languages unconsciously know

Table 1.1 *Antecedents for embedded subject pronouns*

	[+Null subject] languages		[-Null subject] languages
	Null pronouns	Overt pronouns	Overt pronouns
Referential antecedents	yes	yes	yes
Quantified antecedents	yes	no	yes
Discourse antecedents	yes	yes	yes

this restriction on antecedents for overt pronouns, that is, they know that overt pronouns cannot serve as bound variables.

The question then arises as to how such knowledge is acquired by native speakers of null-subject languages. This situation constitutes a learnability problem, in that there is a mismatch between the adult knowledge and the kind of data that the child is exposed to. The phenomenon in question is very subtle. The input is surely insufficient to alert the child to the relevant distinction. For one thing, utterances involving quantified antecedents are likely to be relatively infrequent. Furthermore, in many cases, overt and null pronouns permit the same kinds of antecedents (see table 1.1), so it is unlikely that the absence of overt pronouns with quantified antecedents under the relevant interpretation would be detected. A further complication is that there is nothing ungrammatical about these particular surface forms; sentences like (7b) and (8b) are grammatical on the interpretation where there is disjoint reference between the embedded pronoun subject and the main clause subject. What the child has to discover is that sentences like (7b) or (8b) are ungrammatical on the other interpretation. Negative evidence is unlikely to be available; it is implausible that L1 acquirers would produce utterances incorrectly using overt pronouns with quantified antecedents, with intended coreference, and then be provided with implicit or explicit feedback as to their ungrammaticality.

It is on grounds such as these that linguists have argued that certain properties of grammar must be innately specified. In the present case, knowledge of the distinction between overt and null pronouns is argued to be built in as a universal constraint, a principle of UG. Montalbetti (1984) proposed the Overt Pronoun Constraint in part to account for the differences described above. This constraint holds true of null-argument languages in general, including languages unrelated to each other, such as Spanish and Japanese. The Overt Pronoun Constraint is given in (9) (based on Montalbetti 1984):

- (9) Overt Pronoun Constraint: overt pronouns cannot receive a bound variable interpretation (i.e. cannot have quantified or *wh*-antecedents), in situations where a null pronoun could occur.⁴

To summarize, the distinction in the behaviour of overt and null pronouns with respect to the kinds of antecedents that they permit provides an example of a poverty of the stimulus situation: the unconscious knowledge that adult native speakers have of these properties is extremely subtle. It is implausible that the child could induce such restrictions from the input alone. In consequence, it is argued that this knowledge must stem from a principle of UG, the Overt Pronoun Constraint.

This is just one example of the kind of abstract knowledge that is attributed to UG. The linguistic literature is full of many other cases, for example, constraints on the distribution of reflexives (Binding Principle A) (Chomsky 1981a), constraints on the distribution of empty categories (the Empty Category Principle) (Chomsky 1981a), and constraints on *wh*-movement (Subjacency) (Chomsky 1977). As mentioned in section 1.2, linguistic theory has developed over time and the formulation of many of the proposed principles of UG has changed. In this book, we will not be concerned with the precise technical details as to how UG principles have been formulated and reformulated. Rather, the crucial question here is the identification of linguistic knowledge that could not arise from the input alone and that requires the postulation of innate principles.

As we shall see in chapter 2, the same general issue arises in the context of L2 acquisition. That is, it appears that L2 learners are also faced with a poverty of the stimulus, namely the L2 stimulus (Schwartz and Sprouse 2000a, b; White 1985a, 1989), and that their interlanguage competence goes beyond the input that they are exposed to. Hence, the question arises as to whether interlanguage grammars are constrained by UG, an issue which will be a major focus of this book.

1.4 Parameters of Universal Grammar

In addition to universal principles, UG includes principles with a limited number of built-in options (*settings* or *values*), which allow for crosslinguistic variation. Such principles are known as *parameters*. Most parameters are assumed to be binary, that is, they have only two settings, the choices being predetermined by UG. L1 acquisition consists, in part, of setting parameters, the appropriate setting being triggered by the input that the child is exposed to. A central claim of parameter theory, as originally instantiated in the Principles and Parameters framework, is that a single parameter setting brings together a cluster of apparently disparate syntactic properties (Chomsky 1981a). This, for example, was part of the rationale for the Null Subject Parameter, which related the possibility of null subjects to other syntactic and morphological properties found in null subject languages (Chomsky 1981a; Jaeggli 1982; Rizzi 1982, amongst others). The insight behind

the proposal for parameters is that they should severely reduce the acquisition task. Rather than learning a number of seemingly unrelated properties individually, the child has only to discover the appropriate setting of a parameter and a range of associated syntactic properties follows automatically. Some L1 acquisition research has provided evidence in favour of clustering, showing that properties which are argued to be consequences of a particular parameter setting emerge at about the same time (e.g. Hyams 1986; Snyder and Stromswold 1997).

Under current proposals, parametric differences between grammars are associated with properties of lexical items, particularly so-called functional categories (Borer 1984; Chomsky 1995; Ouhalla 1991; Pollock 1989). Linguistic theory distinguishes between lexical categories – verb (V), noun (N), adjective (Adj), adverb (Adv), preposition (P) – and functional categories, including complementizer (Comp or C), inflection (Infl or I) (often split into agreement (Agr) and tense (T)), negation (Neg), determiner (Det), number (Num), as well as others. Functional categories have certain formal features associated with them (such as tense, number, person, gender and case). Functional categories and features form part of the UG inventory.

There are three potential sources of crosslinguistic variation relating to functional categories:

- i. Languages can differ as to which functional categories are realized in the grammar. On some accounts, for example, Japanese lacks the category Det (Fukui and Speas 1986).
- ii. The features of a particular functional category can vary from language to language. For instance, French has a gender feature, while English does not.
- iii. Features are said to vary in strength: a feature can be strong in one language and weak in another, with a range of syntactic consequences. For example, Infl features are strong in French and weak in English (see below), resulting in certain word-order alternations between the two languages.

The lexicons of different languages, then, vary as to which functional categories and features are instantiated and what the strength of various features may be. Such variation has a variety of syntactic effects.

1.4.1 An example: feature strength and movement

In this section, we review the role of feature strength in current accounts of syntax, and consider some examples of parametric variation which depend

on feature strength. In later chapters, such variation will become relevant as we examine the nature of interlanguage grammars, and the kinds of changes that take place in the grammar during the course of L2 development.

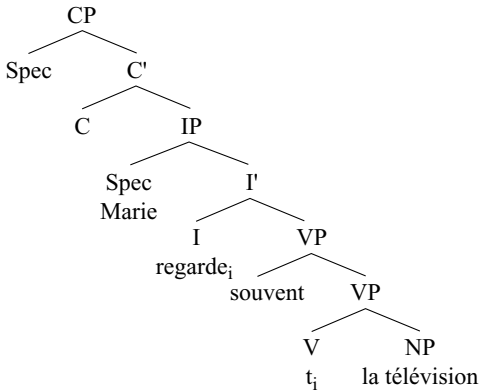
Feature strength is an abstract property which is argued to have syntactic consequences, particularly for word order. The first example to be considered here concerns the strength of features associated with the functional category Infl. Finite verbs have tense and agreement features which have to be checked, at some point, against corresponding V(erb)-features in Infl (Chomsky 1995). Simplifying somewhat, if the V-features in Infl are strong (henceforth, strong I), there is overt movement of the finite verb, which raises from the VP to I for feature checking. If V-features are weak (henceforth, weak I), overt movement does not take place. Instead, features are checked at Logical Form (LF); this movement is not ‘visible’ in the syntax and is said to be covert.

This distinction between strong and weak features accounts for a number of well-known word-order differences between languages like French and English (Emonds 1978; Pollock 1989). In French, finite lexical verbs must appear to the left of the negative *pas* and to the left of VP-adjoined adverbs, as illustrated in (10). In English, on the other hand, the lexical verb remains to the right of *not* and to the right of adverbs, as shown in (11).

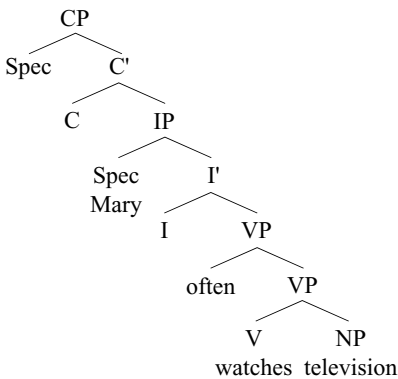
- (10)
- a. Marie ne regarde pas la télévision.
Mary (ne) watches not the television
‘Mary does not watch television.’
 - b. *Marie pas regarde la télévision.
Mary not watches the television
 - c. Marie regarde souvent la télévision.
Mary watches often the television
 - d. *Marie souvent regarde la télévision.
Mary often watches the television
- (11)
- a. Mary does not watch television.
 - b. *Mary watches not television.
 - c. Mary often watches television.
 - d. *Mary watches often television.

These verb placement differences are accounted for in terms of differences in feature strength, French having strong I and English weak. At an underlying level, the two languages have the same structure (compare (12) and (13)). However, because of the difference in feature strength, finite verbs in French must raise to I for feature-checking purposes, whereas finite verbs in English remain within the VP. This is illustrated in (12) and (13).

(12)



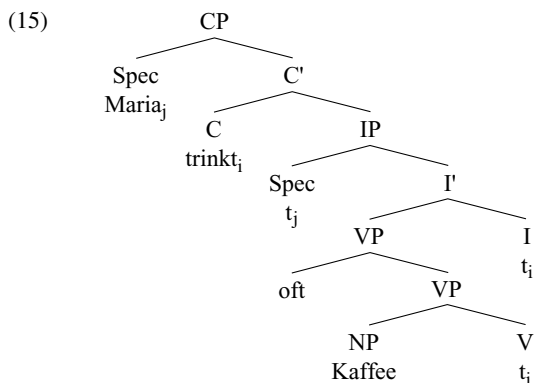
(13)

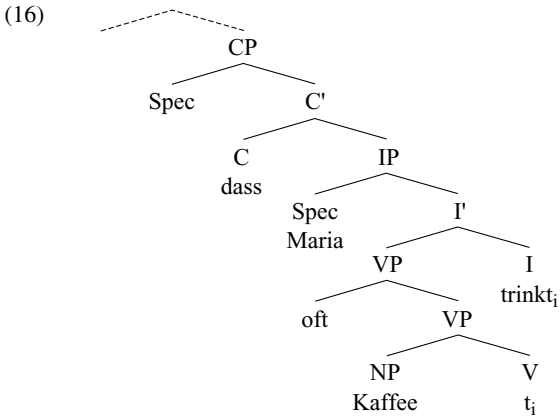


Germanic languages provide another example of crosslinguistic differences in word order which are partially explained in terms of feature strength. Languages like English and German contrast in two respects, namely the underlying position of the verb (VP initial in English, final in German), and the *verb second* (V2) phenomenon (characteristic of German but not English). Main clauses in German and English both show subject-verb-object (SVO) order when no auxiliaries or modals are present, as shown in (14a, b). In such cases, sentences with finite main verbs in final position are ungrammatical, as shown in (14c, d). However, in German main clauses containing auxiliary or modal verbs, the lexical verb appears finally (see (14e)); all verbs appear finally in embedded clauses, as in (14f). Furthermore, in German main clauses, any constituent can be fronted; when this happens, the verb must appear in the second position (V2) in the clause, as shown in (14g–j). That is, the finite verb in main clauses can only be preceded by one other constituent, which does not have to be a subject.

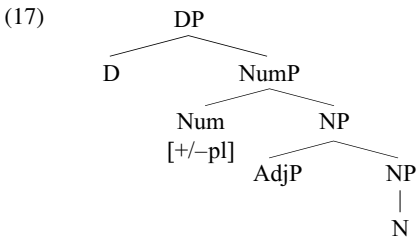
- (14)
- a. Maria trinkt Kaffee.
 - b. Mary drinks coffee.
 - c. *Maria Kaffee trinkt.
 - d. *Mary coffee drinks.
 - e. Maria möchte Kaffee trinken.
Mary wants coffee drink-INF
 - f. Maria sagt, dass sie Kaffee trinken will.
Mary says that she coffee drink-INF will
 - g. Kaffee trinkt Maria.
Coffee drinks Mary
'Mary drinks coffee.'
 - h. *Kaffee Maria trinkt
coffee Mary drinks
 - i. Oft trinkt Maria Kaffee.
often drinks Mary coffee
 - j. *Oft Maria trinkt Kaffee.
often Mary drinks coffee

The position of the verb in German is accounted for in the following way. According to standard analyses of German, VP and IP are head final, as shown in (15) (e.g. Platzack 1986; Schwartz and Vikner 1996; Thiersch 1978).⁵ Finite verbs in main clauses undergo two movements: from V to I and then from I to C, driven by strong features in C. Some other constituent (subject, object or adjunct) raises to the Spec of CP, resulting in the V2 effect. In embedded clauses, the verb cannot raise to C because this position is already filled by a complementizer, such as *dass* ('that') in (14f); consequently, embedded clauses remain V-final. This is shown in (16).





DPs provide a final example of word-order variation attributed to differences in feature strength. On many current analyses, DPs contain a functional category Num, located between D and NP, as shown in (17) (Bernstein 1993; Carstens 1991; Ritter 1991; Valois 1991). Num has number features, as well as gender features in some accounts (Ritter 1993).



In Romance languages such as French and Spanish, number features are strong and nouns must raise overtly from N to Num for feature-checking purposes, over any adjectives that may be present. This results in the noun adjective (N Adj) order typical of Romance, as shown in the Spanish example in (18a). In English, on the other hand, Num features are weak, nouns do not raise and the word order is adjective noun (Adj N), as in (18b).

- (18)
- a. la blusa roja
 - the blouse red
 - b. the red blouse

In other words, parallel to the situation with respect to the position of the verb in the clause, crosslinguistic differences in the position of the noun in the DP are determined by feature strength.

In summary, a variety of word-order differences are accounted for under the assumption that the strength of features in functional categories varies, being either strong or weak. Various word-order alternations between French and English (including others that have not been mentioned here) can be accounted for by one parametric difference between the two languages, namely the strength of V-related features in I. A range of differences between languages like German and English can be accounted for by two properties, the underlying position of the verb and the strength of features in C. Differences in adjective placement between Romance languages and Germanic languages can be accounted for in terms of the strength of features in Num. These parametric differences will be discussed in greater detail in later chapters, as we consider the extent to which the interlanguage grammar exemplifies parameter settings distinct from those found in the L1 grammar.

As is the case with principles of UG, the formulation of the precise mechanisms involved in feature strength and feature checking has changed over time. In this book, the issues will be presented in a way which preserves the general insights without being tied to technical details specific to any particular theory.

1.5 UG access: earlier approaches to UG and SLA

So far, we have considered UG as a system of principles and parameters which provide constraints on grammars in the course of L1 acquisition, as well as on adult native-speaker grammars. L2 learners face a task parallel to that of L1 acquirers, namely the need to arrive at a linguistic system which accounts for the L2 input, allowing the learner to understand and speak the second language. Given this apparent similarity, the question of whether UG also mediates L2 acquisition, and to what extent, has been investigated and debated since the early 1980s. The first decade of research on UG in L2 acquisition concentrated largely on the so-called *access* issue, namely, whether or not UG remains available in non-primary acquisition. (See White (1989) for an overview and discussion of the relevant literature.) This research looked for evidence that L2 learners can (or cannot) apply principles of UG, and set or reset parameters, as well as investigating the extent to which the mother tongue (L1) was involved, for example through the adoption of L1 parameter settings in interlanguage grammars. Hypotheses varied as to whether L2 learners have *no access*, *direct access* or *indirect access* to UG. All of these terms have turned out to be somewhat problematic.

One side of the debate, sometimes referred to as the *no access* position (for example, by Cook 1988; Cook and Newson 1996; Epstein, Flynn and Martohardjono 1996), is represented by the Fundamental Difference Hypothesis (Bley-Vroman 1990) and related claims (Clahsen and Muysken 1986; Schachter 1988). According

to this view, child L1 and adult L2 acquisition differ in major respects. Proponents claim that adult L2 acquisition is not constrained by UG, or that it is only constrained by UG insofar as universal properties can be accessed via the L1 grammar. Indeed, the assumption that UG is at least partially implicated via the L1 suggests that the term *no access* is a misnomer; hence, this view is sometimes also referred to as *partial access*. Regardless of terminology, the crucial claim is that all the linguistic mechanisms available to the L1 acquirer are no longer available to the L2 learner. In support, advocates of this position tried to show that learners are ‘stuck’ with principles and parameter settings exemplified in the L1 (e.g. Schachter 1989) or that their grammars show no evidence for UG constraints at all (e.g. Clahsen and Muysken 1986).

On the other side of the debate is the position that L2 learners indeed have access to UG. In other words, interlanguage grammars show evidence of being constrained by UG principles; at the same time, interlanguage grammars show evidence of parameter settings other than those of the L1. Some proponents of the UG access position argued that at no stage would the interlanguage grammar actually exemplify L1 parameter settings (e.g. Flynn 1987). In other words, L2 learners arrive at relevant properties of the L2 independently of the L1 grammar. Hence, this position was often referred to as *direct access* (e.g. by Cook 1988; Cook and Newson 1996).

An alternative kind of account recognized the role of both the L1 and UG: L2 learners are indeed assumed to have access to principles and parameters of UG. However, initially at least, access would be via the L1 grammar, with the possibility of subsequent grammar restructuring and parameter resetting, in the light of exposure to L2 input (e.g. White 1985b, 1989). This position is sometimes referred to as *indirect access* (e.g. by Cook 1988; Cook and Newson 1996). However, as pointed out by Thomas (1991b, 1993), it is just as appropriate to characterize this perspective as involving direct access, since the learner is not restricted to UG principles and parameter settings exemplified in the L1 grammar.

Terms like *direct* and *indirect access* have since been replaced with *full* and *partial access* but these have proved to be equally problematic. As we shall see in chapter 3, there is still disagreement as to whether or not *full access* to UG implies absence of L1 effects on the interlanguage grammar. Epstein, Flynn and Martohardjono (1996), for example, restrict the term *full access* to the position that UG operates in interlanguage grammars independently of L1 representations. In contrast, Schwartz and Sprouse (1996) propose the Full Transfer Full Access hypothesis, arguing that there is nothing incompatible in the assumption that both UG and the L1 grammar are implicated. Since the L1 is a natural language, there is no a priori justification for assuming that a representation based on the L1 implies lack of UG constraints, or restricted access to UG.

As hypotheses about UG access developed, interest began to shift from overarching questions like ‘Is UG available?’ or ‘What kind of UG access is there in L2?’ to a closer examination of the nature of the interlanguage grammar, with particular focus on whether interlanguage grammars exhibit properties characteristic of natural language (e.g. du Plessis, Solin, Travis and White 1987; Finer and Broselow 1986; Martohardjono and Gair 1993; Schwartz and Tomaselli 1990; Thomas 1991a; White 1992c). As we shall see, this detailed focus on the grammatical properties of interlanguage grammars remains characteristic of current research.

1.6 Methodological issues: ‘tapping’ linguistic competence

The research to be discussed in this book seeks to establish the nature of the L2 learner’s linguistic competence, addressing in particular the question of whether interlanguage grammars are UG-constrained. This raises the issue of how one can in fact discover what the unconscious linguistic system consists of. Linguistic competence is an abstraction; there is no way of directly tapping that competence. Hence, researchers must resort to various kinds of performance measures in order to determine, indirectly, the essential characteristics of mental representations. This is true whether one is interested in adult native-speaker competence, child L1 acquisition or child or adult non-native language acquisition.

A variety of methodologies have been developed over the years for investigating linguistic competence, and data have been obtained using different experimental techniques. It is, of course, the case that no methodology allows one to tap linguistic competence directly: in all cases, performance factors will be involved. Ideally, performance data from various sources will converge. When results from different tasks and different groups of learners show the same trends, this suggests that we are indeed gaining insight (indirectly) into the nature of the underlying linguistic competence.

Data can be broadly classified into three categories: *production data*, including spontaneous and elicited production; *comprehension data*, including data obtained from act-out and picture-identification tasks; and *intuitional data*, including data from grammaticality judgments and truth-value judgments (see chapter 2), as well as, more recently, a number of online techniques such as sentence matching (see chapters 3 and 4).

A myth has developed in the field of L2 acquisition that researchers working in the UG paradigm take grammaticality-judgment tasks to have some kind of privileged status, such that they provide a direct reflection of linguistic competence (e.g. Carroll and Meisel 1990: 205; Ellis 1990: 388). This is a misconception: it

has always been recognized that judgment data are performance data, on a par with other data (e.g. Cook 1990: 592; White 1989: 57–8). The appropriateness of a particular task will depend on what the researcher is trying to discover. For example, grammaticality-judgment tasks provide a means of establishing whether learners know that certain forms are impossible or ungrammatical in the L2. Thus, a grammaticality-judgment task can be used to find out whether sentences which are ruled out by principles of UG are also disallowed in the interlanguage grammar. Consider, for instance, the Adjunct Island Constraint (e.g. Cinque 1990), a constraint which prohibits *wh*-phrases from being fronted out of adjunct clauses. In order to establish whether L2 learners ‘know’ this constraint, one could ask them whether or not sentences like those in (19) are grammatical:

- (19) a. Who did you quit school because you hated?
 b. What did Tom fall when he slipped on?

If interlanguage grammars are constrained by UG, then learners are expected to reject such sentences (while accepting corresponding grammatical ones).

Although grammaticality-judgment tasks suffer from a number of well-known problems (see, for example, Birdsong (1989) and Schütze (1996)), in cases like the above example they have advantages over other sources of data, such as spontaneous production. If L2 learners never produce sentences like (19), it would seem, on the face of things, to provide support for the claim that interlanguage grammars are UG-constrained. Unfortunately, however, failure to find certain sentence types in production data is no guarantee that such sentences are in fact disallowed by the grammar. There may be independent reasons why they fail to show up. The use of methodologies such as grammaticality-judgment tasks, then, allows the experimenter to investigate aspects of interlanguage competence which may not otherwise be amenable to inspection.

It is important to recognize that there is no one methodology that is appropriate for investigating all aspects of linguistic competence. For example, if questions of interpretation are being investigated, grammaticality judgments will often be totally uninformative. Consider the Overt Pronoun Constraint, as discussed in section 1.3.1. As we have seen, certain Spanish and Japanese sentences involving overt-pronoun subjects in embedded clauses and quantified phrases as main clauses subjects are ungrammatical under a bound variable interpretation, as in (7b) and (8b). This contrasts with English, where the interpretation in question is possible. If a researcher wanted to determine whether or not Spanish-speaking learners of English know that a sentence like (3a), repeated here as (20), is possible, a traditional grammaticality-judgment task would not be appropriate.

- (20) Everyone thinks that she will win.

The problem is that this sentence is ambiguous for native speakers of English, being grammatical on two different interpretations (i.e. with *she* taking *everyone* as its antecedent or with a discourse referent as its antecedent). If learners respond that such sentences are grammatical, it would be impossible to tell which interpretation of the sentence was being judged. In other words, one could not tell whether the learner had acquired unconscious knowledge of the difference between Spanish and English with respect to this property. In such cases, alternative methodologies are called for, which match sentences with potential interpretations. This is often achieved by means of so-called *truth-value-judgment tasks* which require the learner to assess the appropriateness of a sentence in relation to some context (see chapter 2).

For such reasons, it is essential for the researcher to construct tasks that are appropriate for the issue being investigated. Various different methodologies will be described in greater detail in later chapters, including a consideration of their appropriateness, as well as their advantages and disadvantages.

1.7 Conclusion

In conclusion, UG is proposed as a (partial) answer to questions such as: What are natural language grammars like? What is the nature of linguistic competence? How is it acquired? As far as the first language is concerned, the assumption is that language acquisition would be impossible in the absence of innate and specifically linguistic principles which place constraints on grammars, thus restricting the 'hypothesis space' by severely limiting the range of possibilities that the language acquirer has to entertain. In subsequent chapters, we will explore the extent to which interlanguage grammars are similarly constrained. Research will be considered which examines in detail the nature of interlanguage representations. As we shall see, claims are made for early grammars (the initial state), for grammars during the course of development, as well as for the nature of the steady state. We will contrast claims that interlanguage grammars are in some sense defective (hence, not UG-constrained) with positions that argue that interlanguage grammars are not impaired, showing, rather, properties characteristic of natural languages constrained by UG.

Topics for discussion

- A number of researchers have suggested that negative evidence is in fact available in L1 acquisition. For example, Hirsh-Pasek, Treiman and Schneiderman (1984) report that mothers of 2-year-olds are significantly

more likely to repeat (and sometimes rephrase) children's ill-formed utterances than their well-formed utterances. Does the availability of such feedback in fact solve the logical problem of language acquisition?

- The claim that there are domain-specific universal linguistic principles constraining grammars is, of course, contested. For example, O'Grady (1987, 1996, 1997, 2003) proposes that language acquisition should be accounted for in terms of more general cognitive principles which are not unique to language. Others place far greater emphasis on statistical properties of the input, in some cases downplaying or denying a role for innate constraints, for example, connectionist models such as Parallel Distributed Processing (Rumelhart and McClelland 1987) or the Competition Model (Bates and MacWhinney 1987). (For an overview of recent research which assumes a major role for statistical learning as well as innate constraints, see Newport and Aslin (2000).) How can one choose between these very different kinds of account (i.e. what kinds of argumentation and data are relevant)? For relevant discussion in the L2 context, see Gregg (2003).
- To what extent are functional categories universally realized and what are the implications for theories of L2 acquisition? There is considerable disagreement as to whether or not languages differ in the functional categories that they instantiate. See Bobaljik and Thráinsson (1998), Thráinsson (1996) and Webelhuth (1995) for useful discussion.
- The problem of teleology. The task of the language acquirer (L1 or L2) is to 'construct' a grammar that accommodates the linguistic input, allowing the learner to provide structural representations to utterances. The task should *not* be seen as having to acquire a grammar that matches the grammar of adult speakers of the language in question. Why is it important to make such a distinction?

Suggestions for additional reading

- It will be presupposed that the reader has some familiarity with the concepts and mechanisms assumed in current generative grammar. The Government and Binding framework is presented in Haegeman (1991), Minimalism in Radford (1997). Papers in Webelhuth (1995) provide a useful overview of both frameworks and the connections between them.
- Arguments for an innate and specifically linguistic basis to first language acquisition can be found in Chomsky (1999), Crain and Thornton (1998), Pinker (1994), amongst others. Useful overviews of L1 acquisition

theories and findings within this framework can be found in Goodluck (1991) and O'Grady (1997), as well as in several of the chapters in Bloom (1994) and in Ritchie and Bhatia (1999).

- For detailed presentation of methodologies appropriate for research on first language acquisition, see Crain and Thornton (1998) and McDaniel, McKee and Cairns (1996). For detailed discussion of the pros and cons of grammaticality-judgment tasks, see Birdsong (1989) and Schütze (1996).
- Other recent books looking at L2 acquisition can be seen as complementary to this book. Hawkins (2001a) provides an excellent introduction to L2 acquisition of syntax and morphology within a generative linguistic perspective. Herschensohn (2000) adopts a more technical Minimalist approach to L2 acquisition.