

# ERROR ANALYSIS AND TRANSFORMATIONAL LINGUISTICS

JAMES W. NEY  
Arizona State University

Recently, teachers of writing have shown an interest in a method of study that language teachers have been using now for some time. That method of study is error analysis, a device that has been used by teachers informally for some time but which has received serious attention from linguists and language teaching methodologists only recently. That this should be the case is paradoxical for a number of reasons that can be found in the recent history of linguistics and language teaching.

At least from the publication of Bloomfield's book, *Language* (1933), to the release of Chomsky's work, *Syntactic Structures* (1957), structuralism in linguistics held sway as the dominant theory of linguistics in America. Many different constructs could be listed as being crucial to these approaches to language analysis. Those, however, which are relevant would include the following:

- (1) Structuralism as a theory of language produced grammars that were taxonomic in nature.
- (2) Structuralism as a theory of language required the collection of data in a corpus.
- (3) Structuralism required the formulation of a theory with the use of inductive discovery procedures.
- (4) Structuralism as a theory of language was associated with behavioral psychology.

The first three of these constructs, (1) to (3), have as their base the objections that Chomsky and his followers made about structuralism as they succeeded in overthrowing this school as the dominant one in linguistics in America. The obverse of these constructs led to the formulation of corresponding constructs which have become the foundation of transformationalism as a theory of linguistics. They include the following:

- (5) Transformationalism as a theory of linguistics produces grammars that are generative in nature.
- (6) Transformationalism as a theory relies on attempts to tap native speaker intuition as primary data.
- (7) Transformationalism as a theory usually operates from rigorous hypothetico-deductive systems.
- (8) Transformationalism as a theory of language is associated with cognitive psychology.

Since the structuralists also believed that languages differed largely from each other, when structuralism as a theory was applied to language teaching, linguists compared one language to another using what was known as the contrastive analysis hypothesis (CAH). In short, structural linguists occupied themselves largely in determining how languages differed from one another. Joos (1957:228) actually stated: "... languages can differ without limits as to either extent or direction." On the other hand, since transformational linguists believed that all languages on a level of abstraction known as 'deep structure' are the same, transformational linguists have occupied themselves largely in trying to determine in what respect all languages are the same.

There has been and there continues to be disagreement on whether the characteristics of transformational grammar suggested in (5) through (8) are necessarily the proper characteristics of linguistic theory or whether they are peculiar to transformational grammar. Michael Halliday (personal communication) has suggested that all grammars are generative in nature insofar as they all attempt to provide for the production (or generation) of sentences not described in a corpus. It would also appear to this observer that all grammars are also taxonomic in some respects. Chomsky (1957:111) produced a taxonomy when he wrote the following rules:

N → man, ball, etc.

...

V → hit, take, walk, read, etc.

...

M → will, can, may, shall, must

But the point remains that the characteristics of transformational grammar listed in (5) through (8) are generally regarded as defining characteristics for the theory.

The preceding discussion has been brought to this point for one reason: Error analysis possesses all the characteristics of structuralism in points (1) to (3) and none of the characteristics of transformationalism in points (5) through (8).

- (9) Error analysis is taxonomic in nature.
- (10) Error analysis creates theories by induction.
- (11) Error analysis relies on the use of a corpus for its data.

(There is some question on whether all attempts at building theory from error analysis are inductive. Freeman sees the error analysis of E.D. Hirsch Jr. as deductive but the error analysis of Shaughnessy as inductive (1979:143). Freeman prefers the latter.)

In the early days of transformational linguistics, Chomsky (1962:125) attacked both the inductive procedures of structural theory and the taxonomic grammars which it produced in the following terms:

Neither the conception of a grammar as an inventory of elements nor the requirement that there be a discovery procedure for elements of the inventory is very easy to justify. A grammar of a language should at least be expected to offer a characterization of the set of objects that are the sentences of this language, i.e. to enable its user to construct a list or enumeration of these utterances. It is not at all clear how an inventory of elements provides this information...

(In Piatelli-Palmarini, there is a good discussion of the limits of induction for theory building, especially Chapter 12, "The Inductivist Fallacy," pp. 255-276.) In short, Chomsky called for the creation of grammars with rules that could be used to describe how speakers of a language generate the infinite number of sentences in a language. Hence, the name generative grammar. Furthermore, it might be pointed out that the fact that a particular theory is taxonomic in nature has been used to denigrate that theory quite recently (Dougherty, 1974:279).

Of particular interest is point (3), the use of a corpus for the provision of data for linguistic analysis. Chomsky (1962:159) has objected to the use of a corpus because "...The corpus, if natural, will be so wildly skewed that the description (of language from it) would be no more than a list." He has also said:

It is no trick to predict the structure of sentences which have already been uttered. To do so would be like a physicist's limiting his predictions to the experiments he has already performed. ...I don't see how anyone who has ever thought about this problem would be content merely to describe a corpus (Chomsky, 1962:159-160).

Chomsky's argument is essentially this: The set of sentences in a language is theoretically infinite. Studying a corpus is not going to reveal much of interest in how the infinite set of sentences in a language is going to be generated. In short, studying a corpus is not going to tell anyone much about the language possessed by an individual. So the problem with a corpus is this: It doesn't reveal much about the linguistic ability of the individuals who are represented by the words in a corpus.

The question could then be raised whether this theoretically based objection has turned out to be true in practice. The answer to that question is affirmative. Schachter (1974), working with Asian, Arabic and Persian students learning English as a second language, discovered what has been subsequently labelled the avoidance phenomenon. In her study, contrastive analysis led her to believe that the Chinese and Japanese students would have more trouble with writing relative clauses than the students of Persian and Arabic background since the Asian languages do not have relative clauses. Persian and Arabic have relative clauses, although the form and function of relative clauses in Persian and Arabic is slightly different from the form and function of the same structure in English. She found out that the Asian students made fewer errors than the Arabic and Persian students in the writing of relative clauses. They simply avoided writing the relative clauses. In effect, she empirically demonstrated the objections to a corpus raised by Chomsky — a corpus simply does not demonstrate the extent of the linguistic ability (or inability) possessed by individuals. Her conclusion from this was stated succinctly at a later time. In the words of Schachter and Celce-Murcia:

For classroom purposes particularly, it is as important to know what the learner *won't* do, and why, as it is to know what he will do, and why. The most comprehensive EA (error analysis) will only provide evidence on the latter, not the former (1977:447).

Thus error analysis is deficient in both the positive and negative senses. It does not demonstrate either the control of certain aspects of language by the subjects studied or their lack of control of these aspects of language in its entirety. It shows only part of the control.

In a practical sense, this is also true because proponents of error analysis actually discard some of the evidence that is available to them. They look at only the errors that students make. They do not try to look at those aspects of language that students control. Schachter and Celce-Murcia describe this difficulty with error analysis in the following terms:

The first step in an error analysis is the extraction of errors from the corpus. In many cases the corpus is then excluded from further consideration... This seemingly innocuous move (abandoning the corpus) provides what some consider to be the most devastating criticism of the whole EA (error analysis) enterprise. To consider only what the learner produces in error and to exclude from consideration the learner's non-errors is tantamount to describing a code of manners on the basis of the observed breaches of the code (1977:445).

Thus, error analysis cannot rationally be used for the basis of a pedagogical grammar or for the basis of an instructional program. It looks at only part of what the students produce; it does not view their entire production.

As a result, the objections to error analysis are partly practical and partly theoretical. As far as the practical objections are concerned, Schachter has demonstrated that error analysis shows only a small part of the linguistic ability (or inability) of individuals and is thus an insufficient instrument for the production of data (or facts) on which to base instructional programs. As far as the theoretical objections are concerned, these are important because they lead into ethical objections. Once again, the minority students are portrayed, not for what they are and for what they possess, but for what they are not and for what they do not possess. Error analysis makes a mockery of the statement adopted by the NCTE and the Conference on College Composition and Communication on the students' right to their own language. Not only is the students' language portrayed in its truncated form, at its very worst, but after this, instructional programs are devised to deprive the students of the one thing that they possess and to denigrate its status in the larger community, their own language. There is simply no escape from the crushing irony: programs designed to lead students away from the language that they possess ultimately demonstrate the second-rate status of the thing possessed.

And the irony is compounded by the manner in which these programs are executed. After the error analysis, students are then 'drilled' (Bartholomae, 1980:258) in the areas of weakness that they have demonstrated. The irony of this is simply that drill has long been associated with behaviorism and structural linguistics—item (4) above—and has for some time been abandoned by language teachers as being incapable of affecting any significant change in the underlying linguistic ability, the language competence, of individuals. Most language teachers, for some time now, have preferred creative exercises using a variety of methodologies which operate quite effectively without any reference to error analysis whatsoever. So one more objection to error analysis is this: it imparts a negative hue to the entire teaching operation. Rather than creatively leading the students into those vast areas of uncharted opportunities for self expression that language provides, it focuses their attention on all the things that they ought not to do: it locks the whole instructional program into a preoccupation with a small part of language. Besides this, specialists on the acquisition of language by children have pointed out time and again that the parental correction of attempts by children to produce language is most often done in terms of content, not of form (Ervin-Tripp, 1973). Once the content is addressed the form follows along. Error analysis neglects this item of recently acquired knowledge by focusing almost entirely on form, neglecting content. In fairness to advocates of error analysis, they seem to recognize that drill on errors does little or nothing for the learner. For instance, Bartholomae states: "Fifteen weeks of drill on verb endings might raise his test scores but they would not change the way he writes" (1980:262).

So the overall objections to error analysis are three-fold: (1) it is taxonomic in nature, (2) it formulates its theories about language inductively, (3) it focuses on

the collection of data in a corpus. This three-fold objection leads to the practical and philosophical difficulties which are attendant on its use: (4) it deals with only part of the language competence which individuals possess, that part which is demonstrated by their performance, (5) it denigrates the language which the students possess and effectively denies them the right to their own language, and (6) it leads to programs using behavioristic techniques which have been demonstrated to be ineffectual within the viewpoint of currently acceptable linguistic and psychological theory.

Besides these objections, there are serious objections to be raised about individual studies. For instance, in his study, Bartholomae blythely indicates that Freeman "... has shown that 'subject verb agreement' ... is a host of errors, not one ..." Freeman (1980:257). At this point, Bartholomae could be accused of misrepresenting the statement in the original. Furthermore, before quoting a source with approval he should have examined it more closely. The original states:

Subject verb agreement, for example is a host of errors, not one: a graduate student in Temple University's internship course for teachers of composition analyzed a large sample of real-world sentences and concluded that there are at least eight different kinds, most of which have very little to do with another (sic). (Freeman, 1979:143).

There are three things that are extremely frightening about Bartholomae's blythe acceptance of evidence that he finds in the Freeman article: (1) Freeman has not demonstrated in any real sense that there are eight types of errors in subject verb agreement; there are no examples to support his contention at all. The reader is simply asked to take his word for it. (2) It is evident from the reading of the article that Freeman has not shown that "'Subject verb agreement ... is a host of errors ...' "; an unidentified graduate student has done this. It is to be hoped that Freeman checked the work of the student thoroughly, but even if he did, there is no guarantee that the analysis is valid. (3) What is even more frightening is the fact that there is evidence in the Freeman article that he does not adhere to a widely accepted definition of grammatical error. He states:

... transformational syntacticians have shown that the sentences *colorless green ideas sleep furiously* and *lazy the jumped fox quick dog brown* are ungrammatical in two ways, not just one. ...

(Bartholomae, 1980:143)

Chomsky, who created the sentence about colorless green ideas, commented on the grammaticality of it. He stated:

Sentences (1) and (2) are equally nonsensical, but any speaker of English will recognize that only the former is grammatical.

- (1) Colorless green ideas sleep furiously.
- (2) Furiously sleep ideas green colorless.

Chomsky (1957:15)

What to Chomsky is a grammatical sentence, to Freeman is an ungrammatical sentence. There would seem to be little choice on which authority to prefer.

Any number of errors of a similar nature can be found in the work of proponents of error analysis. For instance, Shaughnessy becomes hopelessly entangled in her attempt to distinguish the expletive *it* from the personal pronoun *it*. Her actual statement follows:

One of the most common inverting devices is the expletive *it is*, which enables a writer to place his subject after the verb. ... Part of the trouble with the word stems from its vagueness. Like other pronouns, *it* refers to something that has already been mentioned, but unlike *he* or *she*, it can refer to any *thing* in the world ... (Certain idiomatic expressions illustrate this vagueness — 'It may rain today'). (Shaughnessy 1977:69)

The first two statements in the quotation are accurate enough; in a sense, the expletive *it* is vague since it has no specific referent. That is, a WH-question cannot be formed on sentences with the expletive since the WH-words are definite and have specifiable referents. Thus, the sentences at (1) are all right since there is a specifiable referent for *it* but the second sentence at (2) is not all right since it contains the expletive *it* which has no specifiable referent and is 'vague' in Shaughnessy's terms.

- (1) It's falling like a gentle dew. What's falling like a gentle dew? The rain.
- (2) It's raining. \*What's raining? \*The rain.

In the third sentence, she confuses the expletive *it* with the personal pronoun *it* but then tries to bring the discussion back to the original thought by referring to the vagueness of *it* in a sentence where it indeed functions as an expletive. If, however, Shaughnessy's treatment of the grammar which she clearly explains is defective, questions could be raised about the validity of so much of the grammatical analysis which is not evident to the reader. Such questions would be crucial in the construction of pedagogical grammars.

Another of the problems with the work of Shaughnessy lies in the impressionistic kinds of language which she uses to categorize and classify groups of errors. For instance, one of her categories is *blurred patterns*. This category is little better than the category *awkward* which has been used in freshman

handbooks for years and which was always marked with a 'K' on the freshman themes. Her category is illustrated with examples such as the following:

- i. Statistics show that *on the average person* a high school diploma in a lifetime is worth about one hundred thousand dollars...
- ii. *To take speedwriting* you must go to a business school *for*.
- iii. You *would be most likely* get a better education...

Shaughnessy (1977:69)

At this point, it is obvious that not only is the Shaughnessy study a taxonomic study, it is also a bad taxonomy. The first of these (i) exhibits the use of an extra noun because the writer starts with one construction, *on the average*, and switches to another construction, *for the average person*. The second (ii) has an extra preposition while the third (iii) demonstrates the absence of the sign of the infinitive, *to*. It could be that all of these errors might be grouped under the general heading of *lack of syntax* but then so could many of the errors such as those under the heading of *consolidations*. Shaughnessy (1977:56). A similar objection could be raised about the taxonomy developed by Freeman in which a number of different kinds of errors are grouped under the heading of *agency*. Freeman (1979:145). The question immediately arises: If pedagogical grammars are to be constructed and if exercises are to be designed to aid students and to lead them away from the errors that they habitually make, should those grammars and exercises not be as specific as possible so that students know exactly what their problems are and so that they can be addressed specifically? Generations of students have puzzled over the old term, *awkward*, never knowing its meaning exactly. Is *problems with agency* or *blurred patterns* any better?

But the crucial problems remain. Theoretically, the number of sentences in a language is infinite. Because of this, the number of different kinds of errors that students can make is infinite or, at least, indefinitely large. Because of this, the chance of a student producing a particular sentence exhibiting a particular error is very small. This is the principal reason behind the creation of vague, general and subsequently, rather meaningless categories in the taxonomies that are used in error analysis. Besides this, just as a grammar of language cannot be constructed from the evidence in a corpus even so the grammars which students use to produce the language cannot be constructed from a corpus of errors for the very reason that Chomsky has indicated. Corpora are skewed; they do not give a representative sample of the possible sentences that students can construct. In addition, corpora of errors miss crucial aspects of the difficulties experienced by students because of the avoidance phenomenon discovered by Schachter. But even greater than this problem is the view that error analysis gives of the students and their abilities or inabilities. They effectively denigrate the students and their language. It would seem to be much more appropriate for teachers to lead students through the use of creative language exercises into the use of many of the possible sentences in a language.



## BIBLIOGRAPHY

- BARTHOLOMAE, DAVID. 1980. "The Study of Error." *College Composition and Communication* 31, 253-269.
- BLOOMFIELD, LEONARD. 1933. *Language*. New York: Henry Holt.
- CHOMSKY, NOAM A. 1957. *Syntactic Structures*. S' Gravenhage: Mouton and Co.
- . 1962. "A Transformational Approach to Syntax." In Archibald A. Hill (ed.). *Third Texas Conference on Problems of Linguistic Analysis in English*. Austin, Texas: The University of Texas.
- CORDER, S. PIT. 1967. "The Significance of Learner's Errors." *IRAL* 5, 4, 161-170. See also *Error Analysis, Perspectives on Second Language Acquisition*. Jack C. Richards (ed.). London: Longman, 1974. pp. 19-27.
- COWAN, J. RONAYNE. 1976. "Reading, Perceptual Strategies and Contrastive Analysis." *Language Learning* 26, 95-110.
- DOMMERGUES, JEAN YVES and HARLAN LANE. 1976. "On Two Independent Sources of Error in Learning the Syntax of a Second Language." *Language Learning* 26, 111-123.
- DOUGHERTY, RAY C. 1974. "Generative Semantics Methods: A Bloomfieldian Counterrevolution." *International Journal of Dravidian Linguistics* 3, 253-286.
- ECKMAN, FRED C. 1977. "Markedness and the Contrastive Analysis Hypothesis." *Language Learning* 27, 315-330.
- ERVIN-TRIPP, SUSAN M. 1973. "Some Strategies for the First Two Years." In Anwar S. Dil (ed.). *Language Acquisition and Communicative Choice*. Stanford, CA.: Stanford University Press. pp. 204-238.
- FREEMAN, DONALD C. 1979. "Linguistics and Error Analysis, On Agency." In Donald McQuade (ed.). *Linguistics, Stylistics, and The Teaching of Composition*. Conway, Arkansas: L & S Books. pp. 143-150.
- GASS, SUSAN. 1979. "Language Transfer and Universal Grammatical Relations." *Language Learning* 29, 327-344.
- GEORGE, H.V. 1972. *Common Errors in Language Learning*. Rowley, Mass.: Newbury House.
- HAMMARBERG, BJORN. 1974. "The Insufficiency of Error Analysis." *IRAL* 12, 3, 185-192.
- HILL, ARCHIBALD A. (ed.). 1962. *Third Texas Conference on Problems of Linguistic Analysis in English*. Austin, Texas: The University of Texas.
- JAIN, M. P. 1974. "Error Analysis, Source, Cause and Significance," In Jack C. Richards (ed.). *Error Analysis, Perspectives on Second Language Acquisition*. London: Longman. pp. 189-215.
- JOOS, MARTIN. 1957. *Readings in Linguistics I*. Chicago: University of Chicago Press.
- RICHARDS, JACK C. 1973. "A Noncontrastive Approach to Error Analysis." In John W. Oller and Jack C. Richards (eds.). *Focus on the Learner, Pragmatic Perspectives for the Language Teacher*. Rowley, Mass.: Newbury House. pp. 96-113. See also *Error Analysis, Perspectives on Second Language Acquisition*. Jack C. Richards (ed.). London: Longmans, 1974. pp. 172-188.
- . 1973. "Error Analysis and Second Language Strategies." In John W. Oller and Jack C. Richards (eds.). *Focus on the Learner, Pragmatic Perspectives for the Language Teacher*. Rowley, Mass.: Newbury House. pp. 114-135.

- RICHARDS, JACK C. and GLORIA P. SAMPSON. 1974. "The Study of Learner English." In Jack C. Richards (ed.). *Error Analysis, Perspectives on Second Language Acquisition*. London: Longman, pp. 3-18.
- SCHACHTER, JACQUELYN. 1974. "An Error in Error Analysis," *Language Learning* 24, 205-214.
- SCHACHTER, JACQUELYN and MARIANNE CELCE-MURCIA. 1977. "Some Reservations Concerning Error Analysis." *TESOL Quarterly* 14, 441-452.
- SHAUGHNESSY, MINA P. 1977. *Errors and Expectations, A Guide for the Teacher of Basic Writing*. New York: Oxford University Press.
- SMITH, MIKE SHARWOOD. 1979. "Strategies, Language Transfer and the Simulation of the Second Language Learner's Mental Operations." *Language Learning* 29, 345-361.
- ZOBL, HELMUT. 1980. "The Formal and Developmental Selectivity of L1 Influence on L2 Acquisition." *Language Learning* 30, 43-58.