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A Critique of Language Learning and Theory in the Audio-Lingual Method of Teaching English as a Foreign Language

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A CRITIQUE OF LANGUAGE LEARNING AND THEORY IN THE AUDIO-LINGUAL METHOD OF TEACHING ENGLISH AS A FOREIGN LANGUAGE

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In this paper I investigate the claims on which many present ESL methods are based and examine them in view of recent developments in both learning theory and linguistics. There are reasons to think that the audio-lingual method is grounded in inadequate theories of learning and linguistics; if so, this warrants experiments in new methods and a re-examination of such currently acceptable teaching methods as repetition, imitation, and pattern practice. In particular, I examine the practices of the audio-lingual method which are based on behaviorist and structural linguistic theories, especially those practices which are extensions of theories about child language acquisition, to show that these practices do not have the solid grounding in theory they were once thought to have.

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I. Introduction

During the internship portion of the MAT Program, this writer has supervised an English language training program in which two basic series of materials have been used. One, the Orientation in American English- "Situational Reinforcement" series, was well-known to the writer through previous use in other teaching programs. The other, the American Language Course of the Defense Language Institute, was included because of its particular orientation of the examination known as the "English Comprehension Level" examination, or ECL. A passing grade on this exam is necessary for graduation from the training program.

Although at the time I entirely agreed with most of the basic assumptions behind the American Language Course, including the view that "language is essentially a process of habit formation", the nature of the ALC material and the subsequent dissatisfaction of teachers involved with its use caused me to examine some of the basic tenets of the method and to reexamine some of my own accepted practices in the ESL classroom in light of this experience.

Materials like the American Language Course might be described as "classical" audio-lingual method. The military language schools where the course is presently used refer to it officially as the "direct-structural-oral approach". The method itself can be traced to an attempt during and after World War II to devise an economical, rapid, and effective method of teaching foreign languages to military personnel in so-called "crash courses".

At that time, various methods were compared, experiments were made, and many specialists from the fields of linguistics, psychology, and educational theory were consulted. The direct-structural-oral approach is, therefore,

according to its proponents, "a practical method unified and directed by theoretical principles."[1]

"Standard" methodology in the fields of teaching English as a second language and foreign language instruction has been strongly effected by the audio-lingual method. There has been a sharp reaction against the old grammar-translation method of foreign language teaching, and the audio-lingual method has been the theoretical basis of most of the language textbooks being accepted in schools across the country.

Each step in the audio-lingual method has its justification in behaviorist-oriented learning theory and a linguistic school of thought closely allied with it; structural linguistic theory. Although this grounding in theory is perhaps more than the grammar-translation method could claim, and although the ALM has had some striking successes, it is possible that these methods are not the most effective methods that could be employed, especially in light of the recent resurrection of interest in cognitive ("code-learning") theory and the approach to linguistics termed generative-transformational grammar.

What I would like to do in this paper is to investigate the claims on which many present TEFL methods are based and examine them in view of recent developments in both learning theory and linguistics. There are reasons to think that the audio-lingual method is grounded in inadequate theories of learning and linguistics; if so, this warrants experiments in new methods and a re-examination of such currently acceptable teaching methods as repetition, imitation, and pattern practice. In this paper I would like to con-

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[1] American Language Course- Instructor Text, (Defense Language Institute, United States of America, 1968), p. 1.

sider some specific learning theories and the theories of language related to them. Also I will examine the practices of the audio-lingual method which are based on behaviorist and structural linguistic theories, in particular those practices which are extensions of theories about child language acquisition, to show that these practices do not have the solid grounding in theory they were once thought to have. I will offer some suggestions for activities that are possibly better approaches, based on cognitive learning theory and transformational linguistics.

II. Learning Theories

The classification of the human learning process into distinct categories of specific tasks has not been accomplished, nor has there yet emerged a general theory of human learning. The best that can be said is that investigations of the process of human learning are proceeding in many areas that range from classical and operant conditioning theories to rote verbal learning, incidental learning, concept learning and probability learning. The discussion of human learning in this paper will therefore be limited to a discussion of those categories of human learning that seem to have a direct bearing on some of the problems of language teaching which will be considered in this paper. As no distinct boundaries amoung learning theories seem to exist, the two areas of learning will be categorized somewhat arbitrarily into stimulus-response theories and cognitive theories. Establishing some basic dichotomies between these two views of the process of human learning will enable us to establish a theoretical framework for the criticisms offered on present language teaching theory and practices.

Learning theories can be categorized into two general classifications, the S-R theories and cognitive theories. The most important features of

of S-R theories are contained in the notation used to describe them. S represents a stimulus, R represents a response and the hyphen (-) between them represents some sort of connection or bond. Behavior is viewed as a transaction between stimuli that affect an organism and the resultant response. Learning involves any more or less permanent changes that result from the interaction of S and R.

S-R theorists make up an extensive and varied group, but even in this varied group we can see two general classifications, those who tend toward Pavlov's classical conditioning theory and those who belong to the behaviorist school of operant conditioning exemplified best perhaps by B.F. Skinner.

Classical theories of S-R learning hold that a conditioned stimulus (CS) may elicit the same sort of behavior from the organism it affects as an unconditioned stimulus (UCS), if the CS is presented in a series of trials a few seconds before and them simultaneously with an UCS. Thus, for example, Pavlov's dogs salivated at the ringing of a bell (CS) after a certain number of trials in which the ringing of a bell was followed by the presentation of food (UCS), which would normally evoke a salivating response.

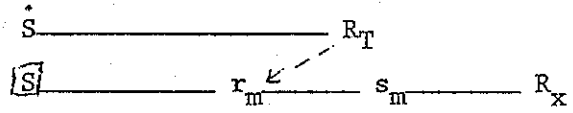
In Skinner's theory of operant conditioning, the desired response is produced not through the reinforcement of the desired behavior out of the many behaviors performed in the presence of specific stimuli by the operant. Thus reinforcement is the key in Skinner's theory, and selective reinforcement by various stimuli in the environment can lead to the eliciting of desired behavior and the shaping of behavior on the part of the operant by the conditioning agent.

The characteristic feature of S-R approaches to learning is the fact that they generally do not consider the role of the organism's cognitive

functions in the relationship that develops between S and R. They are interested only in the observable and empirically verifiable aspects of the organism's behavior, such as stimulus strength, deprivation times, strength of response, etc., and since the processes of the mind which may occur are not their province they take no note of cognitive aspects of behavior, limiting themselves to what may be viewed as a mechanistic approach to behavior and learning.

Some theories of learning which are basically S-R theories, however, do allow for the action of the organism in the relationship between S and R so that the formula becomes S-O-R.

Charles E. Osgood has proposed a model of language learning in which there is recognition of this intervention of the organism between stimulus and response and he terms this intervention the "representational mediation process."



In this process, (shown in the above diagram) total stimulation from the object Ṡ elicits a complex set of reactions (R_T). Stimuli ([S]) which regularly accompany total stimuli (Ṡ), but are apart from it, evoke a portion of the total behavior, r_m, which is the representational mediation process, which in turn produces S_m, self-stimulation, which is connected with the behavior that results. Thus Ṡ is not totally responsible for producing the behavior, but produces it in association with r_m, an intervening process which is cognitive rather than mechanistic.[2]

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[2] Charles E. Osgood and Thomas A. Sebeok (editors), Psycholinguistics: A Survey of Theory and Research Problems (Bloomington: Indiana University Press, 1965), pp. 127-12 .

This intervention of the organism in the S-R process is being investigated by those who are interested in more than just the response patterns with which Skinner and his followers were concerned. These theorists are concerned with aspects of behavior which might be termed "insightful", behavior which makes its appearance without the gradual building-up process of S-R bonds. These theories are generally termed cognitive theories and are concerned with the part cognition plays in learning. One of the most important contributors to cognitive-field theory has been Kurt Lewin, who did not develop a theory of learning but did contribute some of his ideas to the areas of learning theory.

Cognitive theory represents a relativistic rather than a mechanistic way of viewing man and the learning process. A mechanist, such as most S-R theorists, considers a person an organism which is the sum product of its history of stimulus-response patterns. The basic principle of relativism is that nothing is conceivable as a thing in itself but must be perceived in relation to other things.

> Reality consists of what one makes of that which one gains through one's senses or otherwise. In cognitive-field theory, learning is a relativistic process by which a learner develops new insights or changes old ones. In no sense is learning a mechanistic process of connecting stimuli and responses within a biological organism.[3]

The cognitive-field theory (CFT) places great emphasis on insight, which is a feeling for relationships, an intrinsic grasping of meaning, which does not have to be a conscious awareness on the part of the person, nor does the person have to be capable of verbalizing his insight. And, a

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[3] Robert Borger and A.E.M. Seaborne, The Psychology of Learning (Baltimore, Md: Penguin Books, 1966), 177.

person's collective insights constitute his cognitive structure, or "consciousness", which means the way a person perceives the psychological aspect of the personal, physical and social world, including his facts, concepts, and beliefs. In other words, the "mind" makes its contribution to the response which is brought about when the organism comes into contact with stimuli.

One explanation of the physiological activity involved in this intrusion of the organism into the S-R process is that offered by Donald O. Hebb. Hebb holds that the human nervous system is made up of chains of nerve cells called neurons, each neuron having many branches which terminate in contact with each other; the points of contact are called synapses. Under certain circumstances these neurons can become active and activate neighboring neurons. Part of the system consists of cells which are specialized in translating stimuli from an environment into patterns of activity within the nervous system. Thus contact of the organism with the environment initiates activity in reverbatory circuits among the inter-connected network of cells; this contact leaves traces within the nervous system and the continued build-up of these traces within the nervous system and the continued build-up of these traces creates a preferred set of networks which not only channel incoming sensory information but also send out information to various muscle groups making possible a basis for the integration between an organism and its environment. The reverbatory nature of the circuits formed under repeated stimulation creates cell assemblies which can sustain their own activity without the need for actual stimulation from outside the organism. These could be the biological systems on which Osgood's "representational mediation process" depends. This would have a direct bearing on how language operates, in that cell assemblies become conditioned to verbal symbols,

the response that was formerly evoked by the referent being activated when the symbol of the referent is recognized.[4]

The distinctions between the two views of human learning that have been presented are basically that learning under S-R theories is mechanistic and it is considered that there is no need for the rational intervention of the organism. On the contrary, in cognitive theories, learning is seen to be an insightful process in which the organism plans an importanf role in processing the stimuli which it receives from its environment. Cognitive theorists do not believe that learning can be accounted for on the basis of S-R association alone.

III. Language and Its Acquisition

There exists a considerable amount of controversey over how language is to be defined. An answer to the question of just what language is is important because that is the foundation upon which methods and techniques of teaching language are based. As in learning theory, views of what language is and how it is acquired fall into two main schools, the structural linguists who see language as a system of mechanistic habits fromed from stimulus-response bonds, and the transformationalists who basically hold that language is the result of various cognitive, not behavioral processes.

For the structural linguist language is a system of mechanistic habits formed from stimulus-response bonds. The system is first an organization of sounds which may be classed into two basic groups, phonetc and phonemic. Phonetic sounds are all those sounds which are employed in the language. These are the smallest units of sound, chosen from the thousands of sounds

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[4]Ibid, p. 74-78

the human being is capable of producing, to be used as building blocks in the total system of the language. Not all languages choose to use the same sounds as units nor do they choose to use them in the same way. For example, English speakers do not employ a clicking sound in their speech, hence this sound is not phonetic in English or important to it, but it may be in other languages. That there are significant differences in the phonetic material employed by speakers of the language provides the basis for the communicative functioning of these units. An important word here is significant, for while there may be differences in a given sound, for example the sound we not in /p/, we learn to overlook some of these differences and distinguish others. Thus, while there are differences in the sound of /p/ in pat and stop, English speakers do not consider these differences significant and we recognize them both as the "same sound". Differences which we do consider significant are phonemic, such as the differences between the sounds we note as /p/ and /b/ and these differences, along with others, enable us to distinguish for example between the words pat and bat. These phonemically different sounds are combined into larger units which are similarly distinguished from each other. These larger units of meaning are termed morphemes, or units which convey meaning. Some of these morphemes may be independent and convey meaning by themselves, such as boy, while others convey meaning only when combined with other morphemes, such as /s/, which when added to certain morphemes conveys "plural" meaning and when added to others conveys "third person singular" meaning. These morphemes are then made into further combinations by syntactic rules which produce larger, more meaningful utterances. Each language has rules, or a grammar, for the formation of syntactically well-formed and semantically meaningful utterances, and these rules differ from language to language. So a possible definition

of language could be a system of sounds chosen from the wide variety of those humanly possible which can be distinquished from each other and formed into meaningful combinations of sounds which in turn can be arranged (following a set of rules) into larger meaningful utterances.

Structural linguists and behavioral psychologists believe that this system we have briefly noted is a sytem of habits, such as those acquired by animals under laboratory training conditions in which S-R connections are formed. According to this theory, in the development of human language, the child imitates those sounds he hears around him and by receiving reinforcement from parents for the correct production of dounds, he continues to make those sounds which receive this reinforcement. Continued practice in the production of the phonology leads to the "stamping in" and automizing of these sounds. It is claimed that the words of the language emerge in a similar way, the child imitating more complicated sounds heard around him (words), associating these signals with referents which were in his environment and being rewarded with some kind of approval from the parents.

It is further maintained that the acquisition of grammar comes about simply through learning the correct ordering of words. Novelty in language is explained through the notion of generalization. Jakobovits states that there are two main features contained in this idea:

> 1) the burden of language acquisition was placed on the environment: the parents were the source of input, and reinforcement was the necessary condition for establishing the habits. The child was merely a passive organism responsive to the reinforcement conditions arranged by agencies in the environment.
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> 2) the relatively simplistic conception of the knowledge to be acquired: sentences were conceived as orderings of words, arranged in sequential probaabilities that could be learned then generalized to novel combinations.[5]

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[5] Leon A. Jakobovits, "Implications of Recent Psycholinguistic Developments for the Teaching of a Second Language," Language Learning, Vol. XVIII, No. 1 & 2 (19688, p. 90.

This view of language is closely related to S-R theories of learning, and especially to that variety proposed by Skinner, termed operant response conditioning.

In his book Verbal Behavior, Skinner attempts to extend his operant conditioning theories of learning to an analysis of human verbal behavior. The basic thesis is that human beings are not essentially different than any other organism in the way they react to stimuli, and that when people employ language they are in fact making a response to stimuli that impinge upon them. The concept of stimulus is however extended from the simple kind of operant conditioning stimuli we find in the laboratory and includes internal stimulation, which is undefined, as well as external stimulation. Internal stimulation is called a mand and arises from some need within the individual, usually one of deprivation or aversive stimulation such as the request, "May I have some water?" arising from an internal state of deprivation, being thirsty. These mands however are also influenced by external stimuli relating to an environment, etc. A tact is a kind of stimulation which evokes a response from the organism while being external to it. Thus most utterances fall into this class. There are other classes such as echoic operant (an imitative response), a textual response (reading material) and an intraverbal operant (made in response to verbal or symbolic stimulation).[6] By this theory, language is basically explained as a system of habits that develop from stimulus-response conditions which are strengthened by reinforcement. The person is still viewed as a history of stimulus-response associations. Although few people accept literally this strict S-R explanation of verbal behavior, it has served as the theoretical basis for many language teaching programs, especially in second language teaching and programmed learning situations.

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[6]Borger and Seaborne, 174-175.

For the structuralist, language is a set of constituent elements, phonology, morphology, and syntax, and the use of language in speech consists of putting these elements together in a chain-like arrangement. The child first learns the constituent elements of speech and then produces speech by associating these elements. Meaning is said to be acquired by a specific set of sounds being conditioned to a set of objects and the verbal response to new objects is the result of generalizations to the new objects from what was already known.

Contrasted with this is the view of those who subscribe to the theories of learning termed "rationalist". The rationalists believe that language is not as simple a process as the behaviorists seem to hold and that it cannot be acquired in the manner the behaviorists describe. The rationalists' view of what language is and how it is acquired differs from the structuralists' view in many of the same ways that cognitive learning differs from behaviorist learning theory.

Language for the rationalists is not a series of sounds arranged in a manner dictated by what has been learned through reinforcement, but rather behavior which involves cognition.

Language is a set (finite or infinite) of sentences, each finite in length and constructed out of a finite set of elements, and each language has a set of rules, or a grammar, that generates all of the grammatical sequences of the language and none of the ungrammatical ones. The grammar which generates these sentences is believed to be intuitively known to the native speaker of the language and can be used in a creative manner, i.e., it can be used to form new sentences never before formed and assign semantic interpretation to new sentences. Thus, language is not

as the structuralists see it, a matter of habit based on S-R theories since, as Chomsky states, "There are no known principles of association that can begin to account for this characteristic creative aspect of normal language use."[7]

Cognitive theorists see the organism as contributing something to its environment. The organism makes its reality; it is not simply the result of stimulus-response associations. While the structuralist view of language is, as we have pointed out, a mechanistic one, the rationalist's is not; rather the rationalists view language as a creative process that is innate in the human organism. This point of view, that the capacity for language is innate, is maintained by Lenneberg who states that "the ability to acquire language is a biological development. It seems. . . language is due to as yet unknown species-specific biological capacities." Language is then see also to be limited to the species Homo Sapiens, because only they among all species seem to have the genetic ability to acquire language. The latter view may, however, need to be modified in light of recent work with chimpanzee's who seem to have grasped the rudiments of language communication.

Chomsky feels that any account of the development and cause of behavior that fails to consider the structure of the organism will provide no understanding of the real processes involved. He holds with the rationalists that the general form of a system of knowledge if a fixed disposition of the mind, and is very much a part of the cognitive school in that he feels learning may be accomplished by an "insight" of the sort that Lewin proposes. He speculates that the brain has evolved to a point

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[7]J.P.B. Allen and Paul Van Buren (editors), Chomsky: Selected Readings (London: Oxford University Press, 1971), p. 153.

where "given an input of apparently fantastic complexity, it produces (by an 'induction' of apparently fantastic complexity and suddenness) the 'rules' of Chinese grammar. . . this speculation is neither unreasonable nor fantastic."[8] What enables a person to learn something of this sort is that humans have an innate propensity to learn, a built-in information processing system which enables us to handle the data we receive from our environment. Chomsky further says:

> The fact that all normal children acquire essentially comparable grammars of great complexity with remarkable rapidity suggests that human beings are somehow specially designed to do this, with data-handling or 'hypothesis formulating' ability of unknown character and complexity.[9]

Other aspects of language behavior can be seen as involving cognitive processes. Brown and Bellugi have carried out an experiment in the child's acquisition of syntax which shows that children are able to understand and construct sentences which are well formed but which they have never heard and thus cannot be accounted for on the basis of S-R learning theory. They attribute this particular ability of the child to an ability to induce correct sentences from a latent structure. In studying the use of noun phrases by children they discovered that children are able to carry out progressive differentiation in the usage of words and also in syntactic classes as well as being able to perform an integrative process in which pronouns functioned as replacement for noun phrases. This process is they say, "more reminiscent of the biological development of an embryo than it is of the acquisition of a conditioned reflex."[10]

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[8] Ibid., p. 139.

[9] Ibid., p. 149.

[10] Roger Brown and Ursula Bellugi, "Three Processes in the Child's Acquisition of Syntax," in Language and Learning, ed. by Janet Ernig, James T. Fleming, and Helen M. Popp (New York: Harcourt, Brace and World, Inc., 1966), p. 23.

Susan M. Irvin has found in her study of imitation in children's speech that children seem disposed to create linguistic systems:

> It is hard to conceive that children could, by the age of four, produce the extraordinarily complex and original sentences we hear from them if they were not actively, by analogic extensions, forming classes and rules.[11]

Cognitive theorists believe that speech involves a process of pattern recognition and equation, not simply learning the identity of constituent elements. For cognitive theorists and transformational linguists, the fact that words tag things in the environment is insufficient to explain meaning in language. Rather they see words as tagging the processes by which a species deals with its environment; for example, the word eye tags a cognitive process developed through a process of categorization and differentiation which is independent of verbal learning. Meaning then is "purely cognitive concept and semantics represents the linguistic expression of these cognitive operations."[12]

IV. Audio-Lingual Methods

What we have seen is that there is a basis for reviewing language and what is involved in learning it from a point of view other than S-R learning and structural linguistics, both of which form the theoretical basis for second language teaching practices in the audio-lingual method.

It would be instructive at this point to examine some of the particular guidelines to procedure in ALM and their accompanying justifications. While some of the references I have chosen to make are from the Defense Language Institute's American Language Course, their extensions in other ALM materials, as well as in other methods which have evolved from it,

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[11] Susan M. Irvin, "Imitation in Children's Language," New Directions in the Study of Language, ed. by Eric H. Lenneburg (Cambridge: M.I.T. Press, 1964), p. 16.

[12] Jakobovits, p. 93.

are obvious.

Proponents of ALM claim it is the best way to reach particular objectives: those summarized in the prescription: "Hearing before speaking, speaking before reading, and reading before writing." It is called the direct approach to distinguish it from the most important of the other ways of approaching language learning: the "natural" way and the "traditional" way.

By the "natural" way is meant the way in which a child acquires his own native language, and many of the assumptions behind ALM are based upon particularly behaviorist concepts of how this process works:

> The natural way is the way every child learns his native tongue. As we know, babies begin to imitate the speech sounds they hear around them. At first this is a random activity, but as the child's chance imitation of significant sounds begins to be reinforced by the approving reactions of parents, the child begins to associate certain sounds or groups of sounds with particular objects or events in the environment. This habit of associating certain sounds with certain things develops forms of active and passive behavior in the child. In its passive form, as when the child merely listens or says over and over "pretty kitty, pretty kitty," this verbal behavior can be recognized as a first step toward subjective reorganization of the environment through verbal means. In its more active form, as when the baby asks for water or attention-- "wawa," "mama"-- we can witness an even more important step: a beginning of control of the environment through language."[13]

The "natural" way of learning a language is felt to be the desirable way, although the time that the process takes and the impracticality of a 2-3 year "total immersion" make it impossible to reproduce in the classroom.

In its emphasis on repetition and reinforcement and mimicry, ALM borrows much from the "natural way". It departs, however, from what one ALM theorist has called the "half-conscious, hit-or-miss

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[13] ALC Instructor Text, p. 1.

learning" of the natural way in its intensity, order, and directness, as well as in its use of materials. "The materials a student studies are graded and arranged so that he may acquire the necessary skill and knowledge in the shortest possible time."[14]

The materials and their use are directed toward the acquisition of a set of correct speech habits. Present day language teaching methods, including the orientation of many current materials to this goal, owe much to Robert Lado who continued in the Bloomfieldian tradition. In his book, Language Teaching: A Scientific Approach (1964) he stated his view of the structure of language in behaviorist terms. He said that language has two parallell substructures, expression and content, and a web of associations between the two:

> Expression is the system of sounds, words, phrases, sentences as spoken, heard, felt, or imagined independent of their particular meanings. . . Content is the system of classified units of cultural meaning and their combinations and relations in a language. Associations are ties between expression and content; when units of expression are perceived, they elicit the associated units of content, and when units of content are experienced, they recall the associated units of expression.[15]

This can be expressed schematically as

C --- E in speaking

E --- C in listening

Lado's definition of second language learning implies that language can be acquired under S-R conditions and that the mastery of language usage depends on how well the S-R bonds are strengthened through rein-

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[14] Ibid., p. 1.

[15] Robert Lado, Language Teaching: A Scientific Approach (New York: McGraw Hill, Inc., 1964), p. 12.

forcement. He says:

> Learning a second language is defined as acquiring the ability to use its structure within a general vocabulary under essentially the conditions of normal communication among native speakers at conversational speed. More specifically it means the acquisition of the ability to use, in speaking, the units and patterns of expression in the second language associated with the units and patterns of content that together constitute the language.[16]

What Lado's definition really describes is the use of language that simulates but does not truly entail knowing the language. That is, his definition really describes language-like behavior and not language. Because a person is able to make associations between the C's and E's in the language does not necessarily mean that he knows that language. For the real use of language involves creativity, being able to create grammatically correct utterances and being able to interpret novel utterances which he hears, as grammatical or ungrammatical. As Bernard Spolsky says, "Knowing a language involves not just the performance of language-like behaviors, but an underlying competence that makes this performance possible. By ignoring this it has been easy to nurse exaggerated claims for the effectiveness of operant conditioning in second language teaching."[17]

To strengthen the S-R bonds that are claimed to enable a student to learn a second language, ALM advocates intensive practice through repetition and imitation of structures graded from easy to more difficult which are presented in "pattern drills".

"Drill is a must. Drill until the students speak fluently."[18]

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[16] Ibid., p. 38

[17] Bernard Spolsky, "A Psycholinguistic Critique of Programmed Foreign Language Instruction," IRAL Vol. Iv, No. 2 (June, 1966), p. 123.

[18] ALC Instructor Text, p. 2.

The assumption is that, since language is habit formation, the structure of a language can be more effectively acquired through the habits that will develop in practice of patterns than through an appeal to the cognitive processes:

> The student should learn the grammar be reciting the different structural patterns. Through speaking, he will gain an understanding of the grammar. There is little correlation between knowledge of grammatical rules and ability to apply them. You should drill to develop ability to use the language rather than to teach knowledge of grammar.[19]

Explanations are likewise suspect, since they might "interfere" with the formation of correct speech habits:

> Every type of sentence construction should be introduced to the student in spoken English with a minimum of explanation. The students are then drilled in a stimulus-response situation in which the instructor gives the stimulus and the students an immediate response.[20]

Definitions are also to be avoided:

> "A student must react to a word, not define it."[21]

As we have pointed out before, the number of sentences a person can create is unlimited; there is therefore no way that stimulus-response conditioning could alone account for the process of language acquisition nor, for that matter, second language learning.

Since the number of patterns that a student would have to learn is far greater than those included in language courses, there is simply not enough time to teach all the patterns necessary. Nor could a student

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[19] ALC Instructor Text, p. 2.

[20] Ibid., p. 2.

[21] Ibid., p. 2.

ever learn enough patterns to account for the completely novel or infinitely long utterances he is able to make as a fluent speaker.

In 1964 Lado held that "the more frequently a response is practiced the better it is learned and the longer it is remembered." That this is true for a series of meaningless utterances seems undeniable, but it can be criticized on the grounds that what is learned is not really language, and the student using "mimicry-memorization" to learn to repeat a series of utterances however graded, structured, or expanded, is not learning language but simply language-like behavior. Some psychologists maintain that repetition plans no significant role in the formation of association and that continual repetition may even have a tendency to weaken association between sound and meaning. It has been observed that children watching Sesame Street can count up to twenty and recite the alphabet with no trouble whatsoever. But it seems very doubtful that they have any concept of what the numbers or the letters signify. Likewise, in continually practicing a response, there is no guarantee that being able to mimic a response will ever lead the student to an understanding of how it actually functions in language. That students do become proficient in speaking language after having used pattern practice is no argument that it works per se. What it may indicate is that students have a number of language items available for their use when the ultimate insight that enables them to be fluent occurs.

What happens, according to the rationalists, is that the student already knows innately how to generalize about languages, and thus discovers for himself the grammar rules for constructing new sentences in

the target language. In other words, what the students mostly needs is exposure.[22]

The use of imitation is an important part of the audio-lingual theory and it is justified from the belief that children learn language by imitating what they hear around them, and by a S-R process of shaping, through reinforcement, they gradually reduce the numer of errors they make in approximating adult speech until they finally achieve competence in it.

In fact, the child does not seem to do any such thing, especially in acquiring his syntax. Brown & Bellugi have shown in "Three Processes in the Child's Acquisition of Syntax" that the child does not use simple imitation to acquire his syntax but rather uses a process of "imitation with reduction" in which only the content words are imitated closely, the child eliminating function words in utterances that he repeats. The child also attempts to form his own grammar which is not an imitation of adult grammar, but rather seems to be a process of hypothesis testing; that is, he forms his own hypotheses and tests them out against what he hears in the environment, continally modifying them until he finds the one which approximates that of adult speech to which he is exposed. He tests these hypotheses in the process described as "imitation with expansion" in which the mother frequently repeats in correct adult speech what she assumes the child has said.[23]

Based on studies with children, Susan Irvin-Tripp has said:

> We cannot look to overt imitation as a source of the rapid progress children make in grammatical skill

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[22]Robin Lakoff, "Transformational Grammar and Language Teaching", Language Learning, Vol. 1969, pp. 117-140.

[23]Brown and Bellugi, p. 45.

> in the early years. . . there is not a shred of evidence supporting a view that progress toward adult norms of grammar arises merely from practice in overt imitation of adult sentences.[24]

Chomsky also holds that beyond the very earliest stages, it is a mistake to assume that much of what the child acquires is acquired by imitation; this is especially true on the sentence level since much of what the child hears and says is new.[25]

Bellugi has shown in another study that some grammatical transformations, such as the formation of questions, are clearly produced by the child. A structure regularly occurring in children's language such as:

"Where I can get them?"

could not have been imitated from adult speech, and the child's inability to produce the correct structure, even when asked to repeat it, indicates that the child cannot imitate structures which he is not yet capable of producing on his own.[26]

David McNeill doubts the applicability of an S-R model to language acquisition inasmuch as he observations show that the early grammar of a child is not the same as that of an adult and therefore could not be the result of mere imitation. In his opinion children are born with the innate cognitive ability to develop their own grammatical systems.[27]

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[24] Ervin, p. 172.

[25] Allen and Van Buren, p. 132

[26] Daniel Slobin, p.

[27] Frank Smith and George A. Miller, The Genesis of Language, A Psycholinguistic Approach (Cambridge, Mass: MIT Press, 1966), pp. 17-24.

Generative transformational linguists maintain that the subtleties of particular languages cannot ever be taught, even by their own generative-transformational rules, much less by pattern practice drills.

Psycholinguistic investigations of the role that memory plays in recall of sentences tend to provide support for those who criticize in language teaching the "mindless" repetition of structures in pattern drills from which an ability to use those structures is presumed to arise. From these investigations has come the belief that meaning and form of a sentence can be stored independently and that the underlying meaning of a sentence is more persistent in memory than the surface structure in which the meaning is expressed.[28] What this means is that people apparently hear and remember sentences in terms of their knowledge of the grammar of the language.

Investigations of this sort have been based upon tests with native speakers dealing with their own language, so the implications may not be directly applicable for foreign language teaching. It does, however, throw considerable cold water on the ALM notion that certain practices such as the minimization of grammatical explanation are justified because "native speakers learn to speak the language before they learn about it."[29]

The role of correction and reinforcement in language learning has also come under the investigation of psycholinguists. One standard TEFL procedure calls for correction by the teacher of a mistake followed by an immediate repetition of the correct structure. The theory behind ALM assumes that this is the way in which a child learns correct structure. But studies

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[28] Slobin, pp. 30-32.

[29] ALC Instructor Text, p. 1.

of verbal reinforcement by parents show that it appears to be truth value of the utterance rather syntactic well-formed-ness that governs explicit reinforcement.[30] In other words, parents tend to correct what a child says more on the basis of whether what the child says is true than how grammatically correct it is. As Slobin says, finding out that a given utterance was incorrect tells the child nothing about the wrongness of his utterance or how to correct it next time. His own cognitive facilities are required in order for him to make use of reinforcment. Furthermore, as Chomsky has pointed out, the extremely low ration of input (verbal reinforcement) to out-put (the child's use of the language) makes it highly questionable that correction by the speech community alone could account for the development of fluency. He says:

> The child who learns a language has in some cases constructed the grammar for himself on the basis of observation of sentences and non-sentences (i.e. correction by the speech community). Study of the actual observed ability of a spearker to distinguish sentences from nonsentences, detect ambiguities, etc. forces us to the conclusion that this grammar is of an extremely complex and abstract character, and that the young child has succeeded in carrying out what from the formal point of view, at least, seems to be a remarkable type of theory construction. Furthermore, this tast is accomplished in an astonishingly short time, to a large extent independently of intelligence, and in a comparable way by all children. Any theory of learning must cope with these facts.[31]

V. Conclusion

Dispensing completely with the accepted practices of the audio-lingual approach would not, in my opinion, achieve the goals of improving the effectiveness of foreign language teaching. These practices certainly have value in providing a foundation for the student, and as they are

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[30] Slobin, p. 59.

[31] Allen and Van Buren, p. 147.

carried out in the target language, provide the "exposure" that some theorists claim is the only essential ingredient in language learning.

What is required is that the present audio-lingual approach be expanded so that, in the process of teaching, the student is led to generalize, deduce and form intuitions about the language he is studying in order to arrive at the "insight" which is necessary for fluency in the language. Allowing him to discover the rules of the language will enable him to construct creative and novel utterances more quickly and efficiently.

It is doubtful that this objective could be achieved through the use of the grammar-translation method alone; however, a more complete integration of grammar instruction in audio-lingual courses (not just the brief explanation of difficult points of grammar now given) would, I believe, hasten this development. By grammar instruction I do not mean simply teaching classes of words or employing paradigms for learning inflections and conjugations. What is needed are explanations of how general patterns function in the language and how a given pattern such as the passive voice is not just a trick or operation we perform to give the students something to do, but that it really serves a purpose in the language. This is also an example of the kind of pattern learning that wouldenable a student to reason about the operations involved in the target language, to generalize about a variety of sentences and from this create the novel utterances that characterize the fluent speaker. This is really a suggestion that a transformational approach be used in teaching a foreign language. Textbooks are now being developed which employ this approach.

Since the student must gain insight into the language to be fluent in it, he needs as much exposure to realistic language use situations as possible.

Thus, the present pattern drills could be altered in such a way that they do not simply pound away at one point of grammar, but drill the number of ways that the pattern can be varied. The technique might be to use sentences such as "They elected him president," and vary it by means of such transformations as "He was elected president." This would show the student that there are a number of grammatically correct ways to express the same concept.

Most forms of imitation, repetition, and pattern practice can only succeed in producing language-like behavior; more attempts at inducing the student to comprehend the underlying constructs of the target language are necessary to bring about true language proficiency. It may be that this can only be accomplished by having a curriculum designed around a transformational approach, but altering some present audio-lingual practices may help to bridge the gap until that kind of curriculum is available.

There is a certain difficulty, even danger, in trying to apply new linguistic theories to foreign language teaching. Even Chomsky has warned that his ideas might not have any practical application in the classroom itself. However, it was almost twenty years before the theories of Bloomfield were put to practical application in the Army Defense Language Institutes, and the persistence of teachers in finding new ways to apply his theory of linguistics has brought about admirable results. So, in a manner analgous to this, teachers should be given the latitude to develop new methods based on new theories which would improve the efficiency and effectiveness of foreign language teaching.

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