

## II Capacity and Representation

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# 2 On the Nature of Interlanguage Representation: Universal Grammar in the Second Language

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## 1 Introduction

In the late 1960s and early 1970s, several researchers pointed out that the language of second language (L2) learners is systematic and that learner errors are not random mistakes but evidence of rule-governed behavior (Adjémian, 1976; Corder, 1967; Nemser, 1971; Selinker, 1972). From this developed the conception of “interlanguage,” the proposal that L2 learners have internalized a mental grammar, a natural language system that can be described in terms of linguistic rules and principles. The current generative linguistic focus on interlanguage representation can be seen as a direct descendent of the original interlanguage hypothesis. Explicit claims are made about the nature of interlanguage competence, the issues being the extent to which interlanguage grammars are like other grammars, as well as the role of Universal Grammar (UG).

The question of whether UG mediates L2 acquisition, and to what extent, has been much debated since the early 1980s. This question stems from a particular perspective on linguistic universals and from particular assumptions about the nature of linguistic competence. In the generative tradition, it is assumed that grammars are mental representations, and that universal principles constrain these representations. Linguistic universals are as they are because of properties of the human mind, and grammars (hence, languages) are as they are because of these universal principles.

The first decade of research on the role of UG in L2 acquisition concentrated on so-called “access,” exploring whether UG remains available in non-primary acquisition. The issue of UG access relates to fundamental questions such as: what are natural language grammars like? What is the nature of linguistic competence? How is it acquired? UG is proposed as a partial answer, at least in the case of the first language (L1) grammar, the assumption being that

language acquisition is impossible in the absence of specific innate linguistic principles which place constraints on grammars, restricting the “hypothesis space,” or, in other words, severely limiting the range of possibilities that the language acquirer has to entertain. In L2 acquisition research, then, the issue is whether interlanguage representations are also constrained by UG.

## 2 UG and the Logical Problem of Language Acquisition

UG is proposed as part of an innate biologically endowed language faculty (e.g., Chomsky, 1965, 1981; Pinker, 1994). It places limitations on grammars, constraining their form (the inventory of possible grammatical categories in the broadest sense, i.e., syntactic, semantic, phonological), as well as how they operate (the computational system, principles that the grammar is subject to). UG includes invariant principles, as well as parameters which allow for variation. While theories like Government-Binding (GB) (Chomsky, 1981), Minimalism (Chomsky, 1995), or Optimality Theory (Archangeli and Langendoen, 1997) differ as to how universal principles and parameters are formalized, within these approaches there is a consensus that certain properties of language are too abstract, subtle, and complex to be acquired in the absence of innate and specifically linguistic constraints on grammars.

UG is postulated as an explanation of how it is that learners come to know properties of grammar that go far beyond the input, how they know that certain things are not possible, why grammars are of one sort rather than another. The claim is that such properties do not have to be learned. Proposals for an innate UG are motivated by the observation that, at least in the case of L1 acquisition, there is a mismatch between the primary linguistic data (PLD), namely the utterances a child is exposed to, and the abstract, subtle, and complex knowledge that the child acquires. In other words, the input (the PLD) underdetermines the output (the grammar). This is known as the problem of the *poverty of the stimulus* or the *logical problem of language acquisition*.

As an example of a proposed principle of UG which accounts for knowledge too subtle to be learned solely from input, we will consider the Overt Pronoun Constraint (OPC) (Montalbetti, 1983), a constraint which has recently received attention in L2 acquisition research. The OPC states that in null argument languages (languages allowing both null and overt pronouns), an overt pronoun cannot receive a bound variable interpretation, that is, it cannot have a quantified expression (such as *everyone*, *someone*, *no one*) or a *wh*-phrase (*who*, *which*) as its antecedent.<sup>1</sup> This constraint holds true of null argument languages in general, including languages unrelated to each other, such as Spanish and Japanese.

Consider the sentences in (1) from English, a language requiring overt subjects. In particular, we are concerned with the coreference possibilities (indicated by subscripts) between the pronominal subject of the lower clause and its potential antecedent in the main clause:

- (1) a. Everyone<sub>i</sub> thought [he<sub>i</sub> would win]  
 b. Who<sub>i</sub> thought [he<sub>i</sub> would win]?  
 c. John<sub>i</sub> thought [he<sub>i</sub> would be late]

In (1a), the pronoun *he* can be bound to the quantifier *everyone*. On this interpretation, every person in the room thinks himself or herself a likely winner: *he*, then, does not refer to a particular individual. This is known as a *bound variable interpretation*. Similarly, in (1b) the pronoun can be bound to the wh-phrase *who* without referring to a particular individual. In (1c), on the other hand, the pronoun refers to a particular person in the main clause, namely *John*. (In addition, in all three cases, disjoint reference is possible, with the pronoun in the lower clause referring to some other person in the discourse – this interpretation is not of concern here.)

In null argument languages, the situation regarding quantified antecedents is somewhat different. On the one hand, an embedded null subject can take either a quantified or a referential antecedent (or it can be disjoint in reference from other NPs in the sentence), just like overt pronouns in English. This is illustrated in (2) for Japanese:<sup>2</sup>

- (2) a. Dare<sub>i</sub> ga [∅<sub>i</sub> kuruma o katta to] itta no?  
 Who NOM car ACC bought that said Q  
 Who<sub>i</sub> said that (he<sub>i</sub>) bought a car?  
 b. Tanaka-san<sub>i</sub> wa [∅<sub>i</sub> kaisya de itiban da to] itte-iru  
 Tanaka-Mr TOP company in best is that saying-is  
 Mr Tanaka<sub>i</sub> is saying that (he<sub>i</sub>) is the best in the company

On the other hand, overt pronouns are more restricted than either null pronouns in null argument languages or overt pronouns in languages requiring overt arguments. In particular, an overt pronoun may not have a quantified antecedent, as in (3a), whereas it can have a sentence-internal referential antecedent, as in (3b):

- (3) a. \*Dare<sub>i</sub> ga [kare<sub>i</sub> ga kuruma o katta to] itta no?  
 Who NOM he NOM car ACC bought that said Q  
 Who<sub>i</sub> said that he<sub>i</sub> bought a car?  
 b. Tanaka-san<sub>i</sub> wa [kare<sub>i</sub> ga kaisya de itiban da to] itte-iru  
 Tanaka-Mr TOP he NOM company in best is that saying-is  
 Mr Tanaka<sub>i</sub> is saying that he<sub>i</sub> is the best in the company

The differences between null argument languages like Japanese and languages that do not permit null arguments like English are summarized in table 2.1.

At issue, then, is how the L1 acquirer of a language like Japanese discovers the restriction on overt pronouns with respect to quantified antecedents. This case constitutes a clear poverty-of-the-stimulus situation. The phenomenon in question is very subtle. In many cases, overt and null pronouns will appear in the same syntactic contexts (although sometimes under different pragmatic

**Table 2.1** Antecedents for pronouns in null and overt argument languages

	<i>Null argument languages</i>		<i>Overt argument languages</i>
	<i>Null subjects</i>	<i>Overt subjects</i>	<i>Overt subjects</i>
Referential antecedents	Yes	Yes	Yes
Quantified antecedents	Yes	No	Yes

and discourse conditions), so it is unlikely that the absence of overt pronouns with quantified antecedents would be detected. It is also highly unlikely that L1 acquirers produce utterances incorrectly using overt pronouns with quantified antecedents and are then provided with negative evidence on this point. How, then, could an L1 acquirer of a language like Japanese discover this property? The argument is that the knowledge is built in, in the form of a principle of UG, the OPC; it does not have to be learned at all.

### 3 UG and the Logical Problem of L2 Acquisition

Assuming a logical problem of L1 acquisition, hence motivating UG, people have asked whether the same holds true of L2; that is, whether there is a mismatch between the input that L2 learners are exposed to and the unconscious knowledge that they attain (Bley-Vroman, 1990; Schwartz and Sprouse, 2000; White, 1985). In the case of L2 acquisition, it is important to distinguish between (i) the logical problem and (ii) UG availability. The first issue is whether L2 learners attain unconscious knowledge (a mental representation) that goes beyond the L2 input. (There would be no logical problem at all, if L2 learners turned out not to achieve knowledge that goes beyond the input.) The second issue is whether such knowledge (if found) is achieved by means of UG. These are not in fact the same question, although they are often collapsed, since the way to determine whether UG principles and parameters constrain inter-language representations is similar to the way to assess whether there is a logical problem of L2 acquisition. However, it is conceivable that there is a logical problem of L2 acquisition, with L2 learners achieving far more than could have come from the input alone, and that their achievement is to be explained by postulating a reliance on the L1 grammar rather than a still-functioning UG (Bley-Vroman, 1990; Schachter, 1988).

The strongest case for the operation of UG in L2 acquisition, then, is if learners demonstrate knowledge of subtle and abstract properties which could

not have been learned from L2 input alone or from input plus general learning principles (not specifically linguistic) or on the basis of explicit instruction or from the L1 grammar. In such cases, not only is there a logical problem of L2 acquisition but also UG remains the only way to account for the knowledge in question. To demonstrate an L2 logical problem, hence the likelihood of involvement of UG, researchers have sought out genuine L2 poverty of the stimulus cases, in which both of the following hold (White, 1989b, 1990):

- i The phenomenon in question is underdetermined by the L2 input. That is, it must not be something that could have been acquired by simple observation of the L2 input, as an effect of input frequency, or on the basis of instruction, analogical reasoning, etc.
- ii The phenomenon in question works differently in the L1 and the L2. If L2 learners show evidence of subtle and abstract knowledge, we want to exclude the possibility that such knowledge is obtained solely via the L1 grammar.

However, the requirement that L1 and L2 differ in the relevant respects becomes harder and harder to achieve, in that many properties of UG will of necessity manifest themselves in the L1 in some form (Dekydtspotter, Sprouse, and Anderson, 1998; Hale, 1996). Nevertheless, if the L1 and L2 differ in terms of surface properties, then transfer can be ruled out, at least at this level, as an explanation of successful acquisition.

In the first decade of work on SLA from a UG perspective (starting in the early 1980s), research focused mainly on whether or not UG is available to L2 learners, and in what form. The UG question seemed relatively straightforward (and relatively global): is UG available (or accessible) to L2 learners? The assumption was that if you can show that a particular UG principle operates/does not operate then this generalizes to other principles, hence to UG availability/non-availability in general. Researchers looked for evidence that L2 learners could (or could not) apply principles of UG, and set or reset parameters, as well as investigating the extent to which the L1 was involved, in the form of L1 parameter settings in interlanguage grammars. Hypotheses varied as to whether learners had no access, partial (indirect) access, or full (direct) access to UG, and there were differing views on the role of the L1 grammar. But although the issues were phrased in terms of access to UG, the question was then, and remains, whether interlanguage representations show evidence of being constrained by principles of UG; that is, whether interlanguage grammars are restricted in the same way as the grammars of native speakers are restricted.

As a recent example of research which takes into account the logical problem of L2 acquisition and looks for evidence as to whether a principle of UG constrains the interlanguage representation, consider Kanno's (1997) investigation of the operation of the OPC in the grammars of L2 learners of Japanese (see box 2.1). Using a coreference judgment task, Kanno shows that L2 learners demonstrate subtle knowledge of the restriction on overt pronouns, correctly

### Box 2.1 The Overt Pronoun Constraint (OPC) (Kanno, 1997)

*Research question:* Do adult L2 learners observe principles of UG which are not operative in their L1? In particular, do English-speaking learners of Japanese observe the OPC?

*Overt Pronoun Constraint (OPC)* (Montalbetti, 1983): In null argument languages, an overt pronoun cannot receive a bound variable interpretation.

*L2 logical problem:*

- i There appears to be nothing in the L2 input to signal the difference between overt and null pronominals with respect to quantified antecedents. It is unlikely that the absence of overt pronouns with quantified antecedents would be detected. This issue is not explicitly taught and not discussed in L2 textbooks.
- ii Knowledge of the restriction on overt pronouns in Japanese is not available from the L1 English. In English, overt pronouns can receive a bound variable interpretation, contrary to Japanese.

*Methodology:*

*Subjects:* 28 intermediate-level English-speaking adult learners of Japanese. Control group of 20 adult native speakers of Japanese.

*Task:* Coreference judgment task, involving 20 biclausal sentences (4 sentence types, 5 tokens of each). Each sentence had a pronoun subject (overt or null) in the lower clause, and a potential antecedent (quantified or referential) in the main clause. Participants had to indicate whether the subject of the embedded clause could refer to the same person as the subject of the main clause or whether it referred to someone else.

*Results:* Native speakers and L2 learners differentiated in their treatment of overt pronouns depending on the type of antecedent involved (quantified or referential), as well as differentiating between overt and null pronominals in these contexts (see table 2.2), supporting the claim that the OPC is being observed. Native speakers overwhelmingly rejected quantified antecedents for overt pronouns (2 percent), while accepting them in the case of null subjects (83 percent). They indicated that null subjects can always take a sentence-internal referential antecedent (100 percent), whereas for overt pronouns an internal referential antecedent was accepted at about 50 percent (both an internal and an external referent are possible). The L2 learners showed a remarkably similar pattern of results and their responses did not differ significantly from the controls.

*Conclusion:* Adult L2 acquirers of Japanese observe the OPC, suggesting that interlanguage grammars are constrained by UG.

**Table 2.2** Acceptances of antecedents by subject type (percentages)

	<i>Native speakers (n = 20)</i>		<i>L2 learners (n = 28)</i>	
	<i>Quantified antecedent</i>	<i>Referential antecedent</i>	<i>Quantified antecedent</i>	<i>Referential antecedent</i>
Null subject	83.0	100.0	78.5	81.5
<i>kare</i> ("he")	2.0	47.0	13.0	42.0

disallowing quantified antecedents in cases like (3a). Kanno's test sentences are carefully constructed to control for use of both types of pronoun (overt and null) in the context of both kinds of antecedent (referential and quantified). This allows her to eliminate the possibility that L2 learners simply prohibit overt pronouns from taking sentence-internal antecedents in general, as well as the possibility that they reject quantified antecedents altogether. In addition to considering group results, Kanno shows that subjects largely behave consistently with respect to the OPC when analyzed individually. Such individual analyses are crucial, since the hypothesis is that UG constrains the grammars of individuals, and group results may conceal individual variation.

The knowledge demonstrated by these L2 learners of Japanese could not have come from the L1 English, where overt pronouns do take quantified antecedents; it is knowledge that is underdetermined by the L2 input, where null and overt pronouns allow similar antecedents in many cases. The distinction between permissible antecedents for overt and null pronouns is not taught in L2 Japanese textbooks or classes. It seems unlikely that there are relevant surface patterns in the L2 input that could be noticed by the learner, leading to this result. Nevertheless, L2 learners demonstrate knowledge of the restriction, suggesting that L2 representations must be constrained by UG. Similar results have been reported for L2 Spanish by Pérez-Leroux and Glass (1997); that is, adult English-speaking learners of Spanish also observe the OPC.

## 4 The Comparative Fallacy

So far, we have considered the case of learners who acquire subtle knowledge of the constraint on antecedents for pronouns (the OPC). Here, then, properties of the L2 assumed to stem from UG are manifested in the interlanguage grammar. The interlanguage grammar and the L2 grammar converge in this respect, as suggested by Kanno's results. But what if interlanguage representations fail to demonstrate certain L2 properties? What if the interlanguage and the L2 diverge? Does this necessarily imply lack of UG? This was, in fact, the interpretation taken (implicitly or explicitly) by a number of researchers in the 1980s.

Some researchers were quite explicit in their assumption that one should compare L2 learners and native speakers with respect to UG properties, the native speaker of the L2 providing a reference point for assessing UG availability. If L2 learners rendered judgments (or otherwise behaved) like native speakers with respect to some principle or parameter of UG, then they were deemed to have access to UG; on the other hand, if they differed in their judgments from native speakers, then their grammars were assumed not to be constrained by UG. For example, in Schachter's (1989, 1990) investigations of constraints on *wh*-movement, this was the underlying rationale for claiming the non-operation of UG. Schachter found that, compared to native speakers, L2 learners of English of certain L1 backgrounds were very inaccurate in their

judgments on illicit wh-movement out of structures such as embedded questions and relative clauses; hence, Schachter argued, L2 learners do not have access to UG principles independently of the L1.

The problem with this kind of approach to UG in L2 acquisition is that it presupposes that the interlanguage representation must converge on the grammar of native speakers of the L2, that the endstate grammar of a second language learner must be identical to that of a native speaker. But this is a misconception (Cook, 1997; Schwartz, 1993, 1998b; White, 1996). An interlanguage grammar which diverges from the L2 grammar can nevertheless fall within the bounds laid down by UG. If we are going to take the issue of representation seriously, we need to consider Bley-Vroman's *comparative fallacy*. Bley-Vroman (1983) warned that "work on the linguistic description of learners' languages can be seriously hindered or sidetracked by a concern with the target language" (p. 2) and argued that "the learner's system is worthy of study in its own right, not just as a degenerate form of the target system" (p. 4).

A number of researchers pointed out quite early on the need to consider interlanguage grammars in their own right with respect to principles and parameters of UG, arguing that one should not compare L2 learners to native speakers of the L2 but instead consider whether interlanguage grammars are natural language systems (e.g., duPlessis et al., 1987; Finer and Broselow, 1986; Licerias, 1983; Martohardjono and Gair, 1993; Schwartz and Sprouse, 1994; White, 1992b). These authors have shown that L2 learners may arrive at representations which indeed account for the L2 input, though not in the same way as the grammar of a native speaker. The issue, then, is whether the interlanguage representation is a *possible* grammar, not whether it is identical to the L2 grammar. For example, with respect to the violations of constraints on wh-movement that Schachter (1989, 1990) reports, Martohardjono and Gair (1993), White (1992b), and, more recently, Hawkins and Chan (1997) argue that L2 learners have a different analysis for the phenomenon in question, whereby structures involving a fronted wh-phrase are derived without movement (based on properties of the L1 grammar), explaining the apparent lack of movement constraints.

A related kind of misleading comparison involves the use of control groups in experimental tasks. There is often an (implicit) expectation that L2 speakers should not differ significantly from native speakers with respect to performance on sentences testing for UG properties. Suppose that on a grammaticality judgment task native speakers accept sentences violating some principle of UG at less than 5 percent and accept corresponding grammatical sentences at over 95 percent. In order to demonstrate "access" to this principle, it is not necessary for L2 speakers to perform at the same level. Rather, the issue is whether the interlanguage grammar shows evidence of certain distinctions: does learners' performance on grammatical sentences differ significantly from their performance on ungrammatical sentences (cf. Grimshaw and Rosen, 1990, for related comments on L1 acquisition)? Do L2 learners distinguish between different kinds of ungrammatical sentences (see Martohardjono, 1993)? If certain

sentence types are treated significantly differently from other sentence types, this suggests that the interlanguage grammar represents the relevant distinction (whatever it may be), even if the degree to which L2 learners observe it in performance differs from that of native speakers. To return to Kanno's study on the OPC, the importance of her results lies not in the fact that the L2 learners did not differ significantly from the native speakers, but rather in the fact that the L2 learners showed a significant difference in their acceptances of quantified antecedents depending on pronoun type, suggesting that their grammars make the relevant distinction between licit and illicit antecedents.

It is not the case, however, that one should never compare L2 speakers to native speakers of the L2 as far as properties of the grammar are concerned.<sup>3</sup> There are legitimate reasons for asking whether the L2 learner has in fact acquired properties of the L2. After all, the learner is exposed to L2 input in some form, and the L2 is a natural language. What is problematic is when certain conclusions are drawn based on failure to perform exactly like native speakers. Failure to acquire L2 properties may nevertheless involve acquiring properties different from the L1, properties of other natural languages, properties that are underdetermined by the L2 input. Such failure does not necessarily entail lack of UG.

## 5 UG "Access" and Terminological Confusions

Earlier approaches to UG in L2 acquisition revealed a somewhat ambivalent attitude to the L1. Perhaps because the strongest case for UG can be made if one can eliminate the L1 as a potential source of UG-like knowledge, some researchers felt that evidence of the influence of the L1 grammar on the interlanguage representation would somehow weaken the case for UG. Nowhere is this more evident than in the terminological confusions and disagreements that arose over terms like *direct access* to UG. *Direct access* for some researchers was taken to mean that L2 learners arrive at UG properties independently of their L1 (e.g., Cook, 1988). For others (e.g., Thomas, 1991b), it meant the instantiation of any legitimate parameter setting (L1, L2, Ln). Similar problems have arisen with the term *full access*, which at some point replaced *direct access*. Epstein, Flynn, and Martohardjono (1996) restrict the term *full access* to the position that UG operates independently of the L1 representation, whereas Schwartz and Sprouse (1996) do not so restrict it.

Part of the problem is that terms like *direct/full* or *indirect/partial access* are too global. In addition, in some cases at least, an overly simplistic and misleading dichotomy between UG and the L1 is adopted. 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 on the interlanguage grammar.

What is required is a greater focus on the nature of the representations that L2 learners achieve. It may not always be appropriate to dwell explicitly on

the UG access question. But by looking in detail at the nature of interlanguage representation, we in fact remain committed to this issue, since evidence of an interlanguage grammar that does not fall within the hypothesis space sanctioned by UG is evidence that UG does not fully constrain interlanguage grammars.

## 6 Interlanguage Representation: Convergence, Divergence, or Impairment

In the 1990s, the UG debate shifted from a consideration of the broad access question to a detailed consideration of the nature of interlanguage representation. Specific grammatical properties have been investigated and claims have been made as to how they are represented. It is largely presupposed that the interlanguage grammar and the grammars of native speakers of the L2 will diverge in some respects, at least initially and possibly also finally (see Flynn, 1996, for a contrary view). Of interest, then, is the nature of that divergence: is it indicative of a representation that is nevertheless constrained by UG (cf. Sorace, 1993) or is it suggestive of some kind of impairment to the grammar, such that the interlanguage representation is in some sense defective? If interlanguage representations were to show properties not found elsewhere in natural languages, this would suggest that they are not UG-constrained, at least in some domains (see Thomas, 1991a, and Klein, 1995).

The focus on representation manifests itself particularly clearly in proposals relating to the L2 initial state. Theories about the initial state are theories about the representation that L2 learners start out with, the representations that they initially use to make sense of the L2 input.

### 6.1 *Example: strong features and verb movement*

Since proposals regarding initial and subsequent interlanguage grammars often dwell, in one way or another, on functional categories, we will consider an example here to illustrate the kinds of properties that researchers have investigated in recent years. Functional categories, such as inflection (I), complementizer (C), and determiner (D), have certain formal features associated with them (tense, agreement, case, number, person, gender, etc.). These features vary as to strength (strong vs. weak). Functional categories are seen as the locus of parametric variation (e.g., Borer, 1984; Chomsky, 1995), which can be found at the level of the categories themselves (not all categories are realized in all languages), at the level of formal features (the features of a particular functional category may vary from language to language), and at the level of feature strength (a particular feature can be strong in one language and weak in another).

Here we will consider properties relating to functional projections above the verb phrase (VP). Finite verbs have features (tense, agreement) which have to be checked against corresponding features in I (Chomsky, 1995).<sup>4</sup> If features in I are strong, the finite verb raises overtly to check its features, as in the French



In French, finite lexical verbs appear to the left of the negative *pas* while non-finite verbs appear to the right (compare (5a) and (5b)). English and French contrast with respect to the position of the finite verb in relation to negation and adverbs (compare (6) and (7)). In English, lexical verbs appear to the right of negation (7a) and adverbs (7c) and cannot precede them (7b, 7d), in contrast to French (6a, 6b). A range of word order differences between the two languages are thus accounted for by one parametric difference between them, namely the strength of features in I.

In the next section, we will use the example of verb movement to illustrate some of the representational issues that are currently being pursued. It should be noted, however, that not all of the theories to be discussed in fact have made claims specifically about verb placement.

## 6.2 *Initial state*

Proposals concerning the initial interlanguage representation can broadly be classified into two types: (i) the interlanguage representation conforms to properties of natural language (though not necessarily the L2); or (ii) the interlanguage representation differs from adult natural languages in fundamental respects (which, however, may not be permanent). Into the first category falls the Full Transfer/Full Access (FTFA) Hypothesis of Schwartz and Sprouse (1994, 1996). I will also consider Epstein et al.'s (1996) Full Access Hypothesis in this category. Although the Full Access Hypothesis is not, strictly speaking, a hypothesis about the initial state (Epstein et al., 1996, p. 750), it nevertheless has clear implications for the nature of the earliest grammar. The second category includes the Minimal Trees Hypothesis of Vainikka and Young-Scholten (1994, 1996), as well as Eubank's (1993/4, 1994) claim that initially features are neither strong nor weak but rather "inert" or "valueless."

Schwartz and Sprouse (1994, 1996) propose that the L1 grammar constitutes the interlanguage initial state. In other words, faced with L2 input that must be accounted for, learners adopt the representation that they already have. Schwartz and Sprouse (1994) originally presented this proposal in the context of an analysis of the acquisition of German word order by a native speaker of Turkish. Schwartz and Sprouse (1996) and Schwartz (1998a) extend the analysis to French-speaking learners of English, arguing, following White (1991a, 1991c, 1992a), that the initial interlanguage grammar includes strong features, because this is the case in the L1 French. In consequence, verbs are incorrectly placed with respect to adverbs, as White found. However, a potential problem for FTFA is that while White's (1992a) subjects had considerable problems with adverb placement, producing and accepting forms like (7d), they did not have equivalent problems with negation, correctly recognizing the impossibility of (7b).<sup>7</sup>

According to FTFA, the interlanguage representation is necessarily different from the grammar of native speakers of the L2, at least initially; it is nevertheless

UG constrained, exemplifying functional categories and features, as well as syntactic properties that derive from feature strength. The interlanguage representation may or may not converge on the L2 grammar in later stages of development. When the L1 representation is unable to accommodate the L2 input, the learner has recourse to options made available through UG. Once the L2 input reveals an analysis to be inappropriate, there is restructuring of the interlanguage representation. For example, in the case of verb raising, there are properties of the L2 input that could signal the need to change from strong to weak feature values: the presence of *do*-support in negatives (7a) shows that finite lexical verbs in English do not raise (Schwartz, 1987; White, 1992a). Thus, convergence might be expected in this case.

In contrast to FTFA, Epstein et al. (1996, p. 751) and Flynn (1996) claim the L1 grammar is not implicated in the initial interlanguage representation. The implicit logic of their argumentation suggests that UG must be the initial state<sup>8</sup> and that the early grammar in principle has available all functional categories, features, and feature values, from UG, so that an appropriate representation for the L2 can be constructed without recourse to categories or features from the L1. As far as representation of functional categories is concerned, there is no development on such an account: the L2 categories are in place from early on; because they are appropriate, there is no need for subsequent restructuring of the grammar.

In terms of our example, this would mean that a French-speaking learner of English should assume weak features initially, hence would make no word order errors, contrary to fact, at least as far as adverb placement is concerned (White, 1991a, 1991c). Similarly, an English-speaking learner of French should assume strong features, hence exhibiting verb raising. Again, there is research that suggests that this is not inevitable. White (1989a, 1991b) reports that English-speaking children learning French fail to consistently accept verb raising in a variety of tasks. Hawkins, Towell, and Bazergui (1993) suggest that intermediate proficiency adult English-speaking learners of French fail to reset from the weak L1 feature strength to the strong value required by the L2.

Although Schwartz and Sprouse (1996) and Epstein et al. (1996) differ radically in their claims about the involvement of the L1 grammar, they share the assumption that the interlanguage representation shows a full complement of functional categories, drawn either from the L1 or from UG. In other words, the interlanguage representation is a grammar sanctioned by UG, both in the initial state and subsequently.

Other theories posit a greater degree of divergence between what is found in the interlanguage grammar and what is found in the grammars of adult native speakers. Vainikka and Young-Scholten (1994, 1996) propose the Minimal Trees Hypothesis, whereby the initial state lacks functional categories altogether, only lexical categories (N, V, P, etc.) being found. Lexical categories are assumed to be drawn from the L1 grammar, hence to exhibit the same properties as the L1 with respect to headedness, for example. Thus, this theory

shares with FTFA the assumption that L1 properties are found in the initial representation. However, as far as functional categories are concerned, Vainikka and Young-Scholten (1994, 1996) assume no transfer at all.

Vainikka and Young-Scholten's (1994) proposals are based on an examination of spontaneous production data from adult learners of German whose L1s are Turkish and Korean. The evidence that they adduce is largely morphological: in early production data from adult learners of German, inflectional morphology is lacking. This leads them to conclude that the corresponding abstract categories are lacking in the interlanguage grammar. (See Sprouse, 1998, and Lardiere, 2000, for arguments against assuming such a close relationship between surface morphology and abstract syntactic categories.) In addition, Vainikka and Young-Scholten (1994) claim that the early grammar lacks word orders that would be the result of movement of the finite verb to a functional projection. In terms of our example, the prediction of Minimal Trees is that French-speaking learners of English should *not* produce errors like (7d), since these are the result of verb movement from V to I (motivated by strong features) (Schwartz, 1998b; Schwartz and Sprouse, 1996). If the functional category I is altogether absent and there is only a VP projection, there is nowhere for the verb to move to. Hence, the only interlanguage word order should be the order that is in fact correct for English, namely (7c), contrary to fact. (See Vainikka and Young-Scholten, 1996, 1998, for discussion.)

Further evidence against Minimal Trees is provided by Grondin and White (1996), who examine spontaneous production data from two English-speaking children learning French. Grondin and White show that there is both morphological and syntactic evidence in favor of an IP projection in early stages. For example, the children show an alternation in verb placement with respect to negation: finite verbs precede *pas* whereas non-finite verbs follow it, suggesting movement of the finite verb to I; this is inconsistent with Minimal Trees, which postulates no I in the early grammar. However, as Vainikka and Young-Scholten (1996) point out, these data may not be truly representative of the initial state, since the children had several months of exposure to the L2 prior to beginning to speak.

In some sense, the Minimal Trees Hypothesis might be seen as implying a defective interlanguage grammar (Lardiere, 2000), since it postulates a period during which the representation lacks functional categories, which are otherwise presumed to be a necessary characteristic of natural language grammars. However, this impairment is assumed to be temporary, with functional categories developing gradually until, eventually, all functional categories appropriate for the L2 are acquired. Furthermore, Vainikka and Young-Scholten (1994, 1996) take the position that gradual emergence of functional categories is also characteristic of L1 acquisition (Clahsen, Eisenbeiss, and Vainikka, 1994); thus, for them, L2 acquisition in this domain is similar to L1.

The final initial state proposal to be considered here also implies that interlanguage grammars are in some sense defective. Eubank (1993/4, 1994) shares with Schwartz and Sprouse (1994, 1996) the assumption that the L1 grammar

constitutes a major part of the initial state: L1 lexical categories and functional categories are assumed to be present. However, Eubank maintains that the initial representation lacks fully specified feature values, at least some interlanguage features being unspecified or “inert.” In Eubank (1993/4) and subsequently (e.g., Eubank and Grace, 1998) the focus is specifically on feature strength: while features are strong or weak in natural language grammars, they are argued to be neither in the interlanguage, suggesting an impairment in this domain. According to Eubank, a consequence of inertness is that finite verbs will vary optionally between raised and unraised positions; this will be true regardless of what language is being acquired as the L2 and regardless of the situation in the L1. In the case of French-speaking learners of English, then, variable word orders are expected, that is, both (7c) and (7d). The same would be expected of English-speaking learners of French. In support, Eubank (1993/4) points to White’s (1991a, 1991c) results on the position of the verb with respect to the adverb, where there was some evidence of variability, with francophone subjects allowing word orders like not only (7d) but also (7c). However, Yuan (2000) shows that French-speaking and English-speaking learners of Chinese (a language with weak features, hence lacking verb movement) are very accurate in positioning verbs in Chinese, even at the beginner level, showing no evidence of optional verb placement.

In fact, Eubank’s assumption that raising of finite verbs will be optional appears to be a stipulation which does not follow from any particular theory of feature strength: if features have no strength, there is nothing to motivate verb raising, since this requires a strong feature value (Robertson and Sorace, 1999; Schwartz, 1998b). Prévost and White (2000) provide evidence that finite verbs in adult L2 French and German fail to appear in non-finite positions (i.e., unraised); instead, they occur almost exclusively in positions appropriate for finite verbs, suggesting that inertness cannot be involved.

In its early instantiation, Eubank’s proposal was not unlike (indeed, was modeled on) similar proposals that features in L1 acquisition are initially underspecified (e.g., Hyams, 1996; Wexler, 1994). Although a grammar with underspecified features is in some sense defective, underspecification in L1 is assumed to be a temporary property. Similarly, Eubank originally assumed inertness to be a passing phase in the interlanguage representation, with L2 feature strength ultimately attainable.

### **6.3 *Beyond the initial state***

Initial state theories necessarily have implications for the nature of representation during the course of development, as well as for endstate representation (that is, the steady state interlanguage grammar). According to FTFA, while the L1 grammar forms the interlanguage initial state, restructuring takes place in response to L2 input; hence, convergence on the relevant L2 properties is possible, though not guaranteed, since in some cases the L1 grammar may appear to accommodate the L2 input adequately and thus change will not

be triggered. Divergent outcomes, then, would not be surprising, but the interlanguage representation is nevertheless assumed to be UG-constrained.

There are researchers who agree with Schwartz and Sprouse that the L1 grammar is the initial state but who maintain that at least some (and possibly all) L1 features and feature values remain in the interlanguage representation, L2 features or feature values not being acquirable (Hawkins, 1998; Hawkins and Chan, 1997; Licerias, Maxwell, Laguardia, Fernández, and Fernández, 1997; Smith and Tsimpli, 1995). This means that development in the form of restructuring toward a more appropriate functional structure for the L2 is not expected.

On Epstein et al.'s proposal, there is no reason to expect change or development in the domain of functional categories for a different reason, since all categories (including L2 categories) are present from early stages. Convergence on the L2 grammar, then, is guaranteed (Flynn, 1996, p. 150). The only kind of development to be expected is in the surface instantiation of abstract categories in the language-particular morphology of the L2. The Minimal Trees Hypothesis also appears to predict eventual convergence on the L2 functional properties, as L2 functional categories are gradually added, in response to the L2 input.

Whether predicting ultimate divergence from or convergence on the L2 grammar, the above researchers agree that the interlanguage representation does not suffer from any essential long-term impairment, that it ends up with characteristics of a natural language, be it the L1, the L2, or some other language. This contrasts with recent proposals that the interlanguage representation suffers from a permanent deficit, rendering it unlike natural languages, hence not fully UG-constrained.

In recent work, Beck (1998) has suggested that inert feature values are a permanent phenomenon, a proposal also adopted by Eubank in later work (e.g., Eubank and Grace, 1998). In other words, the interlanguage representation is assumed to be defective not just initially and temporarily but permanently. In terms of our example, this means that variable word orders in the case of English-speaking learners of French or French-speaking learners of English are predicted to be found even in the endstate. The results of Yuan (2000), mentioned above, argue against this claim: Yuan demonstrates that L2 learners can indeed reset feature strength to the value appropriate for the L2, even when the L1 value is different (as is the case for the French-speaking learners of Chinese), and that there is no variability in word order at any level of proficiency.

Meisel (1997) proposes more global impairment to functional (and other) properties. He argues that interlanguage grammars are of an essentially different nature from those found in L1 acquisition. He points to differences between L1 and L2 acquisition: in L1 acquisition, the position of the verb is determined by finiteness (compare (5a) and (5b)), whereas, according to Meisel, in L2 acquisition it is not. Prévost and White (2000) provide counter-arguments and data that show that verb placement is not as free as Meisel suggests.

In order to investigate the nature of the interlanguage representation in the functional domain, some of the researchers discussed above have considered both morphological properties (namely whether inflection is present or absent,

accurate or faulty) and syntactic ones (whether there are alternations suggestive of verb movement to higher functional projections). Thus, Vainikka and Young-Scholten (1994) argued that the early interlanguage exhibits both a lack of verbal morphology and a lack of word orders indicating movement; Eubank (1993/4) argued that syntactic optionality is associated with absence of inflection; Meisel (1997) argued that both interlanguage morphology and interlanguage verb placement are variable.

But what is one to conclude if syntactic reflexes of feature strength are demonstrably present and morphological ones are lacking or not robustly present? If the interlanguage contains a full complement of functional categories, it might seem somewhat mysterious that L2 learners reveal problems in the domain of morphology associated with functional categories, such as verb inflection. If functional categories are in place, and in place early, why should L2 learners have problems with morphology? Yet it is well known that they exhibit variability in their use of inflection, with tense and agreement morphology sometimes present and sometimes absent in L2 production.

This issue is addressed by Lardiere (1998a, 1998b), who provides a case study of an adult L2 English speaker, Patty, whose L1 is Chinese and whose interlanguage grammar is clearly at its endstate. Patty reveals a lack of consistency in her use of English inflectional morphology: tense marking on verbs in spontaneous production is at about 35 percent, while 3rd person singular agreement is less than 17 percent. At the same time, Patty shows full command of a variety of syntactic phenomena which suggest that tense and agreement are represented in her grammar, with appropriate weak values. For example, Patty shows 100 percent correct incidence of nominative case assignment (nominative case being checked in I, hence implicating this functional category) and complete knowledge of the fact that English verbs do not raise. In other words, she shows no variability in verb placement with respect to adverbs or negation. Word orders like (7b) and (7d) are never found; rather she consistently produces orders like (7a) and (7c), suggesting that verbal features are appropriately weak. According to Eubank and Grace (1998), if interlanguage grammars have permanently inert features, then learners with an L1 with weak features, such as Chinese, learning an L2 also with weak features, like English, should allow optional verb movement. However, Lardiere shows that Patty's interlanguage grammar disallows verb movement and that her problems are not due to any deficit in functional features as such. Even in the absence of appropriate 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, though the surface morphology is divergent, in the sense that it is often absent.

Lardiere argues that this divergence reflects a problem in mapping from abstract categories to their particular surface morphological manifestations. This problem in surface mapping is very different from the impairment to the grammar implied by inert features. In the former case, abstract properties are

present and the grammar shows reflexes of feature strength, such as appropriate case marking and word order. There is nothing in UG that says that past tense in English must be realized by a morpheme /-ed/ or that agreement must manifest itself as /-s/ in the 3rd person singular. Yet it is this realization that is problematic, rather than the syntactic consequences of tense or agreement.

To conclude this section, while the issues are by no means resolved, it seems clear that we have left behind the more general, global question (is there access to UG?) and are now probing quite intricate properties of the interlanguage representation, in order to understand the nature of the grammar that the learner creates to account for the L2. (Of course, the issue of UG involvement is still central, since a grammar constrained by UG will be different in nature from one that is not.) Interesting conceptual questions are being raised: does it make sense to think of an interlanguage representation as being defective in one domain (morphological mapping) but not another (syntax); does it make sense to think of some features being impaired but not others? If the interlanguage representation indeed draws on a variety of knowledge sources (UG, the L1, etc.), how do these come together?

## 7 Beyond Representation

UG is a theory relevant to the issue of linguistic competence, a theory as to the nature of grammatical representation. Although UG provides constraints on possible grammars in the course of acquisition, it is not, of itself, a theory of acquisition. This point is often misunderstood, perhaps because of terms like "Language Acquisition Device" (LAD) (Chomsky, 1965), which many people in the past equated with UG. It would be more accurate to think of UG as a component within an LAD or as part of a language faculty. A theory of language acquisition will also have to include learning principles, processing principles, triggering algorithms, etc.

In other words, in addition to a theory of constraints on interlanguage representation, we need a theory of how that representation is acquired, a theory of development (whether we are talking about L1 or L2 acquisition). A number of researchers have pointed out that theories of acquisition must explain both the representational problem (what L2 learners come to know) and the developmental problem (how they attain this knowledge) (e.g., Carroll, 1996; Felix, 1987; Gregg, 1996; Klein and Martohardjono, 1999). Most research looking at the operation of UG in second language acquisition has focused on the nature of the L2 learner's grammar, looking for evidence for or against the involvement of principles and parameters of UG, and exploring the nature of the initial state and subsequent grammars. These are representational issues, as we have seen.

Even if one looks for UG-based properties in learner grammars at various points in time, this is a question of representation rather than development. A representational theory is not the same as a developmental one; there is clearly a need for both and room for both. A representational theory makes claims

about what learner grammars are like (a grammar at time X conforms to property X and at time Y to property Y) but does not seek to explain how or why grammars develop in a particular way. We should bear in mind that UG itself is not a learning theory; it can only interact with other theories that try to explain development.

To account for grammar change (i.e., development), one needs a theory of how the L2 input interacts with the existing grammar, what properties of the input act as triggers for change, what properties force changes to the current representation, what might drive stages of acquisition. Some L2 learnability work has looked into these kinds of questions (the role of positive and negative evidence, learning principles, proposals that grammar change is failure driven, possible triggers in the input, etc.) (e.g., Schwartz and Sprouse, 1994; Trahey and White, 1993; White, 1991a). However, this is an area where much remains to be done.

Another issue is relevant in this context. In the field of second language acquisition, there is often a confusion between competence (in the sense of underlying linguistic representation) and performance (use of that representation to understand and produce language). People often look at L2 performance, note that it differs from that of native speakers, and argue that this demonstrates essential defects in competence, or lack of UG (the comparative fallacy again). But it is in fact possible that L2 learners' underlying competence is to some extent hidden by performance factors, such as the demands of processing or parsing. Knowledge and use of knowledge do not always coincide. In recent years, there has been an increase in research which investigates how the interlanguage mental representation is accessed during processing, seeking to determine how the representation is used on-line and off-line and the extent to which processing pressures may mask competence (e.g., Juffs and Harrington, 1995; Schachter and Yip, 1990). Again, this is an area where more research is needed.

## **8 Conclusion**

It is not the aim of UG-based theories of second language acquisition to account for all aspects of L2 development. These theories concentrate largely on the nature of unconscious interlanguage knowledge. I have argued that it is not necessary to show that the interlanguage representation is identical to the grammars of native speakers of the L2 in order to demonstrate that the representation is constrained by UG. The pursuit of interlanguage representation has led to a number of interesting and competing proposals: that interlanguage grammars are natural language grammars, constrained by UG (on some accounts, restricted to L1 properties, on other accounts not), versus that interlanguage grammars suffer from impairments (permanent, according to some researchers). The local impairment position contrasts with earlier views which assumed a more global deficit, in the form of a total inability to reset parameters (e.g., Clahsen and Muysken, 1989).

In conclusion, it is important to bear in mind that claims for UG operation in L2 acquisition are simply claims that interlanguage grammars will fall within a limited range, that the "hypothesis space" is specified by UG. As Dekydtspotter et al. (1998, p. 341, n. 1) point out: "Given that the sole 'role' of UG is to restrict the hypothesis space available to the language acquirer, *Full Restriction* might be a more perspicuous name than the standard *Full Access*." If we have to use such terms at all, this one has many advantages, since it focuses our attention on properties of the learner's representation, while at the same time reminding us that the restrictions come from UG.

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## NOTES

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- 1 For a more recent treatment of this phenomenon, see Noguchi (1997).
- 2 The examples are drawn from Kanno (1997). The following abbreviations are used: NOM = nominative; ACC = accusative; TOP = topic.
- 3 Of course native speaker control groups should be included in experiments in order to make sure that the test instrument achieves what it is meant to test. This is a different matter.
- 4 For purposes of exposition, I ignore analyses that have tense (T) and agreement (Agr) heading their own projections (e.g., Pollock, 1989).
- 5 Where features are weak, feature checking is achieved by the mechanism of covert movement (Chomsky, 1995).
- 6 This is an oversimplification, which I will adopt for the sake of the argument. See Pollock (1989).
- 7 See White (1992a) and Schwartz and Sprouse (2000) for analyses that account for these data in a full transfer framework.
- 8 In fact, Epstein et al. (1996, p. 751) reject this possibility as well, so that it is impossible to determine their precise position on the initial state.

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