ESL AS POST-CRITICAL PERIOD LEARNING[1]

Stephen D. Krashen
Department of Linguistics
University of Southern California

For the last two years, I have been working on a general model of adult post-critical period learning. (Post-critical period learning is simply adult attempts to learn things or internalize skills that children seem to learn more easily.) The kind of post-critical period learning that has been of most concern to me is adult second language learning, and I would like to sketch some of the progress that has been made in constructing such a model, and also indicate the applicability of the model to skills other than language.

The model to be described here for language attempts to do two things: First, it attempts to account for previous experimental data and to predict new data. Second, it attempts to be consistent with our intuitions about good second language teaching. It is thus not an exercise in "applied linguistics." I am, rather, using my experience as an ESL teacher, teacher trainer, and second language student as input to the theoretical model.

The central concepts of the model are two ways of internalizing linguistic generalizations, acquisition and learning. Acquisition refers to the subconscious representation of rules, and is the way children "pick up" both first and second languages. While we see some individual variation in the rate of language acquisition among children (Brown, 1973; Fillmore, 1976), success in child language acquisition, barring physical damage to the brain and sociological or psychological barriers, seems to be inevitable. For at least child second language acquisition, these variations in rate may be related to personality factors--some outgoing children may aggresively seek out environments that facilitate acquisition and thus progress faster (see e.g. Fillmore, 1976). We may thus not have to posit any significant individual differences in the "language acquisition device" to explain such variation.

[1]This paper was presented at the 1976 MEXTESOL conference, October 10, 1976, Guadalajara, Mexico. I thank Marie Watson for help in preparing this paper.

Another characteristic of acquisition is that it does not seem to require or even profit from overt teaching, either in the form of explicit syntactic rules, or error correction. Brown and his colleagues have found, for example, that the parents they studied did not pay much attention to syntactic form, but instead tended to correct errors of fact (Brown, Cazden, and Bellugi, 1973). In another study, it was found that grammatically deviant child utterances communicated as well as well-formed utterances, indicating that there is no clear communication pressure influencing syntactic development. (Brown & Hanlon, 1970) Cazden (1965; see also discussion in Cazden, 1972) failed to demonstrate that error correction in the form of "expansions," or corrected repetitions, aided progress in first language acquisition more than simple verbal interaction.

Data from the child second language acquisition literature is also consistent with the hypothesis that overt teaching plays no necessary role in child language acquisition. Fathman (1975) compared children who had taken extra ESL classes with those who had not, and found no difference between these two groups in proficiency in English as a second language, as measured by her SLOPE test, an oral measure. Similar data is reported by Hale and Budar (1970). Fillmore (1976), in her study of kindergarten age second language acquirers, reports that English native speaking American friends of the ESL acquirers helped in many ways: they used simpler vocabulary, made maximum use of extra-linguistic context, and often provided models. They did not, however, correct syntactic errors.

Some things that adults, or caretakers, or other native speakers of the target language do may be of great help, however. There have been several studies that show that adults tend to simplify their speech to children (Snow, 1972; for a review, see Cazden, 1972). In addition, Wagner-Gough and Hatch (1975) present evidence that suggests that the child second language acquirer receives significantly simpler input than the older acquirer, and they speculate that this difference may be a major factor in predicting observed child-adult differences in second language attainment.

Still another characteristic of acquisition is the lack of meta-awareness of the rule system internalized by the performer. When we use the term "rule" to describe the child's linguistic competence, it is not asserted that the child consciously understands the grammatical principle involved. As Brown has stated: "In saying that a child acquires construction rules, one cannot, of course, mean that he acquires them in any explicit form; the pre-school child cannot tell you any linguistic rules at all." (p.122) (See also Slobin, 1971, pp. 53-55.) There have been some recent reports that indicate that older children may develop some meta-linguistics awareness.

Their conscious grammatical knowledge, however, appears to be limited (e.g. rules such as plural marking and number agreement). See Hatch (1976) and Cazden (1975).

Finally, the acquisition process is thought to be governed by universal strategies available to all acquirers (Slobin, 1973; Ervin-Tripp, 1973). The presence of these universals explains the clear similarities researchers have found among children acquiring the same language (Brown, 1973; Dulay and Burt, 1975) and even among children acquiring different language (Slobin, 1973).

Language learning, the conscious internalization of rules, differs from acquisition in several important ways. First, it is clearly not inevitable. The learner's success, or rather, his degree of success depends on several factors, some of which are intelligence, diligence, and the clarity of the presentation of the rule by the text or teacher. Individual differences in learning may also be due to differences in cognitive style (Krashen, Seliger, and Hartnett, 1974).

While over-teaching in the form of rules and error correction is apparently not useful for acquisition, such teaching is thought to be quite useful for learning (Krashen and Seliger, 1975).

Linguists' ambiguous use of the term "grammar" (Chomsky, 1965) parallels the difference between acquisition and learning. The acquired grammar is equivalent to the native speaker's tacit knowledge of a language (note that children who have acquired a second language also have this tacit knowledge, and it will be argued below that adult second language performers also have tacit knowlege of their second language), while learning is the same as the linguists' description of this knowledge.

I have listed elsewhere in detail (Krashen, in press) the evidence that suggests that adults, as well as children, are able to acquire language. Briefly, this evidence comes from four sources: (1) studies that claim that informal linguistic environments are quite efficient in increasing second language proficiency in adults; for complete discussion, see Krashen (1976) or (in press). (2) Evidence that adults can acquire aspects of interlinguistic codes used by second language speakers, without having any meta-awareness of the grammatical rules of the code ("foreigner talk"; see Hatch, 1976). (3) Psycholinguistic studies in which adults demonstrate competence in artificial languages without explicit learning of the rules (Braine, 1971; Reber, 1976). (4) The finding of the child's difficulty order for aspects of grammar in adult second language performance.

The last part of this evidence for adult acquisition deserves some clarification and discussion, as it also provides insight into the operation of the Monitor Model, a model that specifies the relationship between acquisition and learning in adult second language performance.

Brown (1973) found a very similar order of acquisition for 14 grammatical morphemes, or functors, in children acquiring English as a first language: Certain morphemes, like the progressive marker ing and the plural marker /s/, tended to be mastered earlier than other morphemes, like the third person singular /s/ ending on regular verbs in the present tense, and the possessive /s/ marker. Brown's longitudinal results were confirmed cross-sectionally by de Villiers and de Villiers (1973): Those morphemes that were correctly supplied earlier also tended to be used more correctly at a given point in time. In a series of papers, Dulay and Burt (1973, 1974, 1975) reported that five to eight year old children acquiring English as a second language also share a common difficulty order. The order obtained was not identical to that found for first language acquisition, but there was striking agreement between different groups of acquirers in Dulay and Burt's sample, and the first language of the subjects did not affect the difficulty order found.
Two studies reported difficulty orders for adults second language performers that were quite similar to the child second language order. Bailey, Madden, and Krashen (1974) and Larsen-Freeman (1975) obtained these results using Dulay and Burt's elicitation instrument, the Bilingual Syntax Measure (Burt, Dulay and Hernandez, 1973), and Larsen-Freeman (1975) also found the "natural order" using adult subjects on an imitation task. As in the child studies, no effect of first language was reported. Larsen-Freeman (1975) reported, however, that the "natural order," or the child's order, was not present for adult subjects when different measures were used, specifically when pencil and paper tasks (reading, writing, and listening) were used. I hypothesized then (Krashen, 1975, 1976) that this result was due to the particular way acquisition and learning are interrelated in the adult.

I have suggested that acquired competence is utilized for basic utterance initiation for all acquirers, children and adults. Many adults, however, utilize conscious linguistic knowledge as a Monitor. The Monitor is used by the performer when the emphasis is on form and not just communication, and when the performer has sufficient time to apply this knowledge "about language" to this output. (Note that the essence of the Monitor Model is that conscious linguistic knowledge is available only as a Monitor. It is possible, however, to monitor, or edit, using acquired compet-

ence as well. Native speakers do this when they correct slips of the tongue. (See Slobin, 1971, pp.53-55.) Larsen-Freeman's results, then, can be easily interpreted in terms of this model: When subjects focus on form and are given sufficient processing time to allow the conscious grammar to intrude, the natural order is disturbed, as more than just acquisition is involved in producing the utterance. The intrusion of the monitor causes predictable changes in the rank order: Items that are easily learned but that are acquired relatively late, such as the third person singular ending /s/ or the regular past morpheme, rise in rank, while the article, which is fairly difficult to learn but acquired relatively early, falls in rank (details in Krashen, in press).

The Monitor model is also valuable in describing at least one kind of individual variation in adult second language performance. In Krashen (in press), performers are classified as Monitor optimal users, over-users, and under-users. Briefly, the optimal user employs the Monitor, or edits, when it does not interfere with communication--i.e. when it is appropriate to do so. Interestingly, we demand more accuracy in just those situations when it is possible to Monitor more, for example in written language and in formal speech. The optimal user monitors just at these times.

In contrast, the over-user tries to use rules all the time. This results in an overcareful, hesitant style of speech. Covitt and Stafford's subject "S" (Covitt and Stafford, 1976; described in Krashen, in press) is such an over-user. She says that she speaks very little because she tries to remember the rules all the time: "I feel bad . . . when I put words together and I don't know nothing about the grammar." Such performers typically show relatively better written performances.

The under-user appears to rely solely on acquisition. These performers appeal only to their "feel" for language and are typically immune to error correction, as are first language acquirers. Covitt and Stafford (1976) make the interesting point that some under-users may pay lip-service to the value of rules, but in reality utilize them little if at all in performance.

Other Post-Critical Period Learning

The acquisition-learning distinction, and the Monitor model, appear to fit other forms of adult post-critical period learning. There has been some serious thought recently on this topic with the current growth of interest in physical fitness among adults: Many adults are now taking up sports they did not pursue as children, and professional teachers are thinking more carefully about the best ways of teaching athletic skills to these students.

Before proceeding to a discussion of one of these careful analyses, let me first present my own case. About ten years ago, I became interested in the Martial Arts, another popular form of post-critical period learning. My failure, I now believe, was due to two factors, one related to learning and one to acquisition. First, I thought I would progress solely by learning: I analyzed every step of every movement, focussed entirely on form, and found myself unable to perform with any speed or agility. Second, I did not get as much input as my more successful classmates. Many of the others clearly enjoyed fighting more than I did. They saw Bruce Lee movies. They stayed around the gym after the lesson, casually watching advanced students sparring. They sparred with each other, something which I avoided, both for fear of getting hurt and for fear of practicing errors. When I practiced, I carefully went over the moves step by step, and tried to avoid errors. My classmates were apparently unworried about their errors and felt their mistakes would work themselves out. In terms of the model, I over-relied on learning and denied acquisition. I had no faith in the acquisition process, and did not provide myself with suitable environments so that acquisition could take place. Most martial arts skills are simply too complex to be learned, and must be acquired, and I did not recognize this. (For discussion of the notions "easy" and difficult" and their relation to acquisition and learning, see Reber, 1976, and Krashen, Butler, Birnbaum, and Robertson, 1976).

Tennis is another complex skill that is apparently better acquired than learned. Gallwey's excellent book The Inner Game of Tennis (1974) has, I think, exactly this thesis. Gallwey represents acquisition and learning as Self 1 and Self 2:

". . . the key to better tennis--or better anything--lies in improving the relationship between the conscious teller, Self 1, and the unconscious doer, Self 2." (p. 26)

Self 1 often takes a very explicit form, as Gallwey notes:

"Listen to the way players talk to themselves on the court: 'Come on, Tom, meet the ball in front of you.' . . . Who is telling who what? . . . One, the "I," seems to be giving instructions; the other, "myself," seems to perform the action. Then "I" returns with an evaluation of the action." (p. 25)

In our terms, Gallwey seems to feel that many tennis players are "over-users." They work Self 1 too hard and do not allow the natural acquisition process to internalize the complex skill of tennis. Typical complaints of the over-user are similar for tennis and second language:

" 'It's not that I don't know what to do, it's that I don't do what I know!' Other common complaints that come constantly to the attention of the tennis pro:

When I'm practicing, I play very well, but when I get into a match, I fall apart.

When I'm really trying hard to do the stroke the way it says to do in the book, I flub the shot every time. When I concentrate on one thing I'm supposed to be doing, I forget something else." (p. 17).

The correlate of these observations in second language is familiar: The over-user may know the rules, do well on (slow) tests, but be unable to consciously control all aspects of grammar when using the second language in ordinary contexts.

Tennis lessons, like second language classes where undue emphasis is on form, are typically addressed to the monitor, or self 1. Consider Gallwey's description of a "typical tennis lesson":

". . . The pro is standing at the net with a large bucket of balls, and being a bit uncertain whether his student is considering him worth the lesson fee, he is carefully evaluating every shot. 'That's good, but you're rolling your racket face over a little on your follow-through, Mr. Weill. Now shift your weight onto your front foot as you step into the ball . . . Now you're taking your racket back too late . . . Your backswing should be a little lower on the last shot . . . That's it, much better.' Before long, Mr. Weill's mind is churning with six thoughts about what he should be doing and sixteen thoughts about what he shouldn't be doing. Improvement seems dubious and very complex, but both he and the pro are impressed by the careful analysis of each stroke and the fee is gladly paid upon receipt of the advice to 'practice all this, and eventually you'll see a big improvement." (p. 18).

Like many mediocre second language teachers, I have taught this way, impressing both myself and my students with my detailed and careful analyses of the intricacies of English grammar. One thing I noted, however, was that many of my students were having "Eureka" experiences-I was supplying a conscious rule that corresponded to tacit knowledge they already had, similar to what happens to native speakers who study the linguistic structure of their own language. My students were satisfied and pleased with this new knowledge, and it seemed to give them a great sense of security. I was, in these cases, however, teaching linguistics and not language.

The acquisition process in tennis is described by Gallwey as follows:

"There is a far more natural and effective process for learning and doing almost anything than most of us realize. It is similar to the process we all used, but soon forgot, as we learned to walk and talk. It uses the so-called unconscious mind more than the deliberate 'self-conscious' mind . . . This process doesn't have to be learned; we already know it." (p. 13).

Acquired performance is best revealed in tennis, as in second language performance, when the Monitor is not able to intrude, that is, when there is no time for it to intrude, or when the conscious mind is somehow "stilled":

"In rare moments, tennis players approach . . . unthinking spontaneity. These moments seem to occur most frequently when players are volleying back and forth at the net. Often the exchange of shots at such close quarters is so rapid that action faster than thought is required. These moments are exhilarating, and the players are often amazed to find that they make perfect shots they didn't even expect to reach . . . they have no time to plan; the perfect shot just comes." (p. 32).

Also, "the player's mind can become "so concentrated, so focused, that it is <u>still</u>. It becomes one with what the body is doing, and the unconscious or automatic functions are working without interference from thoughts . . ." (p. 21). In this state the player "is not aware of giving himself a lot of instructions, thinking about how to hit the ball, how to correct past mistakes or how to repeat what he just did. He is conscious, but not thinking, <u>not</u> over-trying . . . The 'hot streak' usually continues until he starts thinking about it and tries to maintain it; as soon as he attempts to exercise control, he loses it." (p.20).

When acquisition, rather than learning of tennis is allowed to occur, Gallwey says that we see errors correcting themselves naturally (assuming, of course, that self 1 = learning and self 2 = acquisition). Errors are best interpreted as part of the development process, something to observe but not to identify with. This is precisely what is said about errors in first language acquisition, and several scholars, especially Corder (1976), have made similar comments about errors in second language performance.

The Monitor Model and the Classroom

I have suggested that adult second language performance and other kinds of post-critical period learning can be described with the same model. This does not imply that all post-critical period learning and instructions should be absolutely identical. It seems to me that the Monitor, or Self 1, may play a slightly larger role in second language than in tennis, for example, and that some degree of conscious learning might be quite useful in some language use situations. As mentioned above, there are occasions where the second language performer has plenty of time to edit an utterance or written sentence, and appeal to the Monitor may indeed increase accuracy (although the Monitor may sometimes get in the way when a complex construction is involved--see Krashen et al., 1976). Tennis may simply require such fast and complex performance at all times that monitoring is impractical.

I have, in fact, suggested elsewhere that the best approach might be one in which both learning and acquisition are fully utilized in the classroom. I base this not on any direct application and testing of the Monitor Model in the classroom, but on my observations that really good teachers provide clear rules for learning, presented in a variety of ways to accommodate different learning styles, as well as interesting, natural (contextualized) exercises. These exercises may provide for both learning (rule practice or induction) and acquisition at the same time. Again, this is not Applied Linguistics. What I think is occurring is that an independently developed Art of Teaching and anindependently developed model for adult second language performance reach similar conclusions.

A revised version of this paper appears in a special edition of ITL: Review of Applied Linguistics.

REFERENCES

Bailey, N., C. Madden, and S. Krashen, 1974. Is there a "natural sequence" in adult second language learning? Language Learning 24, 235-243.

Braine, M. 1971 On two types of models of the internalization of grammars. In Slobin, D. (ed.) The Ontogenisis of Language 153-186. New York. Academic Press.

Brown, R. 1973. A First Language. Cambridge, Ma.: Harvard University Press.

Brown, R., Cazden, C., and Bellugi, U. 1973. The child's grammar from I to III. In Ferguson, C. and Slobin, D. (eds.) Studies of Child Language Development 295-333. New York: Holt, Rinehart and Winston.

Brown, R. and Hanlon, C. 1970. Derivational complexity and order of acquisition in child speech. In Hayes, J. (ed.) Cognition and the Development of Language 11-53. New York: Wiley.

Burt, M., Dulay, H., and Hernandez, Ch. E. 1975. Bilingual Syntax Measure. New York: Harcourt Brace Jovanovich.

Cazden, C. 1965. Environmental Assistance to the Child's Acquisition of Grammar. Doctoral Dissertation, Harvard University.

Cazden, C. 1972. Child Language and Education. New York: Holt, Rinehart, and Winston.

Cazden, C. 1975. Hypercorrection in test responses: An example of test-induced distortions in children's speech. Theory into Practice 14, 343-346.

Chomsky, N. 1965. Aspects of the Theory of Syntax. Cambridge: MIT Press.

Covitt, G. and Stafford, C. 1976. An investigation of the Monitor Theory. Presentation at the UCLA-USC Second Language Acquisition Forum, May 25, 1976. UCLA.

Corder, S.P. 1967. The significance of learner's errors. IRAL 5, 161-170.

De Villiers, J. and De Villiers, P. 1973. A cross-sectional study of the acquisition of grammatical morphemes in child speech. Journal of Psycholinguistic Research. 2, 267-278.

Dulay, H. and Burt, M. 1973. Should we teach children syntax? Language Learning 23, 245-258.

Dulay, H. and Burt, M. 1974. Natural sequences in child second language acquisition. Language Learning 24, 37-53.

Dulay, H. and Burt, M. 1975. A new approach to discovering universal strategies of child second language acquisition. In Dato, D. (ed.) Developmental Psycholinguistics: Theory and Applications 209-233. Georgetown University Roundtable of Languages and Linguistics 1975. Washington, D.C.: Georgetown University Press.

Ervin-Tripp, S. 1973. Some strategies for the first two years. In Dil, A. (ed.) Language Acquisition and Communicative Choice 204-238. Stanford: University Press.

Fathman, A. 1975. Age, language background, and the order of acquisition of English structures. In M. Burt and H. Dulay (eds.) New Directions in Second Language Learning, Teaching, and Bilingual Education: On TESOL 75. 33-43. Washington: TESOL.

Fillmore, L. 1976. Doctoral Dissertation, Stanford University.

Gallwey, W.T. 1974. The Inner Game of Tennis. New York: Random House.

Hale, T. and Budar, E. 1970. Are TESOL classes the only answer? Modern Language Journal 54, 487-492.

Hatch, E. 1975. Foreigner talk. Presentation to the USC-UCLA Second Language Acquisition Forum.

Hatch, E. 1976. Comments on the Monitor Model. Presentation to the UCLA-USC Second Language Acquisition Forum, May 25, 1976 UCLA.

Krashen, S. 1975. A Model for adult second language performance. Paper presented at the annual meeting of the Linguistic Society of America.

Krashen, S. 1976. Formal and informal linguistic environments in language acquisition and language learning. TESOL Quarterly 10, 157-168.

Krashen, S. Second Language Acquisition. In Dingwall, W. (ed.) Survey of Linguistic Science. In press.

Krashen, S., Seliger, H., and Hartnett, D. 1974. Two studies in adult second language learning. Kritikon Litterarum 2/3, 220-228.

Krashen, S. and Seliger, H. 1975 The essential contributions of formal instruction in adult second language learning. TESOL Quarterly 9, 1973-183..

Larsen-Freeman, D. 1975a. The acquisition of grammatical morphemes by adult ESL students. TESOL Quarterly 9, 409-420.

Reber, A. 1976. Implicit learning of synthetic languages: The role of instructional set. Journal of Experimental Psychology: Human Learning and Memory 2, 88-94.

Slobin, D. 1971. Psycholinguistics. Glenview, Illinois: Scott, Foresman and Company.

Slobin, D. 1973. Cognitive prerequisites for the development of grammar. In Ferguson, C. and Slobin, D. (eds.) Studies of Child Language Development 175-208. New York: Holt, Rinehart, and Winston.

Wagner-Gough, J. and Hatch, E. 1975. The importance of input data in second language acquisition studies. Language Learning 25, 297-308.