

The Rationalist Approach to Language learning

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1. Introduction

The purpose of this study can be seen as a statement of the implications which transformational grammar should have for language teaching.

Since the late 1950's an increasingly large number of linguists have followed Noam Chomsky and other transformational grammarians in rejecting the empiricist approach to language learning in favor of a sophisticated revival of the rationalist approach. Transformational grammarians themselves have established that rationalist-based "direct methods" similar to those of Berlitz and de Sauze are undergoing a spirited revival in this new linguistic climate.

Transformational grammarians say about language learning as the follows: The first is that a transformational generative grammar should be drilled into the student using techniques of mim-mem and pattern drill; the second, that the rationalist theory of language learning implies either that a) we should abandon formal instruction altogether, or at least that b) we should avoid instruction in grammar and abandon the use of materials that are ordered according to grammatical difficulty.

Firstly, I have attempted to deal with the background of transformational theory in connection with Chomsky. Secondly, I have attempted to suggest an outline view of the state of generative grammar in relation with the language education. Thirdly, I have attempted to give a focus on the transformational theory and its application to the language learning theory. I admit that the scope of this study is too comprehensive to result in deep investigation of a narrowly-postulated object of linguistics as, but I am rather anxious to offer a general view of the state of affairs of the linguistic theories—"Rationalism" in connection with the Language learning.

2. The Theoretical Background of Transformational-Generative Grammar

"Generative grammar" is a description of the tacit competence of the speaker-hearer that underlies his actual performance in production and perception (understanding) of speech. A generative grammar, ideally, specifies a pairing of phonetic and semantic representations over an infinite range it thus constitutes a hypothesis as to how the speaker-hearer interprets utterances, abstraction away from many factors that interweave with tacit competence to determine actual performance.

Transformational-generative grammar is based on rationalism. Therefore, the transformationalists take the following rationalistic attitude towards language

- 1) A living language is characterized by rule-governed creativity
 - 2) The rules of grammar are psychologically real
 - 3) Man is uniquely built to learn language
 - 4) The transformationalist is more concerned with the system that underlies the language than he is with the actual speech of an individual at any given time.
 - 5) The Transformationalist is to say that he is interested in the speaker's competence, or knowledge of the language, rather than in his performance, or actual use of it.
- In addition, speech may be affected by physical surroundings, emotions, memory

1) Noam Chomsky, *Cartesian Linguistics* (New York: Harper & Row, Publishers, 1966), p.75.

limitations, distractions, or other features such as chewing gum in the mouth of the speaker. It is language (the underlying system), not actual speech output, that is of primary interest to the transformationalist. Another way of stating this is to say that he is interested in the speaker's *competence*, or knowledge of the language, rather than in his *performance*, or actual use of it. We will see the difference between human linguistic competence and that of lower animals.

In *Cartesian Linguistics*, he sets forth Descartes' insights about language, and his conclusion that

man has unique abilities that cannot be accounted for on purely mechanistic grounds, although, to a very large extent, a mechanistic explanation can be provided for human bodily function and behavior. The essential difference between man and animal is exhibited most clearly by human language, in particular, by man's ability to form new statements which express new thoughts, and which are appropriate to new situations.²⁾

Descartes considered the possibility of a machine which would give a specific number of responses to a specific number of cues, but pointed out that one could not conceive of a machine that could reply appropriately to everything said to it, as every human being can. However imperfect a man is, he can arrange words together to express his thoughts. However perfect an animal, it cannot. The distinction is basic and not just connected with peripheral organs, for a parrot can utter words, but cannot speak; a deaf man cannot produce words, but can use language. Consider the parrot for a moment. We can easily teach him to produce a number of sets of sounds that seem like utterances. With more care and appropriate use of reinforcement, we can train him to produce each of these 'utterances' on appropriate suggestions. There should be no difficulty in training the bird to utter sounds that seem like "please feed me" in order to receive food, or like "It's a pellet of food" when the food appears from the hopper. By the definitions of behavioral psychology these utterances could be classified as a man and a tact respectively, essential elements of what Skinner calls verbal behavior. But I do not think that many of us would be prepared to call such behavior language. What is missing is the creative element: the parrot's repertoire of utterances, remains limited and

2) Noam Chomsky (1966). p.3.

closed: we do not find it one day saying "Please give me a pellet" unless it has been exposed to that particular sentence.

And the central fact in support of the creative aspect is that humans produce (and of course understand) many sentences that they have never heard before. For the parrot to learn English by memorizing all the sentences of English would be a clearly impossible task, for there are about 10 possible English sentences of twenty words or fewer (by comparison, there are about 3% 10 seconds in a hundred years). This creativity is the basic distinction between what I have called language like behavior and knowing a language. While precise specification may not be possible, for there is a continuum, the interpretation of each is relatively clear. Thus, language-like behavior refers to the parrot trained to speak, and equally well to the student who is able to recite a number of sentences in a second language but not to modify them in a free conversational situation. This example of the students learning a second language makes the continuum clear, for there is a stage at which the student may be able to use his stock of sentences to answer a finite set of questions.

But this is not the same as knowing a language, which involves the ability to produce an indefinite number of sentences in response to an indefinite number of stimuli. One is said to know a second language when one's competence is like that of a native speaker. Performance need not however be identical, for it is accepted that someone knows a language even when he speaks hesitantly, with many errors, or with a foreign accent, or when he understands it with some difficulty under conditions of noise. What confuses the distinction between language like behavior and knowing a second language is a third category, speaking a second language with the grammar of the first. It is thus normal for a person who knows one language and has developed language-like behavior in a second to be able to adjust this behavior in accordance with the grammar of his first language. It is this that differentiates the human language learner from the parrot. Again, it is a matter of degree, but we would not normally want to say that such a person has learned a language until he has developed linguistic competence in it, and until he is able to understand and create novel sentences in it according to its grammar and not just to the grammar of his first language.

The creative aspect of language is one of the good cornerstones of the argument for transformational grammar, for only such a grammar has available the "technical devices for expressing a system of recursive process," and only with such devices can the creative aspect be formulated explicitly. The only way to handle the fact that language has an infinite set of sentences and that is used by people with a finite time for learning is to postulate a system of rules. The task of the grammarian is to find the best statement of the form of these rules, knowing a language is a matter of having mastered these (as yet incompletely specified) rules; the ability to handle new sentences is evidence of knowing rules that are needed to generate them.

It is important at this juncture that we make a clear distinction between two pairs of terms that are often confused, competence and performance, and comprehension and production. The following passage discusses competence and performance.

The speaker produces a signal with a certain intended meaning; the hearer receives a signal and attempts to determine what was said and what was intended. The performance of the speaker or hearer is a complex matter that involves many factors. One fundamental factor involved in the speaker-hearer's performance is his knowledge of the grammar that determines an intrinsic connection of sound and meaning for each sentence. We refer to this knowledge — for the most part, obviously, unconscious knowledge—as the speaker-hearer's "competence." Competence, in this sense, is not to be confused with performance. Performance, that is, what the speaker-hearer actually does, is based not only on his knowledge of the language, but on many other factors as well — factors such as memory restriction, inattention, distraction, nonlinguistic knowledge and beliefs, and so on. We may, if we like, think of the study of competence as the study of the potential performance of an idealized speaker-hearer who is unaffected by such grammatically irrelevant factors.³⁾

The grammar of a language, then, is a description of competence; it may be compared, to use an analogy first suggested by Saussure, to the score of a musical work. The score necessarily underlies any performance, but does not account for all the features of any single performance. A moment's thought makes clear that linguistic performance may be either active or passive, that both the speaker and the hearer are in fact performing. The implication of this for language learning is extremely important, for it suggests that one may learn a language just as well by

3) Chomsky and Halle (1968), p.3.

listening as by speaking. The implication for language testing is equally important, for it suggests that we can find out about 'knowledge of a language, which is the same as underlying linguistic competence, equally well when we test passive and active skills.

This last does not of course mean that an individual's performance as a speaker is the same as his performance as a listener; such a claim would clearly be ridiculous, for it would be nothing more than saying that anyone who could read a Shakespeare play could also write it. All that it does claim is that the same linguistic competence, the same knowledge of rules, underlies, both kinds of performance.

Knowledge of rules is also the principal factor in the understanding of messages with reduced redundancy. Miller and Isard(1963) have shown that the intelligibility of a sentence depends on it following syntactic and semantic rules. Sentences which break semantic constraints (e. g., "A witness appraised the shocking company dragon") prove more difficult to understand and repeat than those that do not, and ungrammatical sentences (e. g., "A diamond shocking the prevented dragon witness") prove even more difficult. This effect became even clearer when they studied the resistance of sentences to masking by added noise; grammatical sentences proved to be far more resistant than ungrammatical ones. Thus, they showed that the "knowledge of the language" providing the listener with help in handling sentences with reduced redundancy was a knowledge of rules, of the grammar of the language.

If we accept that knowledge of a language, "linguistic competence, is a matter of knowledge of rules, what implications does this have for language testing? First, we must keep clear the various reasons for which language tests are designed; we are concerned here with proficiency tests, or what Lewis has called "summative assessment" and not with diagnostic tests. Further, we are concerned with a test that is independent of a specific set of materials and of the language analysis that lies behind it. In searching for a test of over all proficiency, then, we must try to find some way to get beyond the limitation of testing a sample of surface features, and seek rather to tap underlying linguistic competence. This can only be done with any degree of certainty if we can be sure that we are presenting the subject with novel utterances, or calling on him to produce

utterances that he has not heard before. The simplest way to do this is to set up an interview situation calling for normal language functioning; this method however is both difficult to score reliably and prohibitively expensive to administer. A long term solution to this problem is to use such interviewing techniques as a method of validating other measures. Until this is done, another worthwhile approach appears to be to make use of the principle of redundancy, and test a subject's ability to function with a second language when noise is added or when portions of a text are masked.

At last year's conference, I reported of on the test overall proficiency which we devised based on this approach. In the meantime, we have prepared multiple-choice version of the test. The distractors were written on the basis of the more common errors made in the administration of the test as a dictation test. The results of the multiple choice test look as good as those we got with the dictation form, and the new format has made item analysis much easier.

Virtually every person in the world knows a language. Perhaps the most striking phenomenon of language is its universality. Few other cultural phenomena are that universal. Equally noteworthy, perhaps, is the fact that lower animals can not learn human language. A certain amount of communication is possible between man and animal, but it is not because the animals understand language. Try speaking to your dog in a English,---it will probably work as well as korean. It is not to understand the language. The similarities among all language as being qualitatively different from the so-called animal language, and they seem to be dependent on the biological make-up of man. Chomsky expresses the comparison of human and animal linguistic competences in his letter to Henry Moore.

But the principal argument, to my mind, which may convince us that the brutes are devoid of reason, is that, although among those of the same species, some are more perfect than others, as among men, which is particularly noticable in horses and dogs, some of which have more capacity than others to retain what is taught them, and although all of them make us clearly understand their natural movements of anger, of fear, of hunger and other of like kind, either by the voice or by other bodily motions, it has never yet been observed that any animal has arrived at

such a degree of perfection as to make use of a true language; that is to say, as to be able to indicate to us by the voice, or by other signs, anything which could be referred to thought alone, rather than to a movement of mere nature; for the word is the sole sign and the only certain mark of the presence of thought hidden and wrapped up in the body; now all men, the most stupid and the most foolish, those even who are deprived of the organs of speech, make use of signs, whereas the brutes never do anything of the kind; which may be taken for the true distinction between man and animal.

Human speech is "appropriateness of behaviour to situation, animal behaviour is control of behaviour by stimuli. The latter is characteristic of automata; it is the former that is held to be beyond the bounds of mechanical explanation, in its full human variety. Chomsky insight the difference between human language and animal communication systems from Rationalism insights.

According to the rationalist, "verbal behavior" is free of external stimuli or internal physiological states, so it is evidently not developed in the individual by conditioning. That is, it is "mental reality" and "cognitive power" Transformationalists derive their theoretical backbones from the 17th century rationalism. we can easily see that human verbal behavior is not made entirely through repetition, mimicry, and analogy. Let's look at Descartes' rationalistic view of human linguistic competence. Descartes is therefore pointing out that, just as in its normal use "verbal behavior" is free of identifiable external stimuli or internal physiological states, so it is evidently not developed in the individual by conditioning. Therefore, man shows creativity in his verbal behavior as he generates or understands sentences which he has never learned or heard. According to Descartes, the cognitive power is faculty which is not purely passive and which "is properly called mind when it either forms new ideas in the fancy or attends to those already formed, "acting in a way that is not completely under the control of sense or imagination or memory. Thus, the rationalists claim that human verbal behaviour is not made by habit formation of stimulus-response repetition, which does nothing more than awake the internal linguistic competence. Accordingly, there can be found a definite boundary between human language and animal communication. Animals achieve their communicative competence by conditioned reflex caused by the external stimulus,

but men achieve their linguistic competence through the internal language acquisition device. Therefore, animals have their mechanical automata limited by the number of transfer circuits switched by the unlimited external stimuli, but men have their internal linguistic device unlimitedly operated by the limited external stimuli. This means that language is not an aggregate of separated or unrelated sounds, words, and sentences but organic system of linguistic rules. According to Humboldt, a language is not to be regarded as a mass of isolated phenomena...words, sounds, individual speech productions, etc. ...but rather as an "organism" in which all parts are interconnected and the role of each element is determined by its relation to the generative processes that constitute the underlying form. In modern linguistics, with its almost exclusive restriction of attention to inventories of elements and fixed "patterns" the scope of "organic form" is far more narrow than in the Humboldtian conception. But within this more narrow frame, the notion of "organic interconnection" was developed and applied to linguistic materials in a way that goes far beyond anything suggested in Humboldt. For modern structuralism, the dominant assumption is that "unsystème phonologique (in particular) n'est pas la somme mécanique de phonèmes isolés, mais un tout organique dont les phonèmes sont les membres et dont la structure est soumise à des lois." These further developments are familiar, and I will say nothing more about them here. Humboldt's linguistic philosophy can be said to have led to the theory of Chomsky's transformational-generative grammar. According to the descendancy of Descartes-Humboldt-Chomsky, it was clearly understood that one of the qualities that all languages have in common is their "creative aspect". As an operational question, there must be a grammatical property dealing with creative aspects which operates as a grammatical device to create an indefinite number of sentences with a system of rules. According to Chomsky, "An essential property of language is that it provides the means for-expressing indefinitely many thoughts and for reacting appropriately in an indefinite range of new situations,"

According to the definition, the length of a sentence is limited from the practical point of view, not from the theoretical point of view. Theoretically, the length of a sentence is unlimited which presupposes that there can be made an infinite number

4) Noam Chomsky, *Cartesian Linguistics* (New York: Harper & Row, publishers, 1966), p.26.

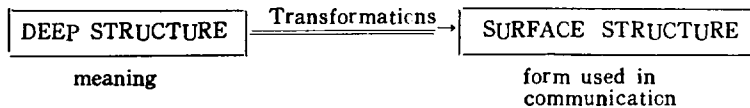
of sentences, so far, the essence of language has been explained in terms of its deep structures. This argument advances into the concepts of competence and performance.

We thus make a fundamental distinction between competence (the speaker-hearer's knowledge of his language) and performance (The actual use of language in concrete situations). Only under the idealization set forth in the preceding paragraph is performance a direct reflection of competence. In actual fact, it obviously could not directly reflect competence. A record of natural speech will show numerous false starts deviations from rules, changes of plan in mid-course, and so on. The problem of the linguist, as well as for the child learning the language, is to determine from the data of performance the underlying system of rules that has been mastered by the speaker-hearer and that he puts to use in actual performance. Hence, in the technical sense, linguistic theory is mentalistic, since it is concerned with discovering a mental reality underlying actual behavior. observed use of language or hypothesized dispositions to respond, habits, and so on, may provide evidence as to the nature of this mental reality, but surely cannot constitute the actual subject matter of linguistics, if this is to be a serious discipline. The distinction I am noting here is related to the *langue-Parole* distinction of Saussure; but it is necessary to reject his concept of *langue* as merely a systematic inventory of items and to return rather to the Humboldtian conception of underlying competence as a system of generative processes. Accordingly, grammar must be an object of description of language competence. In other words, a grammar of a language purports to be a description of the ideal speaker-hearer's intrinsic competence. If the grammar is, furthermore, perfectly explicit --in other words, if it does not rely on the intelligence of the understanding reader but rather provides an explicit analysis of his contribution -- we may (somewhat redundantly) call it a *generative grammar*. what must be borne in mind here is that transformational-generative grammar does not accept the dualism of Bloomfield's mechanism and mentalism although mentalism is an object of its investigation. Transformational-generative grammar deals with language by the method of dualism ; deep structure and surface structure. To accept traditional mentalism, in this way, is not to accept Bloomfield's dichotomy of "mentalism"

versus "Mentalistic linguistics is simply theoretical linguistics that uses performance as data (along with other data, for example, the data provided by introspection) for the determination of competence, the latter being taken as the primary object of its investigation. The mentalist, in this traditional sense, need make no assumptions about the possible physiological basis for the mental reality that he studies. In particular, he need not deny that there is such a basis, One would guess, rather, that it is the mentalistic studies that will ultimately be of greatest value for the investigation of neurophysiological mechanisms, since they alone are concerned with determining abstractly the properties that such mechanisms must exhibit and the functions they must perform. Here we can see that there is something in common between Saussure's *langue* and *parole* and Chomsky's competence and performance. However, as we have noticed, there is a big difference between them: *langue* as merely a systematic inventory of items, and linguistic competence of transformational grammar is a systematic inventory of underlying generative process. Briefly, the deep and surface structures of a sentence can be explained as follows:

Deep structure: the grammatical structure of the base (or bases) underlying the surface structure of a sentence. Surface structure: the apparent structure of a sentence, as opposed to the underlying structures which have been transformed to produce it. The surface structure determines the phonetic character of a sentence

The most important question of all is: *How* is the deep structure of a sentence related to its surface structure? A deep structure becomes a surface structure via *transformations*.



The notion "transformation" may seem strange at first, but you really know more about it than you realize.⁵⁾

Namely, deep structures underlying all languages are transformed into surface structures through the process of transformation. This kind of investigation based

5) Roderick A. Jacobs, Peters, Rosenbaum: *English transformational grammar* (U.S.A. : Blaisdell Publishing Company, 1968), p.19.

on rationalism offers almost unlimited possibilities for linguistic study and it has a historical nature of Descartes-Humboldt-Chomsky.

3. The State of Affairs of Transformational Grammar

I, being of the transformationalist persuasion, would like to avoid misrepresentation of the opposite view and must say at once that many people would probably not agree that the view is opposite. Some might deny the division as stated. Many structuralists would wish to disclaim some of the structuralist theory as described here. But structural linguists, or some of them, have said, or have seemed to say, the following:

1. Any utterance by a native speaker is essentially grammatical.
2. In describing a language, one should begin with the phonology, then do the morphology and then syntax.⁶⁾
3. These levels should not be mixed -- e.g., one shouldn't take the syntax into account in describing the phonology.⁷⁾
4. The grammarian should work from a corpus -- i.e., a collection of utterances one or more native speakers.
5. Making a grammar is essentially a matter of classifying and making an inventory of the structures in such a corpus.
6. It is not useful to explain structures as being in derivational relationship to each other -- e.g., to say that a passive in English derives from an active.
7. Relative importance among structures is one of frequency, the more frequent structures being the more important.

structural linguists nowadays might or might not want to stand on these grounds as stated. But transformationalists would deny them all categorically. To see the

6) H.A. Gleason: *Linguistics and English Grammar*(New York: Holt, Rinehart and Winston, Inc., 1965), pp.51-52.

7) R.R.K. Hartman and F.C.Stork: *Dictionary of language and linguistics*(London: Applied Science Publishers Ltd., 1979), p.128.

the reason, I will discuss each in a little more detail.

To a transformational grammarian, as, doubtless, to most teachers of English, it seems absurd to say that anything a native speaker utters is grammatical and must be taken into account in a description of the grammar.⁸⁾ It is true that we are seldom ungrammatical in the utterance of simple (kernel) sentences. Only a foreigner learning English could say "John are boy" or "He will bought the car." But in complicated sentences (transforms), we are all of us ungrammatical much of the time, we are forever losing our way, forgetting what the subject was, making new starts, juxtaposing structures that don't fit. In normal conversation we are always hitting near the grammar but are seldom squarely on the mark. As for writing, if what students wrote were consistently grammatical, courses in the improvement of writing wouldn't be so numerous.

Transformationalists deny also that the morphology and syntax must be built on a prior description of the sound structure. They would rather begin, in the traditional way, with the syntax and develop the description of sound structure from that. There are many theoretical reasons for this preference and one powerful argument; after decades of effort, structural linguistics has produced rather thorough descriptions of English sounds and extensive inventories of morphemes but very little in syntax. It is at least a plausible hypothesis that this failure reflects a weakness in the theory itself.

The problem of "mixing levels" need not detain us long, since we are interested in only one level, the syntax. It may be mentioned, however, that transformationalists feel that they can attain a more economical description of the grammar if they take one part into account while describing another. For example, if we know that words are, say, nouns or verbs, we can devise rules that tell which of their syllables will receive the stress or accent and which of their vowels will be reduced.

Transformationalists put very much less weight on the idea of the corpus than structuralists do. The structuralist likens the corpus the raw material

8) Noam Chomsky : *Aspects* (Cambridge : M.I.T. , 1965), p. 3.

with which the physicist or the chemist works; it is what he must observe and study. To the transformationalist, this is both a bad analogy and a misunderstanding of natural science. The transformationalist is likely to use the corpus as a kind of checklist, to remind him of structures he might otherwise overlook, and perhaps as a source of fresh examples. But if he is himself a speaker of the language he proposes to grammarize, he doesn't generally need the corpus to tell him what are sentences of the language and what are not. He doesn't need to find "John bought a car" in a text or on a tape to learn that it is a grammatical English sentence. Furthermore, any corpus, no matter how large, will not necessarily contain all the simple-sentence types necessary to the description. One might read a hundred thousand books and never come across the particular sentence "John bought a car." To plod laboriously through texts looking for sentences that one can easily think up in one's study strikes the transformationalist as a peculiar way to go about the job. Finally, as has already been stated, the transformationalist does not equate grammaticality with possibility of occurrence. Much of what occurs in corpora, particularly in recordings of speech, is ungrammatical and therefore irrelevant to the making of the grammar.

Neither does the transformationalist conceive of the grammarian's task as principally one of classification and the making of inventories of structures.⁹⁾ This also seems so him based on a misconception of the nature of natural science. The advances in physics and chemistry are not made chiefly by a direct attack on raw material, by observing rocks and boiling things in test tubes. Rather they are made by getting insights into the hidden nature of things. So in grammar, the problem is to come to an understanding of the often deeply buried mechanisms that make languages viable. Classification doesn't in itself lead to any such understanding. If classification is itself the goal, it is difficult to show that one classification is better than another. Noun modifiers, for example, might be classified in any number of ways, all defensible. It is only when a classification is forced by the whole system that it becomes important.

9) Bruce L. Liles, *An Introductory transformational grammar* (New Jersey: Prentice-Hall, Inc., 1971), p.5.

Structural grammarians have commonly objected to the traditional practice of speaking of certain structures as deriving from others. They have felt any utterance should be taken by itself and not explained in terms of some other utterance. Thus they have rejected explanations which say that in the sentence "close the door" the subject is you "understood" or that "This is John's car" is short for "This car is John's car." On this point transformationalists side with traditionalists. It is not that they believe that speakers who say "Close the door" in some literal way "understand" you or that when we say "This is John's car," we first formulate the sentence "This car is John's car" and then consciously delete the first car. It is rather that the task of explaining how languages operate demands that we find in their sentences as much relationship, and therefore as much simplicity, as possible. It is clearly more economical to describe the transitive verb system in English and then give the rule for making any sentence with a transitive verb passive than it is to describe the system for active sentences and then to describe it all over again for passives.

We suppose that this bears on the way languages are learned and used. It is obvious that we don't learn our language by hearing sentences, storing them, and then speaking them when the occasion arises. The number of sentences that any speaker of a language is capable of using is enormously greater than could conceivably be learned and stored. Most of the sentences that we speak and write are new sentences, ones that never occurred before. Yet we use them with the confidence that they will be understood and accepted as English sentences. It is highly improbable that any sentence on this page ever occurred before, but presumably anyone who knows English will accept these sentences and understand them. The explanation must be that we are operating not with a particular collection of sentences but with a system for generating sentences, and it must be further true that this system is a closely relational one.¹⁰⁾ To discover and express these relationships is the central task of the grammarian, as the transformationalist sees it.

The structural linguists have often put a good deal of weight upon frequency of occurrence. This emphasis reflected in books for teaching foreign languages, which

10) Chomsky : *Aspects*, pp.60-61.

often begin by explaining the structure of questions and responses, instead of dealing with simple declarative sentences in the old-fashioned way. The argument is that learners can make more use of "Does John speak English?" than he can of "The grass is green" or "Babies cry." Here again the transformationalist is old-fashioned. He would agree of course that "Babies cry" has a frequency of nearly zero. One almost never has occasion to say it. Nevertheless it is undoubtedly a great deal simpler, much closer to the heart of the grammar, than its more likely derivatives, like "I hate to hear babies cry" or "The crying of the baby kept us awake." The sentence types that are likely to occur are for the most part transforms, structures of considerable complexity. If we begin with them and ignore the simpler (though less likely) sentences that make them up, we will simply be unable to attain to any understanding of the grammar.¹¹⁾

This explains one feature of this text that may puzzle its users and perhaps annoy them. About two thirds of it deals with apparently very simple constructions, ones in which no speaker of English is ever likely to err. But there is no way to skip or hurry over this. This is heart of English syntax, the stuff with which all our complicated sentences are built. If one wishes to understand the complicated sentences are built. If one wishes to understand the complicated sentences, where ungrammaticality is likely to occur, one must begin by understanding the components. It will be seen that with this base it is relatively easy to deal, in the last part of the text, with a wide range of sentence types, including many that give trouble to inexperienced writers

Until as recently as a decade ago it appeared- that a major breakthrough had occurred in teaching foreign languages. In vogue was a method variously described as the Aural-Oral, Audiolingual, or even Linguistic Method, a method that derived much of its novelty from the discipline of linguistics. It appeared to many linguists that language was speech, that speech preceded writing in various ways, that the contrastive systems of phonology and grammar could be described with considerable accuracy and that knowledge of language as a system for conveying meanings was somehow more important than knowledge of the

11) Ibid, pp.37-38.

meanings themselves. Allied to certain ideas in learning theory, such as habit formation and interference, and to notions of programing or sequencing of materials, this linguistic knowledge seemed to promise a new era in language teaching. In such teaching emphasis was to be placed on teaching the spoken language, on teaching a language as a system, on establishing this system as a set of habits, and on reducing the learning burden by teaching only those features of the language that contrasted with those of the first language.

In 1957, the publication of *Syntactic Structures* by Noam Chomsky (Yhr Hague: Mouton) revolutionized linguistics. In this book Chomsky called into question the basic tenets of the discipline of linguistics, outlined a set of new assumptoins, and formulated an entirely new set of questions for the discipline to address itself to. It is impossible to understand current irsues in teaching English to speakers of other languages without having some under standing of the generative-transformational theory associated with_chomsky.

Generative- transformational theory stresses the creative, rule- governed nature of the linguistic knowledge of a native speaker and attempts to set up criteria by which various models of this knowledge may be evaluated. These models have been called competence models in that they are concerned with ideal linguistic behavior in an ideal setting. They are not_concerned with performance, that is, with actual linguistic behavior, nor are they concerned with psychological processes. Linguistic competence is said to underlie linguistic performance and to explain part of that performance: grammars themselves are not to be taken as performance models. These notions competence and performance are discussed by chomsky.¹²⁾

The models express a different relationship of sounds to meanings from the models used by structural linguists. No longer are phonological, grammatical and semantic sytems discussed as though they were independent of each other.¹³⁾ Instead, either syntax or semantics is made central and the other two components (semantics and phonology or syntax and phonology) are made subordinate. Linguists use these models in an attempt to explain how a speaker concurrently

12) Chomsky : *In language and mind* (New York : Harcourt Brace & World, 1965)

13) Chomsky : *Aspects*, pp.84-86.

decides the content of what he wants to say and then produces that content in some kind of substance. The structural description of the content is sometimes called the deep structure and that of the substance the surface structure; however, there are no precise definitions of what either of these terms means, how the levels which they denote may be distinguished (if indeed they exist), and how deep structures through transformational processes.

It is possible to illustrate some of the difficulties that arise in teaching English to speakers of other languages by reference to certain specific problems in syntax, phonology, and meaning. The problems that follow are discussed in a linguistic framework only it should be noted that the various linguistic insights that emerge do not determine any particular teaching method or methods. Too often in the past the assumption has been made that a linguistic technique could be made into a pedagogical technique (for example, the "minimal pair" technique) or that apparent insights into linguistic structure achieved by linguists should be communicated rather directly to learners. In the discussion that follows, linguistic insights are separated from pedagogical concerns of one kind or another,

Generative-transformationalists have stressed the importance of relationships between sets of sentences such as those represented in the pairs 1-2, 3-4, 5-6, 7-8, and 9-10:

1. The boy chased the dog.
2. The dog was chased by the boy.
3. the boy came. the boy is little.
4. The little boy came.
5. I asked Tom something. Tom wanted something
6. I asked Tom what he wanted.
7. Someone opened the door.
8. The door opened.
9. You will eat your dinner.
10. Eat your dinner !

There is some good theoretical reason in each case to claim a "primacy" for the odd-numbered member(s) of each pair over the even-numbered member, because the former may be said to underlie the latter in some way, though the ways are

somewhat different in each case. In the same way, 11 may be said to be more basic than 12, even though 12 is more likely to be heard than 11:

11. where are you going? I am going to the library.
12. where you going? To the library.

Generative-transformationalists have also stressed the importance of ambiguous sentences such as 13 and 14:

- Bo They have discarded clothes.
14. Girl Hunter Says Father Sets Example.

This insist that an adequate grammar must have devices for resolving the ambiguity of such sentences, so that 13 can be interpreted as a statement about either social workers or nudists and 14 as a newspaper headline about either the daughter of a hunter or the playboy son of a playboy father. They also point out that sentences 15-17 are identical in certain aspects of surface arrangement but basically are rather different, as shown by both the possible and impossible and impossible paraphrases which are indicated in 18-20:

15. The boy is easy to please.
16. The boy is eager to please.
17. The boy is certain to please.
18. It is easy/eager/certain to please the boy.
19. The boy is eager/easy certain. He intends to please Someone.
20. It is certan/easy/eager/the boy will please.

In phonology, linguists have concerned themselves with such problems as the nature of the relationship of the stop consonants within 21 and of the vowels within 22:

21. pin bin spin
22. bit beet beer

Concern with such phenomena is not new in linguistics but the proposed solutions to phonological problems in terms of ordered rules and distinctive features are new. Likewise, there is a concern for the phonological rules which are required to establish relationships not between vowel pairs such as those in 23 but between vowel

airs such as those in 24:

23. beet and bit; bait and bet; boot and good

24. meter and metric, sane and sanity; phone and phonic; type and typical

There certainly phonetic relationship between there are pairs in 23, but there are said to be more important phonological relationships between the related words in the pairs in 24.

In semantics, the concern is with such matters as the acceptability or grammaticality of sentences such as 25-28:

25. The tree barked.

26. Our pet goldfish passed away yesterday.

27. John is as sad as the movie I saw.

28. Be intelligent!

These sentences have a variety of semantic and syntactic problems associated with them, some of which only now are linguists and philosophers beginning to tackle.

It is apparent, then, that today there are available insights into the English language that were not available only a few years ago. These insights are generated by the theory of generative-transformational grammar itself. In a sense they are the artifacts of that theory and are correct only in the sense that they conform to the requirements of the theory. But, it may well be that theories themselves are neither correct nor incorrect; theories are more interesting or less interesting, rather than correct or incorrect. They are more or less interesting because of the questions they raise and the answers they suggest for these questions. Unless they continue to raise questions and provide insights, they become shopworn and value-less,

What is available to language teachers today from linguistics then are new insights into language, but insights which are theoretical artifacts at the same time. They cannot, however, be ignored, but must somehow be incorporated into teaching. The sets of sentences 1-10 probably suggest a new principle of gradation, that is of ordering structures from simple to complex. However, sentences 11 and 12 suggest that the criterion of frequency of usage demands that 12 be taught rather

than 11, except, of course, one must assume that if the theory is in some sense "correct", an understanding of 12 presupposes a knowledge of 11. However, while ambiguity is an important aspect of language and must be accounted for, it is interesting to note that most sentences are not ambiguous. Sentences 15-20 again alert us to ambiguity and the collapsing of many "deep" structures into but a few "surface" structures; however, one cannot help but wonder whether some of the solutions linguists propose are pseudo-grammatical in nature. The phonological examples in 21-24 remind us that both competence and performance are important. Sentences 25-28 suggest that we never forget we are teaching the language to human beings who have lived and who have brains, and not to mindless machines in dark basements.

Generative-transformational grammar provides language teachers with new insights into language. For example, no one can read English Transformational Grammar by R. A. Jacobs and P. S. Rosenbaum without being¹⁴⁾ impressed by the insights into English structure that it contains. However, neither the grammar nor existing descriptions give teachers any way of teaching these insights nor do they provide any way of assigning a truth value to the insights on an absolute scale, apparent claims to the contrary notwithstanding. The grammar does provide a new metalanguage,¹⁵⁾ a new zest, and new possibilities. However, the first two are no substitute for the last and very little has been done so far to exploit the last. Some such exploitation of possibilities is necessary. At the moment there is a great deal of speculation ranging across the whole scale of possibility, but little actual experimentation has been done. What claims for success there are for what has been done appear to be more colored by the newness and zest just mentioned, that is, by the wellknown Hawthorne effect, rather than by any intrinsic value. Chomsky himself has expressed skepticism about the immediate usefulness to language pedagogy of the linguistic theory associated with him.¹⁶⁾

Rigorous experimentation is required in deriving principles of gradation in both

14) Rodevick A. Jacobs, Peters, Rosembaum(Massachusetts; Blaisdell Publishing Company, 1968)

15) a mentalanguage is a kind of tool language with which another language is explained.

16) "Linguistic theory" northeast conference on the tracking of foreign language, 1:63 Reports of true working committee, pp.43-49.

syntax and phonology; serious study is demanded of the possibilities of using generative-transformational theory in contrastive analysis; urgent clarification is required of the still muddy concepts of competence and performance; and careful documentation is essential in the area of putative linguistic universals. The time has come for the serious work of consolidation if generative-transformational theory is to have some widespread and lasting influence in teaching English as a second language

4. Transformational grammar and Language Acquisition

In the formation of humanity, the indispensable relation between the innate potentiality and the external environment is required as education consists of the internal cultivation and the external enlightenment and the dialectic congregation. Namely, the three great elements of humanity are education, innate potentiality and the external environment. Chomsky renders a linguistic explanation upon the human innate linguistic potentiality as a creative property. According to him, a human child is born with the innate linguistic device with which he can lead a creative life of language, differently from other animals. Accordingly, language is a human species specific.

The linguistic education, whether of a native language or a foreign language, should therefore be conducted in the way that such a creative human property may be ignited to match the external stimulus according to the innate linguistic rules. The efficient way of language acquisition concerns two large questions of "How?" and "what?". The first question is how language learning should be conducted, and it is not confined to the linguistic theory but it must be studied in the field of general learning process of psychology. But the second question is strictly limited to the linguistic proper. After Bloomfield, linguistics has made a great progress in the practical application of language learning theory as well as in the general theoretical aspects of language.

The empirical linguists such as Bloomfield and Sapir maintain that language learning

is possible only through memory, imitation, repetition and analogy. Their methodology of language learning is based on pattern-drill which they regard as the only and best way of learning a language. On the other hand, the rationalists led by Chomsky claim that human verbal behavior is not a habitual behavior for communication acquired by conditioning process but a cognitive behavior accomplished by the ignition of the innate language acquisition device.

Diller made a methodological division for language learning: imitation, memory and pattern drill; Francois Gouen's successive teaching; and Berlitz and De Anag's direct teaching.¹⁷⁾ The triple division presupposes the linguistic universality on which any theory of language learning should be based. The study of language universals would be the backbone of the language learning theory. In the exploration of language universals, Chomsky proposes the so-called deep structures underlying the base of any language. In other words, the deep structure is a kind of universal structure common to all human languages. This discovery enables the linguist to investigate more confidently the human language universality, which in turn, will contribute to the language education. According to the Chomskyan linguistic theory, the acceptance of the linguistic universality presupposes that language is a human species specific and man has such a universal innate linguistic device.

The language acquisition device plays two roles in Chomskyan theory: first, it accounts for the striking similarities among human languages, even those which, as far as is known, are historically and geographically unrelated.

The second role of the language acquisition device is in accounting for the speed, ease and regularity with which children learn their first language which, as we have seen, decreases rapidly after the child reach adolescence. Moreover, the fact that all the children learning a given language seem to pass through the same regular stages in their acquisition might also be explained on the assumption that children possess an innate theory of language of the form Chomsky outlines.¹⁸⁾

17) Karl Conrad Diller : Generative grammar, structural linguistics, and language teaching (U.S.A. : Harvard University Press, 1977) p.51.

18) Neil Smith, Wilson, *Moderu linguistics* (Pelican Books, 1979), pp.250-251.

Within this framework, then, it is 'natural to look for language universals. The language acquisition device would guarantee their existence, by ensuring that the only learnable languages would conform to innately determined principles. Moreover, the language acquisition device would itself be a theory of language universals, equipping the children with information about the form and content of grammars in terms of which he could organize the linguistic data he encountered. What would a universal grammar actually contain? The answer is a word: competence. The mystery about the great linguistic competence given only to the human species will be likely to be given answer sooner or later.

Following Chomsky's most recent work, we might divide linguistic universals into two types: formal and functional. As their name indicates, formal universals specify the form of rules in a grammar, the vocabulary in which they are stated, the way in which they interact; functional universals apply to the actual linguistic data they are designed to describe. The formal universals, for example, might define a class of phonological distinctive features, such as \pm nasal, \pm voice, \pm coronal, which the phonological rules may refer to.

It will be recalled that the functional universals are those that state how the grammar fits the data: how the particular rules of the grammar apply in the analysis of any given sentence. So, for example, we might know how to formulate the rule of passive for English, but be in doubt about whether, how or where to apply it in the derivation of a particular transitive sentence. Any universal which prescribed the functioning of grammatical rules in the analysis of a given sentence would be a functional universal in Chomsky's sense.¹⁹⁾

Then what result has such a linguistic universality brought in the language education?

Firstly, the more linguistic universal elements are discovered, the more easily is the language education conducted. It is obvious that the child's quickest and complete learning of his native language accounts for the linguistic universality which arranges the natural systemization of the particular language according to the universal linguistic rules.

19) Ibid, 254.

Secondly, the language universals will help to make the grammatical description of the world languages more complete and simpler. The discovery of as many linguistic universals as possible will contribute to the simplification of the grammatical description a particular language by the omission of the linguistic universals constituting the underlying structures of the language from the grammatical description. The grammatical description of a particular language will be no more than the description of the specific elements peculiar to the language, and a kind of human language grammar will deal with the language universals. Chomsky enumerates some language universals: (1) all the human language consist of the syntactic component, the semantic component and the phonological component; (2) they have transformational rules; (3) the distinctive features of the phonological component are common to them; (4) they categorize the sentential constituents; (5) they have vowels and consonant.

Thus, Chomsky and his followers claim that language consist of deep structures and surface structures and that deep structures common to all human languages and that surface structures are peculiar to particular languages. According to them, by this dualistic division of language, more precise and efficient method of languages education can be found. Diller expresses his view on the rationalistic approach to language education as follows:

Since the late 1950's an increasingly large number of linguists have followed Ncam Chomsky and other generative grammarians in rejecting the empiricist approach to language learning in favor of a sophisticated revival of the rationalist approach. Generative grammarians themselves have not yet established themselves in the language teaching profession to the extent that the structuralists have, but rationalist-based "direct methods" similar to those of Berlitz and de Sauze are undergoing a spirited revival in this new linguistic climate.

Let us organize our discussion of the rationalist approach around our propositions:

- 1) A living language is characterized by rulegoverned creativity.
- 2) The rules of grammar are psychologically real.
- 3) Man is uniquely built to learn languages.
- 4) A living language is a language in which we can think.²⁰⁾

20) Karl Conrad Diller: Generative grammar, structural linguistics, and language teaching (U.S.A. : Harvard University Press, 1971), p.21.

The above-mentioned four propositions can be expanded as follows: (1) creative power of generating an infinite number of sentences; (2) refilling ability for deleted or omitted parts of a sentence; (3) understanding ambiguous parts of a sentence; (4) understanding synonymous parts of a sentence; (5) child's innate development of linguistic competence; (6) human monopoly of language; (7) uniformity of language learning. Chomsky emphasizes the following four conditions of grammar for language learning; systematization of grammatical rules, symbolized formality of grammatical rules, explicitness of grammatical rules and simplicity of grammatical rules.

What can be thought to be the Chomskyan contribution to linguistics is that he makes a dualistic division of language in two points: linguistic competence and performance, and deep structures and surface structures. This division may well be made the best use of language education.

A great deal of effort has been expended in the attempt to demonstrate the potential contributions of the field of descriptive linguistics to the teaching of second languages and, since the theory of transformational grammar has become the dominant theory in the field of linguistics, it is not surprising that applied linguists have sought to apply transformational grammar to gain new insights into the teaching of second languages. It will be claimed in this paper that it is a mistake to look to transformational grammar or any other theory of linguistic description to provide the theoretical basis for either second language pedagogy or a theory of language acquisition. That is, what is needed in the field of language teaching are not applied linguists but rather applied psychologists.

The primary goal of the language teacher is to instill in the student abilities in the production and comprehension of the target language which are comparable to those of the native speaker. Before adequate methods of language pedagogy can be developed, textbook writers and teachers will have to have access to a theory of human language acquisition and an understanding of the psychological representation of linguistic knowledge in the mind. Anything less puts the teacher in the position of merely presenting data to the student in a hit and miss fashion with no principled basis for deciding what it is that should be taught, the order of presentation, or how to give

adequate explanations. Many scholars view transformational grammar as an attempt to represent the structure of linguistic knowledge in the mind and seek to apply transformational descriptions of languages directly to the development of second language teaching materials. If it is true that transformational grammar is a cognitive theory of language which is intended to make claims regarding the psychological representation of knowledge, then applied linguists who base their teaching materials on transformational grammar may feel that they are on the right track. If, however, transformational grammar makes no psychological claims, then just what is its status and what does it have to say to the language teacher?

When we consider people's ability to acquire, store, and use language and ask what kind of theory would "explain" or "characterize" human linguistic competence, we realize that there are at least three approaches open to us. These three approaches correspond to three "levels" of theories which may be constructed to describe human behavior. First, we may be concerned with a neurophysiological, biochemical description of the actual physical processes involved in language. Meaningful statements on this level are certainly far off in the future and it is not obvious that neurophysiology will contribute anything to the language teacher. Secondly, our goals may be in the field of descriptive linguistics and lead us to formal descriptions of languages and a theory of linguistic description. Thirdly, we may be concerned with developing a cognitive theory of language within the field of psycholinguistics. It is only the latter type of theory which could be utilized in the development of a theory of language acquisition. This is true because theories of linguistic description are concerned with the abstract or logical structure of languages and consider a language as an autonomous system isolated from the psychological processes which result in the acquisition, storage, and use of linguistic knowledge. Theories of linguistic description claim nothing regarding the way in which the knowledge of language processes and data is structured and stored in the mind (what might be called a theory of linguistic competence) or how a person acquires and utilizes these cognitive structures in producing or understanding sentences (that is, linguistic performance). Both theories of competence and theories of performance as defined here are beyond the goals of descriptive linguistics if we restrict these goals to the description of the abstract structure of linguistic utterances. No

attempt is made to integrate theories of linguistic description with the concerns of psychologists interested in constructing models of other cognitive processes such as problem solving, perception, long and short-term memory, concepts and concept formation. Of course, descriptive linguistics has validity as a field of scientific endeavor but it should not be confused with the attempt to understand human language as a psychological phenomenon. The viewpoint of a cognitive theory of language must be psychological, that is, it should be concerned with describing people rather than describing languages. In addition, there must be at least some indication of how such a theory might be integrated with other cognitive functions and the models which have been proposed to explain them.

Chomsky and other transformational grammarians have contributed a great deal to for example, our understanding of language and language pedagogy, by pointing out the vacuity of behavioral psychology and the uses to which it has been put in language teaching. However, an examination of recent second language textbooks shows just how little of any consequence has been contributed by the theory of transformational grammar itself to the development of teaching materials. Once we get beyond the superficial misapplications of terminology (e.g., talking about "two surface structures being derived by transformational rule from a common deep structure" when it is merely meant that two sentences are related in meaning), we see that the formal structures and categories defined in a transformational grammar have not been put to pedagogical advantage in second language teaching²¹⁾ (Lamendella 1969b). Moreover, theories of linguistic description are relevant to language teaching only to the extent they form part of the data which psycholinguists may use in constructing a cognitive theory of language. It is this theory which may properly be utilized as the theoretical basis for second language pedagogy.

21) Lamendellar, John T. 1969b *Review of Modern English*, by W. E. Ruthertford. *Language Learning* 19. 1 & 2, 147-160.

Conclusion

It should seem obvious that the history of foreign language teaching did not have a linear development. We do not have a situation in which the faults of one method were corrected by a new method, each one superseding the last. Rather, we have two separate history. The great theoretical division between linguistics---the empiricist vs. the rationalist---also divides the language teaching methodologies. Teachers on the one side include Jespersen, Palmer, and the other European linguists of the "reform method," along with Bloomfield and his following of American descriptive linguists---all having an "empiricist" or "behaviorist" theory of language acquisition. On the side we have Francois Goin, M berlitz, de Sauze, and many other traditional grammarians with a "rationalist" theory of language acquisition very similar to that of Chomsky's transformational generative grammar.

I have dealt with transformational grammar based on "Rationalism and language learning on this study, also Chomsky's language acquisition.

One of Chomsky's main contributions to the study of linguistic universals have been to make the search of a universal theory of language respectable. The language acquisition device plays two roles in Chomskyan theory. Following Chomsky's most recent work, we might divide linguistic universals into two types: formal and functional.

As for "Rationalism" I have largely confined my concern to the concepts of language creativity distinguished from animal mechanical communication, and the dichotomy of linguistic phenomena into competence vs. performance and deep structure vs. surface structure. What I regard as the strong points of the transformational approach to the language learning over the structuralistic stimulus-response mechanism is that the transformationalist accepts the linguistic universality as the most striking phenomena of language and that language is peculiar to the human species, which presupposes that animalistic conditioning has nothing to do with the human creative verbal behavior.

This study constitutes nothing more than a suggestive attempt to prove that language is a human species specific such that the human verbal behavior cannot be studied without taking into account the human cognitive nature connected with the innate language acquisition device. My hope is that further and more serious study of this suggestion will bring about a truly new contribution to linguistic and language-learning theories.

이성주의에 입각한 언어학습

梁 宇 鎭

1950년대 후반 이래로 점점 많은 언어학자들이 지금까지 언어학습이 경험주의에 입각해서 행하여 졌던 방법을 물리치고 여러가지 형태로 되살아난 이성주의적 방법을 추구하는 Chomsky와 다른 변형—생성문법가들이 언어학습에 이성주의를 추구하게 되었다.

“베리츠” “테쓰쵸”등 이성 주의에 바탕을 둔 “직접교수법”이 새로운 언어사조에서 활발한 부활을 하고 있다.

언어는 “유심적 실재” “언어의 창조적 특성”이 인간에게 내재되어 있으므로 언어습득은 후천적이 아니고 선천적인 점에 있다고 주장하는 이성주의자들은 다음의 명제를 언어교육에 내세우고 있다.

- 1) 산언어는 규칙에 지배된 창조성이 특징이 있다.
- 2) 문법규칙은 심리적으로 실존한다.
- 3) 인간만이 유일하게 언어를 배우게 되어 있다.
- 4) 산언어는 그 언어로 우리가 생각할 수 있는 언어이다.
- 5) 인간은 보편적 특성으로 나타난 언어의 보편성의 기초가 되는 체제에 더욱 관심이 깊고
- 6) 화자의 언어응용에 있어서나 혹은 말을 사용하는 실재에 있어서 보다는 화자의 언어능력이나 언어에 대한 지식에 더욱 관심을 가지고 있다. 라고 하므로서 이성주의자들은 언어교육에 혁신적인 개혁을 이르기었던 것이다.

이에 본 논문은

- 1) 이성주의에 바탕을 둔 변형—생성문법이론에 대한 배경과 실재를 논하고
- 2) 언어의 내면구조와 표면구조, 언어학습에 있어서 어떻게 필요하며 화자의 언어능력과 언어 수행에 있어서 우리가 범하기 쉬운 문제점들을 예문을 들어 설명했으며
- 3) 이성주의에 바탕을 둔 언어의 보편성이 모국어 사용인 뿐만 아니라 외국어 학습에도 얼마나 중요한가를 다루어 언어습득 과정에 있어서 변형—생성이론의 중요성을 다루었다.