

DOCUMENT RESUME

ED 025 743

AL 001 586

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Toward Psycholinguistic Models of Language Instruction.

Pub Date Sep 68

Note-7p.

Available from- TESOL, School of Languages and Linguistics, Georgetown University, Washington, D.C. 20007 (Single copy \$1.50).

Journal Cit- TESOL Quarterly; v2 n3 Sep 1968

EDRS Price MF-\$0.25 HC-\$0.45

Descriptors- Contrastive Linguistics, *English (Second Language), *Language Instruction, Language Teachers, *Models, Pattern Drills (Language), *Psycholinguistics, *Teaching Techniques

The author suggests that the starting point of improved language teaching can be found in the language classroom itself and not in the theoretical considerations of the linguist or the theories of learning advocated by the psychologist. At the same time, however, both linguistics and psychology can be extremely useful to the language teacher, not because they furnish principles which can be extrapolated into the language-teaching situation, but because they are tools necessary for a meaningful analysis of the teaching process and of teaching experience. Elaborated upon is a simple example of the use of linguistic and psychological principles as tools of the analysis of the teaching process. A master teacher's performance in teaching contrast in English mass nouns vs. count nouns, and "want" vs. "hope" is observed and analyzed according to--(1) frame of reference, (2) reward of correct response, (3) use of a variety of stimuli, (4) gradual withdrawal of control stimuli, and (5) use of concept learning (grammatical explanation). Such analyses may provide a model that can be defined, studied, and replicated in other teaching situations. What is more important, the author feels, is that once the elements of the psycholinguistic model have been identified, the model itself can be made the subject of research; the teacher variable can be eliminated through using the model in programmed instruction. (AMM)

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Toward Psycholinguistic Models of Language Instruction

Robert L. Politzer

There is almost general agreement that principles of linguistics and psychology can and should be applied to language teaching. As a matter of fact the very name "applied linguistics" seems to imply that good language teaching consists to a large extent in knowing linguistic principles and the way in which they function in the language classroom. Just what is meant by linguistic principles or their application is subject to considerable controversy. Perhaps the least questioned or questionable application of linguistics is the contribution of contrastive analysis. Especially in the teaching of languages for which no considerable and systematic teaching experience is available, contrastive analysis can highlight and predict the difficulties of the pupil. Other applications of linguistic principles seem considerably more doubtful. Let us look at some principles: 1. Language is primarily a spoken phenomenon. Application: The teaching of speaking and listening should precede the teaching of reading or writing. Principle 2: Substitution in the same "slot" in a frame is a way of proving that elements belong to the same substitution class. Application: Exercises in which the pupil is asked to substitute language elements in the same slot will develop fluency in speaking as well as awareness of grammatical patterns. Principle 3: In making a description of morphological variants it is better to describe the larger form first and then the form derived from it. Application: In a language like French the feminine adjective form (e.g., /movez/) should be taught first and the masculine be derived from it (/move/ = /movez/ minus the consonant). Examples of such principles of "applied linguistics" could be multiplied quite easily. What they all have in common is that the application of the linguistic principle made in the classroom may, at best, be called reasonable—but has as such very little obvious scientific validity.

When it comes to the application of psychological principles to language teaching, the situation is not very different, unless we deal in such generalities as the necessity of rewarding correct responses. In many cases, the psychological principles cannot be applied unambiguously. Often principles clash with each other; for example, it is a well known psychological principle that it is difficult to tie a new response to an old stimulus. This principle argues quite neatly for not using orthography (reading, writing) in the initial stages of learning languages written in an alphabet which is familiar to the student from his native language. For the speaker of English, the new response French /R/ will be more difficult if it is tied to

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the familiar orthographic stimulus *r*. But there are other psychological principles that tell us that withholding visual presentation and the written word will make language acquisition more difficult for many students—especially those with visual modality preference. Which psychological principle takes precedence? Ultimately the answer must be found in practical experimentation and by the language teacher himself.

As far as the application of linguistic or psychological principles to language teaching is concerned we can thus conclude that there will always be considerable doubt as to what principles are to be applied and whether a specific application of principle is really valid. The very concept that application consists of extending theoretical principles to practical situations is an oversimplification which is in need of re-examination. For the concept does not take into account the simple fact that validation of the principle of applied linguistics must be derived not only from its linguistic soundness, but above all its practical success. For this reason we can very well argue that the starting point of improved language teaching can be found in the language classroom itself and not in the theoretical considerations of the linguist or the theories of learning advocated by the psychologist. [At the same time, however, both linguistics and psychology can be extremely useful to the language teacher, not because they furnish principles which can be extrapolated into the language-teaching situation, but because they are tools necessary for a meaningful analysis of the teaching process and of teaching experience.]

In elucidation of the above statements, I would like to elaborate on a simple example of the use of linguistic and psychological principles as tools of the analysis of the teaching process. Part of the normal training procedure for language teachers is to have the apprentice teacher watch the performance of an experienced master teacher. Let us follow an imaginary student teacher into the classroom and observe the master teacher's performance.

The master teacher is presenting a simple lesson on the use of count nouns vs. mass nouns. The lesson as such is not terribly unusual. It has been presented in this or in similar form by many teachers and can be found in various textbooks. The teacher is utilizing two charts: One chart shows pictures of *shaving lotion, tooth paste, ink, soap, bread, milk, butter*, etc. The other chart shows *cameras, wristwatches, toothbrushes, nail files, pens, pencils, apples, pears, cherries* etc.

The teacher points at objects on chart 2 and models the sentences: *This is an apple* (pointing at *one* apple!), *This is a pencil*, *This is a tooth brush*. After modelling these sentences, he elicits choral and then individual repetition. After the teacher is satisfied that the pattern, *This is a . . .* has been learned, he turns to chart 1: *This is ink; This is milk*, etc. Again choral and individual repetition follow.

Next, the teacher returns to chart 2. He makes sure that the class understands that he is referring not to a single object but to *all* the objects depicted within one square of the chart: *These are tooth brushes, These*

are apples, etc. After a sufficient number of repetitions, the teacher returns to chart 1. He circles the entire square showing *soap, bread, etc.*, but the sentences referring to *soap, bread, etc.* remain the same as before: *This is soap, This is bread.*

Now the teacher introduces these grammatical explanations. He puts the two contrasting patterns on the board:

This is <i>an</i> apple.	These are <i>apples</i> .
This is _____ butter.	_____

These are some nouns (count nouns) which take the indefinite article and which can be put into the plural. There are others (mass nouns) which do not take the indefinite article and which do not form plurals.

Our teacher returns to his charts. Pointing to the objects he asks questions: *Is this an apple? Is this milk?* The students reply with *Yes, this is an apple, or Yes, this is milk.* After this, the teacher keeps asking the same question—but doesn't point to the objects which he is naming: *Is this an apple? No this is not an apple; this is a pear. Is this milk? No, this is not milk; this is butter.* After several exchanges of this type, the teacher makes sure that the object to which he points is a mass noun whenever his question contains a count noun, (or *vice versa*). The result is that the student's answer must contrast the mass noun and the count noun pattern: *Is this an apple? No this is not an apple; this is milk. Is this milk? No this is not milk; these are apples.*

Next, the teacher reverts to simply asking *What's this?*—pointing either at a specific object or the whole square containing pictures of one type of object. The students reply, chorally, then individually: *This is milk, This is an apple, These are apples.* When our teacher decides to dispense with the question, *What's this?* and to elicit the responses: *This is a _____, These are _____, This is _____* by simply pointing to the pictures.

At the end of the lesson the teacher explains that we buy *cameras, wrist watches, nail files, pencils, tooth paste, etc.* in drugstores. We buy *butter, milk, apples, pears* in the grocery store. Of course, in *supermarkets*, we can buy not only *milk, butter, etc.* but also *toothpaste, pencils* (but not *cameras, wristwatches*). The final exercise consists of the teacher asking *What do we buy in the grocery store? (drugstore, supermarket).* Each student is free to choose his own answer, but it must include at least one count noun and one mass noun: e.g., *In the drugstore we buy soap and nail files.*

As we have stated before—this lesson is not terribly unusual. It is not meant to be a model in the sense that it is necessarily exemplary. What is of interest is the analysis of the underlying approach.

Linguistic Principles. The lesson was based on an obvious linguistic contrast in English, namely mass nouns vs. count nouns. We can also assume that it was based on a contrast between English and the native language of the pupil (e.g., If the native language of the pupil is Japanese or Russian, the use of any kind of article will be an entirely new phenomenon).

Psychological Principles.

a) **Frame of Reference.** It is generally assumed that new materials are learned better if they are introduced in relation to known materials or in relation to each other. A "multiple frame of reference" (relation to several facts) is presumably better than a single frame of reference. In the introduction of new language materials, the very nature of language itself can usually provide a triple frame of reference. A linguistic sign consists of a signifier and signified. The latter, the meaning of the linguistic sign, is the first and most obvious frame of reference that can be used. The signifier of the linguistic sign functions by virtue of its difference from other signifiers of the same system. This contrast of one signifier with another signifier (in the case of the model, indefinite article vs. zero and plural vs. no plural) provides the second natural frame of reference. The third frame of reference is provided by the contrast between the signifiers of the foreign language with those of the native language (in the case of the model lesson English *a* or zero vs. Japanese or Russian zero).

b) **Reward of Correct Response.** Throughout the lesson the teacher rewarded correct responses immediately by indicating approval. He attempted to avoid incorrect responses by modelling correct responses first and by having individual responses preceded by group response.

c) **Use of a Variety of Stimuli.** The teacher attempted to cue the same responses through more than one stimulus. He used repetition, questions, pictorial cues.

d) **Gradual Withdrawal of Control Stimuli ("Fading of Cues").** The teacher attempted not only to use several stimuli, but the stimuli were arranged in such a way that the responses came gradually under control of stimuli which were increasingly dissimilar from the response itself. There was a gradual progression from repetition, to questions partially similar to the response, to pictorial stimuli, and finally to questions like *What do we buy in the drugstore?* (completely dissimilar from the original stimulus as well as from the expected response).

e) **Use of Concept Learning (Grammatical Explanation).** The teacher gave a concise grammatical explanation after the frame of reference had been introduced. Evidently he felt that the likelihood of correct response would be increased if the students understood the grammatical principle underlying the material which they were practicing.

I want to emphasize again that the model lesson which we have just analyzed is not meant to be a "model" in the sense that it should be imitated by all and everyone because it presents *the* best way of teaching. But the analysis of the model lesson can furnish us a "model" that can be defined, studied, and replicated in other teaching situations. As an example, let us take a very different problem, namely the English construction *I want someone to do something*, and see how our model may be applied.

Linguistic Principles. In English, sentences of the type *I want it* and *I am here* may be combined into a sentence of the type *I want to be here*.

If the subject of the second sentence is different from that of the first (*I want it, Charles is here*), then it must be preserved as a noun or object pronoun: *I want Charles to be here. I want him to be here*. Sentences of the type *I hope (so) and I am here* may be combined quite similarly to *I want to and I am here: I hope to be here, I want to be here*. However if the subject of the second sentence is different from the subject of *hope*, the second sentence becomes a subordinate clause: *I hope that Charles is here* (as opposed to *I want Charles to be here*). In many languages (e.g., Spanish, French, German) the words corresponding to English *hope* or *want* follow the identical construction type. If the subjects of the actions governed by the words for *hope* or *want* are the same as the ones doing the hoping or wanting, a dependent infinitive is used (Spanish *Espero* or *Quiero trabajar* = *I hope to work, I want to work*). If the subjects of the dependent actions are different, a subordinate clause must be used in both cases: *Espero que trabaje* = *I hope that he will work; Quiero que trabaje* = *I want him to work*. The English construction *I want him to work* thus contrasts with another English construction, namely, *I hope that he will work*, as well as with the foreign (Spanish) construction which corresponds literally to something like **I want that he (will) work*.

Psychological Principles.

a) The frames of reference to be used are: (1) reference to reality (meaning); (2) the English contrast between the construction of *hope* (*I hope that he will work*) and *want* (*I want him to work*); (3) the contrast between the English pattern *I want him to* and the foreign construction **I want that he . . .*

b) Principles *b* through *e* as mentioned above are to be utilized in the lesson.

Lesson Plan:

The teacher introduces the following monologue:

Carlos is studying English. Why? Does he really want to study English? No, he does not want to study English. He is studying English because his uncle wants him to study English. And why does his uncle want him to study English? Because he hopes that Carlos will come to live with him in the United States.

The monologue is repeated several times. The teacher asks for choral and individual repetitions after each sentence. He then proceeds to ask questions about the material presented:

Does Carlos really want to study English? No, he does not really want to study English.

Why is he studying English? Because his uncle wants him to study English.

Does Carlos hope to come to live in the U.S.A.? No, he does not hope to come to live in the U.S.A.

Why does Carlos's uncle want him to study English? Because he hopes that Carlos will come to live in the U.S.A.

Then the teacher introduces another monologue:

Pedro is studying engineering. Why? Does he really want to study engineering? No, he does not want to study engineering. Pedro wants to become a teacher. He really hopes to become a teacher. Why is he studying engineering? His parents want him to study engineering. Why do they want him to study engineering? Because they hope that Pedro will be rich.

This monologue is utilized in the same way as the first. Individual and choral repetition is followed by choral and/or individual answers to such questions as:

Why is Pedro studying engineering?

Why do his parents want him to study engineering?

Yet another monologue introduces the story of Juan:

Juan is studying law. Does he really want to study law? No, he hopes to become a film star. But his father wants Juan to study law because he hopes that he will become his partner in his business.

After the monologue has been utilized for repetition and question-answer type exercises, the teacher puts the contrasting constructions on the board.

His uncle wants Carlos to study English.

His parents want Pedro to study engineering.

His father wants Juan to study law.

He hopes that he will live in the U.S.A.

They hope that he will become rich.

He hopes that he will become his partner.

Now the class can be led to the rule of generalization concerning the construction of *I want . . . to do* vs. the construction *I hope that . . .*

As a next step the teacher may organize a pattern drill. Questions like *Why is Carlos studying English?* or *Why is Pedro studying law?* are to be answered by *Because his uncle wants him to study English*, *Because his father wants him to become his partner*.

The next pattern drill is used to pull together and contrast the *hope* and *want* constructions:

Why does Carlos's uncle want him to study English? Because he hopes that he will come to live in the U.S.A.

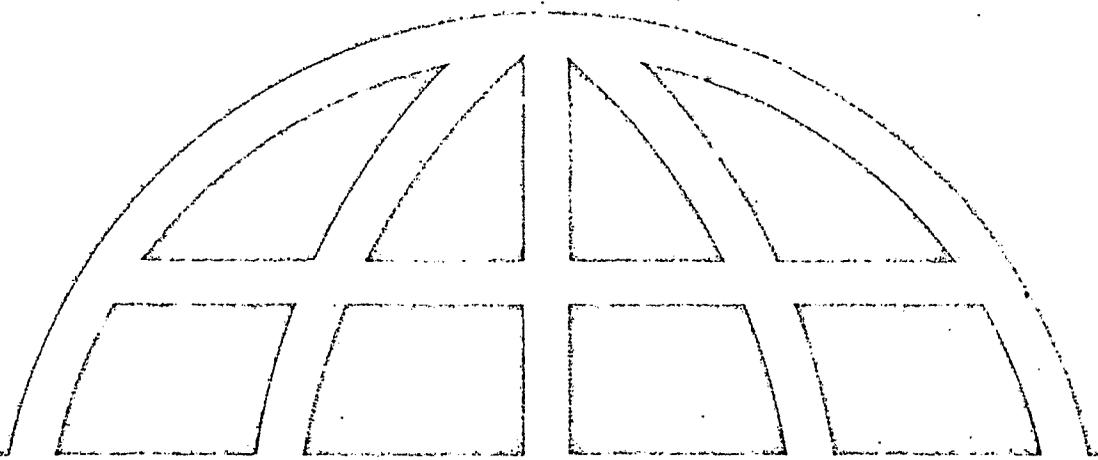
Why do Pedro's parents want him to study engineering? Because they hope that he will become rich.

After these drills, the lesson may continue with questions addressed to individual students: *Why are you studying English? Do you want to study English or do your parents want you to study English? Why do your parents want you to study English?* The students are told to answer truthfully, and to use the construction they have just learned. (*I want to, . . . wants me to . . ., . . . hopes that I*) in their answers.

In a final exercise the teacher may attempt to elicit these constructions through completely dissimilar stimuli. But the students are instructed that they must use *hope* or *want* in their answers: *Why are you in this class? (Because my parents want me to study English.) Why do you stay home in the evening? (Because my parents, my wife, etc. want me to stay home.) Why do you work so hard? (Because my parents, my wife, etc. want me to work hard.) Why? (Because they hope that I will earn a lot of money.)*

In conclusion I would like to repeat again that the model which we have just described and applied is not meant to illustrate the best possible application of the best possible linguistic and psychological principles. The construction of psycholinguistic models of language teaching has, however, two important advantages: (1) A good lesson taught by a good teacher remains an isolated example—perhaps to be imitated by those fortunate enough to be able to watch the performance. But a psycho-linguistic model based upon the performance can be taught, imitated, transferred to different teaching situations. Both of the “model” lessons described in this article are as a matter of fact based on similar lessons taken from a syllabus dealing with teacher training in French (R. L. Folitzer, *Practice Centered Teacher Training: French*, Stanford University, Center for Research and Development in Teaching, 1966). (2) What is even more important, once the elements of the psycho-linguistic model have been identified, the model itself can be made the subject of research: The teacher variable can be eliminated through using the model in programmed instruction. Individual components of the model can be used as independent variables in educational research, for the creation of scientific principles of language teaching does not depend on the speculative application of linguistic and psychological principles to the teaching situation, but on the establishment of scientifically validated optimal models of language teaching. As language teachers we should learn that the disciplines of linguistics and psychology will *not* furnish the answers to our questions—but they do provide the tools for asking them.

EDU 25743



TESOL

Teachers of English to Speakers of Other Languages

QUARTERLY

Volume 2

September, 1968

Number 3

AL 001 586

TESOL QUARTERLY

A Journal for Teachers of English to Speakers of Other Languages

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TESOL QUARTERLY is published in March, June, September, and December.
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