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# SLA AND FIRST LANGUAGE ACQUISITION*

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## INTRODUCTION

In a brief article published some years ago (Foster-Cohen 1993), I suggested that fruitful collaboration between the fields of first and second language acquisition was underexploited. I also suggested that second language researchers were, in general, better at keeping themselves informed of developments in first language studies than first language researchers were at paying attention to second language issues. I think it fair to say that there are some signs this is changing. One is the now established existence of the journal *Language Acquisition* (Lawrence Erlbaum Associates), started in 1990, which publishes work in both first and second language acquisition with a view to understanding the nature of language acquisition in general. Its preference for papers that address issues in formal linguistic theory complements well *Applied Psycholinguistics* (Cambridge University Press), which has always published material relevant to both fields, but which also goes well beyond acquisition issues in its brief. A second factor seems to be a gentle but insistent re-examination of issues in bilingualism and a growing awareness that bilingual studies, second language studies, and first language studies overlap in important ways in the study of the bilingual individual. One key indicator of this shift is the appearance of a new journal *Bilingualism: Language and Cognition* (Cambridge University Press). Also, as one of the principal organizers of the recent annual conference of the European Second Language Association (September, 1998, Paris), which had 'The Bilingual Individual' as its theme, I was happy to see how well bilingual and second language studies could be made to come together. A confluential trend also seems to be reflected in two further ways: an increased interest in multiple second language acquisition (L3, L4, etc.; e.g., Williams and Hammarberg 1998), and a focus among second language learners on very late stages of language acquisition (Bartning 1997, White and Genesee 1996) as the upper limits of second language acquisition are placed more carefully alongside those for first language acquisition.



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However, even if the L1-L2 connections have not always been explored, most of the 'big questions' in the two fields are inherently connected, and advances in thinking on these questions will form the main focus of this review. In particular, the question of the extent to which language acquisition is natural represents, in one form or another, a constant. In first language acquisition, there is no question that given basic favorable conditions, language will be learned; however, whether there is a language-specific acquisition device or whether other cognitive factors, in place for other reasons, are the main agents is still an issue. In second language studies, there is no such assumption of automatic success, except in situations of natural child second language acquisition. In fact, the onus is on those who think a natural language acquisition device is involved in adult second language acquisition to prove it in the face of ample evidence of acquisition failure by learners. This contrasts with first language studies where the onus is more frequently on those who argue for a non-specific mechanism to prove that such a mechanism can result in the complex knowledge that learners acquire.

A second and related issue involves the nature of the input and the use that learners are able to make of it. Here, there has been a recent resurgence of interest among L1 researchers in the didactic nature of the input. This trend now complements an ongoing interest in L2 studies on the relative utility of didactic and non-didactic input and their relationships to implicit and explicit learning.

There is also the question of what exactly it is that learners have stored when they have learned some aspect of language. Many frameworks for explaining acquisition carry with them automatic answers to this question. A UG explanation for acquisition implies a rules and representations account of what is stored. A connectionist account of acquisition implies a non-rule, non-representation, activated node account of what is stored. Other frameworks, however, leave this question more open. For example, processing accounts, in which learners work from processing a string, to analysis of the string, to generalizations about structures, might use a rule-based, a construction-based, or a connectionist account of storage.

One particularly thriving approach to questions of both storage and acquisition involves looking at the extremes of learner variation, namely at disordered populations. In first language acquisition, the last few years have seen the spotlight turned fully on Specific Language Impairment (SLI). This research continues the tradition of looking for double dissociations, that is, children who are capable in one arena and not in another, and matching children with the reverse set of competences/deficits. (SLI children are argued to be of normal intelligence and social adjustment, but to have specific problems with language. There are other children, e.g., Williams Syndrome children, who are argued to be normal in their language development while deficient in general intelligence.) Double dissociations speak to the general question of the modularity of mind and the specific issue of the modularity of the language faculty. Second language researchers rarely have such windows on acquisition, although the case of

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'Christopher' is a notable exception (Smith and Tsimpli 1995, Tsimpli and Smith in press). Nevertheless, if the goal of language acquisition research is to understand how a mind can learn a language, then this is an area that ought to be of interest to all acquisition researchers.

In what follows I will address each of these areas in turn, and then conclude with some consideration of methodology, since any empirical conclusions are only as good as the data on which the analyses were based, and there is considerable discussion at the moment about the validity of certain types of data and about new ways to extract meaingful data from learners.

## IS THERE A LANGUAGE INSTINCT?

There seems to be a general assumption among second language researchers that first language researchers have almost all adopted some version of a Universal Grammar (UG) approach. One sees this assumption voiced when researchers interested in investigating the role of UG in second language acquisition set up their research design. Of course, as a rhetorical tactic this is inevitable because if UG is not viable for L1, then there is no point in looking at it in L2. However, there are many in first language acquisition studies who would rightly bristle at the suggestion that UG is widely accepted in L1 (Tomasello 1995), since there are still undoubtedly more researchers in child language research who adopt a position *other* than UG than adopt a UG position. This is hardly surprising given the linguistically technical nature of the UG hypothesis on the one hand, and the great variety of training possessed by those interested in first language acquisition (psychology, education, anthropology, etc.) on the other. However, it is important to recognize that, while researchers hostile to UG reject the claim of 'special' nativism in its particular guise of UG, they are still open to 'general' nativism in which other, innate, aspects of human cognitive functioning are argued to account for language acquisition. (See the special issue of *Second Language Research*, edited by Eckman [1996], for discussion of specific versus general nativism in both first and second language development.)

First language researchers who adopt a 'general' nativism position argue that children bring cognitive expectations to the analysis of the world around them and to the language to which they are exposed. While perhaps a weaker tradition than it was in the heyday of Piagetian research, there are nonetheless many whose main interest is to show the effects of non-linguistic cognition on language development. Lieven, Pine and Baldwin (1997), Marchman, Plunkett and Goodman (1997), Pine and Lieven (1997), and Tomasello (1998) are among those who are currently explicitly arguing for a non-UG account of first language acquisition. Their position is that children learn construction by construction and that it is the position of a word in relation to the other words in the construction that is both noticed by children and made the basis of generalizations to other constructions. This is a resurfacing of Braine's original pivot-open grammar, which has lain dormant for a while following fatal criticisms in the early seventies,

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new life having been breathed into it by demonstrations from connectionist researchers that it ought to be possible in principle to account for a significant portion of grammar acquisition in this way, and by recent developments in 'construction grammar' (e.g., Goldberg 1995; see Tomasello's review article of this book [Tomasello 1998] and the discussion that follows it from a variety of authors).

A second language approach which has some of the same hallmarks is Truscott's proposal that second language acquisition is a case of building up generalizations from instances (Truscott 1998b). Learners, under this account, form concepts about language from exposure to specific examples or instances of linguistic data. However, Truscott suggests that learners cannot learn from instances of linguistic features without knowing what linguistic features to pay attention to. Such concerns lead *him* back to UG as a constraining mechanism on unconscious 'noticing,' since if learners have no idea what is worth noticing or paying attention to, there is no possible way in which they can form appropriate linguistic conclusions. Truscott 1998a is a trenchant critique of the notion of 'noticing,' which has been a popular idea in recent years (Ellis 1994, Schmidt 1990; 1993; 1994), which, he argues, can only be salvaged by proper couching within linguistic theory, and which should probably be "reformulated as a claim that 'noticing' is necessary for the acquisition of metalinguistic knowledge but not competence" (Truscott 1998a:103).

An approach to second language acquisition which is more purely 'general nativist' is that of Klein and Perdue (1997a), who believe that second language learners come to the task with cognitive expectations about how the linguistic world is organized and evolve a 'basic variety' of early second language production based not just on transfer from their L1, but on general typological expectations. This approach has its roots in Slobin's suggestions some years ago (Slobin 1973) that children analyze the input using a number of 'Operating Principles' (which are argued to be not specifically linguistic) and deduce a 'Basic Child Grammar.' The data used to argue the second language case by Klein and Perdue include, for example, the similarities in ways to code time, methods of discourse organization, and the function of adverbs across learners of a variety of second languages who come from a variety of different first languages. A useful summary of their position is presented by Klein and Perdue (1997b) as a special issue of *Second Language Research* devoted to the 'Basic Variety.' Their introductory article is followed by various critical responses to it, all of which might have been more positive if Klein and Perdue had not attempted at the end of the article to go beyond their original idea and suggest that the basic variety is compatible with a UG perspective if one assumes the mechanism of 'feature strength,' and specifically that all features are 'weak' in the 'Basic Variety.' That Klein and Perdue feel they need to address the UG question at all shows the immense power it holds within the second language research field. The fact, however, that many of the criticisms, in my opinion, hit home also shows the difficulty with UG proposals: They often consist of relatively simple ideas sitting

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on a complex set of interconnected assumptions, such that to propose even a modest contribution to the debate implies ramifications far beyond the original proposal, all of which have to be checked and re-checked to ascertain the consequences.

One gets the distinct impression these days that second language acquisition research cannot escape UG. Like Alice in *Through the looking glass*, as hard as people attempt to avoid it, they always seem to be heading straight towards it; drawn to account for themselves in its terms, even if not accepting its conclusions. In first language studies, far fewer researchers are drawn to the same kind of accounting, although there are still many who see it as both an important source of hypotheses about language acquisition itself, and as a means, thereby, to refine the UG hypothesis itself (Foster-Cohen 1996). Among first language researchers, many of the questions that were among the first to be raised continue to motivate research; these include, for example, the search for functional categories in early stages (Bohnacker 1997, Müller, Crysmann and Kaiser 1996), the nature of pro-drop (Hamann 1996) and syntactic movement (Labelle 1996), and the nature of children's understanding of quantification (Crain, *et al.* 1996). In second language acquisition research, a recent article by Paradis, Le Corre and Genesee (1998) has suggested that the sequential acquisition of agreement and tense features in children learning French as an L2 shows the separateness of these features in the grammar. This particular article then goes on to interpret the findings in light of the three currently most influential UG accounts of SLA: 1) Schwartz and Sprouse's Full Access/Full Transfer account (Schwartz and Sprouse 1996), which argues that the initial state of an L2 learner is one in which the learner both has access to UG and transfers into L2 learning all that he/she knows about the L1; 2) Eubank's Weak Transfer/Valueless Features Hypothesis (Eubank 1996), which argues that while both lexical and functional categories transfer from the L1 to the L2, the parameter values associated with the functional categories do not transfer; and 3) Vainikka and Young-Scholten's Lexical Transfer/Minimal Trees hypothesis (Vainikka and Young-Scholten 1996), which, in line with Minimalist Theory, posits only a lexical grammar with no functional categories as the initial L2 state. These three accounts are conveniently presented in a single issue of *Second Language Research* on the nature of the initial state for SLA, edited by Eubank and Schwartz (1996).

Child second language is currently severely under-studied despite the strength of articles such as Paradis, *et al.* (1998), which continues the Canadian tradition of research in early L2 acquisition, and Grondin and White (1996), which shows the presence of functional categories in beginning L2 and thus distinguishes itself from Vainikka and Young-Scholten's arguments for an early purely lexical phase in L2. Lakshmanan's study (Lakshmanan 1994) still stands relatively alone in child SLA, awaiting more contributions from those interested in exploiting the particular window that child second language acquisition can offer on both language acquisition and linguistic theory, namely acquisition by individuals young enough to be within the critical period, but yet with a first language already

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learned. One such contribution is set to appear (Schwartz in press), which compares L2 children, L2 adolescents, and L2 adults, and specifically addresses the issue of 'language instinct' for second language acquisition. It argues in favor of such an instinct.

Finally, whereas first language researchers seem to have accepted the 'gentle decline' definition of the language critical period for L1 argued for by Newport (1990), the 'critical period' for second language acquisition is still a subject of ongoing discussion. In SLA research, there are continuing attempts to explore the notion of a critical period as an explanation for the lack of success in second language learning when compared with first language learning. A current contribution is made by Bialystok (1997), who argues against a purely maturational sensitive period for SLA and in favor of a processing explanation for the apparent differences between older and younger learners. (Pienemann's recent discussion [1998] of his Processability Theory makes similar claims.) In addition, Lee and Schachter (1997) argue against a unitary notion of a critical period for SLA and in favor of multiple 'sensitive periods' for different parts of the grammar during which the learner is more able to respond to input relevant to a particular part of the grammar than either before or after the sensitive period. Children who start their second language learning after the sensitive period for, say, subjacency, will have problems with that set of facts about the language, though not necessarily with other aspects of the language. These studies throw interesting light on what it is that distinguishes first from second language acquisition by looking at second-language-acquiring children. One hopes that more such studies will be forthcoming in the future.

## WHAT'S THE INPUT LIKE?

First language research has a very long tradition of trying to determine what the input could and does teach a child. These discussions continue unabated among those who believe that the answer to the puzzle of first language acquisition must lie in large measure in the analyses that the young child can make of the ambient language or languages. Thus, there is a regular flow of studies suggesting that caregivers produce more or less subtle cues for dividing the speech stream into words (Hung and Peters 1997), for learning vocabulary items (Bloom and Wynn 1997, Masur 1997, Naigles and Hoff-Ginsberg 1998, Oshima-Takane and Derat 1996, Pearson, *et al.* 1997, Tardif, Shatz and Naigles 1997), and for forming word categories (Shi, Morgan and Allopena 1998). This effort adds grist to the mill of those who, since the early days of psycholinguistics, have been trying to prove Chomsky's 'poverty of the stimulus' problem to be a non-problem. On a number of fronts, attempts have been made since the mid-sixties to show that children get adequate input from which they can learn. In the early days, the focus was on showing that caretaker speech was grammatical; now there is a focus on showing that there are viable correlations between what adults say to children and the language that the children produce (see the studies cited above). Another approach is to show that children do actually receive negative feedback and explicit

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instruction which they can use. Saxton (1997) used an experimental design to show that irregular past tenses for novel verbs are learned more effectively after explicit correction of an incorrect form produced by the child than after simple positive input. This result is in line with Clark and Grossman (1998) who suggest that two- and three-year-olds listen to, take note of, and use explicit instruction from their mothers about how to use new words. And Evey and Merriman (1998) found that children's abilities to learn new words depend on corrective feedback from adults. These studies may indeed show that children are exposed to some negative evidence and that they can make use of it, at least in the area of morpho-lexical development. However, they do not show that negative input is more than a peripheral effect, and they must be taken together with a range of other studies, including those within the non-UG tradition, which show that other aspects of the lexicon are deduced by children from positive input (Beals 1997, Bloom and Wynn 1997, Tardif, Shatz and Naigles 1997). Moreover, to find an effect for input in general (positive or negative) on the metalinguistically most easily tractable part of the linguistic system is not surprising. Everyone can talk about words. But not everyone can talk about, or even correct, long-distance dependencies, tense and agreement features, or reflexive interpretations; and that was one of Chomksy's points back in 1965. Not only do children not get negative input (well, they get a little, it turns out), but the crucial aspects of language that they come to 'know' (unconsciously) as adults could not have been taught in any overt fashion by adults because those adults are unable to access without explicit training the knowledge they would have to be teaching.

In second language acquisition, the input debate revolves around the issue of how exposure becomes 'intake.' Part of that picture involves the nature and role of 'noticing,' already alluded to, as well as the question of the extent to which second language acquisition can and does involve implicit as opposed to explicit learning. Of particular interest here is the work of N. Ellis and others interested in observing learners under laboratory conditions in which both the input and output are so tightly controlled that the relationship between exposure and knowledge are more visible. (A special issue of *Studies in Second Language Acquisition*, edited by Hulstijn and Dekeyser [1997], summarizes current research.) The disadvantage of this kind of work is that the input is often fabricated and the learning conditions are often unnatural, but the advantage is that variables can be controlled much more tightly than is normally the case. This tradition of research will no doubt continue as a complement to more observational or natural experimental approaches. Tentative conclusions from this new research stream support a processing approach in which memory for instances and associations play a larger role than the kind of rule-based acquisition predicted by a UG approach. Obviously, for ethical and practical reasons, a parallel research stream is unlikely to emerge in first language studies, except perhaps for very late developments in which the role of controlled input via computer might be studied with respect to, say, late vocabulary development or metalinguistic skills.

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## RULES AND REPRESENTATIONS

The previous two sections dealt, respectively, with the nature of the language acquisition device and the nature of the input which provides some or all of the data (according to one's theoretical convictions) that the device operates on. There remains the question of what it is, exactly, that is acquired. At one level, the answer is simple: language. But how exactly does 'language' reside in the individual? Here the main debate, in both first and second language acquisition studies, is whether there are mental representations of linguistic knowledge or simply well-worn pathways in a connectionist network. In the latter scenario, what passes for a representation is simply a series of primed nodes which ensure that the person will comprehend, produce, and judge as grammatical what he or she evidently does comprehend, produce, and consider grammatical.

As already indicated in the section on the language 'instinct,' work by Lieven, Pine, and others is currently continuing to explore the notion that children learn their first language construction by construction, thus building up pathways of recognition from instances. Köpcke (1998) is another such researcher, arguing that inflectional morphology is built up via pattern recognition rather than involving the acquisition of rules, although he does say that the end product of acquisition may be rules. Elman, Bates, Johnson, Karmiloff-Smith, Parisi and Plunkett (1997) represents the work of those who argue vigorously for a connectionist account of both acquisition and storage.

It is interesting that, while in L1 studies the success of a connectionist account seems to lead to almost automatic rejection of a UG account (although the concession by Köpcke [1998] that represented rules may still be the endpoint of learning suggests a compromise position), many of those endorsing a connectionist account in L2 explicitly indicate that it need not be to the exclusion of UG. Thus, N. Ellis (1996a) argues for the memorization of sequences of words and the extraction of rules from the sequences, but says that, to the extent that UG does not deal with the lexicon and syntactic categories, this approach complements UG. In Ellis (1996b), he also suggests that UG is a way of describing the endpoint and not the processes by which learners reach that endpoint. Similarly, van Patten (1996) suggests that UG is a constantly present knowledge source which can thus exist side by side with the processing account. As we have seen, Truscott (1998b), in his 'instance theory' account, proposes more than just a non-interventionist role for UG in an otherwise processing approach, suggesting that it is UG which actually constrains what the processing mechanism will recognize as an instance of linguistic material to be memorized. The differences between the two fields of L1 and L2 research with respect to rules versus connectionist accounts of linguistic knowledge thus seem to be two-fold. First, the greater power of UG within SLA studies than within L1 studies leads researchers more frequently to seek compromise positions so as not to give up on UG while the jury is still out; and second, the concern that UG may well not be able to account for much, if any, of SLA leads second language researchers to be more interested in connectionist

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accounts out of a genuine need to look for alternatives, even by those attracted to the UG hypothesis for L1.

## WHAT KINDS OF INDIVIDUAL DIFFERENCES ARE THERE?

Individual differences in language acquisition, both first and second, have been a topic of interest for some time. Questions of cognitive style, personality variables, motivation, gender, and so on continue to be studied in both fields. Recent first language studies include Bornstein, Haynes and Painter (1998), who show variation in child vocabulary to be positively correlated with a variety of maternal variables; Thal, *et al.* (1996), who suggest children may differ in the size of linguistic unit they can store and manipulate; Rollins, Snow and Willett (1996), who suggest children vary in how they extend their utterances beyond two-word combinations; and Elsen (1996) who suggests children's use of 'expressive' versus 'analytic' style utterances depends on the context. There is also an interesting on-going line of research comparing language acquisition in monolinguals with bilinguals, another source of individual difference (Chitiri and Willows 1997, Davidson, *et al.* 1997, Oller, *et al.* 1997); and, of course, cross-linguistic comparisons continue to be used to tease out language universals (Allen and Crago 1996, Lléo and Prinz 1996, Ravid and Avidor 1998, Valian and Eisenberg 1996). In second language research, the issues of gender (Scarcella and Zimmerman 1998), the degree of success in reaching the target language (Bongaerts, *et al.* 1997), the role of affect on individual success (Schumann 1998), and the relationship between learning style (aptitude) and implicit versus explicit learning conditions (Robinson 1997) are among the topics of continuing interest.

However, current interest in individual differences in first language acquisition seems to be mainly focused on the pathological ends of the spectrum where individual differences are not only profound, but constitute recognizable syndromes. Deafness (Anderson and Reilly 1997), blindness, Down's Syndrome, autism, and Williams syndrome (Stevens and Karmiloff-Smith 1997) are among those syndromes that have formed the focus of much research (see, e.g., Tager-Flusberg 1994), and work in those areas continues. The most intensively studied syndrome at the moment seems to be Specific Language Impairment (SLI), a condition that involves normal scores with standard measures of non-verbal intelligence, but that indicates significant problems with language, largely in language production. Most energy has been taken up with trying to define precisely what the deficits are. On the one hand, researchers such as Rice, Wexler and Cleave (1995) argue that the root of the problem lies in a prolongation of a specific stage of verb evolution in normal children called the Optional Infinitive Stage in which children use uninflected verb forms where the adult version would be inflected (Rice, Noll and Grimm 1997). On the other hand, there are researchers such as Clahsen (1991), who thinks that there is a general problem with missing agreement, and van der Lely and Stollwerck (1997), who think the problem lies with a general problem of dependencies between items within a sentence. This debate is particularly interesting in relation to SLI children learning

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languages such as German where uninflected and inflected verb forms occupy radically different positions in the sentence. According to the research, German SLI children understand that uninflected forms are sentence final, and produce them in the right place, even when an inflected form in second position would be the grammatical option. Other researchers focus not on the representational ('knowledge') differences between SLI and normal children, but on processing constraints, suggesting that these differences rather than differences in knowledge are responsible for the abnormal pattern of behaviors (Dollaghan 1998, Edwards and Lahey 1998, Fazio 1997). One thing that is becoming clear is that monolithic definitions of SLI are inappropriate, and as more specific targeted testing becomes possible, as a result of linguistic analyses having shown what needs to be tested, different sub-populations of SLI children are being identified.

As with the study of normal children, the question being hotly debated is whether the deficit, or deficits, in SLI children are the result of either damage or delay to particular linguistic mechanisms (and the weight of the evidence at the moment seems to be on delay, rather than damage; Franks and O'Connell 1996), or to more general processing mechanisms. There are those researchers who argue that SLI children have similar problems with non-linguistic tasks, suggesting a non-UG/non-specifically linguistic account of their language problems (Bertolini and Leonard 1996, Conti-Ramsden 1997, Fazio 1997); conversely, other researchers favor a specifically linguistic account based on the malfunctioning of innate mechanisms (Hadley and Rice 1996, Rice 1997). And then there are those who fall somewhere in the middle, such as Kushnir and Blake (1996), who argue that SLI children have problems with memory for verbal items in sequence (i.e., their ability to repeat a list of words). As with all disorder studies, the value of this work to the understanding of language acquisition in general is enormous, provided one can argue that such learners exhibit non-pathological behavior in all other respects apart from those argued to be abnormal. This condition is by no means easy to establish, and it must be seen against another prime question of current research; namely, 'is the language learning mind modular?'

Second language studies have much less access to dissociation data. The exception is 'Christopher' (Smith and Tsimpli 1995, Tsimpli and Smith in press), whose enhanced ability to learn the morpho-syntax of numerous (more than 17) languages demonstrates a clear dissociation of the computational aspects of language from those argued to be part of more central processes (i.e., pragmatics). This dissociation finds ample support in the L1 literature (e.g., Levy 1997, van der Lely 1997), and there are clearly connections to be made with the relative difficulty second language learners have in acquiring the pragmatics of a second language, although a good start can be made via the recent special issue of *Studies in Second Language Acquisition* on the development of pragmatic competence, edited by Kasper (1996), which argues specifically for a more psycholinguistic approach to second language pragmatics, thus opening up the possibility of more fruitful collaboration between the two fields.

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## SOME METHODOLOGICAL CONCERNS

Since conclusions about language development are only as good as the measures of linguistic knowledge used to draw those conclusions, there is ongoing concern to examine the tools that are currently in use and to develop improved ones. Two very useful books in first language acquisition focus on developing better ways of getting at children's linguistic competence. Crain and Thornton (1998) and McDaniel, McKee and Smith Cairns (1996) are aimed at helping child language researchers choose or develop experimental paradigms and statistical measures that will be as illuminating as possible. It is no accident that both of these books come out of a tradition which presumes children have complex linguistic knowledge from the start (a UG viewpoint), since the challenge for such an approach is to find ingenious ways of tapping into that knowledge from the earliest age possible. For those who adopt a stance in which children are presumed to deduce linguistic structure from the input, there is no such imperative to find new techniques usable with younger and younger children.

Another pressing concern for first language researchers is to find ways of measuring different languages in parallel, something L2 studies have always had to do. Extending tried and true methods of language assessment from the language they were designed for to other languages is not easy, as those who develop clinical and educational tests for different language backgrounds can easily attest. And for first language researchers, even the ubiquitous Mean Length of Utterance measure must be carefully scrutinized. Thordardottir and Weismer (1998), for example, argue for specific modifications to the MLU calcuation to provide an accurate picture of structural acquisition in Icelandic. Even more crucially, Rollins, Snow and Willett (1996) warn that children from the same language group and with the same MLU may have used a variety of different strategies to lengthen their utterances, and thus may not be comparable on other measures.

In second language research, where MLU is rarely an appropriate measure, the debate seems to revolve around grammaticality judgments and whether they really do tell a researcher what the learner knows. Davies and Kaplan (1998), for example, suggest that native and non-native speakers are not the same, so that even when a non-native speaker accepts the same sentences as a native speaker, they are not, or may not, be doing so for the same reasons. Murphy (1997) also cautions that subjects respond more accurately and more quickly to grammaticality judgement tasks in written rather than in oral mode, which raises uncomfortable questions about the nature of linguistic knowledge that researchers cannot afford to ignore in either L1 or L2 research.

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## CONCLUSION

I have tried in this short summary of recent research to draw out themes that engage both L1 and L2, or ought to. As will be obvious, my review is most definitely skewed towards the psycholinguistic and grammatical/computational aspects of language. With more space, one could cover comparisons in additional areas: in discourse and text research, in the role of language teaching in specific contexts (e.g., the late acquisition of the lexicon among first and second language learners), and in first and second language learners' abilities to process variations in speech patterns. I hope, however, to have provided at least some impression of the 'hot topics' in the two fields and to have provided enough pointers towards the authors and their work so that further study of these issues is facilitated.

## NOTES

*My special thanks go to Lucy Mitchell, British Institute librarian, whose efforts to find me sources went far beyond the call of duty.

## Annotated Bibliography

*Bilingualism: Language and Cognition*. 1998-pres. Cambridge: Cambridge University Press.

This is a new journal; its first issue appeared in April 1998. A significant portion of each issue will be organized around a keynote article followed by a number of responses from others in the field, with a reply from the author afterwards. Perhaps slightly oddly, its first issue concerns Pienemann's Processability Theory as applied to both L1 and L2, which is not perhaps an approach one thinks of immediately in the context of bilingualism studies. However, the choice may be viewed as marking a significant shift towards drawing bilingualism studies more firmly into the fold of theoretically-driven studies of first and second language acquisition.

Crain, S. and R. Thornton. 1998. *Investigations in Universal Grammar: A guide to experiments on the acquisition of syntax and semantics*. Cambridge, MA: MIT Press.

Language acquisition researchers working within a UG tradition have sometimes been unfairly criticized for not getting their hands sufficiently

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dirty in the data pool. Any lingering sentiments of that kind (not already dispelled by McDaniel, *et al.* 1996) ought certainly to be dispelled by this book which focuses on the Elicited Production Task (for production) and the Truth Value Judgment Task (for comprehension), with an emphasis on the reproducibility of research results.

Fletcher, P. and B. MacWhinney (eds.) 1995. *Handbook of child language.* Oxford: Blackwell.

Although this volume was published just prior to the period covered by this review, it is a useful overview of many aspects of current child language study, and it can be used as a basis for further reading in first language acquisition. It covers both UG and non-UG approaches, although considerably more space is devoted to the latter than the former.

Foster-Cohen, S. 1999. *An introduction to child language development.* Harlow, Essex: Longman.

This is an introductory textbook for undergraduate students which covers what I consider to be the key issues in child first (and to some extent, second) language development. It argues that both UG and non-UG approaches are necessary in order to account for the full range of language development facts.

Pienemann, M. 1998. *Language processing and second language development: Processability theory.* Amsterdam: John Benjamins.

This is an ambitious attempt to account for practically all aspects of both first and second language development (interlanguage, strategies, age differences, effectiveness of input, etc.) by means of a model of language production (encoding procedures) which is built up gradually according to an implicational hierarchy justified on processing grounds. It claims to 'predict' the course of grammar development and to explain how different grammars are processable at different stages of acquisition. It is discussed at length in the first issue of *Bilingualism: Language and Cognition.*

Schumann, J. 1998. *The neurobiology of affect in language.* Oxford: Blackwell [also *Language Learning Monograph Series.* 48. SUPP/1.]

This volume is an attempt to apply new knowledge about the brain chemistry of emotions to language acquisition. It is a logical extension of his early work on the importance of affect within the context of his Acculturation Theory of language development (Schumann 1978).

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VanPatten, B. 1996. *Input processing and grammar instruction in second language acquisition.* Norwood, NJ: Ablex.

VanPatten's approach is an interesting complement to Pienemann's since, unlike Pienemann, VanPatten's starting point is learner comprehension, not learner production. VanPatten's suggestion is that learners begin by focusing on lexical items because these are perceived to carry the informational content. Only when the informational content can be processed relatively automatically are learners able to concentrate on grammatical morphemes which they perceive not to carry meaning.

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