# UNIVERSAL GRAMMAR IN SECOND LANGUAGE ACQUISITION: THE NATURE OF INTERLANGUAGE REPRESENTATION*

Lydia White
McGill University

## Constraints on representation

In this paper, I provide an overview of differing perspectives on the role of Universal Grammar (UG) in second language acquisition (SLA). I will suggest that we must not lose sight of the fact that UG is a theory which provides constraints on linguistic representation. At issue, then, is whether interlanguage (IL) representation is constrained by UG.

UG is part of an innate biologically endowed language faculty. 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. While theories like Government-Binding (GB), Minimalism, or Optimality Theory differ as to how precisely they handle concepts like principles and parameters, there is a consensus that certain properties of language are too abstract, subtle and complex to be learned without postulating innate and specifically linguistic constraints.

Much of the work on UG in SLA has been conducted within the GB framework. Since then, there have been changes in linguistic theory; some properties that were determined by principles in GB are handled differently under the Minimalist approach. Parameters have gradually become more constrained, being largely associated with variation in the lexicon. In the Minimalist framework, the computational system is 'given' by UG and is invariant. What varies is properties of the items that enter into the computation (for example, their feature composition and feature strength).

Such changes in linguistic theory (hence in the definition of UG) should not be seen as a matter of major concern. What we are interested in (in part) is whether certain abstract and complex properties which are underdetermined by the L2 input manifest themselves in interlanguage grammars (ILGs). The fact that there are constant revisions to theoretical analyses of these properties is tangential. (It is a reflection of normal development and growth within linguistic theory.) What does not change (much) is theoreticians' view of what the problematic data are that require postulation of innate principles and parameters in the first place.

* Different versions of this paper (with different titles) were presented at GASLA , Pittsburgh, Sept. 1998 and at SLRF, Hawaii, Oct. 1998. This research was conducted with the generous support of research grants from FCAR and SSHRCC.

UG is a theory relevant to the issue of linguistic competence, i.e., 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), which many people in the past equated with UG. But it would be more accurate to think of UG as just part of an LAD (Hilles 1991) or part of a language faculty (Radford 1997). The LAD will also have to contain learning principles, processing principles, triggering algorithms, etc. In other words, in addition to a theory of constraints on IL representation, we need a theory of how that representation is acquired, a theory of development (whether we are talking about L1 or L2 acquisition). (See Carroll 1996; Felix 1987; Gregg 1996; Klein and Martohardjono, in press).

**The logical problem of language acquisition**

Although UG contributes to an explanation of how languages are acquired, this is in the sense of how it is that learners come to know properties that go far beyond the input, how they know that certain things are not possible, why grammars are of one sort rather than another, etc. These properties do not have to be learned; that is the claim. What is the motivation for UG in the first place? It is the claim that, at least in the case of first languages, there is a logical problem of language acquisition, a mismatch between what goes in (namely, the primary linguistic data) and what comes out (a grammar). In other words, the input underdetermines the output. Assuming a logical problem of L1 acquisition, people have asked whether the same holds true of L2 (White 1985a; Bley-Vroman 1990).

This question remains central - is it the case that L2 learners attain unconscious knowledge (a mental representation) that goes beyond the L2 input? And if they do, can we eliminate alternative sources of this knowledge, such as the L1? The strongest case for the operation of UG in SLA is if the L2 properties could not have been learned from input alone or from input plus non domain-specific learning principles or from the L1 grammar alone.

Let us review what kinds of situation have been used to demonstrate an L2 logical problem, hence likelihood of involvement of UG. Researchers have sought out genuine 'poverty of the stimulus' cases. In other words, both of the following must hold (White 1990):

> i. The phenomenon in question must be underdetermined by the L2 input. That is, it must not be something that could have been acquired without recourse to universal principles, by simple observation of the L2 input, by frequency effects, or on the basis of instruction, analogical reasoning, etc.
>
> ii. The phenomenon in question should work differently in the L1 and the L2. If L2 learners show evidence of subtle and abstract knowledge, we want to exclude, as much as possible, the possibility that such knowledge is obtained via the L1 grammar alone.

Indeed, this double requirement (not obvious in L2 input; not present in L1) has been applied as a kind of formula to much UG-SLA research (see Schwartz 1997 for related observations). 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 (see Hale 1996). Nevertheless, if the L1 and L2 differ in terms of surface properties, then we can at least rule out transfer at this level as the sole explanation of what is going on.

It is important to distinguish between the logical problem question and the UG question. The logical problem question is: Is it the case that L2 learners attain unconscious knowledge (a mental representation) that goes beyond the L2 input? The UG question is: is this achieved by means of UG? (These are NOT the same question, although they often get collapsed, since the way to determine whether UG principles and parameters operate is similar to the way to assess whether there is a logical problem.)

**UG 'access' and terminological confusions**

Assuming that there is indeed a logical problem of L2 acquisition, researchers asked more UG-specific questions. In the 1980s, the UG question seemed relatively straight forward (and relatively global): Is UG available (or accessible) to L2 learners? In other words: do ILGs show evidence of being constrained by principles of UG? A number of principles were investigated, such as Subjacency, the ECP and Binding Principle A. 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.

The first issue to be taken up in our field was, I believe, the issue of UG parameters rather than invariant UG principles, e.g. head position (Flynn 1984) and pro-drop (White 1985b), Ritchie (1978) being an early exception. A lot of early work looked at whether there is evidence of parameter (re)setting in ILGs (i.e., early stage L1 value, later stage L2 value of some parameter, with relevant clustering of properties). If ILGs are UG constrained, then we expect parametric properties to show up, either in the form of L1 settings or L2 settings or settings found in other languages, with an associated cluster of properties.

A number of people proposed a 'no parameter resetting' hypothesis, whereby L2 learners are subject to UG principles but cannot reset parameters (e.g. Clahsen and Muysken 1989; Liceras et al. 1997; Tsimpli and Roussou). Others argue that L1 settings prevail initially, with subsequent acquisition of other values (e.g. Schwartz and Sprouse 1996; White 1985b). Some have proposed that L2 settings are attainable without prior adoption of L1 settings (Epstein, Flynn and Martohardjono 1996; Flynn 1987).

Considerable terminological confusions and disagreements arose fairly early on, relating to the involvement of the L1 and implications for UG operation. For example, consider terms like *direct access* and *full access* to UG. *Direct access* for some meant 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 settings

(L1, L2, Ln). *Indirect access* to UG was used to refer to access via the L1, some researchers using it to mean access ONLY via the L1 (e.g. Cook 1988), while others took this to mean access via L1 initially followed by parameter resetting. Similar problems have arisen with the terms *full access* and *partial access* which at some point replaced *direct/indirect access*. *Full access* for some (Epstein, Flynn and Martohardjono 1996) is restricted to the position that UG operates independently of the L1 representation, whereas for others (e.g. Schwartz and Sprouse 1996; White 1985b) it means access via L1 but not restricted to L1.

Part of the problem is that these terms are too global. In addition, some researchers have assumed a fairly simplistic and misleading dichotomy: UG **or** L1 in the IL representation. As Hale (1996) has recently pointed out, in many cases it is impossible to tease UG and the L1 apart. UG is necessarily manifested in the L1.

But another part of the problem, to me at least, is that these terms reflect too much concentration on the **source(s)** of IL knowledge (UG versus L1). I believe that it is time to focus more on the **nature** of the representations that L2 learners achieve. Not that we ignored this in the past, but it always seems to be secondary. *Is UG available? - let's take a look at the grammar .....* I think we should be prepared to reverse this focus and concentrate more on the nature of the IL representation. We must recognize that it may not always be appropriate to dwell on the UG question. For example, much current work on functional categories in IL representation presupposes the operation of UG and concentrates on details of how functional categories and features are represented (see below for further discussion).

**The comparative fallacy**

If we are going to take the issue of representation seriously, we need to consider Bley-Vroman's (1983) *comparative fallacy*. Recently, Schwartz and Sprouse (1994), Schwartz (1997) and Cook (1997) have reminded us of the dangers of comparing L2 learners to native speakers of the L2 with respect to UG properties. In his 1983 paper on the comparative fallacy, Bley-Vroman 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 pointed out 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).[1]

Ironically, I believe that the Fundamental Difference Hypothesis (FDH) itself constitutes a case of the comparative fallacy. Bley-Vroman argues that L2 learning is fundamentally different from L1 acquisition in part on the basis of differences in the outcomes (i.e., properties of the grammars of L2 learners versus the grammars of native speakers). Certainly, other proponents of the FDH are 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. Research was often somewhat formulaic (see also Schwartz 1997): take Principle X or

[1] See White (1982) for similar observations re L1 grammars.

Parameter Y, investigate whether or not L2 learners observe properties relating to the principle or parameter in question. If L2 learners rendered judgments (or otherwise behaved) like native speakers, then they were deemed to have access to Principle X or Parameter Y; on the other hand, if they differed in their judgments from native speakers, then their grammars were assumed not constrained by UG; hence, UG is not available/accessible. (For arguments against this position, see Schwartz (1997) and White (1996b).) For example, in Schachter's (1989, 1990) investigations of Subjacency, this was the underlying rationale for assuming non-operation of UG (or UG only via L1). L2ers of certain L1 backgrounds were very inaccurate in their judgments on Subjacency violations when compared to native speakers of English; hence, Schachter argued, L2 learners do not have access to UG principles independently of the L1.

A number of UG/SLA researchers pointed out quite early on the need to consider ILGs in their own right with respect to principles and parameters of UG, i.e. not to compare L2 learners to native speakers of the L2 but to consider whether ILGs are natural language systems (e.g. duPlessis et al. 1987; Finer and Broselow 1986; Martohardjono and Gair 1993; Schwartz and Sprouse 1994; White 1992). These authors have shown that if one concentrates on properties of the ILG in its own right, one sees that L2 learners may arrive at grammars 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 ILG is a 'possible' grammar, not whether it is equivalent to the L2 grammar. For example, with respect to Subjacency, Martohardjono and Gair (1993), White (1992) and more recently Hawkins and Chan (1997) argue that L2 learners have a different analysis for the phenomenon in question, i.e., wh-questions are derived without movement, using *pro* as the empty category, hence explaining lack of Subjacency effects.

Another form of the comparative fallacy is to expect L2 speakers not to differ significantly from native speakers with respect to performance on some property. Suppose that on a grammaticality judgment task native speakers accept some UG violation at less than 10% and accept corresponding grammatical sentences at over 90%. In order to demonstrate 'access' to this principle, is it necessary for L2 speakers to perform at the same sort of level? In fact, this is not the issue. Rather, the issue is whether the ILG shows evidence of certain distinctions: does learner performance on grammatical sentences differ significantly from their performance on ungrammatical sentences (c.f. 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 ILG represents the relevant distinction (whatever it may be), even if the degree to which they observe it may differ from native speakers.

Should one, then, never compare L2 speakers to native speakers of the L2?[2] This, I think, would be overdoing it, since there are legitimate reasons for asking whether the L2 learner has in fact acquired properties of the L2. After all, the L2 is a natural language, the learner is exposed to L2 input (though this may in fact be deficient input). What is problematic is when certain conclusions are drawn based on failure to achieve the L2 grammar. 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.

Comparing ILGs to the L1 grammar potentially constitutes a case of the comparative fallacy as well, since such a comparison may result in failure to observe the ILG in its own right, i.e., precisely the same problem that arises with constant comparison to the target language grammar. (See Schwartz (1997) for a contrary view.)

**The nature of interlanguage representation**

Much current research concentrates on the nature of IL representation. Specific grammatical properties are investigated and claims are made about how they are represented in the ILG. In a number of cases, the "does this come from UG/L1?" question and "does this mean access to UG?" question is not explicitly addressed (rightly in my view). The focus on IL representation manifests itself particularly clearly in current research on the L2 initial state. There have been a variety of initial state claims: the L1 grammar is the initial state (Schwartz and Sprouse 1996); UG is the initial state (Epstein, Flynn and Martohardjono 1996); a grammar with lexical but not functional categories is the initial state (Vainikka and Young-Scholten 1994); a grammar lacking specified features is the initial state (Eubank 1994). Theories about the initial state are theories about the representation that L2 learners start out with, the representation that they use to make sense of the L2 input. These are **not** theories about UG availability (contra Epstein, Flynn and Martohardjono (1996) who mistakenly equate claims about representations lacking functional categories with claims about partial access to UG).

The nature of representation during development is also an issue. Indeed, earlier claims about parameter resetting were claims about the nature of representation at different stages, although they were not always seen that way. The growth in papers investigating detailed aspects of IL knowledge in various domains reflects the current concern with representational issues, as well as increasingly sophisticated analyses within the field.

Finally, interest in ultimate attainment is also a representational matter, addressing the issue of what endstate represention like. Some researchers have investigated the nature of the endstate grammar in considerable detail, for example Sorace's (1993a, b) work on how unaccusativity is represented in the grammars of near native speakers and

[2] Of course control groups should be included in order to make sure that one's test instruments are OK, etc. This is a different matter.

Lardiere's research on divergence between endstate syntactic knowledge and morphological properties (Lardiere 1998a, b).

In other words, researchers have been exploring the nature of various properties in the ILG, in order to understand the 'theory' or grammar that the learner creates to accommodate the L2 input. With this shift, we are no longer asking the UG question directly; instead of worrying about the **source** of grammatical properties (UG, the L1, something else), we are looking at the **nature** of those properties. This is not to say that we have abandoned the UG question but we are coming at it from a different angle.

**Impaired representation**

With the issue shifting to the nature of ILGs considered in their own right, the question arose as to whether they are always natural language systems, or whether are they 'wild' or 'rogue' (i.e. failing to observe UG constraints) (see Dekydtspotter et al. 1998; Hamilton 1998; Klein 1995; Thomas 1991a, 1995). In these cases, ILGs are argued to show (or not show) properties not found elsewhere in natural languages, hence indirectly casting doubt on involvement of UG. (The response takes the form of offering an alternative analysis of the same data, and/or showing that such cases do arise in natural languages.)

Recently, there have been explicit claims that IL representation is impaired, either globally (Meisel 1997) or locally (Beck 1998; Eubank and Grace 1998; Hawkins and Chan 1997; Liceras et al. 1997), impairment mostly located in properties of the IL functional feature system. One can broadly distinguish two classes of claims. The first (the unimpaired camp) assumes that the ILG will include L2 functional categories and features (Epstein, Flynn and Martohardjono, 1996; Grondin and White 1996; Lakshmanan 1993; Schwartz and Sprouse 1994; Vainikka and Young-Scholten 1994; White 1996a). Although these researchers differ as to the presumed nature of early ILs, i.e., whether they lack functional categories altogether (Vainikka and Young-Scholten 1994) or whether the L1 representation is initially involved (Schwartz and Sprouse 1994) or not (Epstein, Flynn and Martohardjono 1996), they agree that L2 functional properties will in principle be present in the IL grammar.

The second approach assumes impairment which affects functional properties in the ILG. This camp can be divided into two, with only the second group making claims for truly impaired representation. In the first sub-camp, Hawkins (1998) and Hawkins and Chan (1997) argue for the 'failed features hypothesis' whereby the IL representation is restricted to those features and feature values available in the L1 (also Liceras et al. 1997; Tsimpli and Roussou 1991). However, (i) the ILG has considerable flexibility to accommodate new data; (ii) this is not an impairment that involves a grammar different in **nature** from other grammars, since L1 featural properties are present. In contrast, Beck (1998) and Eubank et al. (1997) propose that interlanguage feature strength is permanently 'inert' or unspecified (the 'local impairment hypothesis' of Beck). These proposals argue impaired representation - inert feature values (at least for finiteness) or no features - with consequences for a number of grammatical properties (verb raising, etc.). (It should be noted that such impairment implies that the ILG is not UG-

constrained in all domains.) Meisel (1997) goes further still, proposing more global impairment to functional (and other) properties, with L2 grammars being of an essentially different nature from those found in L1 acquisition.

Without going into the details of this debate, it seems clear that we have left the global question (is there access to UG?) and are now probing quite intricate properties of the IL representation. This in turn raises interesting conceptual questions: does it make sense to think of an IL representation as being impaired in one domain (morphology) but not another (syntax); does it make sense to think of some features (say, finiteness) being impaired but not others? If the ILG indeed draws on a variety of knowledge sources, how do these come together?

**Beyond representation**

A number of researchers have pointed out that theories of L2 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, in press). Much UG/SLA research 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 has explored the nature of the initial state, the developing grammar, etc. These are representational issues, as we have seen.

Even if one looks for UG properties in learner grammars at various points in time, this is a question of representation, not development. It answers the question of **what** learner grammars are like (grammars at time X conform to properties X and at time Y to Y) but not **how** they develop in that way. In other words, showing that L2 learners can reset parameters is not a theory of interlanguage development. We should bear in mind that UG itself cannot be a learning theory; it can only interact with other theories that try to explain development. A representational theory is not the same as a developmental one; there is clearly a need for both and room for both.

Nevertheless, researchers working on UG and SLA have considered the issue of how grammar change is brought about. To account for grammar change, one needs a theory of how the L2 input interacts with the existing grammar, what properties of the input act as triggers change, etc. 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. Trahey and White 1993; White 1991).

Another issue is relevant in this context. In the SLA field, there is often a confusion between competence and performance. That is, people look at L2 performance, note that it differs from native speakers, and argue that this means essential differences in competence, lack of UG, etc. (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. Recently, there has been increasing work looking at how the IL mental representation interacts with other

'modules' such as processing (i.e. how the representation is used on-line and off-line) (Juffs and Harrington 1995; Schachter and Yip 1990). Knowledge and use of knowledge do not always coincide.

## Conclusion

The UG question is part of a bigger question: what are natural language grammars like? Or rather, UG is proposed as an answer to that question. By focusing more on what ILGs are like (their nature rather than their source) we are arriving at a more fruitful way of investigating the involvement of UG in SLA. 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, Sprouse and Anderson (1998) 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 ILG (the learner's representation), while at the same time reminding us that the restrictions come from UG.

**References**


Beck, M. (1998). L2 acquisition and obligatory head movement: English-speaking learners of German and the local impairment hypothesis. *Studies in Second Language Acquisition* 20: 311-348.

Bley-Vroman, R. (1983). The comparative fallacy in interlanguage studies: the case of systematicity. *Language Learning* 33*:* 1-17.

Bley-Vroman, R. (1990). The logical problem of foreign language learning. *Linguistic Analysis* 20: 3-49.

Carroll, S. (1996). Parameter-setting in second language acquisition: explanans and explanandum. *Behavioral and Brain Sciences* 19: 720-721.

Clahsen, H., & Muysken, P. (1989). The UG paradox in L2 acquisition. *Second Language Research* 5*:* 1-29.

Cook, V. (1997). Monolingual bias in second language acquisition research. *Revista Canaria de Estudios Ingleses* 34: 35-49.

Cook, V. J. (1988). *Chomsky's Universal Grammar: an introduction*. Oxford: Basil Blackwell.

Dekydtspotter, L., Sprouse, R., & Anderson, B. (1998). Interlanguage A-bar dependencies: binding construals, null prepositions and Universal Grammar. *Second Language Research* 14.

duPlessis, J., Solin, D., Travis, L., & White, L. (1987). UG or not UG, that is the question: a reply to Clahsen and Muysken. *Second Language Research* 3: 56-75.

Epstein, S., Flynn, S., & Martohardjono, G. (1996). Second language acquisition: theoretical and experimental issues in contemporary research. *Brain and Behavioral Sciences* 19: 677-758.

Eubank, L. (1994). Optionality and the initial state in L2 development. In T. Hoekstra & B. D. Schwartz (Eds.), *Language Acquisition Studies in Generative Grammar* (pp. 369-388). Amsterdam: John Benjamins.

Eubank, L., Bischof, J., Huffstutler, A., Leek, P., & West, C. (1997). "Tom eats slowly cooked eggs": thematic-verb raising in L2 knowledge. *Language Acquisition 6*: 171-199.

Eubank, L., & Grace, S. (1998). V-to-I and inflection in non-native grammars. In M. Beck (Ed.), *Morphology and its interface in L2 knowledge* ). Amsterdam: John Benjamins.

Felix, S. (1987). *Cognition and language growth.* Dordrecht: Foris.

Finer, D., & Broselow, E. (1986). Second language acquisition of reflexive-binding. In S. Berman, J.-W. Choe, & J. McDonough (Eds.), *Proceedings of NELS 16* (pp. 154-168). Graduate Linguistics Students Association.

Flynn, S. (1984). A universal in L2 acquisition based on a PBD typology. In F. Eckman, L. Bell, & D. Nelson (Eds.), *Universals of second language acquisition* ). Rowley, MA: Newbury House.

Flynn, S. (1987). *A parameter-setting model of L2 acquisition*. Dordrecht: Reidel.

Gregg, K. (1996). The logical and developmental problems of second language acquisition. In W. Ritchie & T. Bhatia (Eds.), *Handbook of second language acquisition* (pp. 49-81). San Diego: Academic Press.

Grimshaw, J., & Rosen, S. T. (1990). Knowledge and obedience: the developmental status of the binding theory. *Linguistic Inquiry* 21: 187-222.

Grondin, N., & White, L. (1996). Functional categories in child L2 acquisition of French. *Language Acquisition* 5: 1-34.

Hale, K. (1996). Can UG and the L1 be distinguished in L2 acquisition? *Behavioral and Brain Sciences* 19: 728-730.

Hamilton, R. (1998). Underdetermined binding of reflexives by adult Japanese-speaking learners of English. *Second Language Research* 14: 292-320.

Hawkins, R. (1998). The inaccessibility of formal features of functional categories in second language acquisition. Paper presented at the Pacific Second Language Research Forum, Tokyo, March 1998.

Hawkins, R., & Chan, Y-C. (1997). The partial availability of Universal Grammar in second language acquisition: the 'failed features' hypothesis. *Second Language Research* 13: 187-226.

Hilles, S. (1991). Access to Universal Grammar in second language acquisition. In L. Eubank (Ed.), *Point counterpoint: Universal Grammar in the second language* (pp. 305-338). Amsterdam: John Benjamins.

Juffs, A., & Harrington, M. (1995). Parsing effects in second language sentence processing: subject and object asymmetries in wh-extraction. *Studies in Second Language Acquisition* 17: 483-516.

Klein, E. (1995). Evidence for a 'wild' L2 grammar: when PPs rear their empty heads. *Applied Linguistics* 16: 87-117.

Klein, E., & Martohardjono, G. (In press). Investigating second language grammars: some conceptual and methodological issues in generative SLA research. In E. Klein & G. Martohardjono (Eds.), *The development of second language grammars: a generative perspective* ). Amsterdam: John Benjamins.

Lakshmanan, U. (1993/1994). "The boy for the cookie" - Some evidence for the nonviolation of the case filter in child second language acquisition. *Language Acquisition* 3: 55-91.

Lardiere, D. (1998a). Case and tense in the 'fossilized' steady state. *Second Language Research* 14: 1-26.

Lardiere, D. (1998b). Dissociating syntax from morphology in a divergent end-state grammar. *Second Language Research* 14.

Liceras, J., Maxwell, D., Laguardia, B., Fern‡ndez, Z., & Fern‡ndez, R. (1997). A longitudinal study of Spanish non-native grammars: beyond parameters. In A. T. PŽrez-Leroux & W. Glass (Eds.), *Contemporary perspectives on the acquisition of Spanish* (pp. 99-132). Somerville, MA: Cascadilla Press.

Martohardjono, G. (1993). *Wh-movement in the acquisition of a second language: a crosslinguistic study of three languages with and without movement*. Unpublished PhD thesis, Cornell University.

Martohardjono, G., & Gair, J. (1993). Apparent UG inaccessibility in second language acquisition: misapplied principles or principled misapplications? In F. Eckman (Ed.), *Confluence: Linguistics, L2 acquisition and speech pathology* (pp. 79-103). Amsterdam: John Benjamins.

Meisel, J. (1997). The acquisition of the syntax of negation in French and German: contrasting first and second language acquisition. *Second Language Research* 13: 227-263.

Radford, A. (1997). *Syntactic theory and the structure of English: a minimalist approach*. Cambridge: Cambridge University Press.

Ritchie, W. (1978). The right roof constraint in adult-acquired language. In W. Ritchie (Ed.), *Second language acquisition research: issues and implications* ). New York: Academic Press.

Schachter, J. (1989). Testing a proposed universal. In S. Gass & J. Schachter (Eds.), *Linguistic perspectives on second language acquisition* (pp. 73-88). Cambridge: Cambridge University Press.

Schachter, J. (1990). On the issue of completeness in second language acquisition. *Second Language Research* 6: 93-124.

Schachter, J., & Yip, V. (1990). Grammaticality judgments: why does anyone object to subject extraction? *Studies in Second Language Acquisition* 12: 379-392.

Schwartz, B. (1997). On the basis of the Basic Variety. *Second Language Research* 13: 386-402.

Schwartz, B., & Sprouse, R. (1994). Word order and nominative case in nonnative language acquisition: a longitudinal study of (L1 Turkish) German interlanguage. In T. Hoekstra & B. Schwartz (Eds.), *Language acquisition studies in generative grammar* (pp. 317-368). Amsterdam: John Benjamins.

Schwartz, B., & Sprouse, R. (1996). L2 cognitive states and the full transfer/full access model. *Second Language Research* 12: 40-72.

Sorace, A. (1993a). Incomplete and divergent representations of unaccusativity in non-native grammars of Italian. *Second Language Research* 9: 22-48.

Sorace, A. (1993b). Unaccusativity and auxiliary choice in non-native grammars of Italian and French: asymmetries and predictable indeterminacy. *Journal of French Language Studies* 3: 71-93.

Thomas, M. (1991a). Do second language learners have "rogue" grammars of anaphora. In L. Eubank (Ed.), *Point counterpoint: Universal Grammar in the second language* (pp. 375-388). Amsterdam: John Benjamins.

Thomas, M. (1991b). Universal Grammar and the interpretation of reflexives in a second language. *Language* 67: 211.

Thomas, M. (1995). Acquisition of the Japanese reflexive *zibun* and movement of anaphors in Logical Form. *Second Language Research* 11: 206-234.

Trahey, M., & White, L. (1993). Positive evidence and preemption in the second language classroom. *Studies in Second Language Acquisition 15*, 181-204.

Tsimpli, I., & Roussou, A. (1991). Parameter resetting in L2? *UCL Working Papers in Linguistics* 3: 149-169.

Vainikka, A., & Young-Scholten, M. (1994). Direct access to X'-theory: evidence from Korean and Turkish adults learning German. In T. Hoekstra & B. Schwartz (Eds.), *Language acquisition studies in generative grammar* (pp. 265-316). Amsterdam: John Benjamins.

White, L. (1982). *Grammatical theory and language acquisition*. Dordrecht: Foris.

White, L. (1985a). Is there a logical problem of second language acquisition? *TESL Canada* 2: 29.

White, L. (1985b). The pro-drop parameter in adult second language acquisition. *Language Learning* 35: 47-62.

White, L. (1990). Second language acquisition and universal grammar. *Studies in Second Language Acquisition* 12: 121-133.
White, L. (1991). Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom. *Second Language Research* 7: 133-161.
White, L. (1992). Subjacency violations and empty categories in L2 acquisition. In H. Goodluck & M. Rochemont (Eds.), *Island Constraints* (pp. 445-464). Dordrecht: Kluwer.
White, L. (1996a). Clitics in L2 French. In H. Clahsen (Ed.), *Generative perspectives on language acquisition: Empirical findings, theoretical considerations, crosslinguistic comparisons* (pp. 335-368). Amsterdam: John Benjamins.
White, L. (1996b). Universal grammar and second language acquisition: current trends and new directions. In W. Ritchie & T. Bhatia (Eds.), *Handbook of language acquisition* ). New York: Academic Press.