

Second Language Acquisition: From Initial to Final State*

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Introduction

Over the last two decades, researchers interested in investigating the linguistic competence of second language (L2) learners have drawn heavily on current generative grammar in order to understand the nature of the mental representation, or interlanguage grammar, attained by L2 learners. The enriched relationship between linguistic theory and L2 acquisition theory can largely be attributed to the introduction of the Principles and Parameters framework (Chomsky, 1981). This framework accommodated variation between languages by introducing the concept of parameters; in addition, proposals for universal principles became much more highly developed than they had been in earlier versions of generative grammar. The emphasis on parameters allowed L2 researchers to look at variation between languages and the role of language transfer, investigating whether or not parameters of Universal Grammar (UG) can be (re)set in L2 acquisition (e.g., Flynn, 1987; White, 1985b). As far as universal principles are concerned, much research focused on the general question of whether UG remains available in non-primary acquisition, and whether interlanguages are natural languages, constrained by principles of UG (e.g., Bley-Vroman, 1990; Schachter, 1989; White, 1988).

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More recently, L2 research has explored the nature of developing interlanguage grammars, as well as looking at the initial and final states of interlanguage knowledge. In this chapter, I identify and discuss three main themes in L2 acquisition research conducted within the UG framework:

- 1 Theories about the L2 initial state and the kind of grammatical knowledge that the L2 learner starts out with.
- 2 Theories about stages of development, the nature of the stages, and the kind of grammar development that takes place.
- 3 Theories about the final state or ultimate attainment possible in L2 acquisition.

Research on these three areas has not taken a chronological path. In the first decade of UG-based L2 acquisition research (starting in the early 1980s), the main thrust of research was on whether or not UG is available to L2 learners during the course of acquisition. Assumptions about the initial state and final outcome were often implicit; research concentrated primarily on various points in development, looking for evidence as to whether learners' hypotheses are constrained by principles of UG and whether they can set or reset parameters. Detailed investigation of the L2 initial state is very much a current concern, while ultimate attainment has received increasing attention in recent years, often in the context of the critical periods hypothesis.

L1 Acquisition

In first language (L1) acquisition, the learner's task is to acquire a grammar on the basis of input, a grammar which constitutes a mental representation of the language being acquired, and which is involved in the comprehension and production of language. L1 acquisition is assumed to be constrained by UG, since the input is "deficient" in various respects, underdetermining the final grammar (the so-called "poverty of the stimulus" argument or the "logical problem of language acquisition"). UG provides a system of constraints (in the form of principles and parameters) which limit the hypothesis space that the child has to search through, restricting the range of possible grammars to be considered. Acquisition proceeds on the basis of input interacting with principles and parameters of UG, leading to the construction of a grammar or series of grammars; eventually, the child arrives at a steady state grammar, as schematized in figure 4.1.

In a sense one can think of L2 acquisition research as starting from where L1 acquisition research ends. In the L2 acquisition field, implicit or explicit assumptions are made about the end result of L1 acquisition (that is, about the steady state grammar achieved by native speakers). Linguistic theory provides some idea of what is attained in L1 acquisition; unfortunately, linguistic

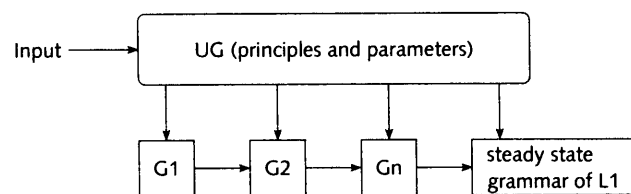


Figure 4.1 L1 acquisition

theory and L1 acquisition theory do not tell us what happens to aspects of UG that are not required in any particular L1. However, there are major implications for L2 acquisition, depending on whether properties of grammar which have not been activated in a particular L1 wither away or become otherwise inaccessible.

Functional categories, such as determiner (Det), inflection (Infl) and complementizer (Comp) and their associated projections, DP, IP and CP, provide an example. Theories about L1 acquisition of functional categories can be divided into two main positions:

- 1 All functional categories are available from the beginning; this is referred to as the “full competence” or “strong continuity” approach (e.g., Hyams, 1992; Poeppel and Wexler, 1993). On some versions of the full competence hypothesis, however, certain functional categories may initially lack fully specified features (Hoekstra and Hyams, 1995; Wexler, 1994).
- 2 Functional categories are initially absent and emerge gradually in response to triggering input according to the “lexical learning” or “weak continuity” hypothesis (Clahsen, Eisenbeiss and Vainikka, 1994) or as a result of maturation (Radford, 1990) or as a combination of both maturation and input (“structure building”, Guilfoyle and Noonan, 1992).

The full competence approach assumes that all functional categories are present in the child’s initial state. The question of relevance to L2 acquisition is what happens to functional categories that any particular L1 happens not to realize. One possibility is that grammars retain all possible functional categories, even those they do not make use of. Another possibility is that functional categories that are not required in a particular grammar wither away in some sense.

On the weak continuity approach, functional categories are assumed not to be present from the beginning; some or all are unavailable initially. Functional categories emerge as triggered by input. Thus, languages (and language acquirers) draw from an inventory of possible functional categories and associated features; a particular grammar instantiates only a subset of the available possibilities. Again, the question of interest to L2 researchers is what

happens to the functional categories that are not triggered in the course of L1 acquisition. They do not form part of the L1 grammar – does the full inventory remain available via UG so that acquisition of new L2 functional categories can successfully take place?¹

These theories differ in their assumptions about the L1 initial state, as well as the course of grammar development. Possibly, they also differ over the end state (namely whether or not all functional categories are represented in all grammars) but because this has no particular consequences for native speaker grammars, this issue is not pursued. However, there are consequences for L2 acquisition. Do functional categories, principles or parameter settings unused in the L1 “wither” and become inaccessible in L2 acquisition or is the full inventory present and accessible?

As we shall see, certain L2 researchers effectively assume withering – the L2 learner is left with nothing more than those categories, features and settings instantiated in the L1 grammar, any other options effectively disappearing. In contrast, other researchers assume that the full range of options remains available after L1 acquisition is over, including options that have not been exercised in the L1.

The L2 Initial State

The L2 acquisition task is similar to the L1 task: the learner must acquire a mental representation on the basis of deficient input (White, 1985a, 1989b). But the means, the process and the end result may well be different; indeed these are matters that have been the subject of extensive debate. What does the L2 learner start from? What mechanisms does the L2 learner use? What does the L2 learner achieve? At issue within the framework we are adopting is whether or not interlanguage grammars are subject to the constraints of UG.

Current research focuses particularly on the nature of the linguistic knowledge available at the commencement of L2 acquisition, including consideration of the extent to which the L2 learner is influenced by the L1 grammar (if at all), whether the L1 grammar is adopted as the L2 learner’s initial theory of the L2 and, if so, whether all or only parts of the L1 grammar are adopted. Much of this debate centers on the nature, availability and role of functional categories and associated functional features, drawing on recent developments in linguistic theory and L1 acquisition theory.

Five different perspectives on the L2 initial state can be identified. They can be distinguished from each other on the basis of two issues: the extent of presumed involvement of the L1 grammar (full transfer, partial transfer or no transfer) and the extent to which UG constrains interlanguage representations. The debate over UG is often phrased in terms of “access” (full access versus partial or no access), although there are problems with this terminology, as we shall see.

Full Transfer/Partial Access

Extending Schwartz and Sprouse's (1996) terminology, I shall refer to the first approach to the initial state as Full Transfer/Partial Access. This is the position that the L1 grammar constitutes the learner's representation of the L2 and is used to analyze the L2 input; in other words, the L2 initial state consists of the L1 final state. Properties of UG not instantiated in the L1 grammar are not available; for this reason, this position is sometimes referred to as the "no access" position (e.g., by Epstein, Flynn and Martohardjono, 1996). However, the term "no access" is misleading; most proponents assume that certain UG effects will, in fact, be manifested in interlanguage grammars, albeit weakly via the L1, as is the case, for example, for Bley-Vroman's (1990) Fundamental Difference Hypothesis.² Indeed, this position is also sometimes known as the "no-parameter resetting" hypothesis, which is perhaps a more accurate reflection of what it stands for.

This view also has implications for the course of development: interlanguage grammars (ILGs) will not show new parameter settings (Clahsen and Hong, 1995; Clahsen and Muysken, 1989) or new feature specifications (Hawkins and Chan, 1997; Licerias and Díaz, in press), as well as for ultimate attainment, which will necessarily be different from the grammar of a native speaker. This position is illustrated in figure 4.2.

Although Full Transfer/Partial Access takes the L1 grammar as the starting point, this does not mean that proponents are committed to the impossibility of grammar development, though they differ radically over what kind of change is assumed to take place and the extent to which L1 principles and parameters can accommodate L2 input. Earlier versions of this approach assumed no parameter resetting and relative inflexibility of UG principles, such that a principle existing in the L1 could not accommodate a totally new situation in the L2 (e.g., Schachter, 1989). More recently there have been suggestions that UG principles remain active, even if these principles are available only via the L1, such that L2 learners can arrive at UG-consistent grammars which differ from the L1 (Tsimplici and Roussou, 1991).

An example of an L1-based UG principle being active enough to constrain the acquisition of novel properties of the L2 is provided by Kanno (1996).³

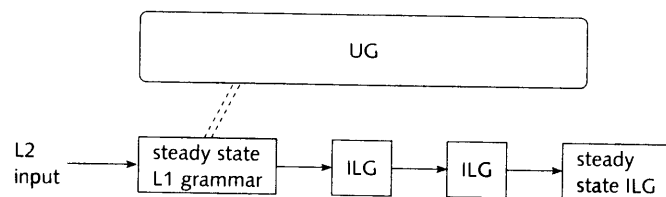


Figure 4.2 Full Transfer/Partial Access

She shows that beginning learners of Japanese are highly sensitive to a subject/object asymmetry in case particle deletion: they recognize that accusative case particles can be freely dropped, whereas nominative particles cannot, even though the L1 (English) has no such phenomenon. Kanno attributes knowledge of this distinction to the operation of the Empty Category Principle (available via the L1 grammar) in a new domain (found in the L2 but not the L1).

No Transfer/Full Access

The next approach, which I will call No Transfer/Full Access, assumes that the L2 grammar is acquired on the basis of UG principles and parameters interacting directly with L2 input, as shown in figure 4.3.⁴ On this view, the L1 final state does not constitute the L2 learner's grammar or mental representation at any stage. (Figure 4.3 illustrates this by dissociating the L1 grammar from the L2 acquisition system. This is not meant to imply that UG was not involved in the acquisition of the L1, nor that it is no longer implicated in adult L1 knowledge.) Instead, UG is assumed to constitute the initial state for L2 acquisition. Thus the L2 learner's initial state parallels that of the L1 acquirer, and L1 and L2 developing grammars are also expected to be similar. All properties of UG are available for L2 acquisition, including new parameter settings, functional categories, and feature values. In other words, any options or choices not exemplified in the L1 still remain available; the content of UG itself (a) does not change as a result of L1 acquisition (that is, nothing withers away) and (b) is accessible in non-primary acquisition at any age.

This position is advanced by Epstein, Flynn and Martohardjono (1996, 1998), Flynn and Martohardjono (1994) and Flynn (1996). Somewhat confusingly, although these researchers explicitly exclude properties of the L1 grammar from the interlanguage representation, they nevertheless assume some role for the L1, without specifying or clarifying its precise status. Indeed, their position is inconsistent. In spite of their claim that the L1 grammar does not constitute the initial state for the L2 learner, Flynn (1987, 1996) and Flynn and Martohardjono (1994) argue that L2 acquisition involves the assignment of "additional" parametric values where L1 and L2 do not match

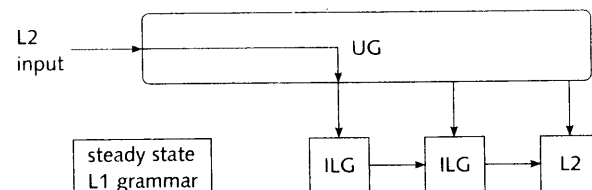


Figure 4.3 No Transfer/Full Access

in parameter settings. It is surely only if the L2 learner starts from the possibilities exemplified in the L1 that the issues of match and mismatch arise.

Another recent proponent of the No Transfer/Full Access view is Platzack (1996) who argues that both L1 and L2 learners resort to unmarked grammars, defined by him in terms of the Minimalist assumption that movement is costly (Chomsky, 1995). Platzack claims that all features in initial grammars are weak (thus not motivating movement in the syntax). For L2 acquisition, this means that the learner will initially assume weak feature values even if the L1 grammar has strong features and even if the L2 input motivate strong features. (White's (1991a, 1991b, 1992a) results indicate that French learners of English transfer a strong Agr feature from the L1, hence inappropriately allowing verb movement over adverbs in the L2, which has weak Agr, suggesting that Platzack's proposal is incorrect.)

As far as development is concerned, No Transfer/Full Access predicts that the grammars of L1 and L2 acquirers should be essentially alike; furthermore, there will be no differences in developing interlanguage grammars attributable to the mother tongue of the learner. This view further predicts that the L2 learner should in principle converge on the L2 grammar; in other words, ultimate attainment should be similar to that of native speakers.

Full Transfer/Full Access

Figure 4.4 illustrates the third position, Full Transfer/Full Access (Schwartz, 1998; Schwartz and Sprouse, 1994, 1996, this volume, chapter 5). According to this approach, L1 and L2 acquisition differ with respect to their starting point but are similar with respect to involvement of UG. The kind of transfer that is assumed is not transfer of surface properties but transfer of the L1 grammar with associated "deep" consequences (clustering of parametric properties, syntactic consequences of certain functional categories and feature values, etc.). Full Transfer/Full Access shares characteristics of the two previously discussed approaches. As in Full Transfer/Partial Access, the L1 grammar is assumed to constitute the L2 initial state. As in No Transfer/Full Access, properties of UG not exemplified in the L1 are assumed still to be available to constrain interlanguage grammars. The learner, faced with L2 input that must be accounted for, initially uses a representation based entirely on the L1

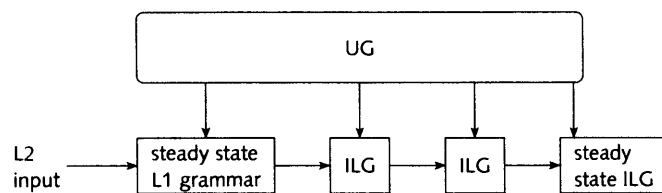


Figure 4.4 Full Transfer/Full Access

grammar. However, where properties of the L2 input suggest that the L1 grammar is inadequate, there is restructuring. When the L1 grammar is unable to accommodate the L2 input, the learner has recourse to UG options, including new parameter settings, functional categories and feature values, in order to arrive at an analysis more appropriate to the L2 input.

An earlier version of this position was exemplified by my own work on parameters (e.g., White, 1985b, 1989a), which maintained that L2 learners initially apply the L1 value of a parameter to the L2 data, with subsequent resetting in response to L2 input. Schwartz (1998) and Schwartz and Sprouse (1994, 1996, this volume, chapter 5) extend this view, arguing that it is not just L1 parameter settings that are applied to the L2 but the L1 grammar in its entirety.

According to Full Transfer/Full Access, the L1 is seen as the initial state; nevertheless, there is no commitment as to how long this state lasts. L2 data might motivate change more or less immediately. There will also be circumstances depending on the L1s and L2s in question, where the positive L2 input will not motivate restructuring (Schwartz and Gubala-Ryzak, 1992; Schwartz and Sprouse, 1994; White, 1989a, 1989b). In effect, the grammar that the learner has hypothesized acts as a filter, preventing certain aspects of the L2 input from being noticed; hence, reanalysis does not take place. (See Brown, this volume, chapter 1, for related proposals for phonology.)

Full Transfer/Full Access predicts that grammars of L1 and L2 learners will differ, prior to any parameter resetting, as will the grammars of learners of different L1s. It is also not expected that learners will necessarily converge on the L2 grammar, since properties of the L1 grammar may prevent the learner from noticing relevant properties of the L2, in effect leading to fossilization at a point short of native-like competence.

Partial Transfer/Full Access

There are a number of researchers who hold that the L2 initial state draws on properties of both the L1 and UG concurrently (varying in what aspects of the L1 grammar they assume to be present in the initial state, as well as what aspects of UG). This situation, which we will term Partial Transfer/Full Access, is diagrammed in figure 4.5.

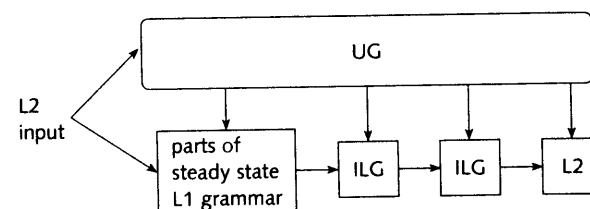


Figure 4.5 Partial Transfer/Full Access

Proponents are Vainikka and Young-Scholten (1994, 1996a, 1996b), who propose that only L1 lexical categories are found in the initial L2 grammar. Functional categories are not transferred. In the initial state, then, L2 learners are assumed to project NP and VP (with L1 headedness) but not DP, IP, or CP. In this respect, L2 learners are like L1 acquirers, who are also assumed, on the weak continuity hypothesis, to lack functional categories initially (Clahsen, Eisenbeiss and Vainikka, 1994). In response to L2 input, learners gradually project functional categories (drawing on the full inventory in UG), just as L1 acquirers are assumed to do. In principle, L2 learners should converge on the L2 grammar.

Eubank (1994a, 1994b) takes a somewhat different view, maintaining that both L1 lexical categories and L1 functional categories are found in the L2 initial state. Features, however, do not take on L1 values (strong/weak) but are initially unspecified, or inert. In consequence, apparent optionality of certain word orders in early L2 grammars is accounted for. In this work, Eubank assumed that functional categories will eventually become specified for L2 feature values.

In the above views, only part of the L1 grammar is represented in the L2 initial state (either lexical categories alone or lexical and functional categories, the latter lacking their feature strength). White (1996a) makes a somewhat different claim, arguing that L1 lexical and functional categories as well as feature values are adopted in the L2 initial state where possible. However, she maintains that there will be cases where the L1 grammar simply could not constitute an initial theory of the L2, appropriate or inappropriate. The L2 acquisition of functional projections which are not realized in the L1 constitutes such a case, e.g., the acquisition of French clitics by English speakers. In such cases, the L2 learner resorts immediately to options made available by UG, successfully acquiring L2 clitic projections.⁵ (See Schwartz, *in press*, for an opposing view.)

Partial Transfer/Partial Access

In recent work, Beck (1997, *in press*), Eubank, Beck and Aboutaj (1997) and Eubank, Bischof, Huffstutler, Leek and West (1997) have proposed what amounts to Partial Transfer/Partial Access. In particular, they depart from Eubank (1994a, 1994b), claiming instead that certain functional features never become specified for strong/weak values in the course of L2 development. In other words, L2 grammars are permanently impaired in a local domain (the local impairment hypothesis (Beck, *in press*)), with a range of consequences not found in native speaker grammars. Since inflectional features are never specified, there is permanent variability in word order, with verbs sometimes raising and sometimes not. On this view, ultimate attainment is necessarily non-native-like. This position is schematized in figure 4.6.

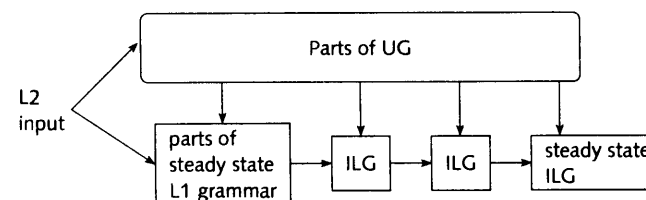


Figure 4.6 Partial Transfer/Partial Access

Evidence for the Initial State: What Counts as Data?

It is not always clear what constitutes appropriate evidence to distinguish between the approaches outlined above, what the relevant data would be or what the existing data show. In part, this is because the positions share a considerable amount of common ground; they make overlapping predictions and certain data simply do not provide the means of distinguishing between them. Indeed, relevant evidence is not confined to data drawn from initial systems.

In investigating the L2 initial state, a number of problems arise relating to data, problems which also have arisen in investigating L1 acquisition. The first problem concerns the use of "absence of evidence as evidence of absence". Radford (1990) and Guilfoyle and Noonan (1992) have used spontaneous production data which show a lack of material associated with functional categories (such as absence of determiners, tensed verbs, agreement, complementizers, etc.) to argue for the absence of functional categories in the initial L1 grammar; Vainikka and Young-Scholten (1994) do the same for L2. However, as a number of researchers have pointed out (Epstein et al., 1996; Grondin and White, 1996), relying only on production data can often lead to an underestimation of an L2 learner's linguistic competence. One cannot automatically assume that late use of a form indicates late acquisition. An abstract category may be acquired even though its morphological realization is lacking; indeed, various syntactic consequences of functional categories may be present in the L2 grammar even in the absence of the relevant morphology (Lardiere, 1998a, 1998b, this volume, chapter 3; Prévost and White, *in press*).

A related question involves accuracy. Does a learner's use of agreement or tense, for example, have to be accurate in order for one to be able to conclude that Agr or T is present in the grammar? Poeppel and Wexler (1993) argue, for L1 acquisition, that where there is accuracy in agreement, this is compelling evidence for the existence of the associated functional category. However, the converse does not follow; morphological inaccuracy or lack of morphology does not necessarily mean lack of corresponding functional

categories. The presence of incorrect agreement markers can be indicative of agreement; such errors would suggest that the learner has certain functional categories in the grammar but has not yet worked out the details of how the categories are realized in the L2 (Epstein et al., 1996; Grondin and White, 1996; Lardiere and Schwartz, 1997). (In fact, Grondin and White (1996) and Prévost and White (in press) report that agreement marking, when present, is accurate in the interlanguage grammars of children and adults.)

Determining how many occurrences of a form are sufficient to count as evidence for the presence of some grammatical property is another area where there has been considerable disagreement. Traditionally, if a form was produced in 90 percent of obligatory contexts, it was counted as having been acquired (Brown, 1973). Vainikka and Young-Scholten (1994) take 60 percent of correct usage as an indication of acquisition of L2 functional categories. Again, usage does not necessarily reflect knowledge or acquisition; some property may be instantiated in the grammar even though it is not used consistently (Epstein et al., 1996; Grondin and White, 1996; Valian, 1991). Emergence may be a more appropriate measure of acquisition than a high incidence of correct use (Meisel, Clahsen and Pienemann, 1981).

Finally, there is the problem that one can never be sure that the first data obtained from any particular learner are in fact relevant to the initial state, even if data elicitation started as soon as the learner first began to speak. After all, there may well be grammar acquisition in the "silent period" that often precedes first productions. Thus, if a theory predicts the non-occurrence of certain phenomena but these are found, it can always be argued that they would have been absent from earlier data. For example, Vainikka and Young-Scholten (1994), on finding evidence suggesting the presence of functional categories in early German L2, suggest that such evidence would have been lacking at an earlier stage. Conversely, if a theory predicts the presence of certain phenomena (such as transfer effects) but these are not found, it could always be argued that they would have been evident at an earlier stage.

Interlanguages and Stages of L2 Development

As a set of constraints on representation, UG places limitations on the form of the grammar, rather than on the acquisition process itself (Borer, 1996; Carroll, 1996; Gregg, 1996). Thus, claims for UG access during the course of acquisition are simply claims that interlanguage grammars will fall within a limited range, specified by UG. Dekydtspotter, Sprouse and Anderson (1998) comment that instead of talking about "full access", we should consider a term like "full restriction", which better represents the role of UG.

With this caveat in mind, let us consider what the various approaches to the initial state have to say about later grammars. Claims about transfer

(whether full or partial) relate particularly to the initial state, in that L1-based representation is assumed in the early stages of L2 acquisition but not necessarily beyond (though this is certainly not precluded). Development, then, is in some sense progress away from the L1 grammar, with restructuring in response to the L2 input. Claims about UG access, on the other hand, are crucially relevant beyond the initial state. Whether L2 learners start from UG or the L1 representation (in whole or in part), if UG constrains developing grammars, this will affect the nature of interlanguage grammars at different stages, as well as the final outcome – grammars will fall within the hypothesis space permitted by UG. If there is only partial access to UG, certain kinds of changes to the grammar will not be possible, for example, parameter resetting, and interlanguage grammars may reveal properties not otherwise found in natural language.

Development: Transfer versus No Transfer

Even though full or partial transfer are claims about the initial state, the effects of transfer may be observed in later stages of acquisition, depending on whether or not restructuring of the initial state grammar takes place. All positions except No Transfer/Full Access predict differences between L1 and L2 acquisition and differences between learners of different L1s; that is, they predict evidence of properties of the L1 grammar, although they differ as to what these properties will be and how long they will last. In so far as L1 properties are found in initial grammars or subsequently, the No Transfer/Full Access model is disconfirmed. Research on developmental stages suggests that L2 learners with different mother tongues behave differently with respect to certain properties; for example, White (1985b) found that the interlanguage grammars of French-speaking and Spanish-speaking learners of English differ, with the Spanish speakers at different stages in the acquisition process treating English as if it were a null subject language, while the French speakers did not do so. Vainikka and Young-Scholten (1996b) show that L2 learners of German initially assume word order that reflects the L1: OV if they are native speakers of Korean or Turkish, VO if they are native speakers of Romance. Hawkins and Chan (1997) demonstrate that French-speaking and Chinese-speaking learners of English differ in how they treat English restrictive relative clauses. They argue that the Chinese speakers arrive at an analysis, based on the L1, which does not involve *wh*-movement, in contrast to the French speakers.

In contrast, other work on developing interlanguage grammars has claimed similarities between learners of different L1s and between L1 and L2 acquisition. If the L2 initial state does not involve the L1 at all, similarities are expected in the grammars adopted at various stages by learners of different L1s. Epstein et al. (1996, 1998) and Flynn (1996) appear to believe that successful acquisition of an L2 property which is not exemplified in the L1

is sufficient to demonstrate lack of L1 involvement in the interlanguage representation; they argue that child and adult Japanese speakers who are intermediate level learners of English successfully acquire English functional categories, hence that they have access to UG independent of the L1.

However, successful attainment of L2 properties in intermediate learners who have been in the L2 environment for a number of years is hardly compelling evidence against transfer. Later similarity in the performance of different groups of learners is consistent both with early differences and with early similarities. If intermediate level learners of different L1s are found to behave similarly, or if learners successfully acquire properties in the L2 which are not found in the L1, such results are equally consistent with Full Transfer, Partial Transfer or No Transfer. Once parameters have been set to L2 values, all Full Access theories predict largely the same kind of grammar development for learners of different L1s, as well as certain similarities between L1 and L2 acquisition and successful attainment of L2 properties. The onus, then, is on those who predict similarity across different learners from the beginning stages to provide data that do indeed address this issue; data from later stages that suggest mastery of L2 properties such as the functional categories investigated by Epstein et al. (1996, 1998), while in principle relevant to the access issue,⁶ are in fact irrelevant to the transfer issue.

Development: Full versus Partial Access

As far as UG availability is concerned, the approaches described above cannot be fully assessed without considering interlanguage grammars beyond the initial state. In order to determine whether UG fully or partially constrains interlanguage representations, it is necessary to look at later stages. As we have already seen, No Transfer/Full Access and Full Transfer/Full Access are distinguishable only by their claims about the role of the L1, since both approaches assume UG is actively implicated, with parameter resetting possible in principle, new functional categories and feature values acquirable, etc. As far as partial versus full access claims are concerned, both Full Transfer/Partial Access and Full Transfer/Full Access assume the same initial state (namely the L1 grammar). Thus, the only evidence that can be used to decide between them is evidence about what happens later, namely, presence or absence of parameter resetting, emergence of new functional categories, changes in feature values, or lack thereof, and the presence or absence of UG-inconsistent grammars.

Much former work on the operation of principles and parameters in L2 development tested predictions of the full versus partial access positions. Proponents of Full Transfer/Partial Access focused on apparent failure to observe principles of UG. For example, Schachter's (1989) results showed that L2 learners whose L1s lack syntactic *wh*-movement fail to recognize Subjacency violations in L2s with *wh*-movement, thus supporting her claim

that they lack the Subjacency Principle. In contrast, research by Thomas (1991, 1993) on L2 reflexive binding suggests that adult L2 learners' grammars are UG-consistent, observing principles such as *c*-command, and that the L1 is not the source of knowledge of L2 reflexives, since L2 learners acquire properties of reflexives which are very different from those of the L1. More recently, researchers have demonstrated that L2 learners observe the Overt Pronoun Constraint (OPC), whereby in null subject languages an overt pronoun cannot take a quantified antecedent (Montalbetti, 1984). Kanno (1997) has shown that English-speaking learners of Japanese at the intermediate level observe the OPC, as have Perez-Leroux and Glass (1997) for English-speaking learners of Spanish at an advanced level. Since English is not a null subject language and overt pronouns in English can take quantified antecedents, there appears to be nothing in the L1 from which knowledge of this principle could originate, suggesting availability of UG principles independently of the L1.

As far as parameters are concerned, there has been considerable research on parameter resetting, investigating whether parametric properties cluster in the interlanguage grammar, including studies on adjacency (White, 1989a), null subjects (e.g., Lakshmanan, 1994; Liceras, 1989; White, 1985b), verb movement (e.g., White, 1991a, 1991b, 1992a), word order (e.g., Clahsen and Muysken, 1986; Flynn, 1987; Schwartz and Sprouse, 1994) and binding (e.g., Finer and Broselow, 1986; Hirakawa, 1990; Thomas, 1991, 1993). If the L2 initial state consists of the L1 final state (in whole or in part) and UG continues to operate, the L2 learner should restructure the grammar in response to L2 input and the resulting grammar should be UG-constrained, exhibiting properties associated with particular parameter settings. Thus, evidence in favour of parameter resetting is evidence for full access, whereas evidence against it supports partial access. Evidence has, in fact, proved quite conflicting and the debate on parameter resetting continues, currently centering largely on the availability of L2 functional categories and feature values (e.g., Beck, *in press*; Eubank et al., 1997; Hawkins and Chan, 1997; Liceras and Díaz, *in press*; Meisel, 1997; Schwartz and Sprouse, 1994; White, 1992a).

In considering the UG access question in L2, there are other outcomes besides successful resetting that can help to determine the extent of UG involvement. If L2 learners arrive at settings which are sanctioned by UG but are those of neither the L1 nor the L2, such outcomes are consistent with full access but are precluded on partial access positions, since, if the L2 learner's only access to UG is via the L1, no other parameter settings are predicted to be acquirable. A number of cases of this kind have been reported, for example by Finer and Broselow (1986) who suggest that L2 learners acquire a parameter value for the Governing Category Parameter which is that neither of the L1 nor L2; as a result, Korean-speaking learners of English treat English reflexives like Russian. In a related vein, duPlessis, Solin, Travis and White (1987) show that learners of German may arrive at a combination of parameter

settings which are those of neither L1 nor L2; a similar proposal is made by Schwartz and Sprouse (1994). Clahsen and Hong's (1995) results can also be interpreted in this way; they argue that Korean-speaking learners of German are unable to reset the null subject parameter from the + null subject setting of the L1 to the - null subject of the L2. Specifically, two properties, namely acquisition of agreement and loss of null subjects, do not covary in the interlanguage grammars in the way they do in L1 acquisition of German. However, some of the subjects who failed to arrive at the L2 German value of the parameter in fact seem to have hit upon the Italian value (i.e., allowing rich agreement and null subjects), again suggesting that parameters can be reset to values other than those found in the L1.⁷

Finally, there is another kind of grammar which should not be found in the course of L2 development if there is full access to UG. All Full Access positions predict that interlanguage grammars are necessarily UG-consistent; hence, "wild" grammars (that is, grammars that fail to observe UG constraints) should not be found. Clahsen and Muysken (1986) claimed that the interlanguages of L2 learners of German were unnatural, allowing rightward movement possibilities not found in natural language; duPlessis et al. (1987) and Schwartz and Tomaselli (1990) argued against this position, reanalyzing the German L2 data to show that, on the assumption that these learners had reset the head direction parameter to the L2 value, their grammars fell within the bounds of UG. Similarly, White (1992b), Martohardjono and Gair (1993) and Hawkins and Chan (1997) have argued that L2 grammars showing apparent non-operation of Subjacency (Schachter, 1989) are in fact not "wild" at all; rather, L2 learners of certain L1s adopt a non-movement analysis of English *wh*-movement, involving the postulation of *pro* (which does not move, hence is not subject to Subjacency). More problematically, Klein (1993, 1995) has found that L2 learners of a variety of ages, levels and L1s assume that null prepositions are possible in *wh*-questions, while they are never found in this context in natural languages, according to Klein. However, Dekydtspotter et al. (1998) argue, contra Klein, that grammars allowing null prep do in fact fall within the constraints of UG.

Where results suggest problems with parameter resetting, or the setting of only some of a cluster of properties associated with a parameter value, the question arises as to how long one can be expected to wait for evidence of successful parameter resetting. If one investigates the interlanguage grammars of L2 learners at any particular point of development and finds no evidence for parameter resetting, the possibility of grammar change in a subsequent stage cannot be ruled out. (This is reminiscent of the problem of always being able to appeal back to an earlier unobserved stage; here we are appealing forward to a stage not yet passed through.) For this reason, the final state (ultimate attainment) of the L2 learner must be investigated (Borer, 1996; Smith and Tsimpli, 1995; White and Genesee, 1996). We turn now to evidence about the ultimate attainment of L2 learners.

The L2 Final State

In L1 acquisition, the working assumption is that all acquirers of the same language or dialect achieve essentially the same end-state. But this is not the case in L2 acquisition, where we have relatively little idea of what the steady state grammar looks like. Anecdotal, it seems obvious that L2 learners differ from each other in their ultimate attainment, even when one considers learners of the same mother tongue learning the same L2. It appears that people "stop" acquiring their L2 at different points ("fossilization"), thus ending up with different grammars. In recent years there has been a move to investigate the nature of the ultimate achievement of L2 learners. Researchers have deliberately sought out subjects who can be deemed to have completed the L2 acquisition process – they have got as far as they are going to get. Two related issues have been investigated in the context of ultimate attainment: critical periods and near nativeness. More recently, researchers have looked specifically at the issue of non-convergence on the L2 grammar in the final state.

The theories described above make different predictions regarding the final outcome of L2 acquisition. No Transfer/Full Access predicts that convergence on the L2 system will necessarily occur. Indeed, Flynn (1996:150) claims that full access to UG implies exceptionless attainment of L2 competence and that any other view is incoherent. Partial Transfer/Full Access as exemplified by Vainikka and Young-Scholten also predicts convergence. Full Transfer/Partial Access and Partial Transfer/Partial Access, on the other hand, predict that the L2 final state will necessarily be different from native speakers (unless the L1 and L2 happen to coincide with respect to all UG properties). Full Transfer/Full Access and certain versions of Partial Transfer/Full Access do not assume that convergence is guaranteed. Whether or not convergence is possible will depend specifically on the L1s and L2s in question, and relates to whether positive L2 input is available to disconfirm inappropriate L1-based analyses. Second language learners starting with different L1 grammars as the initial state will not in fact be taking the same developmental path. The initial representation, as well as UG, will constrain subsequent hypotheses. In some cases the current grammar may in fact appear to accommodate the L2 input adequately and thus change will not be motivated, not because of lack of availability of UG but rather because the current grammar effectively acts as a filter. Divergent outcomes, then, would not be surprising.

Critical periods

One way of addressing the ultimate attainment issue has been to look at whether there are maturational effects in L2 acquisition, particularly whether there is a sudden decrease in UG availability at puberty or a gradual decline,

or no decline at all. In other words, the idea is that UG might wither away but only at the end of some critical period for language acquisition.

Johnson and Newport (1991) showed that proficient L2 speakers who learned English as adults and who were native speakers of Chinese performed significantly below native controls on Subjacency violations, incorrectly accepting many of them. When these subjects were compared with adult Chinese speakers who learned English at various ages (4–7 years, 8–13 years and 14–16 years), results showed a continuous decline in performance and a correlation between performance and age of arrival in the USA, suggesting that access to UG is subject to maturation and that the ultimate attainment of adult learners is likely to be different in essence from that of child learners.

Others, however, have not found evidence of lack of UG principles in adult learners. For example, White and Juffs (1998) found that native speakers of Chinese who were proficient English L2 speakers and learned English as adults were not significantly different from native speakers of English in their performance on Subjacency violations. White and Genesee (1996) found native-like performance on Subjacency and no evidence of age effects for learners of English who were assessed, by independent measures, as being of near-native proficiency.

Near-native speaker competence

As we have seen, the Full Transfer/Partial Access position assumes that parameters cannot be reset (Clahsen and Hong, 1995; Clahsen and Muysken, 1989; Hawkins and Chan, 1997; Smith and Tsimpli, 1995; Tsimpli and Roussou, 1991), the implication being that the grammar ultimately attained by L2 learners will necessarily fail to be native-like. Recently, there has been interest in the linguistic competence of near-native speakers (people who can pass as native speakers of a language which is not in fact their mother tongue or who can pass as such except for their L2 phonology). If their competence (not just their performance) proves to be native-like, this suggests the active involvement of UG beyond what is given by the L1 grammar, with parameter resetting possible in principle.

Experimental results on the ultimate attainment of near-native speakers are conflicting: some report that fluent L2 speakers do not achieve native-like competence in certain domains, even if they pass as near-native speakers (Coppieters, 1987; Sorace, 1993) while others report few or no differences between near-natives and natives (Birdsong, 1992; Ioup, Boustagui, El Tigi and Moselle, 1994; White and Genesee, 1996). Indeed, results from various studies on near-native competence suggest that there may be certain areas where divergence between native and near-native grammars is found and others where ultimate attainment is fully native-like. This is unexpected on the No Transfer/Full Access position but can be explained on the views that assume full access together with full or partial transfer. If properties of the

initial representation (drawn from the L1 grammar) act as a filter, there will be cases where L2 input will never motivate grammar change. If so, we expect differences in degree of near-nativeness achieved for the same property by learners of different L1s; learners of certain L1s may be more likely to notice properties of the L2 input because of features of the L1. This is what is reported by Sorace (1993) who shows that English-speaking and French-speaking near-native speakers of Italian differ as to how they represent unaccusatives (verbs whose sole argument is a theme) in the L2. Sorace suggests that the French-speaking learners of Italian were more sensitive to auxiliary choice (i.e., when to use *essere* “to be” or *avere* “to have”) in certain syntactic contexts with unaccusative verbs than English-speaking learners, because French overlaps (though by no means coincides) with Italian with respect to auxiliary selection with unaccusatives.

Non-convergent final outcomes

Near-native competence represents one extreme as far as the L2 final state is concerned. But most L2 learners do not achieve even near native performance. In such cases, it is of considerable interest as to whether the interlanguage grammar is in fact different from the grammar of native speakers, that is, whether non-native performance reflects non-native competence and, if so, in what respects. This issue is investigated by Lardiere (1998a, 1998b, this volume, chapter 3) who examines the end-state competence of an L2 speaker who has fossilized at a point short of the L2, English. The subject is a native speaker of Chinese who has lived in an English-speaking environment for many years. Spontaneous production data gathered after ten years and after 18 years in the USA show that incidence of overt tense and agreement morphology is very low, suggesting that the functional categories Tense and Agr might be lacking or deficient in features. Lardiere argues, however, that this would be a mistaken interpretation of the data, since there are other reflexes of the categories Tense and Agr in this subject's grammar. In particular, use of nominative versus accusative case on pronouns, depending on a +/- finite tense distinction, is totally accurate, as is verb placement, the verb never being inappropriately raised, which follows if Agr is weak. These results suggest that, even in the absence of inflectional morphology, functional categories and their feature specifications are present in the grammar and function in ways appropriate for the L2. In this case, then, the underlying grammar does in fact converge on the native grammar, even though the surface morphology is very divergent.

Conclusion

The various approaches to the operation of UG and the role of the L1 that have been discussed in this chapter are summarized in table 4.1, which

Table 4.1 Summary of claims on UG availability and transfer

	FT/PA	NT/FA	FT/FA	PT/FA	PT/PA
Initial state Grammar development	L1	UG	L1	UG and parts of L1	Parts of UG and L1
	UG principles (via L1)	UG principles	UG principles	UG principles	(Some) UG principles
	L1 parameter settings + local adjustments	L2 parameter settings	Parameter resetting from L1 → L2/Ln	Parameter resetting from L1 → L2	Parameters associated with functional features remain unspecified
	Possibility of "wild" grammars	No wild grammars	No wild grammars	No wild grammars	Locally wild grammars
Final state	L1 (+ local adjustments) L2 not attainable	L2	Ln (L2 possible but not inevitable)	L2 (Ln)	L2 not attainable

compares the claims that each position makes for the L2 initial state, subsequent grammars during development, as well as the final state. What is presented in table 4.1 necessarily represents an oversimplification, since, as we have seen, there are in fact different versions of all of the positions that have been discussed. But what table 4.1 makes clear is that these positions have a great deal in common in terms of their underlying assumptions and there is considerable overlap in the predictions that they make. Perhaps, then, it is time to adopt a less global approach.

Looking at the UG debate in terms of full versus partial transfer and full versus partial access has yielded fruitful research questions and interesting empirical results over the years, such that our understanding of the nature of interlanguage grammars has advanced considerably. However, there are some problems with continuing to insist on these distinctions, or at least on these distinctions in their current form. One problem relates to the difficulty of disentangling properties of the L1 grammar from properties of UG. As Hale (1996) notes in his commentary on Epstein et al. (1996), it may be impossible to distinguish empirically between the possibility that UG-like knowledge comes only from the L1 (partial access) and the possibility that it comes directly from UG (full access). This suggests that we should avoid thinking in terms of a dichotomy: Does interlanguage knowledge come from UG or from the L1? Many of the studies reviewed here have shown that L2 learners can acquire subtle and abstract properties of the L2 which are not obviously present in the L1 and which are underdetermined by the L2 input. In other words, these studies suggest that interlanguage grammars can be pushed in new directions, whether the more abstract underlying principles come from UG, the L1 or both.

Another problem is that the concept of partial access has, in the past, been treated globally, whereas in fact this is by no means an all-or-nothing issue. Currently, a number of researchers are actively pursuing the possibility that there may be quite specific or local impairments to interlanguage grammatical systems; for example, L2 learners may be "stuck" with L1 feature values (Hawkins and Chan, 1997; Liceras and Díaz, in press) or with no feature values at all (Beck, in press; Eubank et al. 1997). Regardless of the ultimate correctness of such proposals, it seems promising to investigate detailed properties of the interlanguage grammar without assuming that problems in one domain necessarily imply problems everywhere, or that success in one domain necessarily implies success in another.

Indeed, we might be better off if we considered the UG question in terms of unimpaired versus impaired operation. If UG operation is impaired, in what respects? What are the consequences for interlanguage grammars? If it is unimpaired, what precisely is the domain of operation of UG? What explains discrepancies between "defective" surface properties of interlanguage grammars (often morphological) and more abstract underlying knowledge? (See Haznedar and Schwartz, 1997; Lardiere, 1998a, 1998b, this volume,

chapter 3; Prévost and White, in press.) In order to further explore these questions, we need detailed investigation of the precise nature of interlanguage grammars at various points in acquisition, considered as systems in their own right.

Notes

- 1 See relevant discussion by Brown and Matthews (1997) and Brown (this volume) on L1 acquisition of feature geometry and the implications for L2 acquisition of phonological features.
- 2 Clahsen and Muysken (1986) present a genuinely no access claim, since they assume that interlanguage grammars are constrained by neither UG nor the L1. A similar position is adopted by Meisel (1997).
- 3 It is not clear whether Kanno is in fact a proponent of Full Transfer/Partial Access or of Full Transfer/Full Access, since she does not discuss this issue. Her data are consistent with either position.
- 4 Somewhat misleadingly, Epstein et al. (1996) equate full access with the strong continuity hypothesis. However, this is misconceived, since the weak continuity hypothesis also assumes full access to UG (Vainikka and Young-Scholten, 1996c). Flynn (1996) uses the term "full access" but restricts this to the position that argues for no involvement of the L1 grammar in the mental representation of the L2. Again, this constitutes a serious misunderstanding of the various positions in the field: Full Transfer/Full Access assumes that transfer is compatible with full access to UG.
- 5 It is possible that what White (1996a) describes is in fact Full Transfer/Full Access but where the L1-based initial state lasts for such a short time that it is unobservable.
- 6 Although relevant in principle, there are considerable methodological problems such that it is not clear that the data show anything other than reasonable imitation abilities on the part of L2 learners. See commentaries on Epstein et al. (1996).
- 7 This is my interpretation of their results. They do not entertain this possibility.

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