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Foreword

The Seventh Annual Round Table Meeting on Linguistics and Language Teaching was held in the spring of 1956 in Washington, D. C. This Monograph publishes in their entirety the papers read at the sessions along with selected excerpts from the ensuing discussions. For reasons of space, we could not include the exact wording of some of the lengthier contributions. In summarizing these, we hope that we did not misrepresent the participants' opinions, and we apologize beforehand for any misunderstanding that might arise from this practical necessity. In this Monograph, we make available in permanent form, to an ever increasing audience, the contributions of those who have participated in the meeting.

The preparation of this Monograph was delayed because of unavoidable technical difficulties. The editor wishes to express his gratitude to his editorial assistant, Miss Mary Spainhour, without whose accuracy, judgment, diligence, and ingenuity, the delay would have been even greater.

The topics of the Seventh Annual Round Table Meeting were designed to reflect the present state of linguistics, and the major areas of uncertainty as well as of progress. We wish to thank the speakers for having responded so magnificently in the spirit of this objective. We also wish to thank those whose sponsorship made possible the meeting.
THE REVEREND FRANK L. FADNER, S.J., Regent of the School of Foreign Service, Georgetown University, made the following remarks:

Ladies and Gentlemen, Colleagues, Participants and Guests at Georgetown University’s yearly Round Table Meeting on Linguistics and Language Teaching.

It has been a source of pride and justifiable self-congratulation that consistently during the past seven years since its inception, the youngest member of Georgetown’s academic family, our Institute of Languages and Linguistics, has shown its loyalty to the University’s motto: Utraque unum. "The two are one," we say. This fidelity, as a working principle, has been most effectively demonstrated in the annual discussions we have sponsored—exchanges of opinion and meetings of the mind—between the theoretical scientists, the linguists on the one side, and those who have devoted their lives, as would have been said in a possibly happier age, “gladly to teach” that most humanistic of disciplines: living language.

Let me be romantic and go back to the despised Dark Ages when a man could lean back in slippered ease to organize his intellectual life and classify its processes. For this happy individual, to whom the questionable blessing of the impertinent telephone was unknown, Scientia, science or knowledge, gained for itself the philosophical definition: Cognitio perfecta rerum per causas—the complete knowledge of things according to their causes. That was the genus; it allowed of two subdivisions. One was the Scientia speculativa—cognitio rerum propter se ipsam tantum—such a knowledge of things for its own sake—a luxurious indulgence of extravaganzas which led to the dismal ignominy of scholastic decadence when wise men lost sleep over the number of angels that could be crowded unto the head of a pin. The other was Scientia practica, or applied science, as I suppose we’d call it today, so tersely described by Boethius, back in the fifth and sixth centuries, as that type of human activity, or knowing,
which *veritatem consideratam ordinat in operationem tamquam in finem.* Pursuing this type of activity your scientist operates by applying the datum under consideration; let us say, the results of his own investigation, toward an end in view, a purpose.

Obviously, our linguistic science must belong to this second category. Our object is to help the man or woman in the classroom—the teacher of language—toward his God-ordained goal, the whole and humanistic formation of American youth. As I look at the programme prepared for this, our Seventh Annual Round Table Meeting, I remark, as a source of almost infinite gratification to me, that so large a proportion of the topics prepared have an eye to this perennial objective of us as educators. There is, for example, a discussion on an interim syntax for the classroom. There is a discussion led by Georgetown’s dear friend Dr. Archibald Hill on “Who Needs Linguistics?” To this has been added an all-important panel on a haunting subject for us American educators of those who flock to our shores: the teaching of English as a foreign language. And, finally, we shall have a word on a subject dear to the heart of every educator: the relation of linguistics and humanistic studies.

I assure you that it is the sincere and earnest intention of your hosts—the Administration and Faculty of the Institute of Languages and Linguistics of Georgetown University’s School of Foreign Service to wish you Godspeed and profit in the discussion of these subjects proposed for your consideration in the course of our Seventh Annual Round Table Meeting.

LÉON E. DOSTERT, Director of the Institute of Languages and Linguistics, welcomed the participants:

Mr. Chairman, Ladies and Gentlemen, on behalf of the Faculty of the Institute, and of our students, I’m very happy to welcome you.

Not very long ago, in reviewing one of the Monographs—I think it was the fifth or sixth—Norman McQuown concluded his article in *Language* by saying that the Round Table Meetings have become a useful and well-established tradition in the field of American linguistics, and he expressed the hope that there might be many more of them.

It’s a special pleasure to welcome you to this Seventh Meeting because—for the eternal reason, namely, budgetary problems—there
was at one time some doubt as to whether or not we could continue the tradition established in 1950. Consequently, it is even more gratifying to welcome you this year than even in earlier years. These meetings, I think, have already established their worth, so it would be wasting your time to speak of it.

This year we have a sort of last family reunion—not last, but a sort of symbolic family reunion—because—Dr. Henry Lee Smith is leaving Washington, as most of you know; Dr. George Trager will be leaving this area to resume his close partnership with him; Dr. Robert Stockwell will be going to the Pacific Coast. All three of them are joining us in this Seventh Round Table Meeting. Professor Archibald Hill is back with us from Texas, and very welcome indeed. I do hope the fact that three leading linguists in the Washington area will be away from us will not mean that we shall not have many future occasions to welcome them again at these meetings. I hope that even as his RTM has enabled us to bring Professor Hill back to our midst, in the future other meetings will become the occasion for others among our friends to come back and join us.

Dr. Garvin deserves real credit for the excellent program of this meeting. I think the exchanges that will take place on problems of syntactic analysis are likely to be of very real significance to the field; I dare predict that the ideas and data that will be developed and presented here will probably represent as forward thinking as is available on the subject in the field today. I am also very happy that a paper will be delivered under a new title—at least to my knowledge—which I think is highly significant. That is the paper by Mr. Reynolds on "Mathematical Linguistics—A New Discipline." I do believe that here is an area of investigation which will prove extremely fruitful, and I'm glad to share with you the hope and expectation that we shall soon receive from the National Science Foundation substantial funds to permit us to continue our investigation in the field of machine translation.

I welcome you again. I think the time has come now to do what we came here to do—namely, to get to work. We will have occasion to chat again at the luncheon which I hope most of you will find it possible to attend.
PAUL L. GARVIN (Institute of Languages and Linguistics) opened the first session:

Father Fadner, Director Dostert, Distinguished Speakers, Ladies and Gentlemen: it gives me great pleasure indeed as Chairman of the Seventh Annual Round Table Meeting to join the distinguished previous speakers in welcoming you here.

I shall now proceed to the pleasant task of introducing the first panel, "Approaches to Syntax," under the Chairmanship of Professor Henry Lee Smith of the Foreign Service Institute of the Department of State. The first speaker on the panel is Professor Smith, who I believe needs no introduction in the Washington area beyond having his name mentioned. This I have done, and I now turn the meeting over to Professor Smith.
Panel: Approaches to Syntax
Superfixes and Syntactic Markers

Henry Lee Smith, Jr.

I. Morphemic analysis underlying syntactic analysis.
A. Four morphemic form classes ("parts of speech") are identified
   by the presence (or absence) of inflectional suffixes.
1. Nouns: inflectable for two categories, number and possession:
   \(-Z^1\) (plural "man-men"), \(-Z^2\) (possessive "man's-
   men's").
2. Pronouns: inflectable for four categories, case, possessive
   1, possessive 2, and number; singular: subject ("I"), object
   ("me"), possessive 1 ("my"), and possessive 2 ("mine");
   plural: "we", "us", "our", "ours".
3. Verbs: inflectable in five forms: name form ("go"), \(-Z^3\)
   gender-marked form ("goes"), \(-D^1\) past tense ("went"),
   \(-D^2\) perfective participle ("gone"), and \(-in\) active
   participle ("going").
4. Uninflectable words: all words not included in the preceding
   three classes.

[Contrary to treatment in the Outline of English Structure, neither
Trager nor I feel the adjective is to be considered an inflectable word
class (or "part of speech"). The process of suffixation by 
-er and
-est is derivational, not inflectional; they are stem-forming suffixes
(cf. "his betters"). On the morphemic level these items have been
referred to as adjunctives (to avoid confusion between adverb and ad-
jective at this level). Properly speaking, however, they can be iden-
tified only on the level of syntax as adjunctivals, and the term adjunc-
tive is not parallel to the terms noun, pronoun, and verb.]

B. The syntactic classifications that follow are arrived at through
analysis of the relationships between morphemically identifiable
forms of the first three classes listed above—nouns, pronouns,
and verbs—and the fourth class, which is the "residue class" of
all other forms in the language. Syntactic analysis itself then
proceeds to analyze the patterns that are exhibited in the com-
binations of morphemically defined and syntactically defined
classes.
II. Syntactic *function classes* (syntactically identified "parts of speech")—general.

A. All remaining classes of words and relationships of words, phrases, and constructions are analyzable only on the level of syntax and can be described without recourse to referential meaning if the patterning of phonological signals is closely observed in the phrase or construct superfixes, the intonation patterns, the clause superfix, and the order-rank tagmeme.

B. On the level of syntax, *function classes* can be conveniently distinguished from morphological *form classes* by designating them with terms ending in "—al":

1. **Nominals**: nouns and pronouns as single forms or in complex nominal phrases and constructions.

2. **Verbals**: verbs as single forms or in complex verbal phrases and constructions.

3. **Functionals**: everything except nominals and verbals. They can be sub-classified by syntactic criteria, as follows:

   a. **Adjunctivals**: uninflectable words (though some are derivationally identifiable—see I.A.4 above) which appear under secondary stress preceding a verb or a noun in a construct, or primary stress when following a verb or noun in a construction.

   b. **Prepositionals**: uninflectable words which appear under tertiary stress before a terminal juncture ("Who'd you go to the movie with?").

   c. **Adverbials**: uninflectable words, homophonous with prepositionals except for stress, which appear under primary stress in verbal constructs ("gët+üp") and under tertiary in nominal constructs ("gët + ūp").

   d. **Conjunctionals**: other uninflectable words, normally under weak or tertiary stress, occurring between constructions of equal syntactic rank.
III. The phrase (or construct) superfix.

A. Take as a point of departure two sentences composed of simple words (having only one base). These are sentences which contain no constructs.

(1) $^{2}John + \text{ran} + ^{3}\text{fast} \#$

(2) $^{2}John + \text{hit} + \text{Bill} + ^{3}\text{hard} \#$

These are composed of (1) noun, verb, uninflectable and (2) noun, verb, noun, uninflectable. Each is included under one intonation pattern ($\sqrt{2} \ ^{3} \ ^{1} \ #$), and each word is separated by plus junctures. Each word has secondary stress except the final (adjunctive), where the one primary stress permitted within the intonation pattern falls. The "areas" of the sentence occupied by these words can be expanded so that several words can be substituted for them, to form phrases or constructs held together by a pattern of stresses and plus junctures called phrase superfixes (cf. Outline).

(3) $^{2}\text{Thē} + \text{big} + ^{2}\text{boy} \ ^{2} \ \text{selōm} + ^{2}\text{runs} \ ^{2} \ \text{very} \ + \ ^{3}\text{quickly} \ #$

[In less deliberate speech, there would usually be a /+/ when the second /|/ is written here, and "runs" would have /\ rather than /\ .]

(4) $^{2}\text{Thē} + ^{3}\text{light} + \text{house} + \text{keēpēr} \ ^{2} \ \text{put} + \text{out} + \text{thē} + \ + \ \text{big} + ^{3}\text{light} \ ^{2} \ \text{in} + \ \text{thē} + ^{3}\text{mōning} \ #$

We now have in (3) a nominal phrase or construct (Thē + big + bōy), a verbal phrase or construct (selōm + runs), and an adjunctival phrase or construct (very + quickly). In (4), we have a verbal phrase or construct (put + out, where "out" has the primary stress of the superfix reduced to secondary because only one primary stress can fall within a single intonation pattern), a nominal phrase or construct (thē + big + light), and an adjunctival phrase or construct (iīn + thē + mōning). The phrase or construct superfixes are morphemes composed of stresses and plus junctures, and are of the following shapes $\sqrt{\ } + \$, $\sqrt{\ } + \$\$, $\sqrt{\ } + \$, $\sqrt{\ } + \$, $\sqrt{\ } + \$, with reduction of /\ to /\ under clause superfix.
These superfixes bind the words together in a hierarchy of relationship; for example \( \sqrt{\text{big} + \text{boy}} \), \( \sqrt{\text{the} + \text{big} + \text{boy}} \), \( \sqrt{\text{light} + \text{house}} \), \( \sqrt{\text{keeper}} \), \( \sqrt{\text{morning} + \text{in} + \text{the}} \). In determining the relationship of the immediate constituents within a construct, it is necessary to find the determining plus junctures of the successive layers of superfixes. For example, in \( \sqrt{\text{the} + \text{light} + \text{house} + \text{keeper}} \), one starts from the last word of the phrase, under secondary stress, and goes back to the first preceding juncture. This is the determining juncture of the superfix \( \sqrt{\text{keeper}} \), and 'keeper' is designated as of primary rank to the rest of the material. The phrase \( \sqrt{\text{light} + \text{house}} \) is similarly attacked, and the phrase is seen to be under \( \sqrt{\text{light}} \). 'House' is primary to 'light'. The inclusive superfix is \( \sqrt{\text{light} + \text{house} + \text{keeper}} \).

An examination of the relative closeness of grammatical 'binding force' exerted by superfixes can be determined by the possibilities of expansion. Nominal constructs formed by \( \sqrt{\text{big} + \text{boy}} \) are never separable, i.e. the result always remains a unit. On the other hand, additional material can be added under superfixes of shape \( \sqrt{\text{big} + \text{boy}} \). For example, \( \sqrt{\text{the} + \text{fine} + \text{big} + \text{boy}} \), \( \sqrt{\text{air} + \text{raid} + \text{wårdën}} \), \( \sqrt{\text{air} + \text{raid} + \text{wårdën} + \text{post}} \), \( \sqrt{\text{air} + \text{raid} + \text{wårdën} + \text{post}} \). In the last construct the whole phrase \( \sqrt{\text{raid} + \text{wårdën} + \text{post} + \text{post} + \text{stair} + \text{way} + \text{entrance}} \) is of primary rank to the whole phrase \( \sqrt{\text{air} + \text{raid} + \text{wårdën} + \text{post}} \), a fact signalled by the pitch rise (to /4/), and the determining juncture of the total construct is the single bar juncture. The inclusive phrase superfix is written \( \sqrt{\text{light} + \text{house} + \text{keeper}} \).

In superfixes of shape \( \sqrt{\text{big} + \text{boy}} \), \( \sqrt{\text{the} + \text{big} + \text{boy}} \), \( \sqrt{\text{light} + \text{house}} \), \( \sqrt{\text{keeper}} \), \( \sqrt{\text{morning} + \text{in} + \text{the}} \), when the weaker stress precedes the primary stress, the element
under the weaker stress is designated as of secondary rank to the item under primary stress, e.g. \( \texttt{\text{th}}\texttt{e} + \texttt{b}\texttt{oy}, \texttt{b}\texttt{i}g + \texttt{b}\texttt{oy}, \texttt{s}\texttt{eld}\texttt{om} + \texttt{r}\texttt{u}\texttt{n}s, \texttt{v}\texttt{e}\texttt{r}\texttt{y} + \texttt{qu}\texttt{ickl}\texttt{y}, \texttt{g}\texttt{e}\texttt{t} + \texttt{u}\texttt{p}.\)

IV. Phrases or constructs are composed of both inflectable and uninflectable words.

A. Nominal phrases or constructs are composed as follows:

1. Noun and noun: \( \texttt{\text{a}\text{ir} + ral\text{d}} \)
2. Adjunctival and noun: \( \texttt{\text{b}\text{i}g + b\text{oy}} \)
   \( \texttt{\text{w}\text{i}t\text{h} + h\text{ous}e} \)
   \( \texttt{\text{b}\text{e\text{a}u\text{t}}\text{f}\text{u}l + d\text{ay}} \)
3. Verb and prepositional: \( \texttt{\text{s}\text{et} + \text{u}\text{p}} \), \( \texttt{\text{t}\text{o\text{s}} + \text{u}\text{p}} \)
4. Pronoun and noun: \( \texttt{\text{h}\text{i}s + b\text{oo}k} \)
5. Prepositional and verb: \( \texttt{\text{t}\text{o} + g\text{o}} \)
6. Prepositional and prepositional: \( \texttt{\text{i}\text{n + b}\text{e\text{t}}\text{\text{w}}\text{e\text{e}}n} \)
7. Adverbial and verb: \( \texttt{\text{u}\text{p} + s\text{wee}\text{p}} \)

B. Verbal phrases or constructs are composed as follows:

1. Adjunctival and verb: \( \texttt{\text{\text{o\text{n}}\text{l}y + w\text{a\text{nt}}} \)
2. Verb and adverbial: \( \texttt{\text{g}\text{e\text{t} + u\text{p}}} \)
3. Verb and prepositional: \( \texttt{\text{l}\text{o\text{\text{d}}}\text{\text{k} + f\text{\text{r}}} \)
4. Verb and verb: \( \texttt{\text{h}\text{a\text{v}}\text{\text{\text{e}}}\text{\text{n} + b\text{e\text{e}n}} \)

[Verbal constructions contain auxiliary verbs, which are inflectable for tense and occur stressless, under weak, or tertiary stress, never under secondary stress. Auxiliary verbs are followed by other verb forms; the whole complex constitutes a construction, not a phrase or construct. See below.]

C. Adjunctival phrases or constructs may be pre-verbal or post-verbal; prenominal or post-nominal. They are composed as follows:
1. Adverbial and adverbial: \( \text{'very + much} \)

2. Prepositional and noun: \( \text{'down + stairs}, \text{'through} + \text{'the + woods} \)

3. Prepositional and verb: \( \text{'for + swimming} \)
   \( \text{'to + see}, \text{'to + swim + in} \)

4. Adjunctival & adjunctival: \( \text{'awfully + pretty}; \)
   \( \text{'pretty + awful} \)

Other examples:

- He very much wanted to go.
- John left very fast. (cf. John + left + early.)
- It's a very nice day.
- His trip through the woods was interesting.
- He liked his trip through the woods.
- He liked it very much.
- It's a nice stream to swim in.
- It's a good stream to swim in.

D. **Prepositionals.** As can be seen from the examples above, certain uninflectable words like *in, to, through, down, up,* enter into constructs of various classifications. In traditional grammars, these words appear in lists of both "prepositions" and "adverbs". By noting their position in constructs and particularly the stress that occurs on them, two classifications can be arrived at to which the terms *prepositionals* and *adverbials* may be given.

1. If the uninflectable word appears in an *adjunctival construct* under *weak* or *tertiary* stress and followed by a noun (or nominal construct), the word will be called a preposi-
tional—\( \sqrt{up} + \) stairs, \( \sqrt{through} + \) the + woods, \( \sqrt{in} + \) the + street (N.B. Prepositionals may also be constructs—"It + fell + in + between the + cracks").

2. If the uninflectable word appears in a nominal construct under tertiary stress, the first word of which is a verb bearing primary or secondary stress, the word will be called a prepositional—\( \sqrt{set} + up, \sqrt{make} + up, \sqrt{go} + down, \) etc.

3. If the uninflectable word appears in a verbal construct under tertiary stress, with primary or secondary stress on the verb form, the word will be called a prepositional—\( \sqrt{swim} + in, \sqrt{come} + to, \sqrt{look} + at, \) etc.

E. Adverbials.

1. If the uninflectable word appears in a verbal construct under primary or secondary stress, with tertiary stress on the verb form, the word will be called an adverbial—\( \sqrt{get} + up, \sqrt{go} + out, \sqrt{come} + in, \sqrt{come} + to, \) etc.

2. If the uninflectable word appears in a nominal construct under primary or secondary stress followed by a verb form under tertiary stress, the word will be called an adverbial—\( \sqrt{up} + set, \sqrt{up} + sweep, \) etc.

3. If the uninflectable word appears post-verbally under primary stress (if final in the clause) or with secondary stress (if other material follows) and the verb bears secondary stress, the uninflectable word is called an adverbial. In these cases, the uninflectable word is an (adverbial) adjunctival and not a part of a verb construct. "He + drove + in". "He + came + in + fast".

F. Conjunctionals (or Relators). These are uninflectable words (or constructs) which are always followed by a plus juncture and occur only under weak or tertiary stress. They occur between material of equal syntactic rank—words with words and constructs, constructs with words and constructs, sentences with sentences, etc. They also introduce (come in first
position) sentences all of whose constituents are otherwise accounted for. "Jack + and + Jill", "youth + and + old + age", "Jôhn + came + so + I + left", "That + he + left + was + true".

V. Analysis of the Sentence—Constructions.

A. 1. A phonological sentence ends in /#/ or /||/.

2. A phonological non-sentence ends in /|/.

B. 1. A complete primary syntactic sentence contains a nominal and a finite verbal (subject and predicate).

2. An incomplete syntactic sentence lacks a nominal subject.

3. A secondary syntactic sentence lacks a finite verbal. It may contain a non-finite verbal with a subject substitute for a pronoun in subject case form and/or a complement.

4. A syntactic non-sentence lacks a verbal.

[Inspection shows that the large majority of spoken material terminating in /s/ or /||/ contains nominal, verbal, and adjunctival material. In the majority of sentences so examined, divisions between these areas are clearly marked by phonological junctures. (Cf. the sentences in III above). One of the principal tasks of the analyst is to use these phonological signals to establish the recurring patterns of the various types of sentences. In this process it is essential first to separate the determining plus junctures of the superfixes from the marking junctures, which serve as signals setting off the main constituents of the sentence as a sentence. But these markers are not always signalled by a phonological juncture, particularly between pronouns and verbals, where the great amount of inflection still present in the pronoun paradigm furnishes a sufficient signal as to the syntactic relationship. For example:

"Jôhn + went + home" vs. "He's + gone" (/hlyz + gohn/);

"Jôhn + took + Jane" vs. "He + took'er" (/hly + tûkêr/).]

C. 1. A principal sentence contains all the principal syntactic markers (□ △ ○) of the order-rank tagmeme.
2. An *included sentence* shares a single terminal juncture with a *principal sentence* (i.e., its ◇ falls inside the principal sentence.)

3. A *related sentence* is introduced by a *conjunctival*. It may be either principal or included.

D. **Constructions** are stretches of related material that include one or more syntactic markers, but are substitutable for a single morphological word in a substitution-expansion frame, as are constructs.

E. The symbols used to represent *markers* are the following:

1. □ "Nominal material precedes *(subject)* verbal and/or * nominal and/or adjunctival material* follows *(predicate).*"

2. ◇ "Verbal material precedes, other material may follow, beginning of *complement.*"

omnia "Nominal material follows, object; a second occurrence marks *second object.*"

3. "Adjunctival material follows, no object."

4. "Finite auxiliary verb precedes, another verb form in *verbal construction* is present in sentence."

3. ◇ "Nominal or adjunctival material precedes, end of *complement.*"

omnia "End of complement, adjunctival material follows *(sentence modifier)."*

omnia "End of sentence modifier, principal sentence follows."

4. ◇ "Adjunctival material follows, of secondary rank to what precedes."

5. ◇ "Relator *precedes*, complete related sentence follows."
VI. Types of sentences—clause superfixes and the order-rank tagmeme.

[Sentences composed largely of single words will be used, since enough has already been said concerning the analysis of phrases and constructs. Regular orthography is used for segmental phonemes.]

A. Steps in analyzing the sentence.

1. Remove the intonation pattern.

2. Abstract the stresses and junctures to get the gross clause-superfix structure of the construction.

3. List the words in their full-grade allologs (cf. Outline).

4. Note the occurrence of nouns (n.), pronouns (p.), verbs (v.), and uninflectables (x). It is convenient, though not strictly appropriate or necessary, to distinguish between the derivationally identifiable adjunctives (a.) and the other uninflectables at this stage. Concordance should be noted at this point also.

5. All determining plus junctures are assigned, by substitution-expansion technique, to their respective superfixes and the resulting constructs and constructions are labeled as nominal (N), verbal (V), or adjunctival (A).

6. The remaining junctures are abstracted and designated as markers in the clause-superfix, which is written with only one stress per construct or construction, that stress being the highest one that is actually present in the superfix of that construct or construction.

7. The symbols for the order-rank tagmeme are placed at the markers, in accord with the definitions under V.E above.

8. The type of sentence and the relationships of the constructions are stated.

B. Principal, Related-Principal, and Included Sentences.

(5) \( ^2 \text{J} \text{ohn} + ^3 \text{r} \text{án} + ^1 \text{f} \text{ást} \)

1) \( \sqrt[^2]{^3} ^1 \)
2) \{ ^+^+^+^# \}

3) \{ "John" "ran" "fast" \}

4) \( n \quad v \quad a \)

5) \( N \quad V \quad A \)

6) \( \sqrt{^+^+^+^+^+^+^+^+^+^+^#} \)

7) \( \sqrt{\emptyset \quad \emptyset \quad \emptyset} \)

8) The sentence is a complete, principal syntactic sentence in normal order, containing noun subject, inflectable (finite) verb, and adjunctive in post-verbal adjunctival (adverbial) position.

(6) \( ^{2} \text{He} + \text{wants} + \text{money} + \text{I} + \text{need} + ^{3} \text{now} \)

1) \( \sqrt{^{2}} ^{3} ^{1} \# \)

2) \( \{ ^+^+^+^+^+^+^# \} \)

3) \{ "He" "wants" "money" "I" "need" "now" \}

4) \( p \quad v \quad n \quad p \quad v \quad x \)

5) a. \( N \quad V \quad N \quad N \quad V \quad A \)

b. \( N \quad V \quad N \quad A \)

6) \( \sqrt{^+^+^+^+^+^+^+^+^+^+^+^+^+^+^} \)

7) \( \sqrt{\emptyset \quad \emptyset \quad \emptyset \quad \emptyset \quad \emptyset} \)

8) The phonological sentence is composed of one principal and one included sentence, the included sentence is a post-nominal adjunctival sentence included in the complement, and hence of secondary rank to the nominal object.
(7) $^2$He $+$ got $+$ $^2$work$^2$ $|$ $^2$after $+$ $^1$I $+$ $^3$saw $+$ him$^1$

1) $\sqrt{2}$ $^2$ $^2$ $|$ $\sqrt{2}$ $^3$ $^1$

2) \{ \prime + \prime + \prime \} \{ \prime + \prime + \prime + \prime \} 

3) \{ "He" "got" "work" \} \{ "after" "I" "saw" "him" \}

4) $p$ $v_1$ $n$ $x$ $p$ $v_1$ $p$

5) a. N V N X N V N
   b. N V N R N V N

6) $\sqrt{\prime}$ $\circ$ $\prime$ $\circ$ $\prime$ $\circ$ $\prime$ $\circ$

7) $\sqrt{\square}$ $\Delta$ $\Diamond$ $\&$ $\sqrt{\circ}$ $\square$ $\Delta$ $\Diamond$

[Here the uninflected word under tertiary stress and preceded and followed by a phonological juncture is designated a relator (R).]

8) Two principal sentences are here related within one complete phonological sentence.

(8) $^2$John's $+$ gone $+$ $^3$home$^1$

1) $\sqrt{2}$ $^3$ $^1$

2) \{ $\prime$ + $\prime$ + $\prime$ \}

3) \{ "John" "has" "gone" "home" \}

4) $n$ $v_1$ $v_2$ $x$

[Here, though "home" would appear in the lexicon as a noun, it cannot be inflected in this frame, and hence is designated "x" in step 4.]

5) N V $v_1$ V $v_2$ A

$v_1$ and $v_2$, $V_1$ and $V_2$ are used to distinguish finite verb forms—
those inflectable for tense—from other verb forms in a verbal construction.]

6) \( \sqrt{\times} \odot ^{0} \odot ^{0} \hat{\times} \odot \hat{\odot} \)

7) \( \sqrt{\quad \Box \quad \triangle \quad \diamond} \)

[Here (steps 6 and 7) the marker between the noun subject and the verbal construction—constructions contain markers—is signalled by the \( \sqrt{-Z^{3}} \)–form of the non-past tense of the auxiliary verb. The auxiliary is in normal transition with the noun and occurs stressless, since it is non-syllabic, a situation which must be symbolized in the clause superfix. Since stresslessness figures on this level of analysis, weak stresses cannot be considered an absence of stress on any level.]

8) The phonological sentence includes one complete, principal, syntactic sentence with a noun subject; a verbal construction—non-past tense of perfect (phase) of verb "go"—; and a post-verbal (adverbial) adjunctival in the complement.

C. Secondary Sentences.

So far we have examined only complete primary sentences. A secondary sentence is a sentence which has no finite verbal. A secondary sentence may be included or have its own independent clause superfixes and order-rank tagmemes. It may be complete or incomplete.

(9) \( ^{2} \text{John} \ + \ \text{hâving} \ + \ ^{2} \text{côme}^{2} \ | \ ^{2} \text{I} \ + \ ^{3} \text{léft}^{1#} \)

1) \( \sqrt{2} \ | ^{2} \sqrt{2} \ | ^{3} \sqrt{1#} \)

2) \{ ^{\times} \ + \ ^{\hat{\times}} \ + \ ^{\hat{\times}} \ + \ ^{\hat{\times}} \ | \} \{ ^{+} \ + \ ^{\prime} \ + \ ^{\prime} \ + \ ^{\prime} \}

3) \{ "\text{John}" \ "having" \ "come" \} \{ "\text{I}" \ "left" \}

4) \( n \ 
\ v_{2} \quad \ 
\ v_{2} \ 
\ p \ 
\ v_{1} \)

5) \( N \ 
\ V_{2} \ 
\ N \ 
\ V_{1} \)

[Here, in steps 4 and 5, \( \sqrt{\text{hâving} + \text{côme}} \) is a verbal construct under
/ ' + ', since it is non-transposable; whereas *have come* is a construction; cf. "have they come".]

6) \[ \sqrt{\text{^o} \ ^\prime} \quad \text{^o} \ \& \ \sqrt{\text{^o} \ ^\prime} \ \text{^o} \]

7) \[ \sqrt{\text{\text{\text{\text{-}}} \ 0} \ \& \ \sqrt{\text{\text{\text{\text{-}}} \ 0}} \ \text{\text{\text{\text{-}}}} \]

8) The one phonological sentence is composed of a secondary principal sentence of secondary rank to the following complete principal primary sentence. Each sentence lacks post-verbal material in the complement, hence the ∆'s are placed inside the ◊'s.

(10) \( ^2 \text{Having} + \text{seen} + ^2 \text{John} ^2 \mid ^2 \text{I} + ^3 \text{left} ^1 \# \)

1) \[ \sqrt{^2} \quad ^2 \mid ^2 ^3 ^1 \# \]

2) \{ ' + ' + ' + ' \} \{ ' + ' + ' + ' \}

3) \{ "Having" "seen" "John" \} \{ "I" "left" \}

4) \( v_2 \quad v_2 \quad n \quad p \quad v_1 \)

5) \( V_2 \quad N \quad N \quad V_1 \)

6) \[ \sqrt{\text{^o} \ ^\prime} \quad \text{^o} \ \& \ \sqrt{\text{^o} \ ^\prime} \ \text{^o} \]

7) \[ \sqrt{\Delta} \quad \Diamond \ \& \ \sqrt{\Delta} \]

8) Here the one phonological sentence is composed of a secondary principal sentence (with a nominal object) of secondary rank to the following complete primary principal sentence which lacks a complement.

(11) \( ^2 \text{I} + \text{heard} + ^3 \text{dogs} + ^3 b\text{arking} ^1 \# , ^2 \text{I} + \text{heard} + ^3 \text{dogs} + ^3 b\text{arking} ^1 \# \)

7) \[ \sqrt{\Diamond} \quad \Delta \quad \Diamond \]
8) There is only one syntactic sentence here, which is a complete primary principal sentence. Both bark and barking are adjunctival to dogs.

(12) He + wants + me + to +

7) The phonological sentence is composed of a single complete principal primary sentence; to go is adjunctival to me. The traditional analysis of me as "subject of the infinitive" does not seem productive.

(13) He + cursed + Bill + for + having + left +

8) The phonological sentence is composed of a complete principal primary sentence which includes a secondary
incomplete sentence as nominal ("object") constituent of prepositional construct. The prepositional construct is a post-nominal adjunctival in the complement of the principal sentence.

D. Types of inverted order.

Up to now, only sentences having normal order—established by inspection of the vast majority of examples in the corpus—have been examined. There are various types of inverted order in the language.

1. Inversion of subject and verb.

\[(14) \quad \hat{\text{2}} \text{Are} + \text{wè} + ^2\text{mén}^2 \parallel\]

7) \(\text{Δ}\) □ ◊

8) Principal primary complete sentence with inversion of subject and simple verb.

\[(15) \quad ^2\text{Càn} + \text{wè} + \text{seê} + ^3\text{Bill}^3 \parallel\]

7) \(\text{∇}\) □ ◊ ∧ ◊

8) Principal primary complete sentence with inversion of subject and (finite) auxiliary verb in verbal construction.

2. Inversion of adjunctival, or nominal material in complement, and subject.

a. \(\text{¥}\) ◊ □ ●

\[(16) \quad \text{Here} \quad \Diamond \text{wè} \Box \text{áre} \quad \overset{\nabla}{\#}\]

\[(17) \quad \text{Down} \quad \Diamond \text{you} \Box \text{gò} \quad \overset{\nabla}{\#}\]

b. \(\text{¥}\) ◊ □ ∧

\[(18) \quad \text{That} \quad \Diamond \overset{}{\prime} \Box \text{dó} \quad \overset{\nabla}{\#}\]

\[(19) \quad \text{He} \Box \text{knóws} \quad \Diamond \text{whô} \quad \Diamond \text{he} \Box \text{is} \quad \overset{\hat{\nabla}}{\#}\]
[Here the included sentence, which is a nominal construction in the complement of the principal sentence, has inversion of nominal material and subject. Note that when this inversion occurs, the inverted item always has secondary stress.]

3. Inversion of auxiliary and subject and of adjunctival material in complement—\(\sqrt{\Diamond \text{ V} \text{ D} \text{ A}}\).

(20) Where \(\Diamond \text{ cǎn} \text{ V} \text{ wè} \text{ gō} \text{ A}\).

(21) What \(\Diamond \text{ dō} \text{ V} \text{ people sāy A}\).

(22) How \(\Diamond \text{ dō} \text{ V} \text{ you sāy A}\).

4. Inversion of adjunctival material in the complement and of subject and verb ("double inversion")—\(\sqrt{\Diamond \text{ A} \text{ D}}\).

(23) Where \(\Diamond \text{ áre A wě D}\).

(24) Down \(\Diamond \text{ côme A the ráin D}\).

Examine the following:

(25) Who \(\Diamond \text{ dō V thēy D sǐn kān thēy D áre A}\).

(26) Who \(\Diamond \text{ dō V měn D sāy A qī D ám A}\).

(27) They \(\Diamond \text{ pāssséd A the cár D on the right D}\).

(28) They \(\Diamond \text{ pāssséd A the cár D on the right D}\).

(29) The man \(\Diamond \text{ tā thē sāw A there D is A hěrē A}\).

(30) The man \(\Diamond \text{ tā thē sāw A there D is A hěrē A}\).

(31) He \(\Diamond \text{ kōnws A the měn tā thē cōm e D in A hěrē D}\).

(32) He's \(\Diamond \text{ vēy kārsół D} \text{ abōut wēm D he D lěts D in A hěrē}\).

(33) \(\text{ Hāvē A thē + měn D pā́d}^1\).

(34) \(\text{ Hāvē A thē + měn D pā́d }^1\).
DISCUSSION

*Question from the audience:* I would like to know if these examples are all from spoken speech.

*Henry Lee Smith:* Yes, every one of these examples is from speech except the ones that are obviously manufactured, like "The big boy had a fine time running down the street" or something like that. All the key work that has been done here has been done from observation of spoken material. This is the only way you can do it.

*George L. Trager (American University):* If I may offer a correction, in "John's gone home" there is a plus juncture after "John".

*Henry Lee Smith:* This is one I knew you would say!

*George L. Trager:* I am absolutely convinced of it.

*Henry Lee Smith:* I decided when I redid this to leave this in in order to have Dr. Trager make that remark. I was going to take it out so there wouldn't be any controversy, but I figured I might as well put it in so we could have the controversy. I'm not decided on this myself. I was really convinced the first time I did it that I was wrong; then I began thinking about it and I figured I might be right. George says it's wrong, and I'll probably end up by saying it's wrong. It's in there on purpose to consider it. I hear it that way at the time of this recension.
The Word As A Descriptive Unit
By Leonard D. Newmark

In linguistics, as in many other scientific disciplines, we have been interested, especially in the past thirty or forty years, in practicing rigorous analysis on the terms and concepts used in our scientific statements. Such analysis was and is, I think, a healthy activity against the imprecise, impressionistic use of terms we find in both past and contemporary unsophisticated studies of languages by people who have thought that one’s Sprachgefühl in a language necessarily implies and somehow excuses his failure to communicate with exactitude his use of terms to someone not similarly blessed with sensitivity to language. We reacted against the definition of a sentence as a "complete thought" or of a verb object as a "receiver of action", which pretended to be definitions against which could be checked mistakes made by people who used the language "incorrectly". We have grown in our understanding of the nature of the terms we use, growth that can be appreciated by comparing, say, Bloomfield's definition of a word in 1926\(^1\) with more recent treatments by Trager and Smith in 1951\(^2\) and Greenberg in 1954,\(^3\) to mention only two of the better developed studies.

Bloomfield's rigorous presentation of the term:

"6. Def. The vocal features common to same or partly same utterances are forms: the corresponding stimulus-reaction features are meanings."

"8. Def. A minimum X is an X which does not consist entirely of lesser X's."

"9. Def. A minimum form is a morpheme."

"10. Def. A form which may be an utterance is free. A form which is not free is bound."

"11. Def. A minimum free form is a word."\(^4\)

represents an important change in approach from earlier statements, such as one of Sapir's:

4 These quotations are all from "A Set of Postulates," 155–6.
"What, then, is the objective criterion of the word? The speaker and hearer feel the word, let us grant, but how shall we justify their feeling? If function is not the ultimate criterion of the word, what is?

"It is easier to ask the question than to answer it. The best that we can do is to say that the word is one of the smallest, completely satisfying bits of isolated 'meaning' into which the sentence resolves itself."5

For Bloomfield, and still more for the scientific tradition that has followed him, a language is known to the linguist through a physical corpus; the linguist is rigorous insofar as he is able to make statements which can be tested on that corpus, statements for which the evidence is either in the physical appearance of the corpus itself or in the results of statable operations of the linguist on the corpus. A rigorous definition of word, then, could not depend on some intangible relation of form to content, on some psychological feeling within a speaker, or on some unstated function of such a unit within a structure.

But Bloomfield's definition was inadequate, by his own admission. After stating, "12. Def. A non-minimum free form is a phrase," he makes what he calls a "special assumption":

"Assumption S1. A phrase may contain a bound form which is not part of a word.

"For example the possessive [z] in the man I saw yesterday's daughter. Def. Such a bound form is a phraseformative.

"This assumption disturbs the definition of phrase above given. Strictly speaking, our assumptions and definitions would demand that we take the-man-I-saw-yesterday's daughter as two words. Convenience of analysis makes an assumption like the present one preferable for English. A similar assumption might be convenient for the Philippine 'ligatures'."4

He felt forced to fall back on the suspiciously vague "convenience of analysis", an unfortunate disclaimer to his own requirements for rigor.

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4 These quotations are all from "A Set of Postulates," 155–6.
5 Edward Sapir, Language, New York: Harcourt, Brace, 1921, p. 34.
Later attempts to define the word took two main directions. Studies like that of Trager and Smith, by elaborating definitions for specific languages, have avoided having to make "special assumptions" to take care of exceptional instances in other languages. Statements like those of Greenberg or Nida, on the other hand, concentrate on the problem of determining under what conditions, for any language, we will want to call something a word; that is, what are the criteria on which our application of special assumptions depends?

But there is a fundamental difficulty with enumerated-criteria definitions of concepts: they don't take decision-making into sufficient account. Given any criterion or any enumerated set of criteria for applying a term which is as widely used as word, we can always find or imagine a case in which we would want to extend our criteria to admit a marginal item which, though it did not itself satisfy the criteria, interlocked in a family of resemblances with members of the class which did satisfy the criteria. A definition of such a concept as word is eventually doomed to failure if the corpus on which it is based is open-ended.

What then is our purpose in defining word? What are we looking for? What is to guide us in our search for better definitions?

Our purpose in any linguistic analysis is of course to understand and describe a language, languages, or language. Criterion definitions are not directly helpful in accomplishing this purpose, but the search for such definitions is of tremendous indirect value in focussing our attention on problems and in rewarding us with an appreciation of the complexity of our object. It may not be accurate to say that a word is a minimal free form, that is, we may not understand from this definition just how we are to decide whether in English of is or is not a word, but it is certainly interesting to us that this simple definition does account for a large number of our decisions to say whether a sequence consists of one or more words, without appealing to muddy phrases like "unit of thought" or "the smallest unit of speech that has meaning when taken by itself." As long as this sort of clarification is the reason for our attempts at definition, fine. But the word unit has been used for much more than that. To mention three of the

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7 I am indebted here to Ludwig Wittgenstein, Philosophische Untersuchungen, New York: Macmillan, 1953, especially part 1, sections 66–7.
more pervasive uses, the word has been employed (1) to provide a basic unit for comparison (both structural and historical) between languages; (2) to organize the distinction between grammar and lexicon; and (3) to establish a basic dichotomy of grammar into morphology and syntax.

I have very little to say about the first use. I don't know whether structural typology would make more sense to me if it were based on less arbitrary measures than the average number and type of units which comprise words—units which are defined for "convenience of analysis." And I have nothing to say about the effect of using word comparisons in historical studies—I would suspect that the traditional emphasis on word etymologies at the expense of other possible investigations might be harder to justify without the conviction that words are the basic building blocks of language.

Before we consider the other uses of words as units, we should consider again for a moment the nature of our terminology in linguistics. No matter how much we might prefer it otherwise, we all know that the meaning of a term is a function of the way the term is used. A single term may have a number of quite disparate meanings if it is used in those meanings. We cannot legislate, as mere speakers of an enlightened dialect, the unique "correct" meaning for a term. So much is commonplace to say. But when we look for the "best" or "most rigorous" definition of a term such as word, aren't we being guilty of just the kind of legislation we warn others about? Our guilt might not be so serious if we were only clarifying what the usage of a homogeneous group of linguists was, or if we were making perfectly legitimate recommendations for a future restriction on the application of a term; but it seems to me⁸ that we sometimes go beyond that: we seem to believe that the definition of word we propose really tells what a word is. If in our study of a language we find that we want to use the term word for different purposes (e.g. as a base from which to describe the phonology; as a base for dividing the "internal" from the "external" syntax for nouns, and then again for verbs; as a name for the items in a dictionary)—if we want to use word for these various purposes, we have several choices: we may with clear conscience use the single term word, only taking care not to claim a unity in reality for our use of a unique term; or we may use diacritic terms to distinguish our different uses, as for example Trager

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⁸ So also, I should add, does it seem to Wittgenstein, section 108.
and Smith do with their phonemic versus morphemic word distinction for English, or as Jordan does with her word versus lexeme distinction for Japanese. We can restrict the term in any way we like, or we may decide not to use it at all, if we dislike the ambiguity of its implications. What we ought not to do is to chase after the "real" word, and when we think we have caught it, to stick a pin in it to preserve it from the profanation of others who don't appreciate its true nature. In our practice of linguistics as a science we should be rigorous but not rigid.

Considering briefly now the second use of the word as a unit, we should realize that the grammar and the dictionary of a language are not independent, discrete entities, but are rather interdependent, fuzzy-bordered sections of a continuum of description. If we achieve, or even try for, a total account of our corpus in our description, we go at the task in two complementary ways. We make statements about classes of morphemes and morpheme sequences in the grammar, and we list words in the dictionary. But in the economy of our description, this simple distinction may not locate for us unambiguously the proper place for the statement of grammatical information.

In Albanian, for instance, the relation of noun plural stems to corresponding singular stems is rather complicated. For some nouns the two stems are identical, for some a suffix appears on the plural stem, for some there is morphophonemic change, for some the plural stem has both a suffix and morphophonemic change, and for some there are two plural stems corresponding to a single singular stem, sometimes with a distinction of meaning between the two plurals, sometimes not. The particular composition of the plural stem has no implications for the rest of the grammar of that stem; there are no statements we would want to make which would be more convenient with a classification of nouns by their particular formation of plural stems. It would be possible to set up in the grammar one 'pluralizer' morpheme (or perhaps two of them), the allomorphic distribution of which would be accounted for in the dictionary by listing, for a given singular stem, the whole corresponding plural stem, or alternatively to set up in the grammar separate classes of nouns for each formation,

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making it possible in the dictionary to list only singular stems, referring back to the grammar by class labels for the stems.\footnote{This is what Stuart E. Mann does in setting up some 30-odd noun declensions, exclusive of some 45 "irregular nouns". See his \textit{A Short Albanian Grammar with Vocabularies and Selected Passages for Reading}, London, 1932.}

What should the relationship between a theoretically proper grammar and a proper dictionary be? If we are interested in trying for a total account of the corpus, our grammar and dictionary between them should exhaust the information given us by that corpus. The grammar makes statements about classes of morphemes; the dictionary lists the membership of those classes. But in the actual traditional dictionary, the indication of class membership is general and vague. An entry in a traditional dictionary is not an item whose detailed distributional class membership is stated so that the item can be properly identified and properly used; the entry is instead treated as a \textit{word}, with all the implications of independence that both the naive dictionary user and the sophisticated linguist often have for that term. Instead of telling us that in Albanian the morpheme \textit{dot 'not at all able'} belongs to a small subclass of "negative adverbs" which occur in Position IV of a verb phrase only after verbs with a negative prefix,\footnote{The details are in my grammar, section 3.4.4.} a traditional dictionary tells us:

\begin{quote}
\textit{"dot adv. (with intensive\textsuperscript{force}) at all"} \footnote{Stuart E. Mann, \textit{An Historical Albanian-English Dictionary}, p. 81.}
\end{quote}

making a futile attempt to inform us of the sharp limits on the distribution of the item, by relying on an imprecise translation plus a label ("adv.") from universal grammar. This sort of dictionary rests on the misconception of the dictionary word as a free form. Freedom for such a dictionary would seem to imply that the word can move about pretty much as it pleases, subject only to the stipulation that it can't occur where it would "make no sense", that therefore an exact statement of distribution would be too complex and of little utility. Surely we need more accurate descriptions than the general labels we find in conventional dictionaries, and at least in many instances we can provide a better description, if we don't insist on
the distinction between bound and free to the extent that the important
distributional characteristics of an item are obscured.

About the third use of word, as the dividing level between mor-
phology and syntax, I find myself in essential agreement with the
position of linguists like Pike, who says, "For the description
of some languages it is not accurate or helpful to postulate a sharp
morphology-syntax dichotomy." 14 The only thing that bothers me
here is the qualification "some" languages. For Pike adds, "For
Indo-European languages we find it relatively simple to demonstrate
that there is a difference between whole words, parts of words, and
groups of words." 15

Now, I have worked with Albanian and English, languages which
are described in most grammars in accordance with the conventional
dichotomy between morphology and syntax, languages which have no
overall structural characteristics which would distinguish them sharply
from other Indo-European languages. But I wonder just what important
features one could find that would make him want to demonstrate a
basic grammatical similarity between, for example, of and distrust,
both of which are words, I suppose, to contrast with the enclitic-
possessive — 's, a non-word, or with stood up, a group of words. Of
course, criteria can be found or constructed which would differentiate
words from other constructions, but why should we automatically look
for such criteria? Having established that of and distrust are both in
the class word, what else do we want to say about that class, other
than what we have already stated as our criteria for definition?

If what Garvin states for Ponapean, that "The word is defined, for
Ponapean, as a sequence of morphemes and morpheme clusters in
fixed order," 16 worked equally well for languages I know better than
Ponapean, I would be happy to accept the morphology-syntax distinc-
tion: morphology would quite sensibly deal with elements occurring in
fixed order, syntax with elements not in such order. But what can we
do with Garvin's definition for English sequences like price of the
second green hat, which manifests fixed order, if that term means
literally what it says, but which no one would want to treat as a
single word? The problem is similar in any language with prepositions
fixed in initial position in a phrase.

14Kenneth L. Pike, "A Problem in Morphology-Syntax Division," Acta
Linguistica 5.125 (1945-9).
15Pike, 126.
For Albanian, it seems to me arbitrary to have to make a decision about whether the three occurrences of the morpheme i (in boldface) in the following sequence are words in none, in one, in two, or in all three occurrences.

\[
i\ biri\ i\ parë\ i\ atyre\ shqiptarëvet^{17}
\]

In all three occurrences i (marking nominative masculine) is bound. In i biri 'third-person's son', it is part of a non-productive, frozen construction-type, particle + kin-indicating noun; in i parë 'first', there is mutual dependence of i with the following adjective—the order is fixed, no non-dependent morphemes may occur between them; in i atyre shqiptarëvet 'of those Albanians', i is dependent on shqiptarëvet 'the Albanians' but is separated from it by a free form atyre 'those'.

Note that the description of the sequence is not affected by our decision about the number of words in the sequence. We may describe the structure of this phrase as a sequence of constructions of different scopes; the constituents of each construction, including the most inclusive one, the noun phrase, are in fixed position relative to the other constituents in the construction. We gain nothing in the description (omitting phonological considerations) by stopping the analysis at an arbitrary point in order to define a level which is of no use in higher levels of analysis. We gain nothing for our description by deciding to call i parë 'first', e 'and', sbikonj 'I see' all words: they enter into higher level constructions in entirely different ways. What we lose by breaking the continuity of description at the word level is the accuracy of the parallel with the continuous nature of the construction itself; the discussion of "syntactical" constructions is displaced from a natural position in the order of increasingly complex structures to a kind of appendix to the grammar in which the relationships of higher with lower-level constructions are likely to be obscured and distorted. As a practical consequence of our tradition of forcing a morphology-syntax dichotomy on languages, the large part of the

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17'The eldest son of those Albanians.' The transcription here is in conventional Albanian orthography. A diagrammatic representation of the immediate constituents in the phrase appears under the transcription.
grammatical description which is relegated to "syntax" gets overlooked in language after language, gets delayed to await the completion of the "morphology"—delayed to the extent that for too many languages, we know wonderful little complexities about the structure of words, but next to nothing about the structure of utterances.
DISCUSSION

GEORGE L. TRAGER (American University): I think that the whole problem of morphology versus syntax and so on is a matter of defining terms and clearly separating levels. In a terminology which I have used, I use the word morphology to include all the treatment of the items which are of the nature of morphemes, which includes tagmemes. This is an over-all term and in that kind of a treatment you can make level divisions which involve a difference between something which you can call morphemes, if you will, and something else which you can call syntax. This is a necessary division and separation in the analysis if you’re not going to get fouled up in the whole business. Obviously, there are morphemes in all languages; I think this is a universal, if you will: all languages have morphemes. Within an over-all morphology, in some languages the statement of morpheme shapes or of their occurrences as independent things of one kind or another may be a very limited one; and most of the grammar may consist of statements about the sequences and combinations of various kinds of morphemes. In other languages it is obviously a matter of convenience if you will, which means necessity imposed by the structure of the language, to devote a great deal of attention to the statements of what kinds of morphemes there are and how some of them cluster, before you take up the higher level of arrangement, which is syntax. It’s as simple as that, it seems to me, and I think that the time has come in linguistics when we ought to stop arguing whether there is to be a distinction between morphology and syntax, or this and that, and get some rigorous statements into our definition, and say: “What I mean when I say ‘morphology’ is so-and-so; what I mean when I say ‘syntax’ is so-and-so”, if we can get agreement on that kind of thing, then we won’t have to argue about whether you have to distinguish morphology and syntax. In many languages you have to make certain kinds of distinctions in order to get your description accurately presented. In other languages some of the distinctions are of no importance. This, however, does not mean that the separate levels do not exist. I believe firmly that they exist everywhere. There is a difference between something like the word level, if you want to call it that—and a word can be defined in every language I’ve seen—and the other level, which is the construction level; and unless you divide these two levels from each other, you perpetuate the confusion that has existed since time immemorial.
PAUL L. GARVIN (Institute of Languages and Linguistics): I agree with Leonard Newmark that the definition of the word for Ponapean would not work for English, because, after all, English is different from Ponapean in that respect. However, in regard to the general problem, I think we all have to recognize that we have morphemes in all languages, and then we have units of varying orders of complexity, that are other than morphemes and are composed of morphemes. I like to call them 'fused units'; other people like to call them by other names. I think that the important problem, then, is this: that as you define your fused units of increasing order of complexity, is there one among them which has a defining criterion totally different from all the others? Now, this happens to be the case in Ponapean, and that is to say, I can define the word by fixed order of morphemes and morpheme clusters, which is a criterion of what I call 'internal structure'. All other fused units are not defined by the criterion of internal structure, but by criteria of what I call 'external functioning', that is to say, distribution and other things. Therefore, I have a fundamental difference in the defining criterion of one fused unit as over all other fused units, which entitles me to say that this is a key breaking-point in the organization of the morphemics of the language. Hence, I am justified in postulating a morphology-syntax division. Now this may not be possible for all languages. I don't at the moment see how this can be done easily for English, that is to say, how you can define the word in English by criteria totally different from those used for phrases, clauses, or anything else. And until you can do that, there will be a discussion about the morphology-syntax division, simply because it is not clear-cut and may not be necessary, and it may be simpler to say that you have morphemes and then you have various units of higher complexity, none of which breaks clean into morphology below and syntax above. This is in regard to the morphology-syntax division. In regard to the matter of grammar and dictionary, this is something which I discussed with Leonard at some length before. I have two comments to make: one is that I believe that one of the important features of the definition of the morpheme classes is whether they are of limited or of unlimited membership. I believe that for some classes of morphemes (for instance, noun suffixes in English) you can by definition state that their membership is limited—there are only so many, and their membership can be exhaustively listed. For other classes of morphemes (shall we say, noun stems or bases in English) the class membership is unlimited—they cannot be exhaustively listed. I would say that morphemes of limited membership class should be listed in the grammar and morphemes
which belong to classes of unlimited membership should be exemplified in the grammar and listed in the dictionary. The second point is that I believe that the organization of the grammar and the dictionary—if it is to be useful—should proceed from totally different criteria. That is to say, that in grammar we are concerned with describing morphemes and morphemic units with listing limited in the manner indicated above; in the lexicon you should, I believe, be concerned with lexical units, which are units of varying morphemic composition which have, in some way or another, the characteristic of having a unified referential meaning. I think that this is what has been done in practice and it has been done very impractically, simply because it was ignored that words are not the only lexical units. There are lexical units of all levels of complexity, including entire sentences, such as "Four-score and seven years ago", which I think is a single lexical unit by virtue of the fact that unless you know this is a quote from the beginning of the Gettysburg Address, you simply cannot translate this properly into Czech or Russian. Thank you.

ARCHIBALD A. HILL (University of Texas): The last two speeches have brought out one of the main difficulties here. One of the real troubles in this whole business of morphology and syntax is that English is such a messy language. If we could get English worked out, I think we would be much happier with things like Albanian, not to say Ponapean. But, I'd like to give a kind of theoretical or hypothetical statement about some of these divisions in English. I give it tentatively, because this is something I'm still trying to work out in my own terminology. But we can assume that phonemes of stress can combine into stress morphemes. To give an example of one, say this particular word said in this way:

\[
\begin{align*}
\text{twenty} & \quad /\text{twent\text{\textbar}y}/, \\
\text{twenty} & \quad /\text{twent\text{\textbar}y}/;
\end{align*}
\]

that is to say, there is a primary and a weak stress, and no juncture between. When we get one of these sequences of morphemes which you can define as a segmental sequence plus a stress morpheme which occurs, and add a plus juncture, you are going to get a phrase superfix—a minimal phrase. If you combine several stress morphemes, with junctures and so on, you then get a phrase superfix of a maximal phrase. Now, on the minimal phrase level, it is worth pointing out that there are again two kinds of things. Suppose, for instance,
I happen to use what is, believe it or not, my native speech type—East-Side New York—and say, instead of twenty /twénti/, twenty /twén + ti/, twenty /twén + ti/.

I got the same stress morpheme and the same sequence of segmental morphemes, but in between the parts of the stress morphemes is now a plus juncture. I got, then, a minimal phrase superfix. Now you noticed that this is a pretty fixed kind of thing. Anybody would call this ordinarily a word. I prefer to say that it is a minimal phrase which is one of the things which, a lot of the time, people describe exactly as if they were words. They add the same way. Now, suppose I use another contrast. I can say this thing in this way:

about /ɔbáwt/,
about /ɔbáwt/;

(weak-primary). Again, no plus juncture. I can also say

a bout /ɔ + báwt/,
a bout /ɔ + báwt/;

(weak, plus, and again primary). Now notice that this may be either one of two things: you can’t tell until you see it in the sentence whether it’s simply some kind of ‘allo—’ of the first thing, that is to say,

‘It’s about eleven o'clock’
or whether it’s a quite different phrase, say,

‘That was a very rough bout’.

But when you get the business of the maximal phrase, combinations of stress morphemes, then we know what level we’re on. Here it’s clear that we’re dealing with syntax. A minor level of syntax, but one of the syntactic levels. But unless we know what we’re dealing with, in terms of whether this is a word, so to speak, or a minimal phrase, and so on, no wonder we are confused by these things. I should point out for instance, also, that in the minimal phrases you have one other
type of distinction; the Trager and Smith distinction between a phrase which consists of two bases, I should now prefer to call a compound. It has, indeed, many of the characteristics of the minimal phrase. It is one, but it has this added characteristic that it has two bases. Thus, then, my somewhat special example /twén + tiy/ is a minimal phrase without being a compound, since I think it is quite clear that we wouldn't say that /t/ is a base.

HENRY LEE SMITH: I wonder if we better not conclude the discussion of this paper and get on to the next one. I'd like to call on Professor Francis. We are going now from the more-or-less theoretical to the practical: An Interim Syntax for the Classroom.
An Interim Syntax For The Classroom
By W. Nelson Francis

My title is meant to suggest two premises on which this paper is based. The first, obvious to all who are hearing the papers presented here, is that we do not yet know all about English syntax, specifically, we do not yet know how to carry through a complete syntactic analysis based upon all the relevant phonological and morphological clues and free from the use of referential or differential meaning. Pioneers like Dr. Smith give promise that we shall ultimately have such knowledge, and that before very many years. They have pushed their panzer attack well into this unconquered territory; but they have also bypassed a good deal of ground that must be mopped up by the linguistic infantry. We must, for instance, have a more thorough understanding of morphemics, to the point of having a complete list or dictionary of English morphemes, and a complete inventory of syntactical superfixes and intonation patterns. We must also have interdialectal studies, so that we can know whether our affirmations about syntax apply to the basic structure of the language as a whole, or just to our own native dialects. There is a great volume of work to be done — enough to supply Ph.D. candidates for many years to come.

The second premise suggested by my title is that we cannot wait either for this consolidating operation or for further theoretical breakthroughs before we make practical and pedagogical use of syntax. Those of us who are faced with the daily necessity of teaching something about the structure of the language, not only to prospective linguists and teachers, but also to freshman writers of themes and sophomore students of poetry, must have some kind of system to work with. We have cast into limbo the old semantic-metaphysical grammar of the eighteenth-century theorists and the twentieth-century handbooks, and thereby created a lacuna in our doctrine. While we are waiting for the new theory to be perfected, we must have something to plug the gap. It is with such a pro tempore system that I come before you today.

At the outset I should like to disarm some of the criticism which might deservedly be brought against my presentation by saying that I am fully aware of its major deficiencies. I shall be guilty of two cardinal linguistic sins: mixing levels in setting up categories of linguistic forms, and using meaning as a determining factor in immediate
constituent analysis. I am sure I am not aware of all my transgressions against linguistic discipline, but these two I do know about. All I can say in extenuation is that at present I don't see any way to avoid them. When I can clearly see the way to carry out the mission of syntax without these interlopers from a pre-scientific age, I shall discard them with relief. Meanwhile, perhaps a frank recognition of their precarious tenure and ultimate discard will neutralize any far-reaching subversive effect they may have.

With this confession of sin out of the way, we may proceed first to note that any syntax must be based upon a thoroughgoing analysis at the lower levels. This means first a phonemics which takes account of all the significant phonological signals, including not only segmental phonemes but the suprasegmentals of stress, pitch, and juncture. Since there apparently are relatively few dialectal variations in syntax, an interdialectal phonemic system like the Trager-Smith one is a valuable instrument. Secondly, we should have a morphemics and morphophonemics which allow us to make clear assignments of allomorphs, particularly affixes, to their proper morphemes, as a foundation for carrying out a clear-cut morphology. On the whole we have this, though there are a good many loose ends in our morphemics that it is the job of the future to tidy up. Thirdly, we should have a morphology that allows us to assign allologs to their proper places in paradigmatic sets; that is, for example, to be able to say with assurance that $go : went : gone$ is a paradigmatic set exactly parallel to $walk : walked : walked$. This in turn permits us to set up morphological form-classes, such as that which contains $walked, went, drove, came$, etc. It is likely that in the present state of our working knowledge, we draw upon historical information to do this more than is considered cricket in synchronic structural analysis, but on the whole we do so primarily as a short cut.

The second premise upon which we construct our syntax is that it is possible to dissociate the structural or syntactic meaning of an utterance from the lexical meaning of the particular items that make it up. The assumption here is that lexical or referential meaning never serves as a syntactic signal, an assumption that is not wholly true. As I have shown elsewhere, the naive speaker often is unaware of the structural ambiguity of an utterance because of the heavy preponderance of lexical probability in favor of one possible meaning over another, as in “he called my brother a waitress” compared with “he called my brother a liar.” But the device of supplanting the
lexical words of an utterance with nonsense syllables, used by Fries and others, demonstrates that we can usually separate the two kinds of meaning quite readily.

To complete the foundation upon which syntactic structure can be built, we must take account of two operations that seem to me to be indispensable, at least in the present state of our knowledge. The first of these is substitution, or more precisely, controlled substitution with minimum variation. By this I mean the process of setting up a frame and varying one element while keeping the rest unchanged. Anyone who has ever tested Christmas tree lights has used the method. The situation in syntax is a bit more complicated because we must often take steps to neutralize the element of lexical probability or compatibility of which I spoke a moment ago. That is, we may start with a frame like "This is the day" and get a rough syntactic class of subjects by substituting for "This" — a class which would contain such items as today, tomorrow, now, Monday, June 14th, my birthday, the first day of spring, etc. But this is also a lexical class, all of whose members are compatible with day. So we have to make judicious substitutions for day as well, if we are to get a pure syntactic class. Since we must substitute for day an item which is syntactically equivalent but lexically different, we must have previously defined the syntactic class to which day belongs in this utterance. The danger of circularity is apparent, nor can it always be avoided. I suspect that sometimes our method must be one of increasingly sharp approximations, arrived at by alternate or multiple substitutions. Theoretically, the method of substitution is a short-cut way of arriving at a statement of distribution. We could, that is, search our corpus of material for all the items which appear in a particular frame. But this is a practical impossibility, and what we actually do is to ask a native speaker, often ourselves, to supply the variant items.

The second essential operation is transformation, which involves making certain controlled changes in syntactic pattern without changing the gross meaning. Here we are again dependent on differential meaning as determined by a native speaker. Thus, given "The dog chased the cat," the native speaker will presumably tell us that "The cat was chased by the dog" means the same thing, but "The dog the cat chased" means something else. The first we can then admit as a legitimate transformation, the second not. Transformation is often the best way to make clear some such structural distinctions as that between "he loves to eat" and "he lives to eat." The former can be
transformed into either "he loves in order to eat" or "to eat is what he loves"; while the latter can be transformed only into "he lives in order to eat". Hence the former is structurally ambiguous and the latter not. It should be noted that a form of transformation of some importance involves change of juncture patterns only. Thus "They accused the man in charge of the theft" is ambiguous, since it may be transformed into either "They accused the man in charge | of the theft" or "They accused | the man in charge of the theft." Given this prosodic transformation, most native speakers could supply further transformations, such as "The man in charge was accused of the theft" on the one hand, and "The man in charge of the theft was accused" on the other. The fact that the former is a more probable utterance than the latter has nothing to do with syntax.

It is time now to move on to the examination of a syntax of English, built on these foundations, which can be taught and used, with all its imperfections on its head. We may begin by recognizing five kinds of signals, two of which are morphological, two purely syntactic, and one sometimes one and sometimes the other. The level-mixing, for which I have already apologized, thus begins at the beginning. The morphological signals are:

**Inflection**, which can be crudely defined as the process that makes *cats* out of *cat; walks, walked, and walking* out of *walk; his and him* out of *he; and* *blacker* and *blackest* out of *black.*

**Derivation**, which can be similarly defined as the process that makes *blacken, blackness, blackish,* and *blackly* out of *black.*

The syntactic signals are:

**Word Order**, which I presume is self-defining, though at the risk of being Johnsonian I can call it the linear sequence of linguistic forms in time.

**Function Words, Structure Words**, or whatever you want to call the items that cannot be replaced by jabberwocky without obscuring or obliterating the structural meaning. These subdivide into various classes such as determiners, auxiliaries, qualifiers, etc. — though no two people that I know agree on the classification.

The half-and-half signal is:
Prosody, which in turn includes combinations of stress and internal junctures, or superfixes, and combinations of pitch and final juncture, or intonation patterns. At this point we may note in passing that while the other four kinds of signals are fairly well indicated in the writing system, this one is not. Instead, it is replaced by another kind of signal, punctuation, which performs some of the same functions, but according to a quite different system. This, of course, is the big element that has been ignored by the writing-based syntax of the past.

On the basis of these signals, we set up four composite word-classes or parts of speech. They are Fries's numbered classes, or approximately so, but we might as well call them nouns, verbs, adjectives, and adverbs. It is apparent from the Trager-Smith analysis and from the discussion here that this is an interim position, which can be justified only on the grounds that it works pretty well in the rough-and-ready kind of syntactic analysis that answers most of our pedagogical purposes, whether we be teaching freshmen or explicating poetry. In the more rigorous kind of syntax which will come, we shall have to distinguish between morphological classes like, for instance, nouns, marked by inflections and derivations, and syntactic classes like nominals, marked by positions and determiners. One of the knotty problems—perhaps the knottiest of all—in English syntax is to make an accurate and precise description of the complex relationships between these two levels of classes. It seems to me on the one hand that a morphological class is a dead end unless it can be carried up into the syntactic level, and, on the other hand, that a syntactic class is likely to be a protean kind of shape-shifter unless it is pretty firmly grounded in the morphology. Yet two facts about English present exceedingly complicated obstacles to accurate description here: (1) by historical accident, one set of three inflections (the noun-plural and possessive and the verb third person) and another pair (the preterit and past participle) are phonemically and morphophonemically identical over a large part of their extent; and (2) transfer of a word from one syntactic class to another is by no means always accompanied by derivational markers on the morphological level, and may not even result in the assumption of inflections usually associated with the new syntactic classification. By this I mean that such an unlikely but not impossible utterance as "Cold conditions the lowly lot of the poorest" presents three words—conditions, lowly, and poorest—whose syntactic classification on the basis of position and prosody is in contrast to what we consider the "normal" relationship to their inflectional or derivational markers, or both, while one
more word, cold, is morphologically undetermined. This is what we used to call "functional shift"; we may not like the term any more, but the problem is still with us.

The only interim solution that I can see now is to set up what I have called composite classes, and adjust competing criteria of classification in some sort of hierarchy that will prevent or at least minimize uncertainty and overlapping. The result is a set of classes that are solid at the core and ragged only at the extreme fringes. They still have to be used with judgment and tact; we can't feed our data into an IBM machine and always come out with an automatic classification. Thus nouns are marked by plural and possessive inflections, a set of derivational suffixes that can be exhaustively listed, position in relation to unambiguous determiners like the, a/an, and my, position in word-order and prosodic patterns in relation to already identified verbs, and certain superfixes such as that which distinguishes /im-print/ from /im-print/. Verbs are marked by third-singular, preterit, present- and past-participle inflections, a relatively short list of derivational affixes like -ate and -ize, position in relation to auxiliaries like can and ought, position in word-order and prosodic patterns in relation to already identified nouns (note the circularity), and certain superfixes. Dr. Smith's class of adjunctivals, identified by the comparative and superlative suffixes or by position with qualifiers like more, most, very, and quite, may be subdivided into adjectives, marked by prenominal position and often by derivational suffixes like -able and -less, and adverbs, marked by postnominal position and often by the derivational suffixes -ly, -ward(s), -wise, the prefix a-, and some other derivational markers. Pronouns appear as a sub-class of nouns, with the additional objective case inflection and the second possessive. Another sub-class of nouns includes other items like some, other, this/these, etc., which have some of the noun-markers but not all; I have called them, perhaps not too happily, function-nouns. The rest are various classes of function words, whose classification beyond the easy and obvious groups like noun-determiners, verb-auxiliaries, adjunctival-qualifiers, and prepositions is at present more or less chaotic, since nobody seems to be completely pleased with Fries's categories, but nobody has presented us with a new set. I have my own, which is pretty subjective and pragmatic; I shall not go into it here, nor yet into the matter of substitutes, except to note that they are present in all four parts of speech: for example the noun-substitute it, the verb-substitute do, the adjective-substitute such, and the adverb-substitute thus.
Next we fit these parts of speech into the various positions in a set of syntactic patterns or constructions. I believe that it is possible to assign all English constructions to one of four classes, which I call structures of predication, complementation, modification, and coordination. All of these except the last are always binary; that is, they can be split into just two immediate constituents. Thus a structure of predication splits into subject and predicate; a structure of complementation into a verbal element and a complement; a structure of modification into a head and a modifier. A structure of coordination may also be binary, like "war and peace" and "either come in or go out"; but it may also be a series of three or more immediate constituents, like "for God, for country, and for Yale." We thus have in effect seven syntactic elements: subject, predicate, verbal element, complement, head, modifier, and coordinate element. Furthermore, we can make the rather surprising statement that with certain important exceptions, like the verbal element in predications, any of the four parts of speech and any of the four constructions may appear as any of the seven syntactic elements. Or to put it the other way around, every time we split a construction into its immediate constituents, we have on our hands either two parts of speech, two structures, or one of each. The process of syntactic analysis consists of continuing the splitting process until we have no more structures, but only parts of speech. We will then have attained the ultimate constituents on the syntactic level. If we wish we may continue the splitting process through the levels of morphemics and phonemics, until we reach the individual phonemes, which are the ultimate structural constituents of the whole business.

One item whose position in this analysis is a bit anomalous is the prepositional phrase. At present I have it in a sort of no-man's-land between the parts of speech and the structures. Actually, of course, there is no reason why it can't also be a structure, whose constituents are preposition and object—hence it is binary like the rest. Likewise there are two kinds of binary complement structures: indirect plus direct object, and direct object plus objective complement. These are distinguishable most easily by transformation operations, though in speech, as I have elsewhere demonstrated, native speakers commonly distinguish them lexically.

There is not time here to illustrate the application of this interim syntax in any fullness. But one sentence, no more contrived than most illustrative examples, will at least illustrate all the structures and all the parts of speech and the way the constituents divide:

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A tall, thin man wearing a gray flannel suit bought a ticket to New York.

The overall structure here is predication, which splits at the single-bar juncture point after *suit* into the subject "a tall thin man wearing a gray flannel suit" and the predicate "bought a ticket to New York." The subject is a series of modifications, one within the other. The first split is at the single bar after *man*, giving us the head "a tall thin man" and the modifier "wearing a gray flannel suit". The next cut removes the determiner, "a". We now have the structure of modification "tall thin man", which is theoretically capable of division either before or after *thin*. Whether by close scrutiny of the superfix, or by the simple transformation of trying an *and* between the adjectives, we are led to split after *thin*, giving us the noun "man" as head and the coordinate structure "tall thin" (with single-bar juncture instead of coordinating function word) as modifier. Contrast this with "gray flannel suit" which transforms not to *"gray and flannel suit" but to *"suit of gray flannel", hence has as modifier not a coordination but another modification, with the noun "flannel" as head and the adjective "gray" as modifier. Going back to the whole post-modifier "wearing a gray flannel suit", we see that it is a structure of complementation, with the verbal element "wearing" and the complement "a gray flannel suit", which in turn is a structure of modification, as we have seen. In this case, since there is only one object, and since "wearing" is a transitive verb (not replaceable by "being"), the object is direct object.

Looking at the predicate of the main structure, "bought a ticket to New York", we recognize it as a structure of complementation and split after "bought", which is the verbal element. The object, "a ticket to New York", is a modification, whose head is "a ticket" with the modifier the prepositional phrase "to New York". Note that if the predicate were "bought a ticket in New York" we should have to call it a structure of modification and split off the modifier "in New York" before splitting the complementation "bought a ticket" into its constituents. There are two kinds of evidence for this distinction. One is frankly lexical, and hinges on the difference between *to* and *in* in an environment involving the purchase of railway tickets. The second is a simple prosodic transformation. We may say "bought | a ticket to New York", but "bought a ticket | in New York", in both cases marking the position of the first IC split by a single-bar juncture.
This has been, I recognize, a hasty and sketchy presentation of a complicated matter. That it is a workable and teachable system of syntax I know from experience. I hope that others will try it when I have been able to publish a much fuller exposition. Meanwhile I welcome comment, criticism, and suggestion of all sorts.
DISCUSSION

ROBERT P. STOCKWELL (Foreign Service Institute): It seems clear to me that a number of people in the room like Dr. Smith, Dr. Trager, or others, could point out that in the analysis presented in the paper *Superfixes and Syntactic Markers*, there are a number of methodological differences in approach and in results from the traditional analysis of syntax, which includes things like diagramming, etc. But it is not clear to me that in either what Mr. Lloyd has presented or what Mr. Francis presented that there is anything basically different. It was not clear to me at all that the phonological elements in the transcription in Mr. Francis’ handout were actually used in the analysis. And I don’t think that this presentation—and I don’t mean to be negative about it entirely, because I think it’s a very elegant set of diagrams—contains anything which is essentially different from that which you could get out of any standard handbook with diagramming, and so on. Now, it is true that you define some of your terms differently—you define ‘noun’ somewhat differently—but I don’t think you defined the relationships differently. The business of substitution and transposition, etc., have been used at least since the eighteenth century in arriving at the grammatical analysis of English sentences. I must confess that I’m a little bit distressed by the fact that either because of what has been referred to as a “dead ear” or for whatever reason—perhaps pedagogical reasons in the classroom—that some of the significant and important methodological differences in the approach to syntactic analysis have not really been utilized here. They have been listed on the top line, as it were, but they were not taken into consideration in arriving at a number of your constituents.

RALPH D. WINTER (Somerville): Maybe the reason they’re not taken into use is because it’s so difficult to do so. It may even be that in your mind and in the mind of those who are skilled in this kind of stress transcription you actually arrive at the stresses by a sort of intuitive grasp of what these men are talking about directly. That is, you figure out what the structure is and you say “ordinarily the stresses are here”; you say it, you hear the stresses and you write them down...

HENRY LEE SMITH (Foreign Service Institute): No! No! In my field work I have noticed over and over again certain kinds of inevitable patterns on this level. It’s not because we were intuitive
about it; we found out that *this is the case*. Consequently we eliminated such words as 'he keeps going' as auxiliaries because they occurred under secondary stress. Why do they occur under secondary stress? Not by intuition, but because that's the way they're said. Therefore, when you have, say, an item under tertiary stress and an item under secondary stress the phonological distinction, which is in the over-all pattern of this language, makes for a different syntactic analysis. It's based on that. You *don't* mess around with your structure in pretty diagrams and then say "it ought to be this way, but, gosh, I'm gonna hear it!" I know that people have said that George and I do this, but it's not true!

DONALD J. LLOYD (Wayne University): But it is much faster, in a given split-second, to go from the structure to the stress than from the stress to the structure.

HENRY LEE SMITH: As you know, when we talk about keeping levels apart, we use every short cut we can, as long as we know what we mean when we say "keep levels apart". But you have got to go back and test that thing from the phonological level before you can make any statement about structure.

DONALD J. LLOYD: It seems to me that Mr. Francis is on a different matter which is of great concern to linguistics and to the future of English teaching. This is the matter of attempting to ground a presentation of the language soundly in the language as it is seen by the linguist—a presentation which goes to non-linguists. We're not so much interested in teaching them how to analyze as we're interested in teaching them how to control, in moving from speech to writing in their native language. I think we can assume that native speakers of English control their speech; we know they don't control their writing. I think that both Mr. Francis and I, if we carried this further, would demonstrate some rather clear differences from the tradition. You're using the word diagram—I should remind you that neither of us disturbs the normal order of the utterance. This is a very important thing. By the time you get through doing a traditional diagram you have wiped the grammar out of existence. That is an important difference. We find in handling the written language that the signals of speech which carry them with most regularity into the writing are the signals of order. I want to keep reminding the youngsters that their writing is a surrogate system which they must always control with relation to their native speech.

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ROBERT L. ALLEN: I think that if Dr. Stockwell used this diagram in teaching English he would find that there is a tremendous difference between this diagramming (which I have used myself) and the traditional kind of diagramming. I have used both systems, and traditional diagramming does not help the student.
Emic Proportion
By Gerald Dykstra

Scholars working in other disciplines may glance in the direction of linguistics and say quite simply that linguistics is a body of knowledge.

Prof. Martinet, writing in Anthropology Today on this discipline of linguistics, finds it necessary to divide it into two European schools and one American school. In America itself, among linguists, all is not always peace and calm and quiet. In fact one might begin to feel that there seem to be different schools of thought within America itself.

I was requested to speak on this panel — Approach to Syntax — on the topic "The Michigan Approach." Now at Michigan itself the Michigan approach is not always clearly defined. It is not always the Michigan approach. There, others have approaches but Michigan looks at the situation, — the individual members of the staff look at the situation, — and come up with different solutions, and you might say there are different schools of thought.

Certainly, there are problems connected with presenting a or the approach of any group in a brief time. In fact, even if we arbitrarily choose a Pike or a Fries to represent the Michigan approach we might still have difficulty. For example, in speaking about Fries recently with a friend from Puerto Rico I mentioned time frames. The friend said, "Oh, he's dropped all that hadn't you heard?" Or if we choose Pike, do we choose Pike of the summer of 1952 or the spring of 1955?

I have tried here to sketch roughly, from one point of view, the relative position of an approach to syntax. Therefore, although it has reference to the work of Fries and Pike, and draws also from the ideas of Gordon Peterson and even of Martin Joos of Wisconsin, I must take the blame for whatever is included in the following. Boldly going ahead, I am presenting an approach but presenting it, first, strictly from my own point of view; and, second, with especially liberal omissions of what would have to be included in a true survey of an approach.
Pike has said, "Meaning and form must be taken together." There are others who have spoken of meaning and form in terms of a dichotomy. I would suggest that meanings and forms themselves are part of a single continuum. Any segments in the area from meaning to form or any correlation of any of these segments make legitimate areas of study.

The potential for substitution, conversion and expansion is considered to be a segment in or a portion of this continuum. "Potential for substitution", "potential for conversion" and "potential for expansion" may really only be other words for an earlier "native reaction" as I see it, but let me illustrate them.

In Ann Arbor, there is a stop sign near a school and about a hundred feet in front of this sign is another warning sign which reads "Stop Ahead." A friend could echo "Stop ahead?" as if to say, "Isn't the stop behind?" or he could echo, "Stop a head?" as if to say, "Don't you mean stop a body?" The potential for substitution is different. I could say "A head is to be stopped." This conversion is not possible except when "a head" equals "a" plus a noun. The potential for conversion is different. In expansion we might get: "Stop straight ahead" or "Stop a big head". The potential for expansion is different. My ahead #1 and my ahead #2 are clearly different in the original statement, or the reaction may be clearly different, yet acoustic juncture can be the same. But there's also a potential for juncture (and for expansion) on ahead #2, even in the event of the absence of acoustic or phonological juncture, and this potential exists just as clearly at the appropriate spot along the speech chain as acoustical and phonological juncture may exist or be absent in another area of the chain.

In connection with this, I'd like to present two diagrams. The first represents the speech chain in a circular diagram and the second represents it in a linear form. In the first of these I will begin at the bottom by marking off arbitrarily an area which will represent roughly the acoustic area of what I have called the speech "chain." To the right and just above this acoustic area, I circle an area which will represent a physiological-phonetic area. This in turn will be preceded by an area which again we arbitrarily mark off and call the area representing neural activity in the speaker, and above that the brain activity area of the speaker. To the left of the acoustic activity area we have an ear activity area or aural-phonetic area. That is followed in turn by a sensory neural activity area and a brain activity area of the listener.
An antecedent of this diagram was formed by Professor Martin Joos of Wisconsin a few years ago in a summer class at the linguistic institute. It has since been refined along rather different lines by Professor Gordon Peterson, formerly of Bell Telephone Laboratories, now with the University of Michigan Speech Department. Among other things, Peterson includes storage and feedback considerations in his model of the speech mechanism. These considerations I must refer to again, a little later, in furthering this sketch of the rationale of an approach.

Although there is no evidence of lack of at least some kind of correlation of activity from one area of the speech chain to another (outside of noise in the system) there is clear evidence to indicate that the related activities are not in very simple one to one correspondence. It is not a case of very simple isomorphism. It has been shown for example that a single opening and closing of the vocal chords is followed by a series of gradually damped acoustic vibrations. Or a quite different illustration can be given by the fact that Navirro Tomás, in his description of Spanish, reacted to what he called the simple stops and the affricate stops as being all equal in length. Acoustic analysis shows first of all that the affricate stops are longer, acoustically, than the other stops. Beyond that, it shows also that the other stops themselves vary in length. [K] is acoustically the shortest by a considerable margin. Still no one would dispute the fact that there is not a phonemic difference in the length of these stops in Spanish. Navarro Tomás was certainly correct in his statements concerning length, but not if he confined his statements to acoustical vibrations. His correctness comes only from describing another area along the chain of events in the speech cycle.

I come now to my second diagram. This diagram is in the form of a three dimensional box with time running on the vertical axis and progression in sequent events of the speech cycle running on the horizontal axis. The third dimensional axis is progression of the sequent events of speech production. Each of these three constitutes a continuum. Individual lines superimposed on the grid represent the speaker's brain, neural and physiological activity on thru the acoustic activity down to the hearer's ear, neural and brain activity. That is to say, what is represented in diagram #1 as a circular channel is here represented as a single straight line.
Since this line of activity along the horizontal axis takes some small quantity of time, the line goes downward to the right — but only slightly — representing a small amount of time.

Imagine an uncounted number of these lines running horizontally in this fashion and each one placed slightly farther outward along the third dimensional axis. The sequence of these lines forms a plane which also slopes downward as it comes out on the third dimensional axis — again to indicate passage of time as the phonemes are put together and succeed each other in neural, muscular, air and other activity. There is represented an area of speaker activity, hearer activity, and air activity (Illustrate) (air might be substituted by wire, tube, speaker, microphone, and possibly by paper, writing, or print.)

The lengths that Navarro Thomás heard as being "same" occurred as such in approximately this area ("interpretation area"). They were definitely not "same" in this area (air). And they were probably not of the same length in the physiological or ear activity areas.

The phenomenon of the single vocal chord vibration producing a series of damped vibrations in the air can be represented in this diagram by making special provision for the use of wave symbols or for the use of multiple line symbols. It would be necessary to state that these modified lines or multiple lines would not represent activity at a different time insofar as their positions varied on a line perpendicular to the whole plane; i.e., they would represent simultaneous activities to the extent that their positions varied perpendicularly to the whole plane.

This diagram might then be conceived of as having many more lines which begin and die out at every conceivable point along the horizontal axis which represents the sequent events of the speech cycle. For example, a tremendous number of changes in neural activity might change what we have come to call a few physiological phonetic features and these in turn might spark what we call only slightly more acoustic changes (if indeed we can make comparative quantifications at all).

It would be the thesis of some workers that at certain areas in the speech chain, stored information is brought to bear. Stored
information as such does not occur in the acoustic vibrations nor in the activity of the ear nor in the physiological activity of speech production. In the areas where storage is a factor, a potential for juncture, or expansion, becomes a legitimate part of the description. Now it might be argued that potential can not be found from the acoustic data alone but I believe it need not be argued. It is quite possible that distribution alone might suffice — but that is another problem.

Notice this "other problem" in these two sentences: 1. "He got me an eggnog" and 2. "He called me an egg head." Now we know immediately that sentence number 1 has interior proportion equivalent to that found in "He bought me a car," and that sentence number 2 does not. We are experienced in, shall I say (the distributions of), the language. The question could be put: "But what makes the brain operate in this way — must it not in fact be, ultimately, reaction to distribution?"

Whatever the answer to this problem may be, I want to give a few more examples illustrating proportion and differences of proportion. Consider: 1. "They called me away" and 2. "They called me a goat." "They called me away" is proportionate to "They called me back." "They called me a goat" is not proportionate to "They called me back," or to "They called me away" but rather to "They called me a liar." In "He stayed around," meaning he stayed near, the "a" of "around" has the same proportion to "round" as "a" has to "way" in "They called me away." To get the same proportion of "a" to "round" that is found in "a" to "goat" in "They called me a goat," it would be necessary to find the sentence "He stayed around" in a context in which "a round" meant "one round."

Compare "A fork will do" and "about will do". "A" may bear the same relationship to "bout will do" in "about will do" as "a" bears to "fork will do" in "a fork will do". Or, in a different situation, take the two sentences "about will do" and "approximately will do." Now again "a" can bear the same relationship to "bout will do" in "about will do" as "a" bears to "proximately will do" in "approximately will do." Potential for substitution (and conversion and expansion) will differ. Proportion will differ.

Notice these sentence types in which acoustic juncture may be the same yet in which potential or proportion is different: A man may
see a woman with travelling bags and say, "I'll call you a porter" or
he may see someone he dislikes and say, "I'll call you names. I'll
call you 'a porter'." Parallel to these but not with the same propor-
tion are these sentences in which the final part represents, in each
case, a new proportion to the rest: "They called me a liar," and
"They called me away," "They called me up," "They called me
early," "They called me lazy," and even possibly, "They called me
father, but me father refused to come."

In terms of a strictly acoustic, or physiological, approach, these
examples are homologous. Yet homologous examples are usually
interpreted on the basis of behavioral, or situational, clues. The
potential for substitution, expansion and conversion becomes an
integral part of an approach to syntax at certain areas in the speech
cycle whereas it is not a part of the approach in studies limited to
other areas of the speech cycle.

In summary, just as by studying thoroughly a single ray of the
sun, if that were possible, a good deal might be learned about the
origin of that ray, or in other words, a good deal might be learned
about the sun, similarly, perhaps, by studying the movement of a
single selected molecule of air we can learn a good deal about speech
occurring in the geographic vicinity. Yet it seems that the linguist
is justified in taking more of the raw material if he can find it; that
he is justified in looking at the three-dimensional chart not only in
its third dimension, (as presented here), but also in its second
dimension. It is there that potential for substitution, with unchanged
proportion, as well as potential for expansion and potential for con-
version are seen as an integral part of the chain, not as a point or a
separate compartment or item apart and easily to be separated from
the language as such.

As a final word, I look upon this presentation not as a fair sam-
pling or representation of what anyone's approach to syntax is, but
rather as my viewing of how an approach fits into a scheme or model
of language.
DISCUSSION

RALPH D. WINTER (Somerville): It seems to me a little unusual to put in a dimension something which isn’t measurable. You have time, which is measurable and the succession of speech segments may or may not be in the same category, but certainly this link-chain — if that’s what you’ve broken and put out in one dimension if I understand it correctly...

GERALD DYKSTRA: Not broken, but kept intact.

RALPH D. WINTER: Just where do you start?

GERLAD DYKSTRA: The single line represents the entire chain.

RALPH D. WINTER: Does the line have two ends?

GERALD DYKSTRA: Well, undefined, yes. That is, the ends are not sharply defined. Admittedly we can not measure where the lines are, where they begin, and where they end.

RALPH D. WINTER: I just registered a bit of confusion here.
Operations in Syntactic Analysis
By Paul L. Garvin

The present paper is concerned with problems of analytic method, rather than stating analytic results. My objective is to spell out in detail the steps involved in working out a procedure for segmenting a text into syntactic units. My statement will therefore be limited rigorously to the English texts under analysis and to the operations performed on them, and will reflect the structure of the language only to the extent to which the latter is represented in the sample under consideration. I am imposing these limitations in order to stay within the bounds of my explicitly formulated technique and to avoid as far as possible supplementing it by insight gained elsewhere, by either intuition or implicit analysis.

Let me now discuss my operations.

I must first choose the order of units into which to segment the text. On theoretical grounds, I may definitely assume only the two extreme orders of units for an unanalyzed language: morphemes — the minimum units, and sentences — the maximum units. I may assume that a varying number of intermediate orders of units, such as words, phrases, or clauses, will emerge from the analysis, but I may not take any specific one of these intermediate units as given. I may thus choose to arrive at syntactic units either by ascending the orders of complexity from the morpheme up, or by descending the orders of complexity from the sentence down. Since my data are the hitherto unsegmented text, I shall choose to segment into sentences, which I may consider the first-degree linguistic immediate constituents of the text.¹

My segmentation will be successful — that is, consistent, exhaustive, and simple — if I can arrive at a definition which, when applied to any randomly chosen text, will yield the required cuts.

¹I am indebted to Louis Hjelmslev, Prolegomena to a theory of Language (trans. F. J. Whitfield; Baltimore, 1953) for many suggestive ideas on rigor of procedure, which I want to acknowledge here, without referring to them in detail.
As a first approximation, I shall reformulate for the present purpose a definition of the sentence which I have proposed elsewhere for another language:² a sentence is a textual segment which is mutually tolerant with the remainder of the same text. I shall similarly redefine mutual tolerance for the present purpose: two sequences are mutually tolerant if they may co-occur, but either may likewise occur without the other.³

From this definition follows the analytic operation designed to segment into sentences: testing what portions of the text may occur as texts in isolation independent of the remainder of the text, with the remainder of the text likewise constituting a viable text in isolation. By texts in isolation I mean, for purposes of this operation, texts which may be uttered ending in a 2 3 1 # intonation pattern,⁴ and without presupposing or implying a specifically structured antecedent text such as a direct question. I shall call this the test of isolability.

Since my definition does not, at this point, include phonological criteria, I shall write my text in conventional spelling. Since, furthermore, I may assume that a deliberate utterance will present fewer analytic difficulties than spontaneous speech, I shall — to go from the simple to the complex — start with a sample of colloquial written English.

My text is the following⁵ (I have left out punctuation marks and initial capitals in order not to allow them to interfere with the segmentation):

²Cf. my Delimitation of syntactic units, Lg. 30.347 (1954): "a sentence, defined for Ponapean as a word or word sequence mutually tolerant with all other word sequences in the same text." Since I have not defined the word in English, I had to change this definition in such a manner that it does not presuppose word boundaries.
³Cf. my original definition, ibid.: "two or more words or word sequences are mutually tolerant if they can occur together but none is a necessary condition for the occurrence of any other."
⁴For the phonological symbolization used here, cf. George Trager and Henry Lee Smith, Jr., An Outline of English Structure, SIL-OP3 (Norman, Okla., 1951), passim. I am indebted to Robert P. Stockwell for his help in transcribing my final text.
⁵From the Washington Post-Times Herald of 25 March, 1956, (p. F17, col. 8).
"she plays with the child and amuses him but a few of the older ones act like they're doing you a favor you feel embarrassed if your child acts up because they didn't get a chance to read or knit personally I should think they would want to keep busy and do little things around the house when the baby sleeps it'd make the time pass more quickly"

In performing my operation, I find that the following textual segments meet the requirement of mutual tolerance without reservations:

"she plays with the child and amuses him but a few of the older ones act like they're doing you a favor"

"you feel embarrassed if your child acts up because they didn't get a chance to read or knit"

The remaining portion of the text can be segmented into mutually tolerant units in either of two ways:

"personally I should think they would want to keep busy and do little things around the house when the baby sleeps"

"it'd make the time pass more quickly"

or:

"personally I should think they would want to keep busy and do little things around the house"

"when the baby sleeps it'd make the time pass more quickly"

I thus find that the operation I have devised to implement my definition has yielded an ambiguous segmentation. Unless I am willing to accept this ambiguity as a feature of the language—which I am not justified in doing after so short a sample, I must either discard my definition in favor of a totally new one, or attempt to eliminate the flaw in my definition by introducing additional criteria. Since I am theoretically in favor of the criterion of mutual tolerance, I shall choose the second alternative.

I shall amend my definition by introducing a phonological criterion, to read: a sentence is a textual segment between two terminal
junctures, or between a terminal juncture and the beginning of the text, which is mutually tolerant with the remainder of the text.

My operation is now simplified, inasmuch as I no longer need test any portion of the text for mutual tolerance, but only portions between two terminal junctures, or between a terminal juncture and the beginning of the text. My text now has to be re-written, with junctures postulated in the places where there are punctuation marks, since they would fall there in fluent reading—/#/ for periods, /|/ for commas and dashes:

"she plays with the child and amuses him # but a few of the older ones act like they're doing you a favor # you feel embarrassed if your child acts up | because they didn't get a chance to read or knit # I should think they would want to keep busy and do little things around the house when the baby sleeps | it'd make the time pass more quickly #"

The phonological criterion resolves my ambiguity, since a juncture intervenes here between the textual segment "it'd make the time pass more quickly" and the remainder of the text, hence only the first of two possible segmentations given above is admissible. The fact that one of my mutually tolerant textual segments now contains a terminal juncture within it (the /#/ between "...amuses him" and "but a few...") does not violate the criteria of the definition, since the latter only specifies that a sentence has to be bounded by a terminal juncture, but not that every terminal juncture constitutes a sentence boundary. This is significant because it allows me to ignore the additional junctures which would have to be noted in the text if it were transcribed phonemically from a normal reading.

My amended definition has thus allowed the successful segmentation into sentences of one text in a deliberate style, with a minimum of junctural variety.

In order to test whether it is applicable to more than one text in this deliberate style, let me attempt to segment another sample transcribed in a like manner:

6From the Washington Post-Times Herald of 31 March, 1956 (p. 12, col. 3).
"experimental use of dogs has proven that they are more economical than other techniques for capturing immature birds | Farley said # the dogs will be used primarily on young mallards | because of the tendency of that bird to leave the water when frightened and scurry to any available brush cover # other types of fowl are trapped by use of nets #"

In applying my amended definition to the new text, I find that the requirement of terminal juncture at sentence boundary in addition to mutual tolerance has by itself not produced an unambiguous segmentation. The following are alternative possibilities in terms of the amended definition:

"experimental use of dogs has proven that they are more economical than other techniques for capturing immature birds | Farley said #"

"the dogs will be used primarily on young mallards | because of the tendency of that bird to leave the water when frightened and scurry to any available brush cover #"

"other types of fowl are trapped by use of nets #"; or:
"experimental use of dogs has proven that they are more economical than other techniques for capturing immature birds | 

"Farley said # the dogs will be used primarily on young mallards because of the tendency of that bird to leave the water when frightened and scurry to any available brush cover #"

"other types of fowl are trapped by use of nets #"; or:
"experimental use of dogs has proven that they are more economical than other techniques for capturing immature birds | 

"Farley said # the dogs will be used primarily on young mallards | 

"because of the tendency of that bird to leave the water when frightened and scurry to any available brush cover # other types of fowl are trapped by use of nets #"; or:
"experimental use of dogs has proven that they are more economical than other techniques for capturing immature birds | Farley said #"
"the dogs will be used primarily on young mallards | "

"because of the tendency of that bird to leave the water when frightened and scurry to any available brush cover # other types of fowl are trapped by use of nets #"

The four alternative segmentations differ in terms of the kind of terminal juncture encountered at the boundary between two sentences: in the first alternative both boundaries coincide with /#/; in the third alternative both boundaries coincide with / | /; in the second and fourth alternatives, one of the boundaries coincides with /#/ and one with / | /.

Common sense suggests that those of our cuts which coincide with /#/ are preferable to those which coincide with / | /; this common sense resolution of our ambiguity can be formalized by introducing a second amendment to our definition, refining the phonological criterion introduced by the first amendment. The twice-amended definition now reads: a sentence is a textual segment between two terminal junctures, or between the beginning of a text and a terminal juncture, which is mutually tolerant with the remainder of the text, such that in case of ambiguity the sentence boundary coincides with the major of two junctures (with /#/ and / | | / being major to / | /).

I now want to test the usefulness of my twice-amended definition for the segmentation of other types of text than the deliberate style chosen so far. My new text is a sample of semi-spontaneous speech: a portion of a recorded conversation which, though unrehearsed, shows some awareness of the recording situation, in the opinion of observers acquainted with both participants. I am transcribing in conventional spelling, but with all terminal junctures noted:

1st speaker: I have some studying to do | and I'm going to study at home #
2nd speaker: what | biology ||
1st speaker: no biology in this # I mean | after all # studying a language | is studying a language # with linguistics concerned #
2nd speaker: and with native informants | concerned #
1st speaker: but definitely # how can you study a language | without a native informant #
Since my definition does not include any mention of the number of
speakers, or of the number of utterance units, I shall disregard
these factors in my segmentation. Common sense observation bears
me out in this, since it is a culturally accepted opinion that one
speaker may interrupt another and "finish the sentence for him",
which implies that a single sentence may extend over all or parts of
more than one utterance unit spoken by more than one speaker.

In order to segment my text by using the twice-amended definition,
I shall thus perform the operation devised to test for mutual tolerance
on textual segments between terminal junctures and between the
beginning of the text and the first terminal juncture. This operation
consists, as was stated further above, in ascertaining whether the
textual segment in question can constitute a text in isolation, with
the remainder likewise constituting a viable text in isolation.

I now find that the following textual segments unambiguously meet
the criteria of my definition as amended, including the two criteria
of the test for mutual tolerance:

"I have some studying to do | and I'm going to study at home #"

"no biology in this #"

"I mean | after all #"

"studying a language | is studying a language # with linguistics
concerned # and with native informants concerned #"

"how can you study a language | without a native informant #"

A residue of textual segments, on the other hand, while impres-
sionistically appearing mutually tolerant, do not unambiguously meet
the first criterion of the test for mutual tolerance: that they must be
utterable ending in a 2 3 1 # intonation pattern without presupposing
or implying a specifically structured antecedent text such as a direct
question. They are the following:

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7 Cf. the definition given by C. C. Fries, The Structure of English, New
York, 1952, p. 23: "any stretch of speech by one person before which there
was silence on his part and after which there was also silence on his
part."
"what | 
"biology || 
"but definitely #"

The first part of my test for mutual tolerance is thus adequate to determine mutual tolerance only for the majority of segments, but not for all segments. Since, however, I am here not dealing with a defining criterion as I did in amending my definition, but with an operation designed to implement a defining criterion, I am allowed to continue using this operation for those segments for which it serves me, provided I can devise a supplementary operation to cover the ambiguous residue. The first part of my test for mutual tolerance then becomes a two-step procedure, with the first step remaining, as before, the isolation of the textual segment, and a second step to be used only to resolve the ambiguities resulting from the first step.

I will attempt to base my supplementary operation on a substitution technique. As a first step, I shall accept my previously formulated requirement of right substitutability: "a substitution is considered right if it produces no change in the previously registered dependences." The dependences which I have registered so far are the mutual tolerance relations between my unambiguous segments. I must now substitute for my ambiguous segments in such a way that these previously registered mutual tolerances remain undisturbed. I can meet this requirement by substituting for these ambiguous segments only such sequences which themselves are clearly mutually tolerant by the test of isolability. If this is feasible, that is, if my total test is viable after the substitution has been performed, then I can consider the replacement sequences rightly substitutable for my ambiguous segments. Since furthermore right substitutability implies functional equivalence, my ambiguous segments will be functionally equivalent to these mutually tolerant replacement sequences, and thus themselves be mutually tolerant.

Let me now see whether I can replace my ambiguous segments by mutually tolerant sequences and retain a viable text:

For "what | " I can substitute such sequences as "you don't | say #" or "I can guess | what it is #", and the text after the substitution remains viable:

8op. cit. in fn. 2, ibid. 9ibid.
"1st speaker: I have some studying to do | and I'm going to study
at home #
"2nd speaker: you don't | say # biology || ", etc.
or:
"2nd speaker: I can guess | what it is # biology || ".

For "biology || " I can substitute such sequences as "don't tell
me | it's biology #", or "I bet | it's biology #", etc.

For "but definitely #" I can substitute "I should say so #" or
"there's no doubt | about it #", etc.

Thus, all my ambiguous segments can be shown to be rightly
replaceable by, and hence functionally equivalent to, mutually tol-
erant sequences. They, too, are therefore mutually tolerant.

Let me now recapitulate my procedure so far.

In terms of the definition of the sentence as twice amended, I
start by testing all segments between terminal junctures, or between
the beginning of the text and terminal juncture, for mutual tolerance.
My testing procedure is to check whether both the segment in question
and the remainder of the text constitute viable texts in isolation, and
I resolve ambiguities in segmentation by the precedence of major
juncture over minor juncture as a sentence boundary. Segments for
which viability in isolation is not unambiguous are tested for mutual
tolerance by right replaceability by unambiguously isolable sequences.

My procedure is now ready for the crucial test: application to a
larger sample of the language, in a style which impressionistically
can be expected to present the greatest difficulties, namely, completely
spontaneous speech.

For this final test, I have chosen a randomly selected portion of
an unrehearsed recorded conversation, in which the speakers were not
noticeably affected by the presence of the microphone. I am again
transcribing in conventional spelling, with terminal junctures noted:10

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10In this test, numerals indicate utterance units, arrows indicate the con-
tinuation of interrupted utterance units (one speaker continuing to speak
while the other is interrupting), rows of dots indicate hesitation pauses.
1st speaker: it was really a very good one it is called the man who likes redheads

2nd speaker: uh huh

1st sp.: did you see that show

2nd sp.: no English movie

1st sp.: yes if you have a chance Jeff you really ought to go to see it

2nd sp.: I will Moira Shearer

1st sp.: yeah Moira Shearer she plays about eighteen parts you know

2nd sp.: she does the Charleston with a wonderful flip

1st sp.: yes well what where’d you hear all this

2nd sp.: I read about it it’s an English movie

1st sp.: yeah and it played at the Circle and you know I thought well it was sort of junky but I called Madeleine asked her if she would like to go and she said she’d already seen the thing so

2nd sp.: Gloria was so tired last night I

1st sp.: yeah well she was tired after the show I know that but it was really funny you know that pungent British wit and all that stuff

2nd sp.: yeah

1st sp.: and Roland Culver and I must say that the most brilliant part of the whole picture was the makeup

2nd sp.: uh huh

1st sp.: they made up Roland Culver to look like an old man and also the other fellow I forget who he was but er it was really beautiful you know that puce complexion and er er the dodderin’ and everything was perfect

2nd sp.: and she’s very pretty

1st sp.: oh she’s a very beautiful girl and a very lovely little shape on her

2nd sp.: yeah

1st sp.: which brings me to remember what we were talking about over there at the Dirty Bird just a while ago I brought a paper I wrote in nineteen forty-eight on er Marine Corps language

2nd sp.: [unintelligible]
(21) 1st sp.: yeah #* I didn't know it | at the time || but it was on .... sort of | more on .... etymology and .... |
(22) 2nd sp.: uh huh #*
(21) 1st sp.: and that sort of business || and Paul | got a great kick out | ....* I'm sure | you remember all the terms || like .... er .... er ....* well | * I can't think of anything | that would .... er ..*
(22) 2nd sp.: Marine slang || *
(23) 1st sp.: yeah #* Marine slang #* you'd like to look at the paper | maybe #*
(24) 2nd sp.: all fouled up || like a Chinese jigsaw puzzle || *
(25) 1st sp.: yeah || or .... like a Chinese fire drill || and .... er .... fubar || and .... you know | all these terms || *

In transcribing this final text, I find that, in addition to terminal junctures, it contains other phonological breaking points, namely, hesitation pauses, sometimes accompanied by hesitation noises. If, for purposes of my operations, I equate the latter with terminal junctures, I can use my criteria to segment unequivocally all of my text but for utterance unit (5), which allows two segmentations:

"yes || if you have a chance | Jeff||
"you really ought to go to see it #",
or:
"yes||
"if you have a chance | Jeff || you really ought to go to see it #".

In both alternatives, the proposed cut coincides with the same juncture; hence the major-juncture amendment to my definition is of no avail to me.

I can resolve this ambiguity by expanding my amendment to the definition to provide for this case. The definition, with the second amendment expanded, will then read: a sentence is a textual segment between two terminal junctures, or between the beginning of a text and a terminal juncture, which is mutually tolerant with the remainder of the text, such that in case of ambiguity the sentence boundary coincides with the major of two junctures (with /#/ and /) being major to /\ or with the first of two major junctures if the second is /\.

My definition as it stands now will eliminate the ambiguity, since I may now use it to choose the second of the two alternatives given above. This is subject to further revision as I segment additional text.
I have obviously not yet arrived at a definitive definition, since my texts have covered only a very small sample of English. Further texts may well make additional amendments necessary, but at this point I may reasonably expect that extensive testing on varied English text material will allow me to refine my definition to a point where further testing will become trivial.
DISCUSSION

Question from the audience: I would like to ask you, Dr. Garvin, if you would be willing to clarify for me what you mean by 'mutual tolerance'.

PAUL L. GARVIN: This is defined as the possibility of two sequences to occur together without either one of the two being a necessary condition for the occurrence of the other — two things that you can say together but that you don't have to say together. Mutually tolerant units are usually coördinate in traditional grammar.

ARCHIBALD A. HILL (University of Texas): Again I have a sort of tentative suggestion. I was much stimulated by this paper. In some work that I have been doing recently, I have a tentative conclusion that you can add a non-linguistic dimension to terminal junc- tures. A plus juncture can never end an utterance, but all three of the others can end sentences or various other kinds of larger units. It would seem that one of the components of a terminal juncture is time. And we measure this time usually in terms of the totality of what is allowed for actual silence and what is allowed for the elonga- tion of previous phonemes. Thus, apparently, there are three sorts of juncture hierarchies involved here: one set, which is the non-terminal — plus and single bar and double bar — in which the maximum total time allowed can be no greater than the minimal time for a double bar. There is another set which is composed of single bar, double bar, and double cross, in which the maximum of total time allowed can be no greater than the minimal time for a double cross. These things seem to occur at the ends of sentences. There is an utterance-final type, consisting again of single bar, double bar and double cross, in which the totality of time allowed is greater than the minimal time for a double cross. When this happens, you're dealing with the end, not of a sentence, but of an utterance; and when you find linkage across these things you're dealing with stylistics on a higher level than the beginning stylistics which shows linkage across the ends of sentences.

HENRY LEE SMITH: I'd like to say that in working with psychiatric patients with tapes that the observation which Dr. Hill has made of these phenomena are borne out. These disturbed people on the tapes are very much sane and they have the same kind of cues that they've internalized, as any of us have. The only trouble is that they're very
much more sensitive to these passages of time. They seem to be very sensitive to the therapist's being able to pick up these signals and throw the ball of the conversation to them. In other cases they're very careful not to throw the therapist these kinds of cues—which are both in junctures and in time—so that the therapist won't break in on their private world. The kind of symbolization of this that I have used in many cases is a single bar with a line through it when in front of the minimal time pieces and I have actually used another symbol to show this extra amount of time that will close what Dr. Hill has just called an utterance. In other words, these factors are the next step in the analysis of linguistic material. What I've said this morning has only to do with the microlinguistic analysis in the syntactic sense, but obviously we need now to move into this area where we get these kinds of interruptions and completion of sentences and all these other cues which are really not much for linguistics, but which are based on microlinguistics.
II

Who Needs Linguistics?
Who Needs Linguistics?
A. A. Hill

To those linguists of my generation, there are two answers to this question: one which we have been all too familiar with over the years and under which we suffer, the other that which we are all too apt to give, and under which other people suffer. The first answer used to be that regularly given by my colleagues, whenever it was proposed that a little linguistics be added to a humanistic program — it was always "well, linguistics is fine, particularly for those who like it, but our program is too full already, we can't crowd it except with absolute essentials." In other words, the people who need linguistics are linguists. Fortunately, the answer is less typical than it used to be. Within the last year, three large Universities in my own sphere of knowledge have committed themselves freshly to the proposition that linguistics is important not merely to linguists, but to an at least occasional other person. The second answer is that which you can get from any linguist, almost as automatically as you get a squeal if you step on his toes. "Who needs linguistics? Why, everybody, of course!" I shall try to steer something of a middle course between these two extremes — not that like all linguists I would not make the linguists' answer. Rather I shall try to be more or less specific about the kinds of people who can now be shown to be in need of linguistic knowledge for practical reasons leaving out those for whom it might be only broadly useful as another part of human knowledge.

At the outset, however, I want to make it plain that I am not saying that any one is incompetent to his job, whatever it may be, if he has not had formal training in linguistics. The world is full of supremely competent people who have never had "linguistics 701 QB, three hours credit, two semesters of foreign language prerequisite" and who frankly do not know their "erne from their allo." For all such people, I believe that linguistics is a tool by which they might have reached their present competence more quickly and more easily, or by which they might even now increase their competence. Linguistics is not something of which you say "either you know it, or you're no good." There are too many ways of being good for such a statement to be either possible or desirable, now or ever.

A conference such as this one is devoted to one proposition that falls within my range. I take it that we would not be here if we were
not convinced that one person who can profit by linguistic knowledge is the teacher of languages. I will not therefore preach to the already converted. Yet the proposition has not always been granted, and in most instances those who say that linguistics is not important to the language teacher are able to point to some branch of linguistic inquiry which is indeed more or less irrelevant to the classroom situation. It is worth while then, to outline specifically the kinds of linguistic knowledge which a teacher most needs, and perhaps even to go on to some of those which are unnecessary.

In the first category, there is pre-eminently a body of knowledge which consists of a few simple principles, but which the teacher must so absorb that they become not intellectually accepted statements, but attitudes on which habitual action is founded. The first of these principles is that language is pattern, and that the pattern is far more important than the individual items that go into it, just as in singing the tune is more important than the words. For the teacher, the attitude means that he will produce patterns for his students, teach patterns to his students, and demand patterns from his students; furthermore, when he gets done, he will start all over again. He will, in short, fill his students’ ears, their tongues, their vocal cords and mouths, so full of patterns, that patterns automatically begin to run out of their lips.

What is meant by patterns, and why are they important? A typical pattern is the sequence of stresses which falls on a greeting like “How are you?” As for the importance, notice that it is the pattern which tells us that this is a first greeting — had it been a response to the first greeting, it would have a different pattern “How are you?” Or to go further with patterns characteristic of social formulas, notice the pattern we use with the words good and night, when we say farewell to an evening visitor. We say /gûd + náyt#/ — it would be rude indeed to use intonation pattern /gûd + náyt#//. I happen to have illustrated by a pattern of stress, and one of intonation — both important examples of how differences in pattern affect meaning. The teacher must know them, of course, or he will not be able to produce them, or correct them, in his students. There are other patterns, of grammar, and of word order. He must know them, too, and know their relation to the patterns of stress and intonation I have mentioned.
He must know for instance, not only that "this is the place John came to" is a different sentence from "this is the place John came to", but that it is the different pattern of stress which is the signal, and which identifies the fact that there is an underlying pattern of different grammar in the two sentences. He must know that a sentence like "Please hook the hook-up up" is intelligible to any native speaker, and would not be, with another stress pattern, such as "Please hook the hook up up." Further, and most important of all, that "Please hook the hook-up up" is a frame into which we can fit all sorts of other items, like "Don't hook the hook-up up," or "Please take the hook-up up," or "Please take the trade-in up" or "please take the build-up out," and so on.

Or for word-order, a simple example, "Mary loves her Mother," will suffice. Notice, though that it is a pattern characteristic of English, and that not all languages have it. As Waldo Sweet has recently pointed out, teachers of Latin have some times made a mistake in trying to rearrange Latin, where there is no such pattern as the English subject, verb, object, into English order so as to make it easier for English students. Such a procedure actually makes the learning of Latin harder, since it teaches the student to look for a pattern which just isn't there at all.

My last paragraph suggests the second basic attitude—patterns inevitably differ from language to language, and the teacher needs detailed information on both native and target language. For instance, teachers of English to speakers of Spanish always notice sooner or later a characteristic Latin mistake, as in "Americans like base-ball," which does not appear if the sentence is "baseball is an American game." One part of the mistake is related to the intonation of a Spanish sentence like "Pues, es un día bonito" and the other to the fact that a weaker-stronger stress pattern is the normal one for phrases in Spanish, as in "una plática malhablada, es fea" as well as "Español mal hablado es feo." Both have the same pattern, whereas English has foul-mouthed for the one, and badly spoken for the other. The Spaniard is merely carrying over, as always, familiar patterns. The teacher will not be able to deal with what is wrong unless he knows what the error is, and will not be able to deal with it easily unless he knows what has been carried over.
Where does a teacher get such knowledge of patterns? He can of course, get it laboriously and slowly for himself by years of classroom practice. Many of the best teachers of older generations did just that, and are doing it still. But there is a source for such knowledge in linguistics — not in all the disciplines which go by that name, but certainly in the one that most interests me, Structural Linguistics. This sort carries in its very name, the notion of pattern, and has for its whole aim the study of patterns, and for its one basic postulate the notion that language is pattern, pattern, pattern, and sets of patterns. As structuralists, therefore, we may well be open to the criticism that we do not communicate, and that our patterns are more evident in our langue than our parole, but it is in the belief in the transcendent importance of pattern that we can find the unity which embraces all the diversity of linguistics from Geneva, Prague, Copenhagen, and even Yale and Washington.

For the practical language teacher, then, the patterns of native and target language are most important, and on acquisition of patterns he bases his drills. He is secure in his belief that meanings are the end-products of the pattern differences, not their foundations. He thinks of words as items to be fitted into the already constructed pattern frames, not as blocks out of which a monument is built. The part of linguistics which is supremely useful to him is that which gives him that knowledge. All parts of linguistic study which do not contribute to that knowledge are at least less useful, and if given alone, may even be hurtful. For instance — and here comes heresy — too much knowledge of English etymology can be hurtful to a teacher of English as a second language, unless he has a firm base of structural knowledge to rest his etymology upon. Suppose, for instance that he knows that an English word like *Érdéal* is the cognate of German *Urteil* — he will not, at least, be very apt to discourage German students who stress the English word as if it were *Órdéal*. A more important statement is one which requires care in the making, since it is easily misunderstood. Too much attention to the "best usage" and to "good style" though useful in their proper places, are hurtful to the teacher if they are his only approach to systematic language study. "Best usage" is that form of usage which has the highest social prestige in formal situations — it does not usually cover informal situations, nor does it cover the socially controlled speech of various levels that the student will be required to hear and understand. No one wishes to teach his students a low-prestige dialect, but it is important to remember that "best usage" is a notion
that can only be properly understood if it is fitted into a frame where it is compared with other usages. If it is assumed that the "best usage" is all that has reality, the facts of language, and so the usefulness of what is imparted to the learner, are falsified. As for "good style" — for the practical language teacher it must be remembered that "good style" usually means skillful and original literary effects. The aim of the language teacher is to produce language mastery, not language artistry. That is, a learner of a language needs to be able to produce the clichés with ease — only when he can do so, should he go on to the dangerous practice of departing from them.

The teacher of second languages is our first individual who needs linguistic knowledge. Our second is the teacher of the native language, here defined as the teacher of grammar and composition. Even ten years ago, such a statement would have been received with considerable resistance; now it is characteristic that a group of High School teachers of English, and members of departments of Education can listen to an address, as did such a group to Margaret Brynat last week in Texas, telling them that linguistics, complete with phonemes, junctures, and superfixes is something they had better know. Again, I do not wish to preach to the converted, as I hope this audience is. Instead, it is my task to describe what sort of knowledge such a teacher needs. Since he is dealing with language, he needs the knowledge that language is pattern, but he does not need to know in detail the patterns of other languages. He needs instead, three kinds of things, not necessarily in ascending order of importance, though certainly the last is most important.

The first is knowledge of the correspondences, and the lack of them, between speech and writing. How far, that is, the system of writing reproduces the distinguishing signals of speech, how far it obliterates them, and indeed, how far it may on occasion introduce new distinguishing signals.

For a teacher of English composition, the first piece of special knowledge is English spelling. By this I do not mean merely a knowledge of how to spell — I mean knowledge of the theory of English spelling. To illustrate, he needs to know the basic units of letter sequences — not letters alone, be it noted — which correspond to the sounds of language. There is a special name for such units, as there is a name for sounds. The unit of spelling is the grapheme, as the unit of sound is the phoneme. To illustrate with a basic
principle of English graphemics, a sequence which consists of vowel, consonant, vowel (I am here speaking of letters) is a grapheme for complex nuclei or diphthongs, when the first vowel sound is stressed, and whether or not the second vowel letter represents a sound. Examples are *write, kite*. Two consonant letters between vowels under these conditions is a grapheme for a simple vowel, as in *written, kitten*. But for the teacher, knowledge of these basic spelling units is not enough. He must also know that English has a host of equivalent spelling units, each one of which is fixed in a given word, defined in turn as the sequence of sounds and letters appropriate to particular sentences. Again to use a technical term, English spelling is morphographemic. This means, specifically, that if you hear me use the phonemic sequence /sáyt/ you will not know how to spell it until you hear me use it in a sentence, and can identify the word which it represents, either in "a sight for sore eyes," "the site of the dam," or "to cite an authority."

The large area of writing and speech includes not only spelling and its theory, but also punctuation, which corresponds in what has been called a hop-skip-and-jump fashion with patterns of intonation and juncture. The basic relation is easy to establish. A story found some years ago in the pages of *Time* will establish it. An unsuccessful candidate for citizenship brought suit, contending that he had been wrongly excluded. The basis of his suit was his answer to the question "Do you belong to any political organizations advocating violent overthrow of the U. S. Government?" His answer I can give most easily by pronouncing it in an unnatural fashion as three separate words /ay//downt/ /now/. He contended that his answer should have been spelled and punctuated to indicate the two sentences "I don't. No.», whereas it was actually recorded as the single sentence "I don't know." It is the tricks possible with variant forms of punctuation which make up the complexities. I recently read, for instance, a skillfully punctuated sentence in a bit of academic writing. I take it that it was to be pronounced as follows

"the saga is written in a |  | 2 3 2 | simple style." That is, *deceptively* was emphasized by treating it as a fully separate phrase, complete with a specific intonation pattern, mid–high–mid, and the special kind of suspensive pause called single bar juncture. The writer of the sentence adopted the only device which I know of, that could make his intention clear — it was to surround *deceptively* by dashes.
The second kind of knowledge which the composition teacher needs is knowledge of different levels of usage. Not merely best usage, but accurate and detailed knowledge of which, of differing forms and constructions, will produce the desired result in a given social situation. An extremely skillful use of this kind of knowledge comes not from a teacher, but a politician — or statesman, if you prefer. When President Truman surprised the experts by winning an election with a resolutely "folksy" campaign, one of his reiterated and always successful sentences was addressed to the plain people who came to listen to him from the back of the train that was carrying him to the University of California, and an honorary diploma — the sentence was "I'm going down to the University and get me a degree." This is realistic fitting of usage to the purposes of the speech, and I am sure that it won votes. I wish that the several English departments with which I have been associated had more often equipped their teacher graduates with the same kind of realistic skill.

The third kind of knowledge is the heart of composition, and of effective communication, whether literary, didactic, or persuasive, in writing. It is a knowledge of style and stylistics. It is not a knowledge very readily obtainable in organized form — unfortunately much that passes for stylistics is on the naive level of a respected book on English prose style which talks about the different rhythmic effects produced by semicolons, colons, and periods. At the minute, I can do no more than outline what would go into such a body of knowledge, and promise that it will one day be forthcoming. The area of style can at least now be defined, and I hasten to add that the definition is not original with me, but is common among structuralists. Style comprises all those relationships between linguistic entities which fall on a wider span than the limits of the single sentence. That is, linguistics covers all items and their relationships up to the limits of the sentence; when we go beyond that to relationships between sentences we are in the area of what George Trager has taught us to regard as metalinguistics, one sub-area of which is stylistics, as defined above. I will give but two illustrations of stylistics, drawn from literature. In a poem by Emily Dickenson, there occurs the following sentence:—

Unmoved, an emperor is kneeling upon her mat.

Linguistically considered, this could only mean that an Emperor is kneeling calmly. Yet stylistically, the sentence is linked to what precedes:
The soul selects her own society
Then shuts the door.
On her divine majority,
Obtrude no more.
Unmoved, she notes the chariot's pausing
At her low gate,
Unmoved, an emperor is kneeling
Upon her mat.

That is, the stylistic setting has completely changed the normal linguistic interpretation at this point. *Unmoved* modifies not *emperor*, but *soul*.

The second is from a very different literary period, the Jacobean. Sir Walter Raleigh concluded his *History of the World* with a famous passage, part of which runs:

> Oh eloquent | just | and mighty | death# Whom none hast advised |
thou hast persuaded# whom none could put down | thou hast conquered#

In terms of kinds of pause and intonation groups, we have three stylistically linked sentences, each bounded by the kind of pause that is ordinarily written by period, even though here it is not. If we represent the two kinds found here by A and B, we have a first sentence which runs AAAB, a second and a third which run AB. It is clear that Sir Walter was arranging sentences in patterns of intonation and pause which would contribute to a total rhythmic effect in the passage. Not that the teacher of composition should demand from his freshman the mastery of stylistic effects that can be found in Emily Dickinson or Sir Walter Raleigh. It is rather that the teacher of composition can scarcely be expected to tell his students what is wrong with their hesitant efforts, or how to improve them unless he has learned to analyze various kinds of stylistic devices and their results, both on the level of literature and that of ordinary everyday writing and speech.

A second kind of teacher of the native language is the teacher of Speech — here of course with a capital letter. In so far as such a teacher is not doing essentially the same thing as the teacher of composition, though under a different departmental roof built over him willy-nilly by the devious course of academic history, he is concerned primarily with those intonation and pause patterns effective in a given
stylistic situation, where the teacher of written composition is concerned with grammatical and lexical patterns. It might be a reasonable division of labor to say that the teacher of composition ought to be concerned with stylistic situations like that in the Dickenson poem, while the teacher of Speech would be expected to analyze situations like that in the Sir Walter passage. This is not all, however, that the Speech teacher should be expected to do, in stylistics. I remember a skillful adviser of teachers of maladjusted children, giving a demonstration of how to win the confidence of a recalcitrant child. Her first utterance was /hwàts+yû+neým 11/, to which the boy immediately responded with a factual and friendly answer. Had the interrogator used the adult's pattern /hwàts+yar+neým#/1, the interrogator would have gotten the response to be expected of a disturbed child who had already had too many uncompromising and contradictory orders from adults.

If knowledge of what kinds of intonation and pause patterns are effective in given situations is the sort of knowledge that would be most obviously useful to teachers of speech, there is also another kind of knowledge which would be even more useful to them. This is knowledge of the sort of thing which has been most carefully explored—though lamentably without full publication—by a member of this conference, Dean Henry Lee Smith. I have in mind the so-called voice qualifiers, whether for instance speech is rapid or slow, loud or soft, characterized by the presence or absence of tenseness and consequent scraping in the lower throat, and so on. It should be mentioned that my child-interrogator quoted above used two qualifiers, slowness and softness, and in the situation, kneeling beside the boy as she was, both contributed to the impression of friendliness to which the boy responded.

Thus both the teacher of composition and speech are concerned with the metalinguistic. But if Trager and Smith will pardon me for taking liberties with their analysis and terminology, there is a difference between the areas with which each is concerned. Relations between entities in sentences lead on a direct line into relationships between separate sentences. This straight line kind of relationship leads then from linguistics to stylistics. The vocal qualifiers, and even more the patterned body movements which accompany speech are not on this direct line. There may be several vocal qualifiers within
a single sentence, and these may be quite independent of the quali-
fiers and body movements which accompany surrounding sentences. They are, so to speak concurrent with sentences, rather than above them. They are thus, to continue the somewhat pseudo-Greek ter-
minology in which scientific analysis works, paralinguistic rather than metalinguistic or stylistic. It is worth pointing out, however, that paralinguistic material whose occurrence goes into larger wholes in the same way that linguistic entities go into larger wholes than sentence units, constitutes an area of stylistics not yet investigated, even by the indefatigable Dean Smith. It is, to bring two bits of jaw-
breaking jargon together, paralinguistic stylistics, or parastylistics, for short. To anticipate something which should structurally fall later, but which I say now for fear I do not get to it, it is parastylistics which most concerns such operators within the sphere of language arts as dramatic coaches and directors.

The last kind of person concerned with the native language to whom linguistics is important, is really two people, the teacher of literature, and the critic. Of these I shall say little, since after all, I have been blasting in speech and in print at both of them for years, with results which are now beginning to be barely observable. I can summarize briefly by two statements. Both teacher and critic of literature need a thorough grounding in linguistics, and over and above that foundation knowledge, as much knowledge of stylistics, paralinguistics, and parastylistics as can be found. The second state-
ment is that for poetry, one of the most critical areas is the relation between the stylistics and the parastylistics. Just how did Vachel Lindsay manage to write in voice qualifier effects of over-loudness into his opening lines

\[
\text{F\text{\textasciitilde}t|b\text{\textasciitilde}ack|b\text{\textasciitilde}ucks#} \\
\text{In a w\text{\textasciitilde}ine/b\text{\textasciitilde}arl|r\text{\textasciitilde}om#}
\]

and at the same time to manage to raise the syllables which get over-
loudness so that they preserve the normal relationships between modi-
ifiers and modified, just as they would have been if both lines had been treated as single phrases? And again, just what artistic effect does this have? I do not know, but I am sure that these paralinguistic effects are an integral part of the poem.

I can summarize those other people who need linguistics quickly. One is the teacher of reading, as Bloomfield long ago maintained, and as Dean Smith has recently demonstrated in a work-shop with elementary
teachers in Maryland. Another, as he and Trager have demonstrated here in Washington, is the interviewer of the mentally disturbed. Not that linguistics is like the kind of Semantics with a capital S, which advanced the notion that incantation of sentences like "Cow one is not cow two is not cow three," was a cure for all mental ills. Rather that observation of speech habits is, if done in detail and with knowledge, one of the best means of finding out what happens within the patient's skin. The statement is old, like so much else that is new in linguistics. It was a commonplace of older textbooks in abnormal psychology that the kind of slurred speech for which the type utterance was "Methist Pispal" instead of "Methodist Episcopal" was a good diagnosis of certain kinds of serious disorders of the central nervous system. It is also true that propaganda analysis has given us a technique whereby psychological states could be plausibly reconstructed from speech and written discourse. If for instance, a man speaks of his mother-in-law in complimentary terms, but if every time her name is mentioned, other terms like selfish, busy-body, nosy, and interfering also appear in the nearby context, it is a reasonable inference that the man does not like his mother-in-law, even though he says he does in the immediate (linguistic) span. What is new in the Smith and Trager observation of disturbed speech is that the observers are trained linguists, placed in a situation where their linguistic and stylistic predictions can be checked by trained psychiatric observers and diagnosticians. To give only a very simple example: One observed patient kept her pitch pattern much on a monotone — yet when her mother was mentioned there was an intonation rise more than was normally required. The diagnostic inference is obvious.

I have already mentioned the fact that linguistics broadly considered is useful to such persons concerned with the language arts as critics, and drama coaches. If useful to analysts of art, it might conceivably be useful to the artists themselves; though this conclusion does not necessarily follow. Artists have only, like the hen, to produce art, they do not have to know how they do it. Yet this much can be admitted, as a reasonably careful and guarded statement. If linguistics can relieve artists of false conceptions of how they produce language art, it should ultimately, and indirectly, be useful to them.

At long last I have reached a conclusion. Who needs Linguistics? You may think I have said — Everybody. I have not. I have all
along been agreeing with the position taken by my older colleagues in the humanities. It is the linguists who need linguistics. It is we who need above all, all the results which our fellow investigators, the innovators and the conservatives alike, are producing within the wide area of human communication. It is we who have the task of making linguistics sufficiently adult, and its results sufficiently available so that all people of good will, who work within the field of language, language art, and language usage, can realize that there are techniques and results which are of value to them, and can by their use of these techniques and results contribute to the aim which all serious students of language must hold, even though unconsciously — the understanding of man in relation to his symbolic activity.
III
Teaching English as a Foreign Language
The Role Of The Native-Speaker In The Teaching Situation
By Edwin T. Cornelius, Jr.

For more than a decade now in this country there has been a concerted effort on the part of many language teaching professionals, particularly those maintaining constant communion with the linguistic scientists, to stereotype the role of the native speaker in the foreign language teaching situation. Those of us who have taken an active part in "promoting" this stereotyped role, and I confess to being a collaborator of the first water, are now beginning to hear from the lips of strangers words which we recognize as our own.

Not so long ago it was possible by pronouncing a few statements about language and the learning of languages to spark heated discussions on the pros and cons of the "spoken" approach, on grammar, and on the role of the teacher of a foreign language. Those of us who have been in the position of interpreting linguistic data to audiences of language teachers early learned to approach these audiences cautiously, attempting to gauge in advance just how much each audience could absorb of our explanations and analyses and how much would be better left unsaid. To discuss teaching techniques with professional teachers is to tread on sacred ground, we discovered, and constitutes in the minds of the teachers themselves an attack equaled in seriousness only by attacks on one's religious convictions. The delicacy of each lecture adventure was to determine how far the lecture audience could be electrified without blowing professional fuses. In a fully charged lecture hall in Cairo some years ago, in the midst of violent discussion following my lecture, I calmly announced that each member of the audience would find a pair of boxing gloves under his chair, and at least half of the professors present thrust their trembling hands under their seats in search of the non-existent gloves. At this moment I find it difficult to believe that an innocent description of vowel phonemes in English, however this description may have differed from the Michael West vowel chart, could have produced such excitement.

But now, these interpretations have become classic. Statements such as these:

One can learn to understand and to speak a language only by hearing and imitating speakers of that language — these are called informants.
It is always best to have an informant who is a native speaker of the language one wishes to learn.

The informant is not a teacher and must not be treated as such.

The normal speaker of a language, educated or not, is not able to describe his language.

We must exercise special care if the informant is literate.

One must try to avoid the schoolroom atmosphere and make it clear that one wants only to hear the informant's ordinary (colloquial) speech.

There is no connection between the knowledge of origins of forms and the practical command of a language.

These statements of Professor Bloomfield,1 made less than fifteen years ago, now startle no one; they are no longer new, unique, and sensational, but, rather, emotionless words which describe the accepted role of the native-speaker in a type of language teaching situation. The present trend to popularize linguistic data is amply illustrated by Professor Mario Pei's statement that the PHONEME has been hailed as the greatest thing since the invention of sliced bread.2

Progress has been made in the re-shuffling of notions about the nature of language and in the adoption of changed attitudes toward foreign language teaching problems. But, much to our dismay, for many of us, the capitulation of old line grammarian professionals has left us without whites of eyes at which to aim, and we become listless because the reformer is still in us.

I want to suggest several new directions in which the energies of the linguist-informant or the reformer-teacher may be turned, avenues yet unexplored and untravelled, — teaching situations yet untainted by the acids of linguistic data. We have to make it clear at the outset,

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1 Leonard Bloomfield, Outline Guide for the Practical Study of Foreign Languages, Linguistic Society of America, 1942, pp. 2–3

2 Mario Pei, Book Reviews, Modern Language Journal, XXXIX (December 1955), p. 429
however, that in re-directing our energies in this way we must remember that the source of our drive and our enthusiasm is not a method of teaching, a limited number of techniques of teaching, but, rather, that we are proselytes to an attitude toward teaching itself, that we are committed to nothing more mysterious nor complicated, basically, than that of the acceptance of language as behavior, and of the acceptance of language learning as the acquiring of a new set of behavior patterns.

Before moving on, let me trace in outline form the principal, now classic, interpretations of the role of the native-speaker, based on a teaching situation familiar to us all.

Classically, the "teaching situation" is defined as a group of from six to ten students whose classroom hours are spent chiefly with a native-speaker of the language they propose to learn, and partly with a trained linguistic scientist; the sole occupation of the native-speaker and, consequently, his role, is that of an INFORMANT; that is, to provide his native speech as a model for the students to imitate and repeat until, through constant correction, the habit is acquired of reproducing the native's speech accurately and naturally; the occupation of the LINGUIST is to guide the learning of the students by influencing their attitudes toward accepting the new language habits, by frequently giving them cues, hints, helps and explanations of the features of the new language, and by pointing out important characteristics of the native-speaker's habits which the students have failed to notice; as an aid in acquiring the new language, the students are provided with a TEXTBOOK which is, basically, a printed record of the forms which are to be spoken by the native informant during the drill periods, and which is to be used by the students as a graphic reminder of the model they have heard and imitated; classically, this printed version has been prepared in a transcription of one kind or another, arbitrarily chosen by the linguist to represent as faithfully as possible the oral model; finally, "the teaching situation" is defined as incorporating a specific number of hours of drill, which number has been arrived at arbitrarily as the typical time required for mastery of a given body of material.

In summary then, the type of teaching situation we have been talking about is a pretty tight little island; a specific number of students; a specialized set of learning techniques; both a native-speaker and a linguist on the staff-side; a special kind of textbook; and a specific number of classroom drill hours.
Now, if this classic yardstick were to be applied to all foreign language classrooms as a means of determining whether, by definition, a "teaching situation" exists or not, the number of presently conducted classes qualifying as teaching situations would be narrowed down to a precious few. Of course some compromises with the classic version are possible immediately. For one thing, for economy purposes, the dual role of the native-speaker and linguist may be combined into the role of a "teacher" who is responsible for the functions of both. In the second place, since both the kind of transcription and the exact number of class hours specified have been arrived at arbitrarily, there is some compromise possible here.

Keeping in mind the markers on this yardstick — that is, the definition of students, techniques, staff, textbook and class hours, admitting all possible compromises, — let us move away from these classic interpretations temporarily to discuss some of the characteristics of the teaching of English as a foreign language in classrooms outside the United States. Although it would be difficult to talk about the teaching of English overseas on the basis of generalizations, it is possible to single out specific situations as useful examples for our purposes; and you will recall that earlier I stated these purposes as the suggestion of several directions in which our energies might be turned now that we have made this much progress in the way of changed attitudes toward foreign language teaching problems.

For example, I wonder whether we would be willing to attempt to come up with something helpful in the way of professional advice to the Vietnamese teacher of English on the secondary school level. A basic problem here is two-fold: how can the teacher who has never had opportunities of learning to speak and understand English ever hope to gain proficiency in the language? Or, second, what helpful thoughts can be offered in regard to the textbook the teacher has been using in the classroom? It is an English language textbook, written in French for students in France; but in the Vietnamese classroom, French is a foreign language. In view of the necessity of explaining an English item in French, then of translating it into Vietnamese to be sure the students understand, and adding a Chinese version for the sake of several students who still don't get it in Vietnamese — in view of this necessity, how can you suggest the teacher can cover more material each hour?
As a concrete example of teaching situations overseas, let me put before you in summary form the characteristics of a true-to-life situation which exists at this moment in at least one foreign country. I want to call this "Situation A" and, although I know that it differs only slightly from innumerable other situations in countless other countries, I have already indicated that it is not my intention to generalize in the description of characteristics.

In "Situation A", the characteristics are these: on the average there are 90 students in each English class; the textbook used by the students and prescribed as the official text is a turn-of-the-century model; the teacher is a non-native speaker of English and for all practical purposes a NON-SPEAKER of English, who spends an average of 10 hours a day earning a living by teaching English; the curriculum is like a railroad time-table and determines exactly what must be covered in each hour of class. And the hours of classes are limited — three hours a week, except when holidays intervene, which is, of course, not reflected in the curriculum time-table; and just to make sure the subject is covered, the closing of each school term brings an official government examiner on the premises who may never have studied English but who, after quizzing each student in the presence of the teacher, makes an evaluation of the achievements of the student, and the qualifications of the teacher.

Now, to begin with, as I think you will agree, "Situation A", as I have described it, represents a few compromises with the linguist-informant type of teaching situation which we summarized at the outset.

Actually, however, I haven't alluded to the personal compromises which the teacher himself must make. The windows of his classroom are broken and during the cold of winter he stands before his class, clad in overcoat, scarf, mittens and wool cap; his students are shriveled little icebergs perched on hard wooden benches;

Glancing at this scene, the obvious thing to do, of course, is to conclude that "Situation A" must constitute some kind of a situation, but by no stretch of the imagination a "teaching situation".

And most language teaching professionals visiting in "Situation A" have made this obvious conclusion. The American observer — typically — has quickly surveyed the situation, announced to the
local teachers that they can’t possibly do what they in fact have been doing for years, and has moved on with his yardstick.

Whether or not we choose to recognize this situation as a teaching situation, the fact is that a type of teaching situation does exist. As a matter of fact, there may be more similarity between “Situation A” and language teaching situations in most schools in the United States than between the classic linguist-informant situation and U.S. school situations. This is the avenue as yet unexplored and untravelled by the linguist and by the language teaching reformer; traditionally, they prefer to block off this avenue as a dead end, and go back to familiar paths; these are the areas as yet untouched by linguistic data; and these are the directions in which I suggest that our energies be turned in a serious effort to define the role of the teacher — of the native-speaker, if you will — in this type of situation — and to suggest positive ways of applying our classic techniques.

Concretely, here are some of the needs to be taken into consideration:

1. There is a need for re-thinking classic descriptions of the functions of the native-speaker (or teacher) in terms of broader and more varied teaching situations.

2. There is a need to force ourselves into the habit of approaching each new teaching situation with a willingness to find out what the pre-determined factors are — the number of students, the staffing, the textbooks available, and the number of class hours at the disposition of the teacher and — in view of these cold, hard facts of the situation which do not permit changes, to devise techniques to fit that situation.

3. There is a need for us to spend less time getting upset about the detailed differences between our own and someone else’s arbitrary decisions regarding methodology and techniques of analysis, and to spend more time pooling our professional resources and experiences so that we can help bridge the much more critical gap between linguists — as a group, and language teachers — as a group.

4. There is a need for us to re-state some of our stock answers to stock questions. For example, as re-stated:

Q. What’s the maximum number of students you can teach in one class?
A. How many students do you have in each class?
Q. What's the best kind of textbook to use for teaching "X" language?
A. What texts do you have access to? or What text is required by your school?
Q. What's the minimum number of hours needed to learn "z" language?
A. How many hours do you have available?

I confess, at this juncture, that the past five years of overseas experiences and constant association with foreign teachers, most of whom plug away day after day in "Situation A" — type of teaching jobs, have brought me to the place where I can look upon a class of 90 students or so as a pretty workable arrangement. Divide the 90 students into nine rows of ten students each, instruct all ten of the students in each row to respond as one voice on the signal for "individual" repetition, and all nine rows — that is, "voices" — to respond in unison on the signal for "choral" repetition, and what you wind up with is nothing more than a simple nine-member class — ready for informant drill.

Although it is impossible to spot poor imitations out of 90 voices repeating in unison, you learn very quickly to identify the unacceptable imitations out of only 10 voices during the individual row repetition. And, by having a daily change in seating arrangement within the row, during the course of every ten hours of classwork, you have had each of the 90 students sitting under your nose for constant close-range check on his individual progress. By making a rigid division of class time between drill periods and explanation periods, you easily succeed in developing two different personalities — a "split" personality, if you will — in your dealings with the students: one, that of the informant who doesn't ever know the answers to any questions asked by the students during the drill periods, but who insists stubbornly on mimicry of the speech model; and the other, that of the linguist who is the seeing-eye and the question-answerer for the group. On the spot adaptations of the printed material of the textbook are not difficult to devise; even Charles Dickens, who usually manages to pop up in about the second year English language textbook, can be dissected into sentence portions for ease of repetition.

You see, the problem of working in "Situation A" is that you are forced to accept the fact that you have certain pre-determined factors in the teaching situation, and you have to take it from there: factor
1 — 90 students; factor 2 — an officially prescribed textbook; factor 3 — no additional staff; factor 4 — a specified curriculum to follow; factor 5 — three hours a week, minus holidays, to do the job. You have perfect freedom in only one direction: the part you can play in shaping the students’ attitudes toward language and the learning of that particular language, and the minute-by-minute and week-by-week techniques you employ in the available hours of contact with the students.

The need is apparent for the description of the role of the teacher — the native-speaker-informant and linguist combined — for a definition of that role in terms of widely varying teaching situations, and not only in terms of arbitrary markings on the classic yardstick.
DISCUSSION

J. DONALD BOWEN (Foreign Service Institute): I think that the classic technique, using informants and linguists, ought to take cognizance of the fact that if learning through guided imitation is to be accomplished, that guidance should be correctly given by both the informant and the linguist. The areas of the guidance which is offered will be somewhat different, but if a native informant is to be no more than a producer of sounds, a motion-picture with a good sound-track will do quite as well as a native speaker. We ought to recognize that the native speaker has more to contribute to the classroom than simply the production of sounds.

JACOB ORNSTEIN (Washington, D. C.): I think you certainly made a good point in saying that willy-nilly the situation is going to cause us either to resign our jobs or to apply ourselves to it. But I think that one point which you probably have but did not bring out was the fact that the rôle of the mechanical device is second-best, although sometimes, perhaps, they might be better than the native informant. What is your feeling there? Especially on the magnetic tape recorder?

EDWIN T. CORNELIUS: There are situations into which, should you have the experience of walking, you would find that there are no ways to start reaching around for additional props, or for perhaps the kind of reform I was referring to at the outset, of being able to militate for more hours in the classroom and fewer students. I'm suggesting posing a situation: given the facts, what can be done here? The tape recording situation? Fine. The trouble is that in Situation A they don't have electricity all of the time. They can't afford equipment like that. The point I'm posing is that we have to do something, and do we throw up our arms and say that this is not a teaching situation and that it's impossible, etc? Or, do we try to look into the possibilities of using some of these attitudes given the circumstances and the predetermined factors of the teaching situation.

JACOB ORNSTEIN: Another question. Have you had experience in trying to familiarize yourself with teachers in foreign countries and trying to familiarize them with some principles of structural linguistics?
EDWIN T. CORNELIUS: Yes, very definitely. I learned some years ago just how far I could go in the presentation of certain principles of structural analysis. For instance, up until 1952, I wasn't successful in getting much beyond the establishment of segmental phonemes. After that, there was simply no comprehension on the part of the student. Since then, however, there is a certain percentage that has responded to this and has taken a serious interest.

L. E. DOSTERT (Institute of Languages and Linguistics): We have had here at the Institute a considerable body of experience in the teaching of English as a second language. We conducted a program of approximately two years duration in Yugoslavia, and are now engaged in a program in Turkey, which has been going on for nearly three years, and will probably extend until 1958. The one significant thing we have learned — I think this is vital—is this: you can orient your teaching staff. In Turkey, for example, we have something like fourteen Americans who are helping with the program and are locally recruited. They have no linguistic sophistication of any sort—really—and most of them have been taught English in the traditional manner and thus are disposed, naturally, to try to teach it the way they were taught. The one thing that I think is of significance is that it is relatively easy to take your native speaker—American, in this case—and train him to understand in a relatively short time the spontaneous pattern of errors that the Turk learner is going to bring to the learning of English. It doesn't take a great deal of complicated terminology to do that. You can simply show them what a Turk does when he tries to make certain American English utterances. You have no idea how much this will improve the teaching capabilities of your untrained staff. Now this, together with an in-training program, whereby your native speaker meets with his colleagues once a week for an hour and a half for a review of the emerging pattern of difficulty, and for orientation by the linguist, and for a tabulated analysis of the pattern of errors, you formulate means of correction, and bring significant improvement in your teaching techniques.
The Problem Of Linguistically Diversified Classes
Bernard J. Choseed

To my topic, "The Problem of Linguistically Diversified Classes," I should add a subtitle: "The Problem of Typical Classes in the United States," since it is essentially a problem confined to the teaching of English as a Foreign Language in the U. S., (or, for that matter, in any English-speaking country), and not basic to teaching abroad in a non-English-speaking situation. Typical, because, whether we like it or not, the class made up of students with different language backgrounds is the type most of us have to face every semester. The institution equipped and staffed to set up separate sections divided according to the native language of every student, is fortunate indeed, but all too rare. I stress fortunate, since we are all, at least here, in agreement on the soundness of approaching English via the native language of the learner. Today, there is little question as to the advantage of a program based on a functional analysis of the target language coupled with a similar analysis of the learner's language. The pages of American and British professional journals are filled with reports on effective means of teaching English to speakers of Spanish, to speakers of Arabic, to speakers of Serbo-Croatian, etc., but the literature on teaching English to a group of speakers of Spanish and speakers of Arabic and speakers of Serbo-Croatian, — i.e., to a diversified group, — is almost non-existent. When the question came up in discussion at last year's Round Table: "...what do you do when your learners speak a variety of languages and, in addition, your linguist speaks the target language rather than the learners' language?", Professor Davis quite bluntly answered: "This is a very difficult problem indeed. . .but it is a problem which we must meet somehow."

So, while granting the efficacy in both theory and practice of linguistically separated groups, it is time that we examine a little more closely than heretofore the reality which is all too prevalent today, and which in all probability will continue to prevail.

The mixed situation presents the greatest problems at the basic level of instruction, that is, in the course set up for complete

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beginners and for those with some previous training in English, but who as yet cannot handle the skills involved in oral communication. Obviously, the first major hurdle would appear to be that of establishing some means of communication between the teacher and the students. It would be very desirable to have the ultimate in polyglots for instructor, but such a phenomenon is either non-existent or else, simply not available when needed. With instruction conducted in English only, for some time to come the uncertainties and time-wasting features of the one hundred percent Direct Method can become a very constant headache. How can we check on the students’ comprehension efficiently and rapidly? How can we avoid spending an inordinate amount of time in endless groping for meaning?

Next, how can we help each student arrive at what one of our British colleagues calls a “comfortably intelligible” pronunciation? Focus on the problems of the separate language groups in turn? Devise special drills separately for each group? This would be fine, but I am afraid, this is merely a rephrasing of the ideal situation, where instruction is carried on for homogeneous groups. Instead of one full-time program, we are now actually talking about a number of separate schedules for the respective number of linguistic groups involved, or perhaps even about private tutoring. Of course, an effective solution lies in having one part of the staff assigned to teaching, and the other part to research and the preparation of special materials. But in the typical situation I am talking about, it is the single teacher with the single class who must face all the problems by himself. The chances are he will know little or nothing about the languages of many of his students. Does this, therefore, rule out the possibility of utilizing the students’ own languages in toto?

And finally, the question of a basic textbook. Since we cannot as yet reasonably expect one set of materials scientifically worked out to deal with the specific problems of each and every language group, does this mean we cannot use any one linguistically oriented textbook?

Now, despite the problems and drawbacks that are inherent in the diversified class, let us nevertheless look for ways to circumvent

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2David Abercrombie, “Teaching Pronunciation,” English Language Teaching, III, 5 (Feb. 1949), p. 120.
and overcome some of the flaws. Let us see if we can even find some distinct advantages in the mixed situation.

The old virtue of the Direct Method will, of course, remain in effect, that is, English will be the language heard and used at all times. There will be no danger of the teacher’s falling into the rut of practicing his own knowledge of the students’ language, and the students will have to communicate with each other, as well as with the teacher in the target language — since English will perforce become the *lingua franca* of the group as a whole.

Basic meaning need not be an insurmountable problem — particularly if we accept the principle that the initial period in language learning must be devoted to the acquisition of a functional mastery of the phonological and structural features of the target language. We know that there is often little correlation between degree of comprehension and the flexibility of the learner’s vocal organs, and that sometimes controlled pronunciation and pattern drills achieve their best results with students who understand the least. However, this in no way implies the elimination of meaning — if such a thing were at all possible! The students’ attention, we know, is instinctively centered on meaning — often to the exclusion of everything else. And there is no reason why the teacher should not allow the student to continue to focus on meaning, while the teacher himself in his drills and exercises is actually focusing on something quite different. The students’ attention to meaning must be strictly controlled and arbitrarily directed at all times. Thus, structure drills in various verb forms can be manipulated and varied on the basis of the barest of vocabulary items, and yet be made interesting and meaningful to the students by the substitution of, let us say, various place names. A rapid substitution drill like, "He comes from New York", when changed to, "He comes from Chicago," or, "He comes from Chattanooga," etc., satisfies the students’ quest for vocabulary and at the same time allows for maximum automatic drill and mastery of the structural item involved.

Explanations and theory will have little functional value in this situation, other than as one form of training in aural comprehension. More than ever, the teacher must concentrate on concrete and material demonstrations wherever and whenever possible. Simple classroom directions rarely present difficulty. If the teacher knows one of the languages of the student group, he may, of course, transmit directions to the speakers of that language, and the other students invariably
comprehend by watching what their classmates do. In the event a beginner sits back and insists on not understanding a thing, — and such cases are not unknown, — the most expedient measure would be to bring in an interpreter and have him sit next to that student for one or more sessions. In this connection, here at Georgetown, we have been looking for ways to adapt the interpreter principle to tape recordings. Thus, we now have one tape for initial proficiency testing available in several copies, each one containing introduction, explanation, and directions in a different language, but all carrying the exact same English test, copied from the original master tape.

In general, translation can hardly play any direct role in the mixed situation, at least not in the classroom, although on occasion I have found it useful to try a question like, "How would you say this in Japanese?", and then watch how quickly the student can come back with an utterance in his own language. While I obviously can have no guarantee that this utterance will be the equivalent of the English one, I think the rapidity with which the student replies can offer some clue as to his comprehension. As a rule, however, comprehension will have to be checked by means of rapidfire questions in the target language. Though here, care must be taken not to elicit too many "yes" and "no" answers. Human courtesy impels non-speakers invariably to answer "yes, yes," to any and all questions, and since "yes" is somehow the most pleasing answer to the interrogator, a student's percentage of correct answers can become ridiculously high. Questions like, "Do you understand?" or, "Do you know what this means?" must be avoided at all costs, particularly in the diversified situation.

Making pronunciation practice and correction efficient and practical requires more effort in the mixed class than in the single language group. Instead of coming already equipped with standardized special drills based on previous analysis of the students' own languages, the teacher will have to employ on-the-spot techniques, devise minimal pair exercises as the problems arise. Thus, if a Vietnamese student hears and makes no distinction between work and walk, and yet has no such difficulty with Turk and talk, then the teacher will have to pay attention to how much the /erk/ and /ok/ contrast is conditioned for the Vietnamese when preceded by the semi-vowel /w/. While this may suggest interesting clues as to the structure of Vietnamese, the teacher's immediate task is not to go into intensive analysis of Vietnamese, but to direct this new data to help the student overcome
his difficulties in English. In this and every other case, the teacher will be forced to deal with each student as an individual learner of English, rather than as a stereotyped representative of some particular linguistic background.

As for any danger of the students' picking up each other's errors in pronunciation, actually, such a danger is relatively negligible. As Professor Lado pointed out some time ago, "easy contamination" is almost non-existent. Spanish speaking students will make errors peculiar to Spanish speakers and not those characteristic for speakers of Turkish. It is, indeed, often encouraging for one group to see that they can readily produce a sound that seems so difficult for other students, and vice versa. The Spanish speaker hearing a Vietnamese mimic pitch contours with relative ease, is less inclined to resist or to give up altogether. At times, students can even be drawn into assisting the teacher. An Italian speaker will enjoy being appointed guardian over his Spanish neighbor's final /s/-es, and the latter in turn, can be counted on to look after the Italian speaker's reluctant initial /h/-es.

Here, too, further use can be made of the learner's native language, even though perhaps not for the purpose of communication. With proper motivation, it is not difficult to arouse sufficient linguistic curiosity about their own languages to provide useful aids for the students and for the teacher. By having a Spanish student supply a word with /I/ in final position in Spanish, we can readily obtain a fixed contrast with the English final /l/, for purposes of demonstration, clarification and practice. Sometimes having the student produce a series of utterances in his own language may reveal the existence of sounds similar to those causing so much trouble in English. Thus, when I found something very close to a retroflex /r/ appearing in certain combinations in Vietnamese, from here on all drills with /r/ became more meaningful for the student, and the results more fruitful.

Use of the learners' languages, of course, calls for reasonable skill in mimicry on the part of the teacher himself. He should be able to mimic an utterance in a foreign language, and on occasion proceed to place the same utterance into the framework of English sounds.

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Changing "Yo hablo español," into /yow hahblow espinyowl/, is not only entertaining and comical, but is an effective device for convincing the student of how much actual change and distortion is needed to make his own sounds appear to be English ones.

Finally, the question of textbooks, (my concern here is not with readers, where the problem is not so great). While we now have a rather extensive body of materials carefully worked out for speakers of different languages, there are almost no linguistically based textbooks specifically designed for use with mixed groups. Davis' current project based on the ACLS work, is an important step in this direction. Prator's Manual For American English Pronunciation, while not intended for teaching on the basic level, is an interesting example of what can and has to be done in this field. In the meantime, in choosing a basic text for instruction in spoken English in the diversified class, I think it is the teacher's job to select solely on the basis of how satisfactorily and effectively a particular text describes and presents the target language, rather than on how cognizant a text may be of the learner's language. Since the majority of our learners in the United States are and will continue to be Spanish speakers, it is no surprise that the most thoroughly elaborated and tested materials to date are those that have been prepared for the teaching of English to speakers of Spanish. This should in no wise prevent us from using such texts with speakers of other languages as well. Students are conditioned to accept such arbitrary decisions without protest, providing the teacher does not teach the Spanish students first, and the others last, and providing of course, that the teacher concentrates on the teaching of English — and not Spanish! Just as one and the same drill may present different problems for each individual speaker of Spanish, so that same drill may just as effectively be a drill in something else for the other students. The drill on final /s/, /z/, and /iz/ in the third person singular of the present tense, may just as validly be a drill in final clusters for the Vietnamese speaker, and so on.

Of course, when using one book in a mixed situation, any explanations and discourse on theory present in that book will have to be pushed very far into the background. We will not be able to depend on having the student read over the explanations at his leisure outside of the classroom. All materials will have to be presented graphically and dramatically, and forcibly imitated and drilled in the classroom, before they are taken home for further study. Tapes for laboratory
practice, too, will have to depend on an infinite variety of practical techniques, and contain almost no explanations or intricate instructions — since the latter will not be too well understood anyway.

The techniques and methods I have suggested for dealing with some of the problems in the mixed situation are, of course, not particularly new or startling. I think, however, that they can serve to underscore the urgency for the teacher’s concentrating more than ever on effective means for the teaching of language, that the teacher will have to concentrate more than ever on practical demonstration and drill, and can never fall back on monologues about theory and rules. Audio-visual aids, film strips, wall pictures, tapes, etc., are even more essential in the mixed situation than in the single-group program. Advantage can be taken of the genuine interest mixed students have in each other’s countries and customs. The Spanish speaker can be counted on to take a greater interest in Korea than in a neighboring Spanish-speaking country, and the results of classroom reports and debates can be as stimulating and rewarding for the teacher as for the students. I have found that mixed students are in some respects more easily motivated to participate in group activities than are students coming from a single cultural and linguistic background.

Obviously, the problems in the mixed situation are many and complex, but there is no reason why good linguistic and pedagogical theory and techniques should not be used just as systematically and effectively here as in other groupings. A statement like that which appeared in Language Learning, "a given language cannot be taught in an identical way to pupils of different language backgrounds,"^4 however true, must, I feel, today be rephrased and expanded lest the teacher in the diversified class become so overwhelmed that he will feel his problems are incapable of solution — or else, simply avoid linguistic aids altogether.

DISCUSSION

ROBERT LADO (University of Michigan), Chairman: I want to thank Mr. Choseed for a very stimulating paper. The paper is now open for discussion.

ALVA L. DAVIS (American University): I would only like to thank Mr. Choseed for answering a question that was put to me last year. I agree with everything in the paper.

ARCHIBALD A. HILL (University of Texas): There's one thing I think that could be added. In regard to the ACLS textbooks for spoken English for various backgrounds: if you're lucky enough, you have students from the right out-of-the-way countries. You can have a diversified class and put the textbooks, each in the native language, into the hands of the diversified class, and then you go through the same drills. If this is extended to some of the great languages this will be even more practical.

BERNARD CHOSEED: I tried that, and found that each ACLS text changes the text considerably. Every time a new edition appears, the drills are different and a lot of the dialogue material is different. This makes it impossible to use it with a mixed group, unfortunately — at least as a regular thing.

ARCHIBALD A. HILL: It has to be edited first.

BERNARD CHOSEED: Yes. I have a series of tapes for one of the ACLS editions, but I found I could not use these tapes with say, the Turkish edition. And I've also seen that everyone who writes a new edition of the book changes the transcription, too. And the intonation!

L. E. DOSTERT (Institute of Languages and Linguistics): There is one difficulty in regard to the ACLS texts, which I would like to bring up. There is a very considerable body of explanation given in the native speaker's own language, so that in Turkey, for example, we faced the situation where we had a textbook approximately half of which contained Turkish material — i.e., explanations in Turkish about English. Now, the students in the class had access to those explanations. The teacher did not, because he didn't know Turkish! This seems to me to be a basic pedagogical problem. I don't know what the solution is, frankly. But I can assure you that your American
speaker, in Turkey, who is trying to teach English to Turks, when he faces a page on which half of the print is in Turkish, and he doesn’t know what it says, he is indeed frustrated.

CHARLES BIDWELL (Foreign Service Institute): I think the fault is not with the textbook, but with the teacher. He ought to know the language of the country he’s teaching in.

ROBERT STOCKWELL (Foreign Service Institute): One can carry Mr. Bidwell’s answer a little further, by pointing out that while the teacher might not be able to read the explanations, all of them are accompanied by extensive illustrations (with underlining of the appropriate material, etc.) so that, generally speaking, it’s possible just from looking at the illustrations for the native speaker of English who is not totally unsophisticated linguistically, to figure out what the explanations probably say. As regards the ACLS texts, while I’m perfectly in agreement and aware that what Mr. Choseed said about Mr. Hill’s answer is completely valid, it should be pointed out that it was never intended that the various editions be used together in the same classroom. So it is not in any real sense a criticism of what they intended to accomplish, that you cannot use them in this way.

ROBERT LADO: I don’t believe that Mr. Choseed’s answer was intended as a criticism. But my personal criticism of the series is that they’re too much alike!

ROSS MACDONALD, (I.L.L.): This is just a format problem, but does it matter about having this native text, not the target language, on the same page, or on the facing page with the target language? Or should this native text be in a separate supplement to the text? I don’t know. The A.C.L.S. has all this in a text which bristles with foreign language. I believe this causes a problem for the learner: slipping between native and foreign language all the time. I think that’s bad. In the text we used in Yugoslavia, the problem was treated in this way: in the first few lessons, the translation faced the transcription. A little further on, the translation faced the English text since because of the extreme shortness of the course, we cut down on the amount of transcription used. Later on, still, by about lesson twelve, the translation was on a succeeding page, and then again, further on, around lesson 20 out of 35, there was no translation at all.
ROBERT L. LADO

We'll have to pass on to the next speaker who is going to talk and demonstrate, Mr. Robert Allen, of Columbia University.

ROBERT ALLEN: The teaching technique I am about to describe is intended more for a teaching situation abroad similar to the one described by Mr. Cornelius, rather than to the kind of situation described by Mr. Choseed.

ROBERT L. LADO: At this point, we will have to forego discussion until after the succeeding papers are presented.
GRAPHIC GRAMMAR: The Use Of Colors In Teaching Structure
By Robert L. Allen

In our teaching of English as a foreign language, we place great emphasis nowadays — and rightly so — upon the importance of using, whenever possible, different materials with students from different language backgrounds. But even students all of whom speak the same native language, will differ among themselves — in their interests, in their purposes for studying English, even in the ways in which they learn. It has been my experience, for example, that there are almost always quite a few students in every class who are perfectly willing to let the teacher do all their thinking for them, to imitate what the teacher says and to "mim-memorize" whatever he asks them to, without worrying about the reason for the use of any particular form; but I have also found that there are usually some students in every class who want to know why: why we say I have lived, for example, with an -ed, on the end of live, but I've been living, with an -ing on the end. They are not satisfied to learn these expressions merely by rote — and if required to do so, are likely to feel frustrated. It has been my experience, further, that such students are often to be found among the more intelligent — or at least the more imaginative — students in the class: they want to know how this new language is put together so that they can go ahead by themselves, making up sentences of their own, expressing their own ideas. And I feel that we, as their teachers, should encourage them to do so in so far as they can without running into the danger of using incorrect forms. Certainly, if we don't answer their queries, there is the real risk that they will jump to wrong conclusions on the basis of the first few sentences they meet — and will later have to waste much valuable time unlearning wrong patterns. (This is especially true of students in courses which meet for only one or two hours a day — or even less, which are unfortunately much more the norm than are intensive courses, at least abroad.)

It was in an attempt to solve these problems — and to provide at the same time a set of tools for teaching some of the facts of English grammar clearly yet simply, without the need for many new words and with the least possible expenditure of class time, and on the basis of strictly formal clues as far as possible — that I turned to the use of colors as a device for the teaching of structure.
This system was first described in my book *Shortcuts to English*,\(^1\) which was used in mimeographed form at Robert College in Istanbul from 1946 to 1948; it appeared again (in revised form) under the title *Controlled English*,\(^2\) which was printed in Istanbul in 1948-49.

In passing I should add that I learned only two or three weeks ago that Professor Donald J. Lloyd of Wayne University has also experimented with the use of colors for the teaching of structure (to English-speaking students); unfortunately I have as yet seen nothing of what he has done along these same lines.

Before I go any further, I want to stress again the fact that one of the primary purposes of my Graphic Grammar is to enable the teacher to teach grammatical points *with the least possible expenditure of class time*. It is not intended as a method for teaching foreign students to speak English — or even to write it. It is not intended as something which would in any way take away from the amount of time a teacher normally spends in oral drill. It is intended purely as an *auxiliary*, a device to enable the teacher to show how English functions, in as simple a way as possible, for those students who feel the need for such explanations; if anything, it cuts down on the time usually required for grammatical explanations and thus leaves even more time for oral work. It has proved its efficacy over the past eight or ten years in the schools in Turkey which have used it. And — as a by-product — it has been of real value to *me*, at least, in providing me with a tool which has enabled me (and even forced me) to look more closely, along strictly formal lines, at the interrelationships to be found among the words in an English sentence.

I think that perhaps the simplest way to demonstrate my use of colors is to ask you to pretend that you do not know the name of a single part of speech — or any other grammatical term — in English. I will try to build up the system before your eyes step by step. Unfortunately, whenever the whole system is thrown at an audience all at once, their usual reaction is to think that it is much too complicated to learn, let alone to teach; but let me remind you again that, with students, I would never cover more than one or two steps at a

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\(^1\)Robert L. Allen, *Shortcuts to English — The Controlled English Course* (Istanbul, Turkey: Robert College, 1946), pp. 75,77. (Mimeographed.)

\(^2\)Robert L. Allen, *Kontrollu İngilizce (Controlled English)* (Istanbul: Amerikan Bord Nesriyat Dairesi, 1948-1949), Books I and II.
time. And every item that I point out in this demonstration will be an item that students have to learn, in one way or another, if they are to master English; nothing is extraneous.

You will notice, I hope, that from the moment I stick up on my flannel-graph the very first word written on a colored card, I have a way of referring to that kind of word — by means of the name of the color of the card on which it appears. (At first I usually use the name for that color in the student's own language — and continue to do so until the student has mastered the corresponding English name, so that at no time am I ever teaching a new concept and a new label for the concept together.)

I will begin by taking two or three sentences which might appear in the students' very first lesson: I will ask you to assume that the students have already learned these sentences and have practiced saying them over and over again. I am now ready to explain one or two grammar points concerning certain words in these sentences — and so I begin by writing these sentences on the blackboard, but with the words which I wish to discuss written in yellow chalk:

When teaching young Turkish students, I have usually been able to count on some student's asking me just why some of the words are written in yellow. After writing down several more sentences in the same way, I return question for question and ask the student what he can tell me about the yellow words. Before long somebody has suggested that the yellow words seem to refer to persons or things — that they seem to answer the questions Who? or What?; although I do not contradict such an answer, I am not satisfied with it — and so we continue to examine the yellow words until we discover that each

---

3The small letters written above the rectangles indicate the colors of the cards represented by the rectangles. (In most of the examples, only the newly added word or words are enclosed in rectangles.) The letters used — and the colors which they represent — are as follows: \( w = \text{white;} \) \( y = \text{yellow;} \) \( b = \text{blue;} \) \( r = \text{red;} \) \( p = \text{pink;} \) \( g = \text{green;} \) \( P = \text{purple;} \) \( G = \text{gray;} \) \( B = \text{brown;} \) \( l = \text{light;} \) \( m = \text{medium;} \) \( d = \text{dark.} \)
such word seems to have two forms, one without an —s on the end and one with. As a matter of fact, the —s almost seems to go more with the position the yellow words come in than with the words themselves: we can take out one yellow word and put in another — in both sentences — without moving the —s:

Who? What?

That's a girl

Those are girl

There is one other interesting observation we can make about the yellow words: whenever a yellow word is used without the —s, it seems to have an a before it, but this a disappears when the yellow word is used with an —s. This a is such a peculiar word that we will give it a color of its own:

That's a girl

And yet this blue word does not always come directly before the yellow word; there is another kind of word which seems to come between them. Since both the a and the other word precede the yellow word, we will use blue for both — but a darker blue for the one that comes second. This word, unlike the a, can be used with both girl and girls:

That's a young girl

Those are young girls

In this second sentence, we can put in a word — in the place of the a — showing how many girls. Since it comes in the same position as the a, it will also be a medium-blue word:

Those are two young girls

I will remove the words That's, and Those and are, since in actual teaching I would probably not be using these examples, anyway: I would explain each grammatical item only after it had already ap-
peared in the students’ oral work, and would then use as an example the actual sentence in which it had appeared. Please remember that the steps I am going through here would cover several days with a real class. At about this stage in my teaching, furthermore, I would stop writing such sentences on the blackboard and would start using cards, as I am doing now.

There are certain other things we can note about the dark-blue word. We sometimes find it with an —er on the end:

\[
\begin{array}{c}
da \\
\text{young} \\
girl
\end{array}
\]

\[
\begin{array}{c}
da \\
younger \\
girl
\end{array}
\]

and even —

\[
\begin{array}{c}
two \\
young \\
girls
\end{array}
\]

\[
\begin{array}{c}
two \\
younger \\
girls
\end{array}
\]

We also find this dark-blue word with an —est on the end — but now we notice something strange: a dark-blue word with an —est on the end is usually preceded by the word the. Since this word precedes even the medium-blue word two, we will use a lighter shade of blue for it:

\[
\begin{array}{c}
\text{the} \\
y \\
two \\
youngest \\
girls
\end{array}
\]

(This word the never appears alone; it almost always has a yellow word after it, not too far away. To help ourselves remember not to use the without a yellow word, we write it on a light-blue card with a yellow edge.)

Even when we use youngest before girl (without the —s), the word the must precede it — and now the a disappears:

\[
\begin{array}{c}
\text{the} \\
y \\
youngest \\
girl
\end{array}
\]

\[A\] is the only word that acts like this; we can show what happens more clearly if we represent \(a\) by light-blue + medium-blue:

\[--113--\]
In other words, when we use \( a \), we cannot use any word in the light-blue position. (You will notice that the card on which \( a \) appears, also has a yellow edge; \( a \) is another word which is never used without a yellow word following it. In fact, it often acts as a signal to point out a yellow word.)

I realize that there are valid reasons for placing the word \( a \) in the light-blue position, along with \textit{the}, as Carlyle Westbrook Barritt did in the study he made at the University of Virginia of "the order classes of modifiers in English."\(^4\) I have found, however, that it is usually not until some time later in their study of English that foreign students are able to appreciate the points of similarity between \( a \) and \textit{the}; since many of my students have of their own accord suggested that \( a \) belongs in the same position as \textit{two}, I do not argue the point but use a card with two colors, instead, to make sure that they realize that \( a \) and \textit{the} (or \( a \) and any other light-blue word) cannot occur together. I bring up this point here, however, primarily for the purpose of showing how it is possible to use colored cards to put across the idea that two items are "mutually exclusive.")

Again, it would appear that the endings —\textit{er} and —\textit{est} belong more to the dark-blue \textit{position} than to any one word, since we can take away \textit{young} and put \textit{tall} in its place — and the —\textit{er} and —\textit{est} still "fit":

\[
\begin{array}{c}
a \quad \text{db} \quad \text{[tall]} \quad \text{girl} \\
\text{two} \quad \text{db} \quad \text{db} \quad \text{[taller]} \quad \text{girls} \\
\text{the two} \quad \text{db} \quad \text{db} \quad \text{[tallest]} \quad \text{girls}
\end{array}
\]

There are also other light-blue words; for example,

\[
\begin{array}{c}
\text{lb} \quad \text{[those]} \quad \text{two tall girls}
\end{array}
\]

It appears, then, that there are three blue positions before the yellow word, the first showing *which* (Which girls? those girls), the second showing *how many* (How many girls? two girls), and the third showing *what kind* (What kind of girls? tall girls). We can put these words above these positions, to help us remember the order:

\[
\begin{array}{cccc}
\text{Which?} & \text{How} & \text{What} & \text{Who?} \\
\text{many?} & \text{kind?} & \text{} & \text{} \\
\end{array}
\]

those two tall girls

We often find two or more words being used as a blue word as a unit. We call this a blue word-group or phrase. The interesting thing about blue phrases is that they come after the yellow words, instead of before them:

\[
\text{those two tall girls in the corner} \quad \text{lb}
\]

I will replace the word *those* with *the*: although the word *those* can also be used in this context, it is one of the most common things in English to find *the* before a yellow word when there is a blue phrase after it.

\[
\text{the two tall girls in the corner} \quad \text{lb}
\]

(You will notice that this blue phrase is made up of a red word, the light-blue word *the*, and a yellow word.)

This, then, is the normal order for blue words and phrases. You will notice that each blue word — and the blue phrase — can be used alone with the yellow word: *the girls*, *two girls*, *tall girls*, *girls in the corner* (although, as I have said, it is much more common to find *the* before the yellow word when a blue phrase follows it: *the girls in the corner*).

Barritt in his study lists two more positions for blue words preceding a yellow word, one immediately before the yellow word — for blue words of nationality, such as *American*, *Brazilian*, *Cuban* — and one before the *which* words, for a very limited number of special blue words like *both* and *all*. It would be possible to add two more shades of blue, but in my own teaching I have found that in most textbooks
blue words of nationality do not occur often enough with other dark-blue words to merit special attention — although if the situation should ever arise, I would produce a card of an even darker blue; the gradation of shades would ensure the students’ knowing where to place it. As for words like *both* and *all*, I write them on a very light shade of blue but teach them as specific items to be learned individually — not as “which” words or “how many” words.

Every once in a while, however, another kind of word creeps in among these blue words, to a position just before the dark-blue word. We know it must be another kind of word because it seems to go with the dark-blue word instead of with the yellow word:

```
the two [very] tall girls in the corner
```

We can say, for example, *the girls are two* and *the girls are tall* — and even *the girls are very tall* — but not *the girls are very*. We will call this new word a pink word — and will show that it is in a way an “extra” word by writing it on a triangle-shaped card, a card with a point at the bottom, since this kind of word pokes its way into many different places in the sentence. Other examples of triangle words are *extremely, rather, and fairly.*

(Two other triangle words which I might mention are *pretty*, as in a *pretty awful hat*, and *awfully*, as in *an awfully pretty hat*. Barritt does not even list them with his other so-called Class A adverbs, even though both are labeled *adv*, in the *American College Dictionary* and both had been discussed eight years before he made his study by Aileen Traver (now Mrs. Kitchin) in her study entitled "The Modificational Patterns of the Substantive Head Construction in Present-Day American English," a study which Barritt appears not to have known about.)

You may have wondered why the card bearing the ending —*s* is longer than the other cards. My purpose in making it longer was so that it would stay up on the flannel-graph even when used over another card which I now wish to substitute for the *girl* card I have been using so far. This new card also reads *girl* — but you will notice that

---

there is an asterisk after the *girl*, an asterisk which is covered up when the ending *s* is affixed to the word itself:

\[
\text{the tall } \underline{\text{y}} \underline{\text{girl}}^{*} \text{ in the corner}
\]

but —

\[
\text{the tall } \underline{\text{y}} \underline{\text{girl}}^{*} \underline{\text{s}} \text{ in the corner}
\]

The reason for the asterisk will become apparent as soon as I introduce the next card — a light-green card, which has *three* words on it (actually four, but only three which are light-green words):

\[
\text{the tall } \underline{\text{y}} \underline{\text{girl}}^{*} \underline{\text{s}} \text{ in the corner } \underline{\text{lg}}^{*} \underline{\text{are (is)}} \underline{[I \ am]}
\]

The light-green word *am* is used only after *I*; we will not discuss it further at this time. The two light-green words which I want to call to your attention, however, are *are* and *is*. You will notice that *is* has an asterisk above it: it is the word we use after a yellow word followed by an asterisk, as in *the tall girl in the corner is.*

\[
\text{the tall } \underline{\text{y}} \underline{\text{girl}}^{*} \underline{\text{is}} \text{ in the corner } \underline{\text{lg}}^{*} \underline{\text{are (is)}} \underline{[I \ am]}
\]

In all other cases — except, of course, after *I* — we use *are*: *the tall girls in the corner are.*

\[
\text{the tall } \underline{\text{y}} \underline{\text{girl}}^{*} \underline{\text{s}} \text{ in the corner } \underline{\text{lg}}^{*} \underline{\text{are (is)}} \underline{[I \ am]}
\]

Before going on to other green words, I would like to call your attention to one more kind of blue word. It is really a dark-blue word — but the unusual thing about it is that it is used only *after* light-green words like *are* and *is*. We will show this by a light-green edge on the card.

\[
\text{the tall girls in the corner } \underline{\text{are (is)}} \underline{\text{lg}}^{*} \underline{\text{db}} \underline{\text{y}} \underline{\text{[I am]}} \underline{\text{asleep}}
\]

The blank yellow card attached to this blue word shows that it *cannot* be used with a yellow word following it. (There are only a limited...
number of these dark-blue words — and most of them begin with the letter a—.)

I now have a complete sentence written out on my cards (though let me remind you again that I would never go through all these steps in a single class hour). I can make this sentence negative by inserting the pink word not immediately after the light-green word. Since the word not usually appears in this fixed position, I will use a different shade of pink for it; in our scheme of things, it will appear as a light-pink word:

\[
\begin{array}{c|c|c}
\text{the tall girls in the corner} & \text{are (is)} & \text{not} \\
\text{I am} & \text{not} & \text{n't} \\
\end{array}
\]

The light-green edge on this not card shows that it must be preceded by a light-green word. This becomes important when we try to change a sentence like The tall girls in the corner understand into a negative sentence: it reminds us that when we insert the not, we must also insert a light-green word before it. When we don't already have a light-green word in our sentence, we always use do or does (or did):

\[
\begin{array}{c|c|c}
\text{the tall girls in the corner} & \text{understand} \\
\text{the tall girls in the corner} & \text{do (does)} & \text{not} \\
\end{array}
\]

You will notice that the word not has two forms: not and n't. The second form, n't, is written way over to the left of the card, right up against the green edge, since this form joins with the preceding light-green word to become one word: don't (or doesn't).

But I am getting ahead of myself. Actually every dark-green word has five forms. (Since the word understand is rather long, I will use the shorter dark-green word sit instead, which has these five forms: sit, sits, sat, sitting, and sat. Two of the forms happen to be identical.) The asterisk above sits shows that that form is used after a yellow word with an asterisk (like girl), while sit is used after all other yellow words; sat is used after both yellow words with asterisks and those without. Sitting and the second sat are used only after light-green words, as the light-green edge to the left of those two forms shows.
In order to make our sentence sound more natural, we will move the phrase in the corner to the end of the sentence — only now it will appear as a pink phrase instead of a blue one. (I could even substitute one word — the pink word there — for the entire phrase.)

(You will notice that I have used the same color — pink — for several different kinds of words, and for words appearing in different positions. The reason for this is that many of my students will eventually turn up in college English classes where all these different kinds of words will be lumped together under the one name "adverbs." By using the same general color for them all, I am helping to prepare my students for this strange behavior on the part of their college English teachers.)

As I have said, the last two forms on our dark-green card — sitting and sat — are used only after light-green words; the first form — sit — may be so used, but it can also be used alone. The interesting thing about our light-green cards, however, is that they are capable of automatically selecting the proper form of the dark-green word without assistance from us:
We can combine these two light-green cards into one:

Examples of the use of other light-green words are:

These last two light-green cards cannot be used after other light-green words — they have no forms written below the middle of the card for the arrows on other light-green cards to point to. But a light-green word like the following can be used either alone or after another light-green word:

Even when such a card is used after another light-green card, the arrows automatically pick out the proper forms:

There is one more light-green word which can be used after other light-green words. It is really a whole family of light-green words, some of which we have already met:
Now obviously nobody in his right mind would keep on repeating *the two tall girls in the corner* in sentence after sentence — and yet, in English statements, we must have *something* preceding the green words. Fortunately we have a very special kind of word which can take the place of all blue words, the yellow word, and the blue phrase. (Most grammar books claim that this kind of word takes the place of just the yellow word, but obviously this is untrue.)

This blue-yellow-blue word has two forms, one which is used when it precedes a green word, the other when it follows; for example,
Although *you* is also a blue-yellow-blue word, it has only one form — as a blue-yellow-blue word.

Not only does the blue-yellow-blue word *they* have two blue-yellow-blue forms, it also has a corresponding light-blue form (which has its own blue-yellow-blue counterpart):

Normally we would read this *you are not watching their gestures;* immediately following a clause such as *they are not watching your gestures,* however, we might say instead *you are not watching theirs.* When we use the form *theirs,* we cannot use a regular yellow word after it.

Some dark-green words, like *sit,* are never followed by yellow words; others, like *watch,* may or may not be, as we have already seen. There is one kind of dark-green word, however, which *must* be followed by a yellow word, either with or without its accompanying blue words. We will indicate such dark-green words with a yellow edge:

The interesting thing about these dark-green words is that, like other dark-green words, they may follow a light-green word — as you can see from the light-green edge to the left of the forms *ignoring* and *ignored,* but sometimes these words follow a purple word instead. They do this when there is no yellow word following them. Fortunately there are very few purple words in English; the one family of purple words used in the great majority of instances bears a strong resemblance to another word-family we have already met — except for its color, the only difference is to be found in the position of the arrow:
We frequently find one kind of word being used as another kind of word, as in the following sentence, where a dark-green word is functioning as part of a blue phrase. This is easily shown by writing on a blue card with green ink:

The two tall girls sitting in the corner are (is) ignored. You

It is also possible to talk about sitting in a corner, as in the following sentence; in such a case, we are using a dark-green word as a yellow word (which we show by writing with green ink on a yellow card).

(Notice also the use of the dark-green word boring as a blue-word after is.)

We have already seen that the regular position for the light-pink word not is before a dark-green word. There are several other light-pink words which frequently appear in the same position, though not so regularly. Three such words are still, always, and never. Unlike not, these light-pink words do not have to be preceded by a light-green word.
Although Barritt does not list such words together in one place (a fact which is rather surprising when one discovers that in his introduction he specifically criticizes Charles C. Fries for having failed to do the same in his *Structure of English* \(^6\)), the teacher of English as a foreign language needs to know which pink words can be used in this light-pink position, because many pink words *cannot*. A foreign student using a wrong pink word in this position — as in the sentences *He is here coming* and *He is tomorrow coming* — would sound very peculiar to native speakers of English. It is for this reason that I have used a special shade of pink for words that may be used just before a green word.

We have already seen that a pink word or phrase showing place, like *there* or *in the corner*, is regularly placed at the end of a sentence. Other pink words and phrases also appear there regularly. Such pink expressions frequently show *manner* or *time*:

\[\begin{array}{c}
\text{have (has)} & \text{be [are (is) [am]]} & \text{ignore (\textsuperscript{*})} \\
\text{had} & \text{were (was)} & \text{ignored} \\
\text{having} & \text{being} & \text{ignoring} \\
\text{had} & \rightarrow \text{been} & \\
\end{array}\]

or — — — — — — — — —

\[\begin{array}{c}
\text{steadily} & \text{today} \\
\text{mp} & \text{dp} \\
\text{steadily} & \text{since lunch time} \\
\end{array}\]

Pink words showing time normally come at the very end; sentences like *They are coming tomorrow here sound so foreign to English that English teachers need to emphasize this end position for time-expressions. As a result, I have set up a dark-pink position just for words and expressions that show when:

```
| w | When? |
```

```
dp, y, y, steadily | since lunch time |
```

Expressions of place and manner, however, while normally preceding expressions of time, seem to occur among themselves sometimes in one order, sometimes in another; for this reason, I have lumped both of them together as merely "medium-pink" expressions:

```
w
| Where? |
```

```
| mp |
```

```
| w |
```

```
| When? |
```

```
| steadily |
```

```
| since lunch time |
```

In passing, we might notice the fact that our triangle word very can also be used before a medium-pink word like steadily:

```
| mp |
```

```
| very | steadily since lunch time |
```

You may have observed that in the phrase since lunch time, we have a yellow word — lunch — used as a blue word. If the two words were to appear by themselves, on colored cards of their own instead of in a pink phrase, this use of lunch would be more apparent:

```
| db, y |
```

```
lunch | time |
```

The phrase since lunch time also includes a red word (since) which introduces the phrase, just as a red word introduced our other phrase, in the corner. The color red was chosen for this kind of word just
because of its kinship to the color pink: many red words also act as pink words, in which case they are used alone.

In fact, it is often difficult to tell whether a red word is really a very, very dark pink word — or indeed a horse of a different color. The red word *in*, for example, can be used to introduce a pink phrase like *in the coffee*:

![Diagram](image)

It can also be used alone:

![Diagram](image)

When it is used alone, it can follow a yellow word in the second half of a sentence, as in the example above, or it can precede the yellow word:

![Diagram](image)

I have said nothing so far about intonation or stress, but it is possible, of course, to indicate the stresses in each of our sentences by means of other cards placed above the stressed syllables. The stresses can be shown by little white cards on which the stress marks have been drawn (I will not take the time to indicate all the stresses) —

![Diagram](image)

the two tall girls in the corner . . . . . .

or by means of round white cards of different sizes, resembling somewhat the musical notation developed by Dr. A. L. Davis —
the two tall girls in the corner . . . .

Personally, I have found it helpful from a teaching point of view to use stress marks of different thicknesses rather than marks slanting in different directions:

\[ \text{the two tall girls in the corner . . . .} \]

The various pitches are exceedingly easy to indicate with my cards — and in a way similar to that which Professor Harold B. Allen finally found to be the easiest to use with Egyptian students: the words themselves go up or down to indicate their pitches.

\[ \text{the two tall girls in the corner . . . . steadily since} \]

When the last stress falls on the last syllable, that syllable is slanted, to show that the voice glides downwards during its pronunciation:

\[ \text{the two tall girls in the corner . . . . steadily since} \]

It is also possible to show single bar and double bar junctures — but I will pass over junctures for the moment, since I wish to refer to them again in another connection.

We have now examined most of the positions to be found in the great majority of so-called "complete" English sentences. Obviously, however, these positions disappear every time we remove the corresponding cards. Since one of the most important features of English is its word-order, we need some way of fixing that order in our students' minds. One device I have used in the past is that of supplying each student with a "colored ruler," on which the most important positions are indicated by colors — with the words Which? How many? What kind? Who? What? Where? How? When? printed (possibly in the students' own language) on the appropriate colors. In Burma, where my wife and I tried out such rulers two years ago, we also had small cards of different colors printed up with English words on one side and their Burmese equivalents (when possible) on the other; our purpose was to enable the students to make up sentences of their own as homework after the class was over. (We did not drill with the rulers
and cards in class.) It was gratifying to see how well these cards of ours could help beginning students to write correct sentences — even sentences they had not heard or seen before.

Unfortunately the preparation of colored rulers and cards costs quite a bit of money. In Burma we were fortunate enough to have an allowance for incidental expenses, but in Turkey I had no such allowance; all I could do there was to get my students to paint colors on rulers of their own, and then to write down all new vocabulary items themselves, on small slips of colored paper which we had had made up into pads. For demonstration purposes, each classroom was provided with one long block of painted timber, which had a groove along the top; in this, the teacher could insert printed cards when making up example sentences. These timbers were always left out in full sight so that the students would soon know exactly what order the colors came in.

Another device with which I am experimenting at present involves the use of sheets of paper printed up in colored columns. I write up my grammar explanations on the lefthand portion of each sheet, which has been left blank; directly opposite each such explanation, I give English sentences as examples, with the words written in the appropriate columns. It is my hope that perhaps some day I may be able to have the colored halves of these sheets printed up — with the English examples — in the United States, and then have them sent out to some foreign country or countries, where local publishers would have the explanations translated into their own languages and printed on the blank halves of the sheets. I feel that such a "graphic grammar" would be more helpful to foreigners than many grammars now in print.

But perhaps the best way in which English word-order can be demonstrated through the use of colors is by means of a colored flannel-graph. I hesitate to show you my own flannel-graph, because — although I think it is really rather attractive — it is likely to dazzle the members of an audience seeing it for the first time, and to seem more complicated than it really is. Perhaps it will help if I transfer our last long sentence to the flannel-graph.

Only a few details remain to be pointed out. The little red triangles on the flannel-graph indicate the positions red words normally appear in when they introduce phrases. The pink column on the left shows
that pink words and phrases which usually come at the end of a sentence may also be placed at the beginning; for example,

\[ \text{since lunch time} \] the two tall girls sitting in the corner . . . .

The light-green triangle with a question-mark drawn on it, of course, indicates the position to which the first light-green word moves in order to change the sentence into a question:

\[ \text{have (has)} \] be \( \texttt{are (is) [am]} \) ig(nore (s))

\[ \text{had} \] were \( \texttt{was} \) ignored

\[ \text{having} \] being ignoring . . .

\[ \text{had} \] been ignored

When there is no light-green word to move to that position, we always make use of one of the three special light-green words do, does, and did.

The gray areas on either side of the main body of the sentence are for those words which many writers separate from the rest of the sentence with commas or exclamation-marks — words like yes, no, well! (which normally precede the main part of the sentence) and too or either (which follow it).

\[ \text{yes,} \] the two tall girls sitting in the corner . . . .

When I first started using such a color-graph, I did not include the gray areas: it did not seem necessary to leave a special place for words which the students had no difficulty in placing in their proper order. It soon became clear, however, that a neutral area was needed on either side of the main body of the sentence for such green-blue expressions as hoping to attract your attention:

\[ \text{hoping \{to attract your attention\}} \] the two tall girls sitting in the corner . . . .

or —

\[ \text{. . . steadily since lunch time,} \]

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But perhaps the greatest assistance which my colored cards and flannel-graph give me is in connection with explanations having to do with sentences of more than one clause. One row of words across the colored flannel-graph is really a clause, not a sentence; it just happens that this sentence we have been examining consists of only one clause. But it is possible to set up sentences of more than one clause, very easily; the phrase since lunch time, for example, might well have been a clause instead — a clause such as since they ate lunch. The red word since now changes to a brown word — which in this case happens to be identical in form with the red word. Lunch is now a yellow word instead of a yellow-blue word. But the important thing to notice is that the clause belongs in the same position as the phrase did; since we cannot easily write out the whole clause in that position, we will put the clause on another line but indicate its proper position with a little mark:

\[ \begin{array}{c}
\text{the two tall girls sitting in the corner have ignored you steadily} \\
\text{w} \quad \text{B} \quad \text{dg} \quad \text{y} \\
\text{w} \quad \text{since} \quad \text{they} \quad \text{ate} \quad \text{lunch} \\
\end{array} \]

There is another kind of brown word, which I will not discuss at length here: it is the dark-brown word, examples of which are and or. Since these words also appear in different places in the sentence, just as the triangle-shaped pink word very does, I write them on pointed cards, too:

\[ \begin{array}{c}
dB \\
\text{and} \\
dB \\
\text{or} \\
dB \\
\text{but} \\
\end{array} \]

We can also substitute a clause for the phrase sitting in the corner. When substituting clauses for blue phrases, however, we do not use brown words to introduce them, but rather a special kind of word which is part brown and part yellow — and which performs the functions of both a brown word and a yellow word. There is only a limited number of these brown-yellow words; almost all of them begin with the letters wb-—. When they introduce a sentence consisting of only one clause — or when they introduce the first clause of a longer sentence all the other clauses of which are introduced by brown (or brown-yellow) words — they usually act as question-words, instead. But at present we are interested in them as words used for joining
two clauses. In our sentence, for example, such a word might join the clause *they are sitting in the corner* to our first clause, *the two tall girls have ignored you steadily*. The brown-yellow word which we would use in this instance is the word *who*. Notice that we again use a little mark to show where this new clause belongs:

```
the two tall girls [w] have ignored you steadily [w]
                                 [w]
[IB y]                        [w]
[who]                        [w]
[are sitting]     [w] in the corner
                                 [w]
[w] since they ate lunch
```

We would read this as follows: *The two tall girls who are sitting in the corner have ignored you steadily since they ate lunch*. Notice that since the word *who* in our second clause is both a brown-and-yellow word, we use no other brown word — and we also omit the yellow word *they*, which we would otherwise have expected to find in the first yellow column.

I come at last to a consideration of single bar junctures: to a consideration of the places in these colored clauses where there seem to be syntactic breaks of one kind or another. To quote from Henry Lee Smith, Jr., "the large majority of spoken material terminating in /#/ or /ll/ contains nominal, verbal, and adjunctival material."

Our first clause, for example, contains a nominal phrase or construct (*the two tall girls*), a verbal phrase or construct (*have ignored you*), and — in this case — an adjunctive (*steadily*), rather than an adjunctival phrase or construct. We can place vertical black lines at the points of division between these different kinds of material:

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the two tall girls have ignored you steadily
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I am in complete agreement with the placing of the second black line; and I admit frankly that in all discussions of immediate con-

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7Henry Lee Smith, Jr., "Syntactic Parts of Speech and the Structure of the English Sentence" (paper read at the Conference on College Composition and Communication, New York, March 22, 1956).
stituents that I have read, it has been assumed that the first major break comes between what we call the "subject" of the clause and what we call its "predicate." Logically, I suppose, this point of division is justifiable. I can't help feeling, however, that in a very large number of sentences (at least in spoken material) there seems to be more of a real cleavage after the first light-green word — or rather, after a light-pink word like not, if there is such a word in the sentence. It seems to me that, just as there is some kind of bond between a verb and its object which resists the intrusion of other material between them, there is also some kind of bond between the subject and the first auxiliary (if there is one in the clause). The auxiliary may revolve around the subject like a satellite — but it resists separation from the subject. In a very large number of spoken sentences the first auxiliary elides with the subject, especially if the subject is a pronoun. In a sentence like John's gone home, the first real phonological juncture comes between John's and gone, not between John and 's. And certainly in questions there is a very definite division between the first auxiliary and the rest of the verb, phonologically as well as positionally.

I admit that in some clauses in long, complex sentences, as in the first clause of the sentence we have set up on our flannel-graph, there seems to be ample justification for indicating a break before the first auxiliary. If we examine that clause all by itself, however (which is permissible, since it could properly stand alone) — or if we examine the second clause (there is no problem in the third since it lacks an auxiliary) — there would seem to be more of a real break after the first auxiliary. (If there were a not in either clause, the break would come after it, especially if it were elided with the auxiliary in its clause: e.g., haven't, aren't.) In the second clause as it now stands (without the not), the who and the are would probably be elided in speech and pronounced who're. And even in the first clause, if we were to say it in answer to the question Have the two tall girls ignored us steadily?, we would find that we could stop in our answer at any one of three different places: at the very end; after the object of the verb; or after the auxiliary (or auxiliary plus not). For example:

- No, the two tall girls have not ignored you steadily
- No, the two tall girls have not ignored you
- No, the two tall girls have not (or, haven't).
But we would not be able to stop after the subject alone: we could not answer *No, the two tall girls or *No, they.

It is because of this very common "short clause" which is used in an exceedingly large number of answers to questions in English, that in my own work with foreign students I indicate the first break as occurring after the light-pink column instead of after the subject:

the two tall girls △ have not ignored you steadily △
△ who are sitting in the corner
△ since they ate lunch

For pedagogical reasons, at least, there is a definite advantage in teaching this division of the clause: we need to remind our students constantly that when somebody asks them if they know English well, they should not answer No, I don't know: they should answer No, I don't know English well, or No, I don't know English, or — best of all — No, I don't.

It is interesting to note in passing that each of these three major parts of a clause as I have now marked them, is frequently used alone in conversation in so-called "incomplete sentences": one often hears such sentences as On your way home?, Back to work again; or Feeling tired?, Correcting papers?, Aha! Caught in the act; and, of course, Are you?, The blonde girl has — but almost never such sentences as *Are feeling tired? or *Have been caught in the act.

This, then, is a brief account of Graphic Grammar — and of some of the potentialities inherent in it for the formal analysis of English structure. As I said earlier, I have found it very helpful in my teaching of English as a foreign language.

I do not mean to suggest, however, that this is the only good way — or even the best way — of explaining grammar points to students learning English. For many teachers, other ways may work better. Teachers differ, just as students do. One thing I can promise you, however — one thing I can state categorically, without fear of contradiction: if you should use Graphic Grammar in your English classes, nobody would ever say of your teaching that it is drab and colorless.

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TERMINOLOGY — Some Conflicts and Compromises
By A. A. Hill

It is a commonplace that there is nothing that men and women would rather argue about than names, and grammatical terminology is no exception to the general rule. Indeed, it is the great plain on which terminological armies clash by night, often enough in ignorance. One needs only to turn, for instance, to the transactions of the British Philological Association for the eighteen eighties, to find there what amounts to a minor civil war over whether cannon, in cannonball is noun or adjective. And anyone who wants to start a lively argument over the same subject might ask his next-seat neighbor right here whether it is noun or adjective today. Much of our terminological dispute is as empty as the dispute over cannonball, and I think we would all agree that the only thing we want to do about it is keep the peace.

For many of us, the problem is that our teaching of English as a second language is done for speakers of West European languages, where the accepted grammatical tradition is still much more Latin than it is in this country, and where the structure of the languages makes a Latin framework, complete with genders and subjunctives, much more workable than it is in English, which lacks both. The students come to us steeped in a Latinate tradition, even when they do not themselves know any Latin. Departure from the familiar framework produces shock, if not downright revolt. From my own experience, an instructive example of the shock is what happened when I was once trying to give some help to a group of adults who wanted to acquire a modicum of reading knowledge of Russian. Not thinking that I was being particularly radical, I followed Josselson in rearranging the order of the noun cases (it was a situation in which paradigm learning seemed to be called for) in such a fashion as to bring cases which had most similarity in form and syntax together. I was met with a genuine revolt. My group told me that they had learned the order of cases as Nominative, Genitive, Dative, Accusative and Ablative, and they didn't see why they were called on to change. The order I had proposed was queer, even if not actually subversive. The outcome of the revolt is also instructive. I was lucky enough to be ready for it. I could point out that learning the order of cases was a single operation, while learning the paradigms of nouns was multiple. Therefore, any single operation which could increase the ease of the multiple operation was worthwhile. Since my group was both adult and
reasonable, they were soon giving me back paradigms in Josselson order, and were quite happy about it. The principle which emerges is that when unfamiliar terminology is given, either by text or teacher, the teacher should be prepared to defend it with clear, simple, and objective reasons. If he can not do so, he had better avoid the unfamiliar. Such a statement of course puts a burden on the teacher. If you are using a text which puts the cases in a strange order, you have to spend a part of the time you give to class preparation in finding out why the text chose the order it gives, and what is gained by it.

Sometimes, also, trouble over terminology is caused by the fact that our students carry their lesson material home, where they show it to parents. Parents belong to an older generation, and can be expected to be from twenty to thirty years more conservative — an important differential when it is remembered that the communications revolution is just about thirty years old. In practice, this works out not so much as unusual conservatism in terminology — though occasionally one runs into a parent who is apt to insist that "If I were king" is a subjunctive, or that "Oh John" is a vocative — as it is total shock the first time a parent sees phonemic notation — strange letters with diacritics and numbers over them. It has been my general experience that students like a phonemic notation, and like it furthermore in direct proportion to how much of the language it records. When a student realizes first that phonemic notation actually indicates the difference between /pritiy + gud#/ and /prkiy + gud#/ and that these differences can be socially important, and second, that the notation is there simply as a help to him, and not as a complicated writing system that he has to learn and be examined on, his reaction can be counted on to be favorable. Parents — and often school authorities — who studied without such aids are horrified. It is in this connection that the Ameriphone system of recording stress, juncture, and pitch, developed at American University by Professor Davis, is particularly valuable. It leaves the segmental material to be indicated only by the conventional spelling, which therefore looks perfectly familiar. The system, furthermore is one of dots and circles arranged on parallel lines above the text, so that it has the advantage of looking at least vaguely like a familiar system, that of music.

The prejudices of both student, and his community, have therefore to be taken into account, as is always the case if we wish to persuade. There might, for instance, be good reason for calling French
an agglutinating language, since it often constructs sentences in which there is only one permitted initial form, a series of forms usually both preceded and followed by something, and then only one form which is characteristically final. In short, a good many French sentences may remind the linguist of sentences in Eskimo. But it should always be remembered that French sentences will never remind a Frenchman of Eskimo, and if he has been reading Max Müller or Jespersen, he will understand any statement that French makes use of agglutination as meaning the same thing as saying that Frenchmen are linguistically uncivilized. If there is any need to describe French structure in these terms, it can easily enough be done simply by giving the facts, without distracting red flags of terminology.

Not only should the student's prejudices be consulted; the terminologist should also consult the student's ease. Rather recently, I heard a teacher of English as a second language inveighing against the use of terms like *tonic* and *atonic*, which he said he wasn't even sure how to pronounce, instead of the familiar stressed and unstressed. When it is remembered that the book he was criticizing was written for speakers of Spanish, his criticism loses force. Spaniards are perfectly familiar with *tonico* and *atonico*; they are terms far easier than stressed and unstressed. This particular teacher was consulting his own convenience rather than that of his students. It is a truism, of course, that terminology should be accurate, consistent, and simple. The principle of ease, however, means that it should be varied in accord with the language and terminological habits of the group being taught.

The last paragraph indicated more or less parenthetically, that one of the duties which falls on the teacher is to be sure that he consults his students' convenience, not his own. The prohibition applies particularly to those teachers who know a little too much of structural linguistics, or of traditional philology, and not enough of classroom realities. I should regard it as a serious mistake to insist on teaching terms like phoneme and allophone to a language learning class — these are things the teacher should know. They are of little importance to the language learner. For him, facts of arrangement, not the terminology by which those would be indicated in a technical situation is what matters. Similarly, I should say that traditional terms like *proparoxytone* do not usually help the learner of French. Both kinds of terms are convenient to a teacher who knows them, but both are out of place in the classroom.
There is one situation in which terminology is essential, and in which fortunately it meets with little resistance. This is the phonetic terminology which is essential to inculcation and correction of pronunciation. Phonetics is not generally taught either here, or abroad, so that the teacher of a second language usually is in the fortunate position of dealing with a tabula rasa. His terminology should then be as accurate, and as up-to-date as he can make it. Terms like velar, aspirate, labiodental, and so on, are all easily taught to the student, and are never confusing unless the teacher is himself confused. Furthermore, they are necessary. If Mr. Lopez makes the /v/ of very a bilabial, he can be quickly corrected provided that he has had a little previous training in the difference between bilabial and labiodental articulation. The necessary antecedent condition is that text writer and teacher both know the difference, and that both describe it accurately and in terms of articulation. Vaguely impressionistic description and terminology — "make your v harder or softer" — does no good.

If phonetics is the field in which the teacher is freest to introduce an accurate and up-to-date terminology, it is grammar in which he is least free. There is no doubt that traditional grammar often provides terminology, and concepts that go with it, which is simply so much lumber to be cleared away. It is fortunate for the teacher that usually this can be done by the simple device of ignoring what is useless. Objections to grammatical terminology are, fortunately enough, usually positive rather than negative. That is, no student, parent or superintendent is very likely to object to a class in English which never mentions the retained object, gerund and participle, or predicate nominative in nouns.

What do we do, however, when a realistic appraisal of the situation seems to call for genuinely new terminology? I think we can give a few postulates; I hesitate to call them axia. First, purely arbitrary terminology, which gives no connotations either to formal characteristics or to semantic groupings, is to be avoided. The reason is simple; nobody can remember it. I doubt, for instance, if there has ever been a reader of Fries' Structure of English who has not laboriously translated his Class I, II, III and so on, into the more familiar names of noun, verb, adjective etc. before he has been able to understand what Fries was saying. In the language learning situation, simple equation of a class in the target language with a class in the native language often suffices, or if it does not suffice, it is often
enough a help. For a German learning English, the terms "definite" and "indefinite" are usually enough to get him past the articles, which are thereafter simply translation items. For a Russian, or a Japanese, on the other hand, the most useful name is apt to be something which is at least a semantic approximation to the meaning. For such students, I should suggest for "indefinite article" the substitute "first mention article" and for "definite" the substitute "second mention article," together with the supplementary statement that the plural of the first mention article is nothing at all. (Parenthetically, not "some" as the so-called General Form has it.) The titles I have suggested are easily abbreviated from their somewhat clumsy form to first and second article, once the meaning is understood.

In instances where the existent terminology is positively misleading, (as the terms masculine, feminine, and neuter are to speakers of English, who automatically translate these terms into male, female, and sexless) terminology can well rely on simply the formal characteristic which distinguishes the classes — der, die, and das words for instance, if we are dealing with German. A striking example of a successful piece of formal terminology was that coined by Jesperson for English. He cut through a mass of disputed usage and pseudo-Latin terminology by calling the forms in "John is talking," "A talking image," and "John likes talking," all by the simple name, the —ing.

Yet even when all precautions have been taken, it is well to remember that terminology can still lay traps for us. I remember an occasion on which I was teaching an Oriental some of the classes of English nouns. I avoided the usual terminology of count nouns and mass nouns, because I wanted to make my semantic label suggest such nouns as happiness, and beauty, which are not suggested by the name mass. I used instead countable and uncountable, and then proceeded to drill. When I got to money, I got the sentence "I want a money." Under correction, the not unpredictable protest was "well, what else do you do with money but count it?"

Two final words of caution. The purpose of language instruction is mastery of the language, not understanding of the bones and sinews of structure. Terminology which has as its purpose laying structure bare, should not be chosen over the familiar, merely because the familiar is wasteful, as long as it is adequate. For instance in English structure, I some years ago hit on the idea that forms like "he,
she, it runs” could less wastefully be called forms correlated with a
gender bearing subject, rather than third person singular, which im-
plies that there are six forms (three persons in two numbers) five of
which are exactly alike. Speakers of Indo-European languages are
used to this kind of correlation between “third singular” and gender-
bearing pronoun subjects, and the term therefore has no place in an
English class for foreigners. For Orientals, at most, the correlation
has to be explained, but even for them — they are always assiduous
readers of conservative grammars — the term is unfamiliar and there-
fore confusing.

The second word of caution, is that there is more to the practice
of name-coining than logical consistency and simplicity. There are
practical considerations. A name has to be one which is understand-
able both in speech and writing if it is to be successful. It is ironical
that linguists have not always seemed to be aware of such criteria.
For instance /shrəl/ drill is a bad name — does it mean oral or
aural. Even worse is a name now happily abandoned — rill spirant.
It sounds all right until I tell you that rill is spelled RILL. Another
difficulty that should be remembered, and is not always, is that a
system of naming too closely analogical in all its parts is one which
is easy to learn, but which invites slips of tongue and pen. Phoneme,
allophone: morpheme, allomorph is such a set. I doubt if there is a
linguist who has not more than once said or written allophone for
allomorph. What is worse, such slips always seem to get past even
the most faithful and astute editors.

I have said at least a number of details about terminology. I have
certainly not said the single most important fact about it. It is a
means, not an end. There is then a simple way of judging the teacher
who is the most effective compromiser in this field of largely un-
necessary conflict. The most effective compromise is always that of
minimizing terminology, and maximizing drill in patterns.
Problems in Learning the Culture
By Robert L. Lado

1. Some present views and practices.

Everyone seems to agree that learning a foreign language should go hand in hand with learning something of the foreign culture as well. It has been said that one cannot really learn a language well unless he understands the culture of which it is a part. This paper assumes the latter position throughout.

Contrasting with the general agreement on the need to understand the culture in connection with learning the language, one finds wide disagreement on what the culture is as it relates to learning the foreign language. Three positions seem clearly identifiable: the belles-lettres position, the encyclopedic position, and the tourist position.

The belles-lettres position held absolute sway not too long ago. That position holds that we should learn the language to have access to the best literary productions of that culture. That position has never been proved wrong, but it is rapidly going out of fashion. Perhaps the prestige of the common man is responsible for the change. As it refers to American English, the belles-lettres position seems distant now. Students, teachers, and publishers react favorably to such labels as "conversational English," "practical English," "everyday English Conversation," etc., and they do not react favorably to "beautiful English," "profound English," "literary English," "the best English," etc.

The position that seems to have the strongest support today is that in which the student studies something of the geography, history, economy, government and institutions of that culture and observes "first hand" the life of the people. This position could be termed encyclopedic and directed toward the common man.

The third position is that of the sentimental tourist who finds all sorts of "interesting" things in the foreign culture. Information on hotels, restaurants, places to see, and usually places "out of the beaten path" which each new tourist thinks he has discovered are central here.
2. Weaknesses of general positions.

*Single frame of reference.* All three positions seem to me to assume that the object in this business of culture is to learn new facts in the single frame of reference that the student already possesses. That frame of reference, we know today, is determined in considerable measure by the patterns of his native culture. In the belles-lettres position there is some possibility of escaping that narrow frame by coming in contact with the thought of great men who may have in part freed themselves from provincialism, but there is no assurance that that will always be the case.

*Inability to interpret own culture.* When a visitor is among us to study the American way of life, or American culture, almost everyone is glad to show him that way and that culture, but do we know what to show him and what to tell him? We are really rather helpless to interpret ourselves accurately and to describe what we do, because we have grown up doing it and we do much of what we do through patterned habits, acquired almost unnoticed from our elders and our cultural environment.

Our inability to describe our cultural ways parallels our inability to describe our language unless we have made a special study of it. The paradox is of course that we are able to use the complex structure of our language with astonishing ease and flexibility, but when we must explain what we do, we give the most surprising fiction convinced that we are giving the truth. Similarly in our culture we may be able to tie our necktie with great speed and ease, but the moment someone asks us to explain what we do we become confused and may give him completely false information. We describe ourselves as being free and at the same time may demand that our student visitors attend class regularly, a restriction that may be considered an invasion of personal freedom in some countries.

3. Structural, bicultural point of view.

The position developed here will not be those mentioned, but one that might be called structural and bicultural.

We assume that **different cultures** like different languages are not merely different items in the same frame of reference but **different systems of behavior** whose patterns have developed relevance or significance within the bounds of each of those systems.
I assume that the student will keep his native culture and learn the foreign one, not merged into a hybrid containing the best or the worst features of both, but as separate and distinct ways of life. Ideally the student learns to react to the patterns of the foreign culture much as the natives do, and he learns to behave in those patterns so that natives understand his behavior in their own ways.

I assume that the cultures themselves will remain unaffected. The matter of self-identification or loyalty should not affect our position, since knowing how to behave in a foreign culture need not imply approval or disapproval.

*Patterned dimensions of behavior in a system.* Even though each act and each meaning is unique, never the same as any other and never any other (i.e. we do each thing only once), within each culture these unique acts and meanings function as "sames" if they fall within the molds or patterns of that culture. These patterns or molds are learned by the members of a culture as they grow up, and each individual, each informant, is able to react to them even though he cannot describe them. For our purposes these molds affect three dimensions of behavior which are at the heart of the problem of learning the foreign culture. They are: (a) the observable form of the behavior, (b) the distribution of the forms, and (c) the significance of the forms in the patterned distribution.

The *forms* of these patterns of culture are identified functionally on inspection by the members of that culture, although the same individuals may not be able accurately to define the very forms that they can identify. Even such a clear unit of behavior as eating breakfast, immediately identified by the performer if we ask him what he is doing, may be described by him as the morning meal or the meal when you eat cereal, bacon, eggs, and coffee; yet a man who works during the night might be eating his breakfast in the evening, and a meal of cereal, bacon, eggs and coffee might be lunch or even supper. We may describe breakfast by observing a representative number of occurrences of breakfast and by noting the contrasts with those occurrences which seem to resemble breakfast but are identified as lunch, dinner, a snack, or supper by natives.

Meanings, like forms, are culturally determined. They represent an analysis of the universe as grasped in a culture. Patterned forms have a complex of meanings, some representing features of a
unit or process or quality, some grasped as primary, others as secondary, tertiary, etc. Eating breakfast, lunch, and dinner are engaged in usually as providing food and drink for the body. We say then that breakfast, lunch, and dinner usually have that primary meaning. And in addition a particular form of breakfast at a particular time of day may have a meaning of good or bad on a moral or religious scale, on a health scale, on an economic scale, etc. A particular form of breakfast may carry as secondary meaning a social class identification. In short, any of the distinctions and groupings of a culture may be part of the meaning of a particular form unit.

**Distribution.** All of these meaningful units of form are distributed in patterned ways. Their distribution patterns are complexes involving various time cycles, space locations, and positions in relation to other units. Breakfast, for example shows time distribution on a daily cycle, a weekly cycle, and a yearly cycle. Breakfast shows a space or location distribution. It is also distributed after some units of behavior and before others.

Within a culture we can assume that when an individual observes a significant patterned form in a patterned distribution spot, it will have a complex of culturally patterned meanings for him. Breakfast in the kitchen at 7 a.m., served by the same person who eats it, and including coffee, fruit juice, and cereal, will have a different complex of meanings than breakfast in bed at 11 a.m. served by a formally dressed waiter and including caviar and other trimmings.

4. **Source of learning difficulties.**

The learning problems arise from differences in the systems. It is not difficult to learn new items if those items do not represent differences with the native cultural system itself. It is not difficult for example to learn the hotels one can go to in visiting the foreign country. One expects hotels. It is not difficult to learn the university one wishes to attend.

There is trouble in learning the culture when the same form has different meanings in the two cultures. A wink from a man to a woman in Spain might be a bold suggestion. From a woman to a man it might be even more of a suggestion. In the United States a wink does not normally have such meaning. It is difficult for the Spanish individual not to react to a wink in the United States the way he might in his own culture.
Drinking milk at meals is a standard practice in the United States. To us it has a primary meaning of food and drink, standard drink, at meal time. It does not have any special connotation of social class, national group, religious group, age group, or economic stratum. Wine, on the other hand, may be served on special occasions or by special groups of the population who have had special contacts with other cultures. Wine, thus, has the meanings: special occasion, special group of people. In France on the other hand, milk at meals is not the standard drink. Some children may drink milk, some adults may drink milk for special reasons, some individuals or families or groups may drink milk because of special cultural contacts. Drinking milk at meals in France has the secondary meanings of special drink, special occasion, or special group of people. Its primary meaning would be food and drink for the body. It is difficult to react to this difference in meaning and it is equally difficult to remember to act like the natives in that respect.

There is trouble in learning a foreign culture when a pattern that has the same form and the same meaning shows different distribution. The learner assumes that the distribution of a pattern is the same as in his native culture. Therefore, on noticing more of, less of, or absence of a feature in a single variant he generalizes his observation as if it applied to all variants and therefore to the entire culture. For some time it was puzzling to me that on the one hand Latin American students complained that North American meals abused the use of sugar while on the other hand University dietitians complained that Latin Americans used too much sugar at meals. How could these contradictory opinions possibly be true at the same time? We can observe that the average Latin American student takes more sugar in his coffee than do North Americans. He is not used to drinking milk at meals, but when milk is served he sometimes likes to put sugar in it. The dietitian notices this use of sugar in situations in which North Americans would use less or none at all. The dietitian notices also that the sugar bowls at tables where Latin Americans sit have to be filled more often than at other tables. She therefore feels quite confident in making her generalization.

The Latin American student for his part finds a salad made of sweet gelatin, or half a canned pear on a lettuce leaf. Sweet salad! He may see beans for lunch. He sits at table, all smiles; he takes a good spoon full and, sweet beans. They are Boston baked beans. Turkey is served on Thanksgiving Day, but when the Latin American
tastes the sauce, he finds that it is sweet — it is cranberry sauce. Sweet sauce for broiled turkey. That is the limit. These North Americans obviously use too much sugar in their food. And whatever secondary meanings attach to the abuse of sugar in the native culture are tagged to the foreign culture.

5. We must teach the patterns that differ from the native ones.

These problems in learning a foreign culture are not understood by merely observing the culture, because their structure is different from that of the native culture. We probably cannot teach all the cultural hurdles that the students might encounter; even natives do not know them all. But natives possess the system of the culture in their patterns of behavior and they can and do understand new behavior if they can observe it. The aim must be then to teach the students the cultural molds so that they too may interpret new items not specifically taught.

6. Outline of steps in teaching difficult patterns.

Once we know by a comparative study of the native and the foreign cultures what the learning problems will be we proceed to teach those problems. We know that it is not enough simply to present the culture. We should direct attention to a significant feature of a pattern and give examples that are "same" and examples that contrast. On the basis of the examples the students should draw their own conclusion as to the relevance of the feature. And finally, there has to be practice in reacting to and using the difficult cultural pattern.
DISCUSSION

ROBERT P. STOCKWELL: I would like to direct my remarks to the paper called "Graphic Grammar," by Mr. Allen. I have four brief comments. Two of them merely suggestions, which might be of interest, one a rather serious criticism in my own opinion, and the other a question. First, the suggestions: he placed the plural morpheme of the noun, the /-s and then the comparative morphemes, /-er and /-est on separate cards. Then when he got to the verbs, instead of placing the same type of suffixes on separate cards and attaching them to the end of the stem, he placed all principle parts on one card. In fact these verb suffixes and these noun suffixes are quite parallel and it seems to me that perhaps he might consider doing them on his chart in a parallel fashion, which might reveal a little more of the language structure to the students.

The second suggestion is that the yellow words, the nouns in this case, were identified by virtue of whether or not they answered the question "Who?" or "What?" It seems to me that this is likely to mislead, because "Who?" can be answered by "Me," "Who?" — "Me." "Who, What" doesn't identify or even describe the facts about these particular kinds of words and I think the fact that Mr. Allen had the /-s up there, that he took this particular kind of suffix and a possessive would have been sufficient identification and should perhaps have been more emphasized.

Now, a third point, and this is more serious: This particular presentation of grammar gives the impression, to me, at least, that language is just so many blocks which are put together like a railroad train, or like a crossword puzzle, depending on how you place things. Having tried to teach a little grammar to students, in a practical situation, and not just in linguistics classes, I have the impression that they would be misled because Mr. Allen's method makes the structure of the language look extremely linear, when in fact, language does not generally have a highly linear structure. It is more overlapping and interwoven.

Then, the final comment I would like to make is by way of a question on which I would appreciate some explanation later, on his part,
namely this: this all seems to me like a powerful lot of machinery! The thought of making up, presumably hundreds and even thousands of these cards! I must ask the question: if I got better acquainted with this method of teaching and saw some of the results of it, would I be convinced that it was worth this tremendous amount of trouble and machinery? Aren't there easier ways to get the same results?

MARGUERITE DORE, (Baltimore): I myself started using colours and blocks in 1944 in Washington state. Since then, I have discarded or simplified down to just three basic colours. I have had marvelous results, this way, with children, but it can become very boring with grown-ups.

J. DONALD BOWEN: I'd like to ask you a brief question, Professor Lado. I, and most people, I think, do agree with your premise and with the importance of teaching folkways and social customs along with the language course of the kind you describe. But what limits do you set? Culture is a vast complex, including anthropology, ethnography, etc. We cannot arrogate unto ourselves omniscience on all its phases and besides, the practical question is: how much of our class time can we take up with these problems. What is your answer to that?

ROBERT L. LADO: Well, very quickly, insofar as you must teach language and insofar as any elements of the language you teach will involve the culture, I think we are bound to clarify this for our students. It is not enough merely to say that "desayuno" in Spanish is "breakfast" in English, etc. Even in only presenting our language material, we must be cognizant of the cultural material it contains, and especially of wherein lie the differences from the learner's culture.

PAUL L. GARVIN: I just wanted to comment on Professor Allen's paper. I was amazed at the ingenuity of his coding system because I had a bit to do with coding language sequences and I think if you could translate the colours and the arrows and the borders into some kind of numerical alphabetic system, irrespective of the merits of the analysis itself in terms of academic linguistics, it might be extremely useful for a number of purposes. I was really amazed at the way it fitted together and I didn't think you could do this as nicely for English.
ROBERT L. ALLEN: I'd just like to say a few words in answer to the previous question posed to me. In the first place, I agree completely that it would be better to separate -ing and -ed endings except for one reason: if it weren't for the irregular verbs. But I want to have my students drill with the different verbs I put up. I put up a brand new verb with all its parts. With regular verbs, I would have put up the endings separately. As for your question, I agree that this method would be very inconvenient if one attempted it with all sentences. If a question or problem comes up in class, I make up a card for that specific situation. Once the students are accustomed to the device of the edges and one card having two colours, indicating that it cannot be used with the other item, then by just making up a card I can very quickly explain that particular detail. What I was trying to show was not a teaching device for teaching the students grammar in the first place; it was a way of explaining to them on the basis of colours, certain things which they had already learned. For example, if a question came up about "the big two boys" instead of "the two big boys" the proper order could be shown very quickly by the differing shading on the blue cards. That's why I explained that I would never try to teach all of these to the students in this order; I would never use it for drill purposes. It's just to show how much can be done with colours. There are four basic colours: one for adjectives, one for adverbs, one for nouns, one for verbs. Once the four basic colours are set up, then with shading, you can get the students to recognize the correct position themselves.

Question from the audience: I want to ask Mr. Lado about the following: the person teaching the culture presumably aids in dealings with members of a foreign culture, and this implies an acculturation process. If I go to a foreign country, I don't plan to give up being an American.

ROBERT L. LADO: The person in a foreign country must realize that when he does a certain thing, it has a certain meaning for the people there. If he wishes to interpret American culture to them, he must do it in a way that means what he wants it to mean over there.
IV

Perspectives of Linguistic Science
PAUL L. GARVIN: I shall make a brief introductory statement about this panel. This panel has come about due to one of my pet peeves. I have had the feeling for some time that linguistics has hit a plateau in some respects and that some of us have been treading a little water. I thought that it might be very useful for us for once to examine our basic assumptions and fundamental techniques rather than our minor analytic concepts and I very much hope that my panel isn't going to disappoint me. The first in the pecking order is Fred W. Householder who is from Indiana University and a very dear friend of all of us.

Rough Justice in Linguistics
By Fred W. Householder

A few years ago I unwarily used the terms 'God's truth' and 'hocus-pocus' in discussing the metaphysics of linguists. I meant those terms to cover two well-known philosophical positions, one or the other of which is held in some degree by everyone, linguist or philosopher, scientist or non-scientist. Like most metaphysical disagreements, this turns on the way you say you will use certain words (though, as I remarked, profession and practice are not always in harmony). The basic words involved here are 'real' — or such synonyms as 'objective', 'in the data', 'non-arbitrary', etc., on the one hand — and 'arbitrary' — or 'subjective', 'in the observer', 'fictitious', etc., on the other. The nouns described by these terms are such as 'class', 'general term', 'abstraction', 'common noun', or, in linguistics particularly, such specific instances of abstract class names as ' phoneme', 'morpheme', 'word', 'structure', etc.; but all of these can be boiled down to the relation of similarity or likeness. The hocus-pocus, or idealist or nominalist point of view, by whatever name it may be called, asserts that similarity is exclusively in the observer, and that all classes are equally arbitrary and equally dependent on the choice of the observer (analyst, scientist, linguist). For example, it says that a class such as that represented by the word 'elephant' in ordinary speech is fully as arbitrary and rests quite as little upon any 'real' or 'objective' similarity among the individuals to which the name 'elephant' is applied as one of those classes which philosophers enjoy constructing, containing, for
instance, 'this sheet of paper', 'my wife's uncle', 'all broken pencils', 'the city of Timbuctoo', 'the middle pedal on King Paul's favorite piano', 'the atomic weight of argon', 'a certain snowflake that fell in Greenland at a certain time', 'transitivity', 'zero', 'your cat', etc., and there is no more reason why this latter class should not have a common class name (say 'saufypt') than the class of elephants. The 'God's truth' or realist metaphysics, on the other hand, asserts or assumes that some items of data are 'really' or 'objectively' more alike than others, and that some classes or names (like 'elephant') being based on this objective similarity, are 'real' or 'natural' or 'non-arbitrary' in a way in which others (like 'saufypt') are not. The hocus-pocus view professes to believe that where there is a high degree of agreement in the use of terms and apparently successful communication, this is due entirely to chance, coincidence and conditioning, not to any external reality or naturalness of the class related by the term. The naive realist or God's truth partisan, on the other hand, takes the argument from consensus or success of communication as convincing. He may go even further, however, and prescribe that the linguist, for instance, should never set up any arbitrary classes or make any decisions not based on objective, agreed-on similarities and differences.

As those of you who have talked philosophy with colleagues in other fields may be aware, the idealist or hocus-pocus metaphysics has had some vogue, particularly in the social sciences. Whether this vogue still continues or not, I can not say, but a few years ago it was possible to find sociologists who would argue not merely that phonemic solutions were non-unique (but convertible) or something of that sort, but that physics, that is 'modern, western physics' represented only one of an infinite number of equally valid but non-convertible and mutually inconsistent formulations. And probably all of us have heard arguments about the social tyranny of the law of excluded middle and the assertion that it, like all 'western' logic, is due merely to certain peculiar features of the structure of Greek in Aristotle's day, and would never have been dreamt of if Aristotle had spoken Nootka or Chuvash.

Now, though something like the above was all I had in mind when I introduced the terms 'hocus-pocus' and 'God's truth', they have occasionally been extended, so that 'hocus-pocus' may apply to any analysis which one wishes to characterize as arbitrary, in particular to the use of a pre-cut analytical model into which selected data
from a language are fitted by the linguist, and God's truth refer to a belief in absolutely unique 'correct' analyses and a tendency to attach excessive importance to apparent asymmetries and irregularities in the data. I am perfectly willing to accept these uses — after all, what good is a term if we can't make it mean what we want it to? — but if they are so interpreted, many linguists (including myself) quite naturally claim that they belong to neither school. A few days before Paul Garvin invited me to this conference, I had a letter from C. E. Bazell in which he made such a claim and proposed instead to be known as an advocate of Rough Justice. And when Garvin wanted a title for my contribution in a hurry, this occurred to me as being apt.

Obviously this term is not on quite the same metaphysical plane as my original use of the other two, though perhaps it bears some resemblance to Critical Common Sense (a modified form of God's truth realism). But with reference to the more common application of the terms, an intermediate position may very well be characterized as aiming at a kind of rough justice. The interpretation of this position which I will sketch today is, of course, my own, and is almost certain to be different (at least in emphasis) from Bazell's.

The instructions given me for this paper were that it should attempt some sort of forecast of the immediate future of linguistics in America. Before launching my prophecy, however, I must enter a disclaimer or two. The business of predicting in this fashion has to be based primarily on rhetorical rather than logical arguments; it is journalism, not science, and if it does fall within the outer limits of any science, it would belong rather to social psychology than to linguistics. Furthermore, my only previous published prediction has so far not come true. About ten years ago or so, I predicted that the sound spectrograph would put an end to the use of *ad auctoritatem* and *ad hominem* arguments in phonetics, and force linguists to acquire an elementary familiarity with statistics. However, even now, just as then, it is possible to find linguists arguing that 'my ear' (or so-and-so's ear) is the only reliable judge of phonetic data' and 'the phonetic data alleged by so-and-so are obviously impossible'. And there has not yet appeared in print (to my knowledge) a phonemic analysis of any dialect which offers a systematic account of the allophonic distribution based on statistical treatment of spectrographic data. So you will probably be wise to take a skeptical attitude toward my forecast.
It is about thirteen years now since I first came in contact with large numbers of linguists. At that time I worked (along with some of you) in a large office populated entirely by linguists, informants, and secretaries. As a group, the linguists I knew there exhibited many of the traits which we tend to associate with oppressed minorities and new religious sects. They were exceedingly chauvinistic; 'European' was almost equivalent by definition to 'pre-scientific' (at that date the favorite pejorative term), and I doubt very much that any of them would have guessed correctly the name of the president of the Linguistic Society this year. They bitterly resented criticism, whether fair and justified or not, particularly if it came from a member of the out-group. They believed firmly in, and proselytized fervently for a set of linguistic dogmas of which some are now taken for granted, while others have largely been forgotten. They did this, of course, in the name of science, not dogma, and, in the end, I think we can all agree that our science did make notable progress, partly due to their enthusiasm and devotion. Like children with a new toy, they were enchanted by logical rigor and by all sorts of novel symbols and novel uses of symbolism; they never ceased to be amazed by the apparently unlimited power of the new tools they were learning to use.

In the intervening years, however, it seems to me that the attitudes and behaviour-patterns of linguists have changed. Naturally the fervor of that generation has waned, but even among the younger linguists there seem to be a few who are either as chauvinistic, as passionate, or as confident that they have discovered the whole truth. Parenthetically it should be noted that if chauvinism has declined, it is also true that many European linguists are now operating within a scientific frame resembling that so vehemently advocated by Americans of the forties. Dogmatism also appears to have declined, though, to be sure, it has not vanished (and presumably never will). These developments can, in general, be easily observed in a chronological reading of the work of the more productive scholars. Taken altogether, the ideals and ideas of linguists today appear very favorable to a position like that which I describe as Rough Justice.

Let us try to be more explicit about this term. The basic imperative of Rough Justice, I should say, is this: 'Don't let your methodology and your assumptions get in the way of your ultimate goal.' This is essentially a modified form of Charles Sanders Peirce's famous dictum, 'Do not block the way of inquiry.' By this Peirce meant
to emphasize the fallibility of scientists and the need for constant skepticism toward all claims of certainty, impossibility, ultimate inexplicability, or final perfection. But even if no such claims are overtly made, there is still the danger of cluttering the way of inquiry so that progress is needlessly slow. And I think that linguists now realize this better than they did fifteen years ago, and are much more careful to leave all roads open than they were then. This or that approach may seem to us now to lead nowhere, but we are ready to admit that at some future date it may seem otherwise. This is not to say that we are dropping any of the essential precautions of all scientific investigation; we will continue to maintain the standards of accuracy, completeness, and communicability (i.e., duplicability) which are the only guarantee of progress. But we are beginning to be more careful about distinguishing methodological convenience and aesthetic pleasure from logical and scientific necessity. It is very easy to fall into this trap. Sometimes, after we have imagined and described a beautifully detailed and rigorous analytical procedure, and have shown how it could be carried out (given sufficient time and help), we absent-mindedly begin to believe that we have in fact carried it out, and to attribute to our results a scientific reliability which they cannot fairly claim. Rigor is fine and necessary, but we must not overlook those places where it appears to be impractical at present and where we still must make use of approximations and shortcuts. Similarly, while the importance of distinguishing levels of analysis in investigation cannot be denied, the synthesis of results achieved on different levels is important in communicating our description. Maybe we can not do perfect justice to each level and each criterion, but we can strive for some sort of rough justice in the final report.

By now we are all familiar with the characteristics of the ideal description of a language, embodied in a perfect grammar and a perfect dictionary: lists of items and rules of combination, expansion and transformation which will generate all occurrent utterances of the language (or corpus), but no utterance which will be rejected as impossible by the native speaker (we make no effort to avoid those which he will judge useless, foolish, or senseless, but possible). This ideal, I suppose, can never be reached for a natural language, but decade by decade we are coming closer to it. Though we are no longer as cocksure as we once were that all descriptive problems have been solved, still, I expect to see one or more descriptions within the next ten years that show a rough justice approximation to
our ideal. Part of this will be due to such recent developments in
technique as the theory of grammatical transformations, or the distri-
butional analysis of paradigms. The full development and gradual
improvement in these and similar techniques which we can expect in
the near future will bring us much closer to our dream. Though I say
'distributional analysis' rather than 'semantic analysis' because I
believe that distribution is sufficient to bring us to our own peculiar
goal, I believe also that, whether we wish to assign it to linguistics
or not, a certain amount of semantic analysis is necessary for another
goal, the goal of language-teaching. This is to generate not merely
all possible utterances, but the appropriate and useful ones for each
context — what we want to say, in short. And since that is so, it
seems inevitable that our present reliance on private, intuitive and
arbitrary methods will be replaced by new techniques, by which
analysts working independently will reach the same or convertibly
equivalent results, and that this will be accomplished largely by
linguists, possibly with some assistance from psychologists and
logicians. This may not happen within the next ten years, but it
must come. And one of the tools that will speed its coming is, I
believe, distributional statistics.

In other parts of our science, too, statistics will play a growing
rôle, as is already evident. In the 1945 volumes of Language and
Word, there is only one article which makes any use of statistics at
all (and that use is limited to a single footnote); in the 1955 volumes
there are eight articles using statistics, in six of which they play a
major and essential part. This count includes some historical as
well as descriptive articles, and the statistics are generally of a
rather elementary nature, but the trend is there, and sigmas, chi-squares
and the like are bound to crop up in our journals with growing fre-
cuency. We have been told quite often that descriptive linguistics
operates with discrete units rather than a continuum, and with all-or-
nothing binary choices rather than percentages. Where, then, is the
place for statistics? There are several possible answers. One is,
as suggested above, in the analysis of semantic elements which,
though not part of linguistics in the narrower sense, is essential for
the fuller understanding desired by language teachers. Then, in
reporting the raw data on which an all-or-nothing discrete unit analysis
is based, we have until now largely trusted to the linguist's artistic
intuition. Now while I am unwilling to deny the importance and per-
manent value of artistry in linguistics, the time is coming when
scholars will more and more expect a statistical treatment of the data.
Where are the 87 percents which are concealed behind our hundred percents, and the 0.9 percents beneath our zeros? In the past, a morpheme has been a morpheme, and all morphemes are equal in the sight of the linguist, but now we are beginning to be interested in learning (what language teachers have always been interested in) that morpheme A is 10,000 times as frequent as morpheme B in a given corpus, or combine with 317 different preceding morphemes where B combines with only six. This information is not, perhaps, strictly descriptive, but it is a matter of valid interest, and can often be related closely to structure. Again, certain parts of the linguistic pattern, particularly those relating to style, (which I am here using in a somewhat different sense than that proposed yesterday by Hill, namely the phenomena related to choice among what are linguistically optional variants) are correlated with such a large range of independent variables that we can have no hope of controlling them separately. Such material is an object of increasing interest today, especially in the marginal area of literary analysis, but also in the general treatment of styles and dialects. And, finally, no one has yet suggested perfect solutions to the problems of (a) distinguishing polysemy (variety of meaning of one morpheme) from homophony (identity of form of different morphemes) or (b) distinguishing free or stylistic variation from contrast in certain difficult cases. A statistical approach seems to offer one possible hope of solving these problems.

So much for my prophesy in regard to descriptive linguistics. Historical linguistics, too, has witnessed recent trends toward more thorough examination and presentation of data, using statistical methods in part. But the most striking development has been the gradual assimilation of structuralism. While articles are still being written in the old isolationist way, more and more we are coming to expect historical linguists to take a structural view of their formulations. The expectation seems reasonable, and the results so far good, if not spectacular. We may not have to wait too long for a new standard or definitive treatment of Indo-European (or Indo-Hittite) which will incorporate this approach.

But it is in the field sometimes called general linguistics, the comparative study of the descriptions and histories of unrelated languages with a view to discovering necessary correlations ('If a language has A, it will also have B', or 'If development C occurs, D will follow'), language universals, and the occurrence (or non-occurrence) and distribution of theoretically possible types of structure, that the
initial stages of data-sifting through which we are now passing must make increasing use of statistical methods. It is here, for instance, rather than under historical linguistics, that the topic of lexico-statistical dating or glottochronology belongs, since all research now must primarily test the two basic assumptions: (1) that there is a discoverable set of meanings and meaning-relations which are central, basic and stable in their expression in all languages, and (2) that the rate this portion of the morpheme inventory of any language changes is a constant, the same for all natural languages under all conditions (with the possible exception of pidgins, if they are considered natural languages). And it may well be that the next few years will bring, not merely empirical confirmation (or rejection) of these two assumptions, but structural, psychological, or sociological arguments from which they can be derived (or disproved) as theorems.

Finally, such marginal fields as psycholinguistics, information theory and the like lie outside my own scope, but obviously also make much use of statistics, and are attracting the interest of more and more linguists.

To sum up: American linguistics seems to be moving in the general direction of a Rough Justice philosophy, which means, (1) taking into account all the data; (2) assigning value to all types of criteria, mixing levels where that is appropriate; (3) studying and reporting not only those aspects of language which lend themselves readily to discrete all-or-nothing analysis, but also those which at present can be handled only statistically; (4) maintaining a scientific skepticism toward all claims which might block the way of inquiry; (5) keeping a constant eye on the ends of linguistics, and succumbing less to fascination by the shimmering ingenuity of the means.
DISCUSSION

CARLETON HODGE, (F.S.I.): Is it not true that all of our traditional grammars, all of our descriptive grammars, or efforts at descriptive grammars, are in a sense, a statistical approach because the morphemes which they select as endings, or as prefixes, or as infixes, are simply those which occur more frequently than those which occur as bases, on the whole?

FRED W. HOUSEHOLDER: Yes. Though there are prefixes which are less frequent, or which occur very rarely, on the whole, the affixes are the more frequent.

ROBERT L. LADO: I don't think it does much good to call "statistical" something that has not been counted. I think we have made frequent mistakes here, in making statements about frequency when we have not counted the data.

PAUL L. GARVIN: If I may make a comment on Carl Hodge's suggestion, I think that probably the fundamental difference between the morphemes that are being listed and the ones that are not being listed in grammars is whether or not they belong to classes of limited or unlimited membership. I think frequency of occurrence is perhaps one of the lesser considerations because linguists usually feel compelled to list all members of a paradigm including such allomorphs as are extremely infrequent and are usually called exceptions, occurring only once in every fifty pages of printed text provided they belong to a limited membership class, and then the unlimited membership is usually left for some other kind of listing. I also feel in regard to statistics in general that this difference may be crucial because when you have a class of unlimited membership, statistical methods are perhaps the only means by which you can approximate any kind of listing. I'm addressing this as a question to Fred Householder.

FRED W. HOUSEHOLDER: I accept the question.

EDMUND S. GLENN (Department of State): I would like to make some remarks, one of them about the beginning of your presentation which I found admirable. The difference between the realistic and the nominalistic, or the hocus-pocus and the God's truth approach, may have a certain significance within descriptive linguistics. It gets much greater significance when it gets into questions of culture and
language, etc., because whereas within linguistics, the assumptions of one or the other nature are a bit extraneous to the subject matter, and therefore not too likely of completely changing the descriptive results of a given researcher, in such a question as culture and language, these assumptions become part of your subject matter. Therefore, if one or the other be emphasized, what you will find at the end is going to be what you will put into it in the beginning, because that becomes what you are really talking about, if you speak about cultures, for instance.

My second remark is a truism; that is: if you want to have decent statistics, you must have large samples.

CHARLES BIDWELL: I support Mr. Householder’s statement that there seems to be greater acceptance of statistical techniques in linguistics at the present time. About seven years ago, I gave a paper to a group of Michigan linguists on the sigma of a sample and I had the feeling of having struck a hornet’s nest. Today, most of my colleagues are struggling with some statistical refinements of their techniques.

W. NELSON FRANCIS (Franklin and Marshall College): I’d like to vote in favor of Dr. Householder’s definition of the field of stylistics. I think this is a much more useful concept of the area of style, being, as I understand it, the choice of linguistically acceptable items upon aesthetic grounds. I think this is perhaps a better working concept than Professor Hill’s simply because I think linguistics is going to push farther and farther into discourse analysis, and bring into linguistics proper what Professor Hill now includes in stylistics, that is, the relationships between sentence units or whatever is the largest syntactic unit; whereas I think there will always be the question of transformations which are linguistically roughly equivalent in the native speaker’s mind but which are aesthetic choices. This is what I like to think of as the area of style, because it allows a very useful and meaningful distinction, not only in linguistics but in rhetoric and literary criticism also.

ARCHIBALD A. HILL: The two definitions given have always seemed to me pretty nearly just the obverse and reverse of the same medal. That is, one is nearly mechanically translatable into another. If we think of sentences alone, we always have a choice; that is to say, I can describe the shape of my head in two ways: “long-headed”
or "dolichocephalic." I have a choice, but I can predict that there are certain situations in which I will use one of those terms rather than another. If you consider these two items as choices, you are looking at stylistics from a linguistic level. To consider these items as choices related to other choices in surrounding sentences, you are looking at these choices in a stylistic fashion.

W. NELSON FRANCIS: I would make a slight distinction. I think the choice between "long-headed* and "dolichocephalic" is stylistic, but I would also call it dialectal, that is, between a learned and a common dialect; whereas the choice between saying: "I'm long-headed* or "The shape of my head is long," or "My head has a long shape" ... these are all both semantic and grammatical equivalents, but there is a selection amongst them which I would call stylistic.

CARLETON HODGE: I'm concerned with this particularly in Persian where you do have different styles which are culturally determined, so that the use of any given style is a choice of a given shape of a given morpheme, but these are culturally approved variants for that particular situation.

ROBERT L. ALLEN: One place where statistics can be very helpful is in some day enabling us to examine a case where language has two synonyms which seem to be practically equivalent in meaning. Statistics can determine which one is used more, and thereby determine which one by being used less, begins to be used in special situations and gradually moves over into another meaning, or begins to take other meanings because of the difference in distribution and in use. This is one problem which the teacher faces in deciding which one to teach, or whether to teach both as equivalent, or to try to explain that one would be used in certain situations, and others in other situations, and how they change in time probably because of their distribution or frequency of occurrence. We need statistics to test cases like this instead of just saying that two words are equivalent in meaning.

L. E. DOSTERT: I was a bit puzzled by what Carleton Hodge just said about culturally approved items. I'm thinking, for example, of Mallarmé in French poetry. It would be difficult to say that he wrote as he did because his choice of items was culturally approved. Some of them are so obscure that they were not even understood. So where would be the cultural approval? How would you define it? How would you discern the cultural approval in respect to a given item?
CARLETON HODGE: Certain cultures like the use of obscure words. This is true of Arabic. Often a speech will be made with many words that are not understood at all by the people, but they like that, so that the choice of these words which are not understood is culturally approved.

L. E. DOSTERT: How do we know that they like it? What scientific evidence have we got?

CARLETON HODGE: The existence of the texts, the fact that these things have been reproduced and carried down to our time and read and re-read.

L. E. DOSTERT: That is a deduction from evidence.

A. C. REYNOLDS (Stromberg Time Corporation): It's my impression, from having attended other conferences of linguists, that linguists have lost the leadership so far as application of statistics to their own field is concerned. Basically, the statisticians have gotten into the field and are so far ahead of you that there are about five years hard work on the part of this group, in order to handle the problem. In particular, I have heard a comment here about the necessity for large samples. I have also heard comment to the effect: "Can statistics handle the problem of stylistics?" The answer to that is "yes" but the papers that have been presented are in the statistical and not in the linguistic journals. I would like to refer you to two papers by Wilhelm Fuchs of Aachen, Germany that deal with the analysis of style in the German language of several texts. This work is one of the most beautiful and complete statistical analyses I have seen, with complete co-ordination between stylistics as understood by the human being, and stylistics as interpreted through the mathematical discipline of statistics. In the United States, the American Press Institute for several years has been conducting an intensive statistical study of the English language. None of this material, apparently, has penetrated into the field of linguistics, but the studies are of basic importance to a great number of things that have been discussed during this meeting. I think this material is something that should be studied before value judgments are placed on whether or not statistics can be applied in this or that area, because they are being applied right now, but not by the linguists.
EDMUND S. GLENN: On the question of stylistics, I believe it would be dangerous to try to establish sharp boundaries. The determining factors range in a continuum from matters of poetic choice to choices influenced by semantic categories. Hence, boundaries should be established rather on the basis of the afore-mentioned "Rough Justice."

PAUL L. GARVIN: The next paper is by Professor Ward Goodenough, of the University of Pennsylvania, who is one of the very few anthropologists who has published in Language and whose recent review of the volume edited by Henry Hoijer may have come to your attention. He has therein demonstrated an unusually keen grasp of the overlap between cultural anthropology and linguistics, and I believe that the title of his topic is extremely appropriate to him and to us.
Cultural anthropologists try to do a number of different things, and a great many of them, at least, can be discussed in relation to linguistics. But the anthropologist's basic task, on which all the rest of his endeavors depend, is to describe specific cultures adequately. This aspect of anthropological work is known as ethnography. It provides the context for what I shall have to say this morning.

A proper definition of culture must ultimately derive from the operations by which we describe particular cultures. Because these operations are still in early stages of formulation and development, it is not yet possible to state precisely just what we mean when we speak of a society's culture. A working definition will be necessary, however, in order to discuss linguistics in relation to ethnography.

As I see it, a society's culture consists of whatever it is one has to know or believe in order to operate in a manner acceptable to its members, and do so in any role that they accept for any one of themselves. Culture, being what people have to learn as distinct from their biological heritage, must consist of the end product of learning: knowledge, in a most general, if relative, sense of the term. By this definition, we should note that culture is not a material phenomenon; it does not consist of things, people, behavior, or emotions. It is rather an organization of these things. It is the forms of things that people have in mind, their models for perceiving, relating, and otherwise interpreting them. As such, the things people say and do, their social arrangements and events, are products or by-products of their culture as they apply it to the task of perceiving and dealing with their circumstances. To one who knows their culture, these things and events are also signs signifying the cultural forms or models of which they are material representations, a fact to which I shall return shortly.

Given such a definition, it is obviously impossible to describe a culture properly simply by describing behavior or social, economic, and ceremonial events and arrangements, as observed material phenomena. What is required is to construct a theory of the conceptual models which they represent and of which they are artefacts. We test the adequacy of such a theory by our ability to interpret and predict
what goes on in a community as measured by the interpretations and predictions of its members, our informants. A further test is the extent to which we ourselves are able to behave in ways which lead to the kind of responses from the community's members which our theory would lead us to expect. Thus tested, the theory is a valid statement of what you have to know in order to operate as a member of the society, and is, as such, a valid description of its culture. Beyond this its acceptability depends largely on the esthetic criteria to which scientists and mathematicians customarily refer by the term "elegance".

Ethnographic description, then, requires methods of processing observed phenomena such that we can inductively construct a theory of how our informants have organized the same phenomena. It is the theory, not the phenomena alone, which ethnographic description aims to present.

The methodological problem of ethnography thus viewed seems to me to be identical with that of descriptive linguistics. A phonetic transcription, for example, describes a particular material manifestation of a language by means of an a priori taxonomy of sounds; it does not describe the language or any segment of it. It does not indicate what the speaker said, but what a recorder heard before he had learned the language. (I defy you to make a phonetic transcription after you've learned the language). It is the raw data from which statements describing the language may be induced, from which the language may be learned. The linguistic problem is to construct a theory as to what are the acoustical percepts with which speakers of the language in question operate — the phonemes, combinations of phonemes, and arrangements of the combinations by which they discriminate speech behavior. Thus, phonemic description bears the same relation to speech as sounds and behavior that cultural description bears to the material world in general. Indeed, we may define a language in precisely the same terms in which we have already defined a culture. It consists of whatever it is one has to know in order to communicate with its speakers as adequately as they do with each other and in a manner which they will accept as corresponding to their own.

In this sense, a society's language is an aspect of its culture. This is contradicted in no way by the fact that two communities speaking what passes for the same language may otherwise have
somewhat different cultures. Other major aspects of culture have a similar kind of semi-independence; societies sharing a common technological tradition may possess different religions. The frequent assertion that language and culture are independent, while properly cautioning against certain kinds of inference, is in other respects an unfortunate half-truth.

The relation of language to culture, then, is that of part to whole. Theory and method applicable to one must have implications for the other. With this in mind, let us examine the implications which the method of structural linguistics may have for ethnography.

It is a proud boast of structural linguists that by their methods they are able to describe the phonology, morphology, and syntax of a language without resort to the meaning of the utterances which they analyze. Because of the improper use to which meaning was formerly put and because of the apparently intuitive approach to meaning which earlier linguists employed, outlawing the use of semantic criteria for descriptive purposes and basing structural analysis on distributional criteria instead has served a very useful purpose. It would be a terrible mistake, however, to assume that structural linguistic method has nothing to do with meaning.

What structural linguistics has done is simply to disallow the use of meanings as entities already known and therefore available as criteria of structural analysis. By doing so, linguists have succeeded in developing a fairly precise method for deriving meanings as the end product of analysis, a fact which, as far as I am aware, has been obscured by an uncritical distinction between so-called structural and referential meaning. In order to clarify what I am suggesting here, let us see how the concepts and methods of structural linguistics may be fitted into sign theory.

For purposes of this discussion, we may distinguish between two different kinds of signs. The first type consists of any sign which is itself a member and, as such, representative of the class of phenomena signified. Thus, a particular safety-pin is a member and representative of a conceptual class of object. It must signify to us the criteria for being in that class before we can recognize it as a safety-pin. It does so by virtue of possessing the properties which we define as necessary for membership in the class. As material manifestations of the conceptual classes, the forms, which they
signify, such signs have been aptly termed iconic (cf. Morris, *Signs, Language and Behavior*, 1946). The second type of sign is non-iconic, consisting of all signs which themselves lack the properties delimiting the classes of phenomena they signify. Now, any material object, event, or act to which people respond is necessarily an icon signifying a conceptual form of some kind (or people wouldn't respond to it). For a sign to be non-iconic, then, it must be other than material. While non-iconic signs signify conceptual forms, they are themselves conceptual forms, which are in turn signified by iconic signs.

Language illustrates the two types very well. As a linguistic form, the word *stone* does not itself have the properties by which we recognize things to be stones. It is, therefore, a non-iconic sign. Each specific utterance of the word, however, is an iconic sign signifying the linguistic form which it materializes. Indeed — and this is the point I wish to emphasize — every uttered sound or "phone" is an iconic sign of a phoneme, itself possessing the properties by which we recognize the phonological class it represents. Every speech utterance is an iconic sign of a corresponding linguistic form or combination of forms. In this respect, linguistic forms are no different from all other cultural forms which have material representation or can be given such representation in iconic signs. A house is an icon of the cultural form or complex combination of forms of which it is a material expression. A tree, in addition to being a natural object of interest to a botanist, is an icon signifying a cultural form, the very same form which we also signify by the word *tree*. If, as I have already suggested, every object, event, or act has stimulus value for the members of a society only insofar as it is an iconic sign signifying some corresponding form in their culture, it follows that any method which enables us inductively to isolate and describe such cultural forms precisely and rigorously by virtue of operations performed on their icons will be of tremendous value to ethnographers.

It is here, of course, that structural linguists have made a notable contribution; for it is on utterances as iconic signs that they have concentrated their attention. By refusing to allow matters relating to the role of linguistic forms as non-iconic signs to enter their deliberations, they have developed rigorous methods for manipulating utterances as icons so that it is possible to isolate and make valid statements concerning the linguistic forms and sequences of forms which they signify. Structural linguistics is, in effect, a science of iconic
signs, a method for describing what they signify, and in this sense, what they mean.

Once we recognize this fact, it is but a short step to apply the method to the problem of describing those concepts which are signified by linguistic and other cultural forms in their role as non-iconic signs. A demonstration of how linguistic method may be applied to this end is now in press and will appear in a forthcoming issue of Language (Vol. 32, No. 1, 1956). Without entangling us in the details and complexities, I can illustrate the fundamentals very simply in connection with writing.

Every letter that is actually written on a piece of paper is an icon signifying the conceptual model for the letter, a grapheme. The grapheme is in turn a non-iconic sign signifying a phoneme. (For the sake of simplicity, I am assuming the writing to be phonemic). The phoneme, in turn, is materialized in speech as a sound which is an iconic sign of the phoneme. If someone unfamiliar with the language wishes to isolate and describe the phoneme represented by the grapheme, he asks an informant to pronounce for him a sample of written words and phrases, of which one group contains the grapheme in question in various positions in the words and phrases while a control group does not contain the grapheme. If he records each utterance in some kind of phonetic notation, he can then follow established methods for isolating the acoustical criteria which differentiate the phoneme in question from others. Having thus described the phoneme he has at the same time described what the grapheme signifies, because the already isolated grapheme was the point of reference for collecting the phonetic data for phonemic analysis. The investigator now knows, as well as he can ever know, what the grapheme means as a non-iconic sign in the culture of his informant.

Similarly, by getting an informant to show him a sample of things which, in the informant’s meaning system, can be called stones, as against a sample of things which cannot be called stones, someone learning to speak English can by virtue of the resulting series of contrasts establish a verifiable hypothesis as to what are the criteria for being a stone. Taken together, these criteria describe a concept, a cultural form, which each stone in his sample signifies as an iconic sign and which the word stone signifies as a non-iconic sign. The method of phonemic analysis, in which the object is to bring out systematically all points of contrast between groupings of icons as
an informant sets them up and, thus, step-by-step to eliminate all but one hypothesis as to what they signify, is fully applicable here.

There are problems to be sure. We lack for other material phenomena the equivalent of a phonetic notation whereby we translate the icons into easily manipulated forms for analytical purposes. But this was once a problem in linguistics as well. It poses obstacles, but none that cannot be removed by applying a little effort. Another complication stems from the fact that non-iconic signs can, and, as I am beginning to discover, frequently do, signify more than one conceptual form, in the same way that a letter in an alphabet may signify more than one phoneme. One of the findings already emerging from preliminary analyses is the fact that non-linguistic forms have systematic relationships to each other in paradigms and combine in accordance with principles analogous to those of linguistic morphology and syntax. Indeed, they seem generally to exhibit many of the same kinds of structural relationships, however more widely ramified, with which we are becoming familiar in connection with linguistic forms — but I am getting beyond the scope of this paper.

The thing to note here is the fact that what non-iconic signs signify can be systematically gotten at only through analysis of icons and determination of the forms they signify. Out of the linguist’s desire to commit hitherto unwritten languages to writing in such a way as accurately to reflect their phonic structures has come the necessary science of icons on which a general science of signs can be erected.

If we return now to our original point of departure, we may ask why a descriptive science of signs is crucial to ethnography. What have anthropologists been describing without such a science to help them, if not cultures?

It is in the course of learning his language and how to use it that every human being acquires the bulk of his culture. An ethnographer, himself a human being, can hope to acquire another society’s culture only by learning and using its language. Thus, as a set of forms, language is not only a part of culture; as a set of easily manipulated non-iconic signs, it is a major instrument for learning it.

What I am saying, of course, is that we learn much of a culture when we learn the system of meanings for which its linguistic forms
stand. Much of descriptive ethnography is inescapably an exercise in descriptive semantics. It is true that ethnographers have so far been only a little more systematic about it than is the average layman as he learns a new culture. As a result, we have tended to talk about cultures instead of accurately describing them. Much of ethnography is taken up with a description of the material setting in which a culture exists and of its technological, social, mythological, and emotional artefacts. Relatively little attention is devoted — systematically, at least — to isolating the concepts or forms in terms of which the members of a society deal with one another and the world around them, and many of which are signified lexically in their language.

The great problem for a science of man is how to get from the objective world of materiality, with its infinite variability, to the subjective world of form as it exists in what, for lack of a better term, we must call the minds of our fellow men. We all of us succeed in doing so, somehow, or we couldn't learn to understand each other. That language exists at all is evidence enough of this. But the processes by which we do it have eluded our grasp. Structural linguistics has, I think, made us conscious, at last, of their nature, and has gone on to convert this consciousness into a systematic method.

Yesterday, Professor Hill said that he regarded linguistics as the best instrument yet devised for getting inside the human skin. He was speaking as a linguist. As a cultural anthropologist, I heartily endorse his opinion.
DISCUSSION

PAUL L. GARVIN: I think that Professor Goodenough’s distinction between iconic and non-iconic is crucial for the type of linguistic theory that has been initiated by our Danish friend, Hjelmslev. It provides, at least in part, the answer to the problem with which our European and some of our American colleagues are wrestling, the relation between form and substance, as Hjelmslev defines it ... that is, between speech or written forms and their structural relations. If you classify this relation as either iconic or non-iconic, you can understand the total problem better.

LEONARD NEWMARK (Ohio State University): First, I’m a little disturbed by the remark that when we got to know a language, we could no longer do phonetic analysis of it. This seems too Whorfian, too Gestaltic. It seems to me we can focus on phonetics, even if we know the language, and we can overcome the difficulty of not hearing more than we need to hear. Also, I’m worried by the example of the stones. If you get the informant on a farm to show you forks, a dinner fork and a pitch fork, you’ve established something about the language, but not about the culture. The forks are different in their function.

WARD H. GOODENOUGH: You are confusing two things. I was talking about meaning only in the significational sense and this has a definition in sign theory: i.e., the criteria for membership in a certain class. The function of the form in relation to other forms is a different problem. You have to isolate the forms first before you can know how they relate to other forms. Here you go into other problems of culture analysis and semantic analysis. In the showing of forks, which you mentioned, you must also have a showing of non-forks.

FRED W. HOUSEHOLDER: With reference to Professor Newmark’s comment, I gather you would assign the realm of lexical meaning to cultural anthropology.

RALPH D. WINTER: I like calling language a part of culture. There is an interesting contrast between the kind of data linguists work with and the kind of things anthropologists are trying to describe, that is, the difference in the number of times an item or class of items appears per day, which ranges from phonemes which are repeated many times per hour, to morphemes, to words like “breakfast” which may happen once a day, etc., etc. It is easier
to analyze what occurs more often, and therefore linguists have done better in phonology than they have in things which occur less often.

ROBERT LADO: I'm sorry to see Professor Goodenough back down on his statement about the near-impossibility of phonetic transcription when you know the language.

WARD H. GOODENOUGH: Well, it might be possible for a carefully trained native English speaker to make a phonetic transcription of English.

W. NELSON FRANCIS: Then presumably you would get a non-native speaker for dialect surveys? Yet he must elicit the required information with a minimum of difficulty. Is this a compromise problem?

WARD H. GOODENOUGH: The anthropologist has the same problem: that of an outsider who must gain entrée to the required data. To do this he usually teams up with someone who has this entrée. The linguist might use this same system.

A. L. DAVIS (American University): What would be the advantage for dialect geography in having a Spanish speaker do the transcription?

WARD H. GOODENOUGH: There is no need for this, because the data would not be only phonetically recorded.

DAVID A. REIBEL (I. L. L.): On the subject of graphemics, I would like Mr. Goodenough to comment: he said, I think, that the grapheme was an icon for the phoneme, but he also mentioned that a letter of the alphabet was an icon of the grapheme. In non-phonemically written languages, however, a grapheme may be two things: an icon of itself or of a phoneme. In English, for instance, there are several ways of writing long "i."

WARD H. GOODENOUGH: A grapheme is not an icon of anything; it is a form that may signify a phoneme.

ROBERT P. STOCKWELL: In reference to the phonetics-phonemics discussion, I do not think that a non-native speaker can transcribe better than a native speaker. At best, a phonetic transcription by anyone is a kind of approximation. It is neither as accurate nor as useful as a phonemic transcription.
PAUL L. GARVIN: This same question of phonetics and phonemics was discussed most ably two years ago at a Round Table Meeting by Professor Halle of M. I. T. who said that there is no phonetics into which phonetics has not crept in, a bit, at least by the back door. Being a native speaker, one is more subject to phonemic bias, a linguist consciously so, a non-linguist, unconsciously. A purely phonetic description without phonemics is, in my opinion, an abstraction. It has been attempted only in a small way once by Pike who said in his *Phonetics* book that if we want phonetics and phonemics to be different, we must describe non-speech sounds. This work passed unnoticed, because it was an attempt at non-phonemic phonetics which does not exist.

ROBERT P. STOCKWELL: After they have figured out something about the phonemic structure of a language, linguists and phoneticians generally find that their first transcription, the first phonetic approximation of the language, was consistently poor, and generally formed largely in terms of the phonemic system of the observer's own native language before working with the new language. These kinds of preliminary phonetic approximations should be thought of only as tools for getting into the phonemic system of the language.

GERALD DYKSTRA (Columbia University): Does this mean that eventually perhaps linguistic geography will not only have to rely on one observer, but go beyond and rely on a Spanish helper, or even an entourage which includes one speaker from every language in the world? Also, will it have to take some kind of mechanical device to make a phonetic geographical system on the basis of sounds that can be separated from the spectrographic continuum by some mathematical device showing situations, bars, frequencies, and so on?

PAUL L. GARVIN: I wonder why the question ever arose that dialect geography must be strictly phonetic. From what I understand, my colleagues in the dialect field are battling fiercely to make it more phonemic. Therefore it is perfectly legitimate to use a native English observer fully aware of the fact that his transcriptions will not be purely phonetic and they will not be influenced by phonemic considerations. This apparently has been wanted ever since dialect geography started, sometime in the late nineteenth century. I'm reminded here of some of the dialect geographies I've seen which are apparently phonetic made by native speakers. These abound with symbols, but usually the kind of symbols that linguists look for are absent.
EDMUND S. GLENN: We might look at the work done by people studying visual perceptions. There is a certain similarity between visual and auditory perceptions. I refer especially to the Princeton-Hanover experiments which have shown that what we see are not shapeless undefined sensations which could be equated with phonetics, but rather, definite shapes depending on the culture of the individual, something which might be compared to phonemics. If this first type of perception is lacking from the visual, it is also probably lacking from the auditory, sense. If you replace sound by sight, the descriptive terminology is similar to Sapir’s in his description of phonemes.

ROBERT P. STOCKWELL: The most accurate phonetic information, outside — presumably — spectrograms, that we can get, results from feeding our data back through our phonemic frame of reference and thereby refining both phonemic and phonetic statements. The process is then a series of making successively less rough approximations starting with rough phonetics, working out a provisional phonemic frame, then back to phonetics which is refined through that frame, and so on, until you are satisfied with the result.

PAUL L. GARVIN: The next paper is by a man recently referred to as one of the few European linguists intimately familiar with American linguistics. He is, however, on the verge of becoming an American linguist by the same token that Professor Einstein was considered an American scientist: he is with us and he plans to stay with us.
Perspectives Of Linguistic Science

By Alphonse G. Juilland, and Eugene Elliott

The field of linguistics sometimes resembles a battlefield more than a cultivated plot from which one might expect a certain harvest. Professor Einar Haugen, addressing the Linguistic Society of America, decried the multiplying of terminology, the working at cross purposes, the lack of understanding and mutual respect necessary in a scientific community. Professor André Martinet, heading the discussion of Linguistics Today, pleads for tolerance and expresses the hope that difficulties may be in part resolved, and soon. Misunderstanding at times seems due to various 'schools' seeking to promote their special brand of linguistics at the expense of all others, justifying themselves by carping at their rivals. Prejudice and ambition seem to blind men to the truth they are all seeking. If this picture of the scholarly society be true, we are at war indeed. Personal and temperamental factors are beyond control. But there may be reasons underlying these explosive volleys, reasons that can be analyzed. And if they can be brought into the open, perhaps some degree of understanding can be reached.

There are two principal areas of disagreement among linguists today. The first opposes traditionalists to structuralists and involves a definition of the field: whether the study of language should include disciplines of some breadth oriented along the vertical axis of language, or should in its 'scientific' form be limited to the descriptive approach. The second concerns the nature of linguistic study, a question of method, and is in dispute among structuralists themselves. In general agreement as to the method to be followed in synchronic analysis, they differ widely as to the premises to be allowed in the final deduction. The two questions are not necessarily unrelated: a difference in the scope of the study may imply a difference in the method of accomplishing it.

Behind these differences lie the historical circumstances of the development of linguistic studies, and the problem of what constitutes scientific method. We will discuss each of these in turn, attempt to

1 Einar Haugen, Directions in modern linguistics, Language 27. 211-22 (1951).

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draw pertinent conclusions, and make suggestions as to what might be done to restore at least a semblance of order.

Linguistics or, to use a less committal label, the study of language grew up in its modern form on European soil, and the characteristics of the soil that nourished it determined to a great extent the nature of the harvest. Early philologists were humanists, and although not all humanists became linguists, those who did saw their work as part of a larger whole — the study of the intellectual life and history of the culture of which they were a part. Their attention was focused upon the living languages of Europe that they themselves spoke, and upon the classical Latin and Greek from which these had developed and which had had so profound an influence during the long Middle Ages and again, in a different way, during the Renaissance. They found a host of materials at hand, documents and memorials of empire, letters and pastoral instructions, poems, histories, tales, literary monuments of all kinds. These had real significance for the scholars studying them, apart from their intrinsic interest as records of language: they were the accumulated wisdom of the past, the source point of ideas still guiding the lives of these very men and their readers. The analysis of language was a means to a larger end that transcended immediate linguistic study. Interest in the forms of language was concentrated upon the clarification of content. The ultimate purpose of such a study was not merely to recognize the correct forms, but to understand the forms in relation to their use in the past and their connection with present-day usage. Linguists distinguished between la langue, a system for the expression of ideas and accumulated knowledge, and la parole, its actualization in a particular expression, the corpus being studied.

Descriptive linguists feel that the literary uses of language are merely special applications of language, and relatively late examples at that. Language, they insist, began in speech as an instrument for communication, a tool, in non-literary form; and the study of written monuments is at best a second-hand way of getting at the linguistic fact. To better understand the traditionalist's position in these matters, Karl Vossler's comment may be of some help:

"Solange man die Schrift nur als ein Mittel der Verständigung zwischen entfernten Personen betrachtet, hat man ihre Eigenart nicht erfasst. Sie ist vor allem als eine bildartige, monumentale Darstellung und Verewigung des sprachlichen Gedankens..."
sich selbst genug. Viele Aufzeichnungen der antiken Sprachen sind hieroglyphisch, d.h. für die Gottheit, für die Ewigkeit und nur in zweiter Linie für die Menschheit und das Zeitliche bestimmt. Ob diese feierliche und sonntägliche Seite der Schrift tatsächlich älter ist als ihre werktägliche Benützung, lässt sich nicht ausklügeln. Der monumentale Aspekt hat immer auch dokumentarischen Wert, und umgekehrt. Man kann höchstens in logischem Verstande, aber nicht der geschichtlichen Abfolge nach, dem Eigenwerte der Schrift den Vorrang von ihrem Nutzwert einräumen, d. h. ihre Form und ihre Besonderheit über ihren Inhalt und ihre allgemeine Dienstbarkeit stellen". 3

The cumbersome problem of the origins of language need not detain us here. It is enough to point out that besides its practical aspect, language had from its very beginnings a literary or 'monumental' function. Traditional linguistic study has been directed largely towards the latter, whereas modern linguistic study is directed almost entirely towards the former. Descriptive linguistics, in its break with tradition, has received a tremendous stimulus from the analysis of unwritten languages, especially Amerindian. This special task, no less an historical fact than the humanistic origins of European philology, has determined many of the special problems which present-day linguists face, and the particular solutions offered to them. In the first place, no texts were at hand. The linguist had to create his object, first by recording the spoken chain of sounds furnished by some native informant, and then by analyzing this corpus to identify its constitutive elements, the meaningful sequences of sounds or forms. The fact that these sequences were meaningful, however, was largely incidental to the study. The primary problem was that of 'breaking the code', or of recognizing the significant units. The message carried by the code was of secondary importance. Meaning, of course, could be one criterion for determining these units — only significant differences were to be admitted.

In any case, in descriptive linguistics, content, instead of occupying a position of central importance in the study of language — that of a transcendental object to be attained through the analysis of forms — came to be considered an incidental attribute of language,

'a function of distribution', as one modern linguist has put it. Language, rather than embodying the accumulated wisdom of a particular society or civilization, was thought of merely as an instrument of communication, a tool to be used in 'getting things done'. If the traditional linguist had labored to open up a channel by which he might approach the distant shores of knowledge about the past, the modern linguist was opening a channel that, in most cases, led nowhere. Most Amerindian languages, to take the most decisive field, have no literary monuments to be studied. Whereas the European languages showed monuments representing a sequence of development which in many cases could be dated with reasonable accuracy, there were here no historical documents through which the development of the language or the thought of the people using it could be traced. And as a general rule, the person conducting the study had no roots in the culture represented. The analysis of language became an end in itself. The 'corpus', and a limited corpus it was, circumscribed the limits of the investigation: *la parole* became identical with *la langue*.

Combined with considerable differences in the material conditions under which different groups of linguists approach their object, the fact that traditional linguistics developed in the study of languages with literary tradition, whereas modern descriptivism developed in the study of languages without such a tradition, had consequences more far-reaching than might at first be suspected. Linguists of the historical school are often antagonized by the complex analytical apparatus set up by structural linguists, and impatient with the lengthy and involved discussions in which they indulge. With his attention focused on content, the linguists of philological tradition asks a simple question: does a different analysis of the 'code' lead to a different interpretation of the messages it carries? If it does not — and this turns out to be the case in the great majority of instances — then the difference is unimportant and, at least at his level of interest, the cumbersome apparatus erected is manifestly inefficient. It might have a somewhat sobering effect upon us to realize that in some of the most crucial debates of structuralism, the conflicting positions, stubbornly defended or strongly condemned, have no bearing on the interpretation of the messages carried by the disputed code. Indeed, in many an analytical dispute, we may adopt

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a certain solution, or interpretation, or assumption, etc., as well as the one we have just rejected, with no difference whatsoever where the communicative function of language is concerned. This, of course, is not the whole story, but it is quite a significant part of it.

In a sense, the crude materials which the traditional linguist studies have already been analyzed. An inscription discovered on a stele or a parchment scroll newly brought to light is an analyzed text. The phonologic invariants have, to a certain extent, been identified and systematized by having written symbols ascribed to them. Grammatical analysis has been partially carried out by the separation of groups of phonologic symbols into words, and by extensive use of diacritic marks. Linguistic investigation in the philological tradition is to be defined, at least in part, as a system for correcting the imperfections of the corpus; method is dominated by these very imperfections. Having recognized and understood these imperfections, the traditionalist takes the established forms as the starting point of his investigations and, oriented towards historical study, attempts to go beyond them, to formulate conclusions of general interest to his public,—the society of which he is a part, already familiar with the materials with which he is working and which he interprets.

The descriptivist, on the other hand, insofar as he deals with unwritten materials, is forced by material conditions to restrict himself to the study of language itself in its most limited aspects. Establishment of the linguistic forms is the goal of his study, rather than the starting point, which it is for the traditionalist. Generally, he prefers not to look beyond the given unanalyzed corpus. Working with frequencies of distributions of sounds or sequences of sounds in relation to their environments, he hopes to arrive at a series of general statements based upon statistical analysis from which the corpus can be reconstructed — reconstructed, incidentally, without reference to the meaning of the forms which have been thus analyzed. And there he stops. There he must stop. Beyond this point there is no place to go, unless assumptions explicitly rejected are now accepted. There is no literature to understand, by which he may arrive at conclusions concerning the life of earlier times from which his own society has developed. There is no historical evidence of past linguistic stages for historical analysis or interpretation. His public, even among the specialists who may read his monograph, has no point of contact through which his work can be approached. Most
persons are totally unfamiliar with the language he has just described. The best they can do is to follow his reasoning step by step as he determines the elements, and criticize his method. This is one of the main reasons for the tremendous development of the methodological apparatus in modern descriptive linguistics, as sometimes revealed by casual remarks like the following: "The discussion of the method is the part of the book most likely to be of general interest to linguists, and the only one that can be subject to review, since the Oneida material itself must be taken on faith, both because of its author’s reputation as a scientist and because he is practically the only modern worker in Iroquoian linguistics."

This seemingly innocent passage is worth pondering over, in that it provides us with a good insight into one of the main sources of misunderstanding which divide and oppose traditional and modern linguists. Among others, it shows to what extent factors never mentioned in our discussions and debates (not to speak of their conspicuous absence from our ‘sets of postulates’) may influence our decisions, thus playing a considerable rôle in shaping the ensuing doctrines. Such factor is, in our case, the nature and quality of the ‘public’. Obviously, whatever the 'author's reputation as a scientist' may be, nobody would dream of 'taking the material on faith' if the language under investigation were English or Classical Greek or French, or even Arabic or Chinese. What is more, no linguist working on a language with a literary tradition would ever assume that his public could take materials on faith, and organize his work accordingly. Not so for the worker in an exotic field: totally deprived of a public able to challenge the substantial (as opposed to 'operational') validity of his conclusions, the only contact that he may envisage with his potential reader is in procedural matters. As Professor Trager pointed out, 'the discussion of the method ... is the only one [part of the work] that can be subject to review', which suggests that structuralism’s insistence on specifying assumptions and making conditions explicit has emerged from necessity rather than been developed by virtue. Such great concern for methodology appears to be as much for the sake of the public — so as to make possible some form of scientific dialogue and exchange of ideas — as for the sake of the object, whose integrity is claimed to be at stake. From this viewpoint, most of the criticism addressed to traditional linguists

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for persistently ignoring postulates and assumptions is not always relevant. Indeed, when addressing a 'knowing' public, as is the case of investigators of languages with a literary tradition, postulates are a part of the cultural and scientific background of the scholarly community: theoretical prerequisites are not so much ignored as they are taken for granted. Whereas structuralists tend to take materials on faith and insist on method, traditionalists tend to take the method for granted and insist on materials.

Descriptive techniques developed mainly in this country have, of course, been extended beyond the field of Amerindian languages — be it said now, with some profit. Descriptive analysis of well-known languages has been undertaken, and in some instances new relations, and thus new facts, have been brought to light under the stimulus of the new approach. But the habits acquired in a work carried out under trying conditions — the well known limitations of time and money encountered by field-workers — persist as prejudices when (and where) the conditions that brought them forth are no longer present. There is no better example of making a virtue, and sometimes a dogma, out of necessity. Linguists of an historical bent, who saw purpose in what appeared to them as legitimate 'emergency-methods' applied in exceptional conditions to the study of native languages, resent their intrusion into a field already established, when these, in their eyes, needlessly complicate a study which is at best a preparation for the real work they have in mind.

On the other hand, descriptive linguists are only too aware of conspicuous errors committed by earlier investigators of little-known languages who forced upon them the patterns and categories of familiar Indo-European languages. They can refer, too, to excesses of historical enthusiasm which have led investigators of the Indo-European field itself to turn too quickly to extra-linguistic data — the migrations of peoples and intercultural borrowings — as a sufficient explanation of linguistic facts. Hence they feel justified in rejecting, at least for the time being, all such extra-linguistic references. They insist that only the language should be studied, and that only those facts immediately discoverable in language should be admitted into the argument.

Of course, for the traditional linguist, even if he is willing to overlook the controversial problem of what is immediately discoverable in language, this is an unwarranted limitation of the field of
linguistic inquiry. A description of the structure of a language, if the formalistic structuralism prescribed by some is to be followed to the letter, can be given only for a particular moment in history. It is synchronic or, better, achronic — outside time. Even a series of synchronic studies of the same language, representing various moments in the history of that language, atomizes the study and, unless something more is introduced, ignores the connections between the moments described, which are the history. The traditionalist complains, not without some justification, that many a structuralist equates history with reconstruction of more primitive forms of language, and that these are not the same thing. There is a tendency for each group to refuse to see the point of view of the other, and even to admit its validity. Why do descriptivists avoid meaning, which is, as a traditionalist has put it, the 'very heart' of the language? Why, the descriptivist demands, must historical linguists vitiate their work by introducing facts and concepts extrinsic to linguistic study? Each sees his own aim and purpose as the only legitimate one, and charges his rival either with triviality concealed by jargon or with not being 'scientific'. Much of the disunity of present-day linguistics has arisen from hasty generalizations, extending conclusions made in work on particular materials under particular conditions to other areas where they do not necessarily apply, insisting that what is valid for one must be valid for all.

A good example of this is the much debated question of meaning, on which linguists of the various schools disagree basically, and about which they argue on quasi-ontological grounds: meaning is an integral part of language, therefore it should be fully examined and extensively used in linguistic analysis; or, meaning is not an integral part of language, therefore lying outside the immediate scope of linguistic investigation, where its use should be carefully limited, if not strictly avoided. A casual observer to this very philosophical dispute may remark, however, that, curiously enough, those who believe meaning to be an integral part of language and so favor its use as an instrument of formal investigation, are precisely those who have developed their techniques and theories in working on materials offered by their own language, or by familiar languages with a long literary tradition. In other words, meaning is the 'very heart' of language for those who are in full command of the meanings carried by the investigated forms. On the other hand, those who maintain that meaning is not an integral part of language and wish to limit its use are generally those who have developed their techniques and
theories in working under considerable limitations on languages without a literary tradition. In other words, meaning has little to do with language for those who are not in full command of the meanings carried by the investigated forms and who had to rely on often unreliable informants for information of that sort. Under these circumstances, however sound the position adopted in their respective fields by the parties to the dispute, it is hard to accept their reciprocal claim that the theoretical stands they adopted are based on purely scientific grounds.

If disagreement has resulted from the meeting of two disparate currents in the historical development of linguistics, the confusion has been compounded by the desire of many linguists to make their study an exact science. This is not to say that there may not be a science of language. But the desire to make of linguistics an exact science has set even the structuralists differing among themselves. Each rejects the point of view of the other in the name of science, without ever bothering to say what science is, if not by way of decree. It is therefore refreshing to learn that other domains, much more advanced on the road of axiomatization, are equally plagued by similar edicts: "But it is hardly possible to say anything precise in the face of such general problem, particularly since the meaning of the various expressions used is so highly undetermined. It is not so much the word 'hypothesis' itself that seems uncertain to us as expressions like 'Science consists of ...'," deprecates Richard von Miseses, who adds: "It makes a big difference whether one thinks of the entire activity of scientists, or the result of such activity incorporated in a definite theory, or the totality of the ideas occurring in its historical development". But scientific linguists do not seem to be so easily impressed by such sophistications which only worry philosophers of science. If we are to believe them, everyone is supposed to know what science is. We live in a scientific age. Science is taught in all schools. Not merely specific sciences, but Science. It is assumed in some of the more recent linguistic publications that Science is always the same; that there cannot be several sciences dealing with the same material; that such admission would be philosophical and therefore is to be avoided like plague. But although such linguists agree that only the descriptive approach is

scientific, they have difficulty in agreeing upon just what that approach should be. Science is implied in method — the scientific method. It is useful, which seems to mean that it must make prediction possible, and must also be productive. It is descriptive, in that it accounts for the phenomena. Above all, it is timeless. It seeks only those general truths that will be applicable to history but which are outside history. In the interests of the scientific approach, terminology has been multiplied until even structuralists have difficulty in reading one another's works, and traditional linguists are about to give up altogether.

Now any science must, of course, account for the phenomena, but not all sciences do so in the same way. The first problem that the linguist who would be scientific faces is which science to use as a model, the physical sciences or the biological sciences? It is generally recognized that the same method is not strictly applicable to both. Development of the biological sciences has been held back for years by a misguided effort to apply to them the procedure so successful in physics, and only recently have the chains so lovingly fashioned for them been shaken off. As most linguists prefer to take their science for granted, it is difficult to say which conception they hold, but in general some analogy with botany seems to be recognized, a morphological study in which elements are recognized and classified and the various combinations of occurrence are catalogued on the basis of statistical tabulation. All of this is to be set out in the precise fashion developed by symbolic logic in the study of mathematics. It must be remarked, however, that the classificatory system so far developed bears more resemblance to the botany of Linnaeus than it does to modern science, in which the relation of plant to environment, and their interaction, occupy the central place. To the extent that this is true, those working to make linguistics an exact science along these lines, although performing a necessary groundwork, are defeating their own purpose when they insist that theirs is the only way in which this can be done, taking as a model a moment in the history of botany which botanists themselves now recognize as insufficient in itself.

Closely related to this question of the nature of science and of scientific method, is that of the substance and form of linguistic study, as it has been discussed in recent publications.\(^7\) It is

somewhat ironical that the controversy over scientific method should be couched in terms more common to despised philosophy than to science, but structuralists have been charged with formalism of approach and circularity of argument, and their attempts to answer the charges have largely been based upon various claims for the substantiality of the structure of language. One question underlying the rest here is, what are the objective data with which the linguist deals? There is the spoken chain of sound, the elements to be identified, the rules of their combination, and the controversial question whether or not 'content' is to be included among the facts to be analyzed. The difficulty seems to turn upon the fact that content escapes mathematical treatment. There is no one-to-one relationship between a word and its meaning. A word may have several meanings — different meanings in different contexts or uses, and for different people. Semantic information is often unreliable, especially when dealing with unfamiliar languages. Content is not amenable to the precision necessary for scientific handling. On the other hand, it seems apparent that once phonemes have been identified, they can be tabulated, counted, classified, and their occurrence in various combinations investigated statistically. The statistical data can be arranged in a series of statements deriving ultimately from a few fundamental postulates, and on the basis of such statements the language in question can be described with scientific accuracy. What it means lies outside the limits of this science.

Here, of course, is the basis of the charge of formalism. The objection is made that, without reference to content, even identification of the phonemes will be somewhat arbitrary, and that the description is nothing but a condensed way of transmitting the corpus, admirable for its economy, but limited in its validity strictly to the reproduction of the corpus analyzed. It is no good checking the stated postulates by substituting elements in various phrases, presented to an informant in the field, for his acceptance or rejection. This only has the effect of enlarging the corpus. Some statements will be accepted, some will be rejected. Those rejected are ignored and those accepted are admitted to the corpus. This is not experimental verification of the hypothesis as is used by scientists. The rejected statements are of the nature of negative instances. In a true scientific hypothesis these would have the effect of invalidating the hypothesis, whereas, in such linguistic analysis, the hypothesis is retained and the instance ignored—a most unscientific procedure.
Furthermore, it can be shown that any of several descriptions might serve to transmit or reproduce the corpus as well. But if one gets out of the analysis only what one puts into it, (and there is the possibility of putting different things in), is structure objective or has it been determined by the linguist? On this point, structuralists themselves are divided. "God's-truth" structuralists, as christened by Professor Householder, insist that structure is inherent in language. It is given in the objective data, to be 'unveiled' by the investigator. 'Hocus-pocus' structuralists, on the other hand, are willing to admit, although somewhat reluctantly, that structure is to a degree dependent upon arrangement. Their reluctance stems from the feeling that, to the degree that arrangement admits of the arbitrary, their science is not true science. They must attain to a real truth in the outside world. They feed blind faith in the ultimate substantiability of linguistic structure upon vague references to thought patterns or neural processes in the physiological nature of man, or to cultural phenomena as a patterning force somehow reflected in language. We have thus come full circle, and the structuralists who began by protesting that traditional linguists were making linguistics a branch of logics or of psychology, now threaten to make it part of physiology or anthropology.

Behaviorists and spiritualists, materialists and idealists, find different answers to these problems. On the whole, it is difficult to accede to their insistence that the question of structure carries with it no metaphysical implications; even when philosophical terminology is carefully avoided, the choices they make betray their metaphysical commitments. Differences of opinion and disagreement between 'schools' are not new in linguistics. One has only to recall the disputes of Neogrammarians and 'Neoidealists', in which Vossler and Spitzer played such an outstanding part. However, all were agreed upon what language was, and what the central problems of the discipline: it is only upon the validity of the solutions proposed for these problems that the argument turned. What is new is that probably for the first time one group of linguists claims to have an essential superiority over all others consisting of a distinctive approach. Those who used to identify themselves as 'mechanists'

believe that there is a basic difference between their science of language and all others; that whereas other schools distort the data by their subjective or a priori approach, they, and they only, are truly scientific. Theirs is a purely empirical study carefully avoiding a priori postulates and premises.

This state of affairs is not peculiar to the study of language, but the situation has been aggravated, more particularly in this country, by the tremendous influence of Leonard Bloomfield. In his preface to the 1933 edition of Language, he stated his position as follows:

"In 1914 I based this phase of the exposition on the psychologic system of Wilhelm Wundt, which was then widely accepted. Since that time there has been much upheaval in psychology; we have learned, at any rate, what one of our masters suspected thirty years ago, namely, that we can pursue the study of language without reference to any psychological doctrine, and that to do so safeguards our results and makes them more significant to workers in related fields. In the present book I have tried to avoid such dependence; only by way of elucidation I have told, at a few points, how the main present-day trends of psychology differ in interpretation. The mentalists would supplement the facts of language by a version in terms of mind, — a version which will differ in the various schools of mentalistic psychology. The mechanists demand that the facts be presented without any assumption of such auxiliary factors. I have tried to meet this demand not merely because I believe that mechanism is the necessary form of scientific discourse, but also because an exposition which stands on its own feet is more solid and more easily surveyed than one which is propped at various points by another changeable doctrine". 11

Whatever may be the historical reasons prompting Bloomfield to advance such a crude naiveté as the cornerstone of his doctrine, the point to be made here is that it is based upon an assumption that can be justified only on philosophical (epistemological) grounds, and which involves the whole philosophy of science. Certainly the study of language should stand on its own feet. What Bloomfield seemed to overlook was the extent to which knowledge of any type presupposes a theory of knowledge; in this respect materialistic or mechanistic

theories are no different from the idealistic. There is no 'thought', except on the basis of certain assumptions. The questions asked in some measure determine the answers given; and whatever reservations we may have about metaphysics, the point to be made in this context is that materialism is, as Sartre put it, "a metaphysics hiding behind positivism", as metaphysical as any idealism. "But it is a self-destructive metaphysics, for by undermining metaphysics out of principle, it deprives its own statements of any foundation".12

Of course, some so-called 'mentalistic' studies, criticized by Bloomfield and by American structuralists, are unscientific, or pseudo-scientific, or semi-scientific. But the reason for this is not, as linguists of mechanistic filiation generally assume, because there is something basically wrong with the axiomatic approach, but because the writers have not remained consistent with their own postulates, or have not clearly distinguished the analytical levels implied in the same, or have been careless in collecting data, or are poor logicians and therefore build haphazardly on foundations which are, in themselves, as solid as any other. If a certain degree of 'apriorism' were sufficient grounds for refusing the label 'scientific' to a certain approach or study, it would be necessary to refuse it to all approaches to language, including mechanistic or positivistic theories, because they also are based upon an epistemology, erected, like every other theory of knowledge, on a minimal set of *a priori* postulates. Indeed, if all *a priori* elements were to be denied validity, science itself would be in jeopardy. In one of his last interviews, Einstein himself stated that the best way of summarizing his work was by saying that he had spent his life investigating the implications of a few basic philosophical propositions.

Science is that activity of man by which he seeks to make natural phenomena intelligible. Towards this end, an attempt is made to build a picture of complex phenomena out of relatively simple propositions; and, conversely, it is necessary to discover relatively simple propositions out of which this can be done. The method of science, by which this is to be accomplished, presupposes the existence of a natural object to the observation of which the method is applied. The problem of intelligibility is that of determining a structure through which the natural object can be understood. To what extent the object

itself is structured, or what is the nature of that structure, is a meta-
physical problem. The scientific problem is to determine a structure
sufficient for the purposes of intelligibility. To quote Ernst Cassirer:
"The critique of knowledge ... does not ask to the origin of concepts,
but only what they mean and are worth as elements of scientific
proof".\textsuperscript{13} The scientific object is defined by the postulates from
which it is deduced. If content is not included among the objective
data considered in formulating the postulates of linguistic descrip-
tion, it is not a part of the object of that science. The science, so
limited, is a legitimate area of research. It may provide the best
means of deciphering an unknown language. It may offer a sound
foundation for further linguistic study. Surely accurate description of
a language is a prerequisite for the understanding of changes in that
language. To insist, however, that the descriptive approach repre-
sents the only 'science' of language, or that content may not be
studied legitimately as well, is similar to denying the possibility of
psychology because it is not part of physiology. The disunity of
linguistics has arisen from an unduly narrow conception of the nature
of science in relation to its object. Defined with reference to postu-
lates which are more or less arbitrary, the object occasions interpre-
tations which are evaluated in relation to the axiomatic method being
followed, rather than in relation to the natural phenomena being
studied. If the constructive or 'calculative' aspect of the theory is
very much in favor, its 'applicability' or 'connectibility' with the
world of experience is badly neglected in certain quarters. It is
symptomatic that in our debates the charge of inconsistency has re-
placed almost entirely that of inadequacy. Viewed in this way,
many traditional disciplines have become a part of 'metalinguistics'.
There is a tendency to push to the periphery of the linguistic area
(as 'macrolinguistics') or to expell out of the field of linguistics
(as 'metalinguistic') those sets of data which cannot be caught in the
limited perspective of a particular set of postulates decided upon
arbitrarily. But such statements are merely reaffirmations of the
limitations previously determined in the selection of postulates.
Statements to the effect that such and such is, or is not, part of lan-
guage should be translated to read that such and such is, or is not,
subject to the kind of treatment (formal-mathematical, for instance)
deriving from a specific set of arbitrarily selected premises. To this
extent, the charge that these problems are 'meta-linguistic' is
accurate, i.e. these problems are beyond the reach of this science.

\[\textsuperscript{13}\] Ernst Cassirer, \textit{Substance and Function}, Chicago 1953, p. 103.
The term is used pejoratively, however, probably because it is formed by analogy with the word 'meta-physics', and metaphysics, everyone seems to agree, is no more than the vague speculations of a cloudy mind. Fortunately, a careful consideration of the confusions upon which these prejudices are based can release us from their hold on us.

It is now not difficult to see that the systems of certain structural schools are formal in approach and circular in argument. They are formal because they seek to analyze something in terms of ideally conceived constitutive elements. They are circular because axiomatic systems are by definition self-contained. Seen in this light, attempts to demonstrate the circularity of one proposed set of postulates or another are especially futile. The appropriateness, or applicability, of an axiomatic system from which the phenomena can be 'deduced' in accordance with the rules of logic cannot be questioned with reference to the system itself. As long as rival systems account equally well for the observed data, they are equally valid. Not even the principle of 'simplicity' or 'economy', so often invoked as the intrinsic principle *par excellence*, can serve this purpose, for here, too, extrinsic factors must be considered. Economical, to what end?

The principle of simplicity or economy, as it is applied in linguistics, is most often defined in terms of inventory. If a 'system' or 'model' of description leads to an inventory of \( n - l \), it is to be considered superior or, rather, simpler or more economical, than another system leading to an inventory of \( n \). In the first place, such a comparison is justified only when complete and exhaustive descriptions at all levels are at hand. Economy has been claimed, for instance, in favor of an interpretation reducing from 7 to 5 the vocalic invariants of an Eastern European language, without any consideration for the fact that this 'simplification' was to be compensated by an increase from 20 to some 70 of the consonantal invariants of the language.

Structuralists are agreed that the purpose of a description is to enable the reader to reconstruct the corpus from which elements and analyzed forms have been extracted; traditionalists, would mean the same by saying in their naïve and unsophisticated ways that the purpose of a grammar is to enable people to speak the language described. Sentences, or discourse, are to be produced by a recombination of the elements, according to certain rules. But in that case,
simplicity of description depends not so much upon the number of elements as upon the number of reconstitutive operations resulting from the application of the rules to the elements, in order to obtain larger units. These appear to be in inverse proportion: the fewer the number of elements to which the corpus has been reduced, the larger the number of operations needed to reconstruct it; the greater the number of basic elements recognized, the fewer the rules and operations needed. By resorting to a facile paradox, one might say that the solutions which have been put forward as the simplest are, in fact, the most complicated, and vice-versa. The proper balance between the two — elements and rules — can be decided only by reference to an extrinsic condition: the purpose of the description. Is it to be used to record the language as briefly as possible? Is it to be used for the sake of comparison? Or is it meant to teach the language to someone unfamiliar with it? In the first case, the proportion of rules to elements might be established at one point; in the second or the third, at another. Glossematics' paradoxically labelled empirical principle offers no intrinsic substitute for the cumbersome confrontation with the world of experience.

The only possible way to choose between two systems each of which accounts for the data, is to refer both to some external fact or observation. As long as the disagreements are debated at the purely 'theoretical' level, as they generally are, with reference to the axiomatic system set up, there is no hope of resolving them. Each theoretician will defend his own 'calculus' and the field of structural linguistics will be open to the charge of ivory tower withdrawal.

It is then only half-surprising that interest in our problems on the part of scholars and scientists from other fields seem to be in inverse ratio to our efforts to make of linguistics an exact science. Despite some considerable achievements of the structural approach to language, at no time in the history of our discipline was linguistics so conspicuously ignored by both humanists and scientists. Our failure to face history and meaning may in part explain the disinterest shown by philosophers of science. While the community of scholars is waiting for some professional in the crucial problem of the language of science, we are taking our cues in the matter from Lynnaeus' botany. This may explain why 'linguistic science' is so conspicuously absent from contemporary manuals and treatises dealing with the various branches of scientific endeavor. It was not so half a century ago, when Sprachwissenschaft occupied a pivotal position,
linking the Geistes- and Naturwissenschaften. Moreover, a glance at the manuals of philosophy of science published at the time reveal that language and its methodology were taken as models for the organization of other areas of research. This decline in prestige should in itself be sufficient warning that, after all, something might be wrong with certain forms and tendencies of modern linguistics, and that something might have to be done about it.

There are, of course, no ready-made answers to these problems and, as often happens, it is easier to say what not to do than to make constructive proposals. If the study of language is to reach full development and fulfill its great promises in our pursuit of knowledge, all possibilities must be investigated and alternate systems made available for studies of a broader nature. To this extent, the progress of our discipline lies in disunity. But we may still seek a kind of unity founded upon understanding and mutual respect, through which the historical perspective and the structural principle, the substantial tradition and the formal approach, may collaborate for the general advancement of the study of language and related fields. The broad reasons for misunderstanding have been pointed out, in the material conditions which give rise to specific approaches hastily generalized as valid for all situations, and in the misconceptions of the nature of science. On the basis of our discussion, the following suggestions can be made in the interests of the kind of unity indicated above:

Let us guard against hasty and unwarranted generalizations. If our practice is generally sound, it is, in most cases, the theory that we extract from it that sets us one against another. If, when analyzing a language, we generally agree in what we are doing, it is in what we are saying about what we are doing that misunderstanding creeps in. A better understanding of the historical conditions and material limitations under which particular theories have been developed, should make it clear that a 'linguistic' solution which is true in one case is not necessarily true in another, where 'extra-linguistic' conditions are different.

Each investigator should become more fully aware not only of his own point of view and implicit assumptions, but also of what lies behind the concepts deriving from them. Awareness of underlying conditions should lead to a recognition that more than one point of view (with the corresponding set of concepts) is possible, and more than one 'solution' acceptable. This does not mean modifying one's own
viewpoint, nor denying its usefulness. It does mean that there will be less insistence that one particular point of view is superior to others, hence there will be more understanding and less bitterness.

When a reasonable amount of agreement is not possible in confronting self-contained theories (this is more or less the case for all those which can be labeled 'structural'), agreement may be reached by reference to an extrinsic, practical objective. Such an objective need not be unique, but may vary with the interests of the investigator or its public, be they anthropology, theology, pedagogy, etc.

Discussion should be as much as possible in the terminology of one's own discipline. Attempts to establish linguistics as an exact science on the basis of mechanical transfer from other sciences (only too often imperfectly understood) has for the most part misled other scientists, long before it misled linguists. The structure of one man's science is no more necessarily the structure of another man's science, than the structure of one man's language is the structure of another man's language.

Let linguistics stand on its own feet and move in its own direction. And it will, if the time and energy often wasted in needless disagreement and confusion, can be turned to more profitable use. Then one will truly find a community of scholars, each making his contribution to the advancement of their mutual purpose, the better understanding of man and his place in the universe.
DISCUSSION

EDMUND S. GLENN: I would like to add an example to this excellent presentation. There is a statement in Trager and Smith to the effect that each successively higher level can be descriptively studied only on the basis of the mastery of the lower level. This may be taken either within the context where it appears or outside that context. It appears in the book at the close of the discussion of phonemes, and at the beginning of the discussion of morphemes and it means that morphemic description requires prior phonemic description. This is good in its context, but outside its context, it denotes a metaphysical postulate according to which you can arrange all knowledge in ever ascending levels in a unique manner. This supposition is especially dangerous for the study of language and culture because it presupposes that there is only one correct cultural attitude or "world-view", and all other attitudes are to be considered as aberrations, which makes the study of language and culture impossible. If our purpose is a description of phonemes or morphemes, then the statement within its context is good. If our purpose is a broader study of languages and world-views, then the statement is not valid.

ALPHONSE JUILLAND: I agree that levels should not be mixed, but why should levels be taken only in ascending and not in descending order? This refers to the problem of morphological criteria in phonemic analysis. Does the non-mixing of levels imply that we operate in ascending order? If our order is descending, we go from larger to smaller units, and then when we get to phonological analysis, our morphological analysis has been basically achieved. If we respect this order, we are justified in considering morphological criteria in phonemic analysis. Thus there are two justifiable approaches.

ARCHIBALD A. HILL: It seems to me that the fact we work upward is partly an historical accident. For centuries there was a traditional approach that worked downward, and that didn’t work very well. We have found it possible to work upward, but we must remember that a mature analysis must be reversible.

ALPHONSE JUILLAND: In Structure immanente de la langue française, Hjelmslev’s disciple Knud Togeby has tried the reversing process, not as an analysis, but as a way of presenting an analysis.
ARCHIBALD A. HILL: But generally, this is not a method of American linguists, working in our particular framework.

ALPHONSE JUILLAND: Would you accept this: if we start with the largest unit in a descending order in going from one level to another, we are justified in working on the basis of results achieved at the preceding level? It seems to me with this approach that morphological criteria are justifiable in phonemic analysis.

ARCHIBALD A. HILL: I would find it difficult to operate in that way.

ALPHONSE JUILLAND: But would you find it methodologically incompatible?

ARCHIBALD A. HILL: I'll explain what I mean. Sentences, phrases, etc. are differentiated from each other because they have different phonemes, or different orders of phonemes. I do not now see how you could set up other than a completely abstract morphology without some reference to the underlying differentiators which distinguish one morphological chunk from another.

ALPHONSE JUILLAND: Morphemes are not determined by the differentiators. It is not just phonologically that we identify morphemes.

WARD H. GOODENOUGH: I think the question is important and I would like to answer it from a different angle. The reason we find it easier to go up rather than down has to do with the ratio of rules to elements. You can know every sentence is different also because your informant says so. But to analyze the sentences, you have an almost unlimited body of different elements, to each of which you must give a different symbol before you can manipulate analytically. This becomes an almost insuperable problem. If, however, you can start with a limited number of elements to which you can assign symbols, then you can do further analysis with a limited number of symbols and formulate a large number of rules to handle them more readily. I think this is the basic reason for the procedure.

ALPHONSE JUILLAND: Most of our disagreement in linguistics comes, not from what we are doing, but from what we are saying about what we are doing.
ROBERT P. STOCKWELL: The accusation of "mixing levels" is really a matter of what criteria you use at each level. Mixing levels occurs when criteria are used on the phonological level which are only appropriate to material which exists on the morphological level. Different material requires different kinds of procedures in analysis and different criteria. You can't mix these two different sets of criteria. I don't think it matters much which order you choose, or whether you work back and forth. But we can't mix the presentation of these two things.

ALPHONSE JUILLAND: But there are ambiguous cases where phonological criteria do not force a choice. Then we must establish a hierarchy of criteria, for example, phonological, then morphological, criteria, always provided that we state clearly the hierarchy of our criteria.

ROBERT LADO: I believe that we begin with utterances, and then jump down to some level with which we can work, and then we may go up again.

PAUL L. GARVIN: Our next speaker is a mathematical and physical scientist who has some familiarity with problems of language and linguistics in machine translation. With reference to linguistics, he may be called a sophisticated outside observer.
Ladies and gentlemen, it is with the greatest humility that I address you. It is obvious from the Chairman's introduction that I am no linguist, but rather that I have a deep and abiding interest in the problems of communication between human beings, be the differences between them those of separate languages — your problem — or those of separate disciplines, my problem today. This is going to be a severe problem in getting across to the linguists the viewpoint of the physical scientist and the mathematician. I have listened to a great number of the terms of my own field being used in a, to me, somewhat unrecognizable fashion. I am certain that you are going to listen to precisely these same terms and they are also going to appear to be unrecognizable. I hope that at the end of the paper we will be able to clear up any semantic barrier that may exist between us with respect to the words such as: "function, operation, structure," etc.

The advent of large scale computing machines of the digital variety in the past decade has introduced a new problem in communications and, paradoxically, a possible solution to a problem as old as the human race. The new problem contains within itself the elements of the solution of the old problem, namely communication across language barriers — the translation problem. The prospect that thus unfolds has intrigued and stimulated numerous individuals, myself included. Your Chairman has actually participated in a successful experiment that demonstrated that the use of machines for translation — mechanical translation — is not only theoretically possible but practically attainable. The purpose of my talk is to acquaint you with the nature of the problem, the physical realities within which the solution must and can be found, and, I hope, stimulate your interest in participating in the brutal drudgery required to arrive at final answers.

First, let us define digital computing machines and their method of operation. Fundamentally all digital machines are discrete rather than continuous in their steps of operation. They perform their operations in steps of multiples of a basic unit rather than in a continuous fashion. Their fundamental operations, for our purpose today, are only three in number. A digital machine can add two quantities, subtract one quantity from another, and can shift a sequence of symbols from one position to a second position. They are very stupid. They
can perform these operations only in the sequences prescribed by the operator or programmer of the machine. Dr. Garvin can bear witness to this. When he wrote down one sentence that he wanted our mutual friend, Pete Sheridan, to place on the IBM-701, Pete would immediately generate some five 8-1/2" x 11" closely written sheets of mathematical symbols that had to be translated into the machine programming sequence.

The manufacturer of the computer may aid the programmer by providing certain sets of sequences built into the machine that will be of assistance in the solution of particular classes of problems, and to date, such sequences have always been directed at the field of the physical sciences and mathematical solutions. They have not been particularly patterned for the problem that we are discussing today, that of mechanical translation. The sequences that were built into the 701 to assist in the solution of arithmetic problems merely got in the way of the programmer when he attempted to use that machine for the totally unforeseen purpose of mechanical translation, the translation, in this case, of Russian into English.

The utility of the sequences provided may determine the selection of a machine to do a job. However, once a job has been defined, the sequences required for its efficient solution can be readily built into a computer. The major challenge confronting an individual desiring to use a computer is the efficient choice of sequences of the fundamental operations required to arrive at a solution. This is the challenge before linguists desiring to use computing machines for translation from one language to another. In other words, what are the sequences the linguist requires for this purpose of utilizing machines for translation? The mathematician does not know, and I am reasonably certain, after the discussions that I have heard in the last two days, that the linguist, at this point, would be hard put to it to define just precisely which sequences would be of assistance to him. The work can, however, be done within the proper framework of analysis.

It is certainly not obvious that all mathematical problems having a numerical solution can be solved by a sequence of the fundamental operations. It merely happens to be true. It must be noted that the truth depends upon the problem being contained within the framework
of a deductive logic, i.e., an axiomatic and tautological system, and at this point, I want to acknowledge the groundwork that was laid for me by the three previous speakers on this panel, in completely ripping apart the arguments that can lead to mechanical translation. In this, I find myself in complete opposition to them. Problems of inductive logic are presently beyond the capabilities of computing machines. It might also be noted that these problems are beyond the ability of philosophy or metaphysics to define within a bounded framework at the present time, and I think that this was admirably pointed out in Professor Juillard's talk this morning. Fortunately, the problems of translation from one defined language to a second can be deductive in nature rather than inductive, if poetry and similar communication of an emotional nature is not considered. The utilitarian value of mechanical translation fortunately lies outside the emotional field. I might add the corollary to this: insofar as we propose to use machines for the purpose of translation, the problem of meaning is also completely beyond the purview. We are concerned only with form, structure, and operations. These are the defining framework within which mechanical translation is possible. Recent investigations into the operation of the nervous system also clearly indicate that sequences of the fundamental operations defined for the computer are adequate descriptions of the operation of the autonomous nervous system. I have participated in putting experiments defining the problems of neural physiology on a computer on which we actually set up neural patterns to see if a learning process could take place. The answer is "yes". Since this is so, we do have a description, possibly not the correct description. This is a metaphysical argument as to correctness. The fact is that we have a modus operandi. Programs we could put on the machine showed that the three fundamental operations were all that were required to make a neural map exhibit a learning pattern. Now an efficient multi-lingual person has incorporated the processes of translation into the autonomous nervous system in such fashion that translation amongst the languages in which he has expert knowledge becomes completely automatic, and I might add that one of the finest examples of this was the simultaneous translation system that was set up at Nuremberg and the United Nations, demonstrating the fact that these sequences can become automatic. The operations of the translator's mind in accomplishing the translation can therefore be described in terms of the elemental operations of a computer. That this has not been done to date in no way detracts from the fact that it can be done.
The question that naturally arises at this point is whether or not an adequate analysis and symbolism exists to cover the diverse fields of mathematical solutions, operations of the nervous system, and translation from one language to another. The answer fortunately is "Yes". The required basis is found in the discipline known as mathematical logic. The founder of the analysis was George Boole, a mathematician of the nineteenth century. His work has had an enduring and fruitful effect on not only mathematics but also philosophy and metamathematics. His writings are still amongst the best for an introduction to the subject. It can be correctly stated that without his work no large scale computer would exist today in its present form, nor would computational procedures exist in their present form today, nor physical analysis.

The exploitation and extension of the work of Boole has led to the present existence of the school of mathematical logic. It has also led to a new philosophy of the organization of the nervous system. It is basic to an understanding of mathematical processes. It underlies the operation of modern computers. It can be shown to be the foundation upon which the successful demonstrations of machine translation in the past few years have been built, not only in this country, but also in Europe and in Russia.

It is my thesis that a new and fruitful wedding can be made between the disciplines of mathematical logic and linguistics. The economic need for mechanical translation can be demonstrated in all the various branches of science. The military need is obvious to all. The solution lies in the joint effort of the linguist and the mathematical logician to exploit our present mechanical knowledge to the fullest. The contribution to humanity can be immense. Can our respective disciplines be so married?

My answer is that they can. I sincerely hope that they shall be.
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DISCUSSION

A. C. REYNOLDS: I should like to make a correction in regard to Biametrika; the correct dates are 1951 and 1954.

ROBERT P. STOCKWELL: Can the speaker expound briefly this model of the nervous system which showed the machine having accomplished an act of learning? Is it too complicated to discuss at this point?

A. C. REYNOLDS: Unfortunately I'd have to go into the theory of binary arithmetic, mathematical logic, and then show how the neural nets were constructed. It is complicated. In this particular case we were presenting to the machine a sequence of letters which preferentially we wanted it to learn on a statistical basis, from numbers of presentations to respond only when the letter "F" or the letter "H" was presented to the machine, a very simple learning problem.

EDMUND S. GLENN: Here again we are in a field where there has been much needless controversy, often because our purposes were not always defined. "Translation" is a word with many different meanings, and some of the controversies were due to the fact that some people were using this word with one meaning, and others were using it with a different meaning. In the experiments which were quite successful, we dealt with scientific texts which were rather restrictive in their cultural import, the restriction being that the men uttering the original and the men receiving the translation may not have spoken the same language in the linguistic sense, but they were speaking the same language in the scientific sense. Where you deal with such questions as statements of an extremely general nature involving differences in language, say from Russian to English, differences in culture, as from Russian to some type of Anglo-Saxon culture, in addition to differences of field, then you have some complex practical problems. The fact that we can, practically, in the near future, make scientific translations should not let us forget that in the latter case, the difficulties may be compounded.

PAUL L. GARVIN: I think one of the very important functions of research in machine translation in relation to linguistics is that machine translation is one of those outside criteria by means of which you can measure the preferability of one solution over another, because — and I'm partly speaking from experience and partly from
inferring theoretical possibilities — it seems to me that it may become quite obvious that of two solutions, one is more readily transposable into mathematical logic and computer operations than another.

A. C. REYNOLDS: I would like to add that the machine can be a tremendous tool to the linguist. There were several statements made yesterday with respect to a complete analysis of the English language. I assume that the audience here is not familiar with the recent experiment that was performed on the Sperry-Rand Univac. For centuries, scholars have struggled with the problem of constructing a complete and encyclopaedic concordance of the Bible. That this goal was never attained was purely due to finite limitations on the human brain and the ability of the human animal to keep working for too many years, actually. Such a concordance was deemed desirable by the publishers of the Bible in this country and the King James version was placed completely on tapes. As a result of the fundamental operations available to the machine, a complete concordance excluding only such words as: "the," "a," "and," some fourteen common words, has been attained with the printed output from the machine tabulating the word, the phrase in which it appears, over the entire length of the phrase, enclosed within the particular punctuation marks selected, the book, chapter, and verse. For the first time, such a complete concordance is available. What does this mean so far as the linguist is concerned? If one is concerned with statistical distribution of phrases, of lexical units if I use the term correctly, this is the fashion in which it can be accomplished. The important thing is that the program is already constructed. It makes no difference now the program is constructed whether you want to tabulate this on the level of The New York Times, The Daily Mirror, The Washington Post, whether you take a translation of Buddenbrooks, for example, and find out what the occurrence is, in a literary translation from German into English. The program exists and insofar as one wishes to utilize it, one can conduct these very studies that were discussed yesterday and appear to be a pressing need for the English language. This is also of extreme importance for translation, because the machine is indifferent to the language which is put into it; it will correlate any set of symbols in the fashion prescribed according to that program. We now have the tool for analysis of distributions of words and phrases and the types of phrases in which they appear, all available for use in mechanical translation.
L. E. DOSTERT: The word just used by Mr. Reynolds, "correlation" is a flash of light on the whole problem, because really the only reason we think "translation" is that we are lingual, so to speak. The machine is not, so that all you have to do, really, in translation, is to achieve a correlation of symbols, and that makes a very significant difference in respect to the problem of meaning.

RALPH D. WINTER: I'm sure there are a lot of things you'll never be able to translate by machine, but it occurs to me that the kind of thing you can't translate by machine, say poetry, and things highly charged with political or emotional overtones, are almost always the things with which the ordinary human translators also have great difficulty. Even to transpose the Good Samaritan parable into modern English might mean to construct an entirely different story. Of course the machine couldn't easily be taught to do this, but neither can a human being.

A. C. REYNOLDS: This question has arisen many times with both linguists and engineers. One can go back to one's school days when Latin was studied and take the pony for the Aeneid, with one page in Latin and the direct translation on the following page. Yet from those direct translations transposed into another cultural context have come some quite beautiful but widely divergent interpretations of the Aeneid. The interpretation still lies with the human being. What we propose to give in mechanical translation is raw material from which the human being can derive the necessary semantic inferences and use the necessary connotations, references to the culture, and thus tie it into something he understands now. The machine will never be able to do this; we will never be able to put cultural context into a machine.

ROBERT L. LADO: You use the term "learning" for the machine, and of course the word "learning" is common stock and I wonder what you mean by it in relation to the choice between "F" and "H"? By "learning" I seem to understand that the subject reacts in such a way that he now does something else without my turning any particular screw in his head by giving him experience. I can't quite interpret this in terms of the machine.

A. C. REYNOLDS: I was hoping someone would ask this question. Actually, on a very high level of abstraction, the learning of a second language, is a question of learning, securing, putting into
the nervous system, a new pattern. What we were trying to show was
that in symbols which the machine could recognize through its sensing
organs, it would learn to follow and respond favorably to a given
pattern. We were testing a theory of synoptic connotations in the
neural system. Insofar as on that level of abstraction we could talk
about pattern recognition as being fundamental to the learning process,
in this sense only, I use the word "learning" in connection with the
machine. It's of interest, however, that in the paper yesterday of
Professor Choseed, his entire paper could have been translated across
the disciplines of linguistics into mathematics, in terms of "built-in
sequences," "memory storage," "speed of recall," that is, "random
access," a basic problem in machine operation, "shift operation,"
meaning the reconstruction of syntax which necessarily takes place
in translating, and repetition. This last gives a difference in the
efficiency of operation insofar as the more repetitive the material,
the more firmly it is grasped, and the more automatic is the response
to the material.

ROBERT L. ALLEN: Shannon and others have developed mechanici
cal rats which can find their way through a maze by trial and error,
and afterwards remember the way through. Is that the same principle
at all?

A. C. REYNOLDS: This is not the same principle. The Shannon
mouse experiment has clouded many discussions of the learning
process. I won't go into the details of that; essentially, your descrip-
tion of the operation is correct, but to call it a learning process is
totally incorrect. There is a machine, however, that does have another
learning process that the Bell Telephone Laboratory has constructed.
It's a very simple and stupid game, but the machine hasn't been
beaten yet. It's the old game of flipping coins. You flip a coin and
press a button to tell the machine this was a head. Or you just put in
a set of sequences of heads or tails. The machine is built according
to the mathematical discipline known as the "theory of games." It can
learn sequences, and after the first few tries, it starts predicting what
you are going to do. Its percentage is 60% for the machine and 40%
against anyone who cares to play with it. The Bell Laboratory states
that this is probably a weighted sample, because people who are
consistently beaten by the machine won't go back any more.

L. E. DOSTERT: I would like to comment on something said by
Mr. Winter a moment ago. I think his statement is highly subjective
and characteristic of the way we react to so-called "poetic language." We think that it is more difficult to translate a line of poetry than a line of prose because we are thinking of its evocative significance to us. In other words, the machine is not reacting to poetry; it is only reacting to symbols. The poetry is what the human being, when struck with the symbol, responds with, so to speak; the poetry is not innate in the symbol. It is an interaction between the symbol and the human being. This, the machine obviously cannot translate. On the basis of the syntactic rules that were formulated for Russian, I have, as an experiment, tried to translate several lines from Milton’s sonnet on his blindness, and I can assure you that what comes out is every bit as poetic — that is, to one who knows French and responds to the French symbol, as to one who responds to the English symbols of the original. So what the machine will never be able to do is to put poetry in the symbols, but it can certainly handle and manipulate the symbols.

DAVID A. REIBEL: I think I read about this in Publisher's Weekly. It was about the Revised Standard Version of the Bible, and the important thing was that they got not only the concordance but a printable text out of the machine. It could then be photographed and reproduced without any more editing and took some small amount of time like twenty-eight hours. This is useful for linguistics, but how much do they get per hour to use in the machine?

A. C. REYNOLDS: Let me rephrase that question. We computer engineers secured this concordance in some fourteen hours of running time on the machine, and some six months of key-punch operation of the programmers' time. The cost of a programmer can run between $400 and $600 per month. There were some ten or twelve people involved in the programming and the key-punch operation. The running time on the IBM machine cost $300 per hour. To have a set of biblical scholars repeat this process would be comparable in length of time to the length of time it took to produce the Revised American Standard Edition, and it would require a subsidy far in excess, by factors of many tens, of the total cost of the programming and the running time on the machine. The economics are all in favor of the machine. Do not be misled by the cost per hour; it is the quantity that comes out per hour that is the basic criterion. With the machine, the cost per word per hour was fractions of a mill as against whole pennies in any other process.
JACOB ORNSTEIN (Washington, D. C.): In reference to some remarks by Mr. Householder and Mr. Reynolds, I'm still obsessed by the cost of these things. The Josselson word list was done at Wayne in three years by a large staff with a Rockefeller grant. Who will finance these things?

A. C. REYNOLDS: Warren Weaver of the Rockefeller Foundation has been behind mechanical translation almost since its inception as an organized effort. The Foundations are interested in scholars who know how to use these machines. If the scholar is sufficiently intrigued by the prospect of solving his problems, he can get the money. He can also get his work done while he's still young enough to enjoy the results of it!

JACOB ORNSTEIN: Since most of this is now done by government subsidy, to what extent do you think private industry is prepared to back work of this sort?

A. C. REYNOLDS: As far as the chemical and petroleum industries are concerned, were it not for the scarcity of large scale computers, the necessity of adopting them to their everyday operations, and the military demands on them for the use of the machines to solve urgent problems in the nuclear field, private industry would be behind this. I have talked to enough industrialists to know this.

ROBERT L. LADO: Private industry has shown enough interest in a similar study of Cervantes, a concordance, to offer the use of the machines at no cost to a member of our staff at Michigan, and plans are going forward to see if that can be done.

A. C. REYNOLDS: A democracy sometimes works a lot more slowly. In the Russian press and journals recently there have been descriptions of their attempts at machine translation. They can put all the money they want into it.
V

Linguistics
and

Humanistic Study
Linguistics and Humanistic Study
By Kemp Malone

Some ten years ago, at a meeting of the College English Association held here in Washington, one of the speakers had this to say about English linguistics: "...the danger of this type of study is that it tends to become an end in itself..." Here is the comment that I made on this pronouncement:

But any type of study worthy of the name tends to become an end in itself. No study can flourish unless it is pursued for its own sake, and linguistics make no exception to the rule. If this be reckoned a danger, the only remedy would be to forbid any kind of study (not merely linguistic study), and this remedy strikes me as worse than the disease.

You of this gathering are here because of your interest in language study. Many of you are active in linguistic investigation and know by experience how true it is that one never gets far with that kind of thing unless one becomes absorbed in it for its own sake. Nothing can take the place of this absorption, this single-mindedness, this complete concentration. Without it, study becomes mere learning by rote, the kind of work that dulls the wits instead of sharpening them.

As we all know, the study of Latin and Greek, as carried on in the schools in the good old days, went largely if not chiefly by rote. The teachers in their own schooldays had learned a body of inherited grammatical lore, a system of classification worked out by the Greeks, taken over by the Romans, and handed down with little change from generation to generation for some two thousand years. The Greek linguists who worked the system out were true investigators, and in their hands linguistics was a lively, interesting, and intellectually stimulating study. But in the hands of their successors the grammatical system came to be a fixed, rigid set of rules, something to be learned and applied to texts in the manner prescribed by long custom. My own father was taught Latin and Greek in this way, and though the teaching methods had changed somewhat by the time I started my schooling, they had not changed very much. Indeed, as I look back upon my school years, it seems to me that such changes as had taken place were for the worse: the old procedures were no longer followed with rigor but they were still followed in a half-hearted way. The new linguistics of the 19th century had shaken the old edifice
but had not replaced it with an up-to-date building; we still went to school in the house of our fathers. Let me illustrate with Latin. The first Latin grammar for high schools that was abreast of the times, linguistically, came out in 1903, but that was too late for me; in that year I entered college.

The new linguistics that I have spoken of differed from the old in that it was historical rather than descriptive in point of view; the linguists of the 19th century were chiefly interested in the changes that had taken place in a given language, with a view to determining the origin of the language and its relation to other languages. The 19th is the great century for historical studies in all branches of learning. Thus, the historical approach created the science of geology (i.e. the history of the earth) and in biological study gave us the theory of evolution. Linguistics had been almost wholly descriptive up to the 19th century; in that century it became, for most of its practitioners, a branch of history. This revolutionary change produced revolutionary results in the universities and led to tremendous advances in our knowledge of the subject but the new knowledge made its way very slowly into the school system and had little effect on the instruction given to schoolboys and schoolgirls. Among the educators traditional descriptive linguistics still reigned supreme, and language continued to be taught as something static, cut and dried, not as the dynamic, constantly changing thing it really is.

I have said that the historical approach dominated linguistics in the 19th century. I do not mean to imply, however, that the descriptive approach was given up or even neglected. On the contrary, synchronic linguistics, as it is now called, was actively pursued, especially in the second half of the century, when phonetics in particular flourished. Systematic study of current speech (as distinguished from the speech of the past) came to have an important part in 19th-century linguistics, and in the nature of the case this kind of study was synchronic, not diachronic. Indeed, one may go further and say that structural linguistics as we now know it has its roots in the phonetic studies of the 19th century. Nikolai Trubetzkoy in his *Grundzüge der Phonologie* traces the beginnings of structural linguistics back to the Polish linguist Baudouin de Courtenay and the Swiss linguist Jacob Winteler, who wrote in 1870 and 1876 respectively. He also points out that Henry Sweet and Otto Jespersen distinguished between what we now call a phoneme and its allophones,
even though it did not occur to them to remove the study of phonemes from phonetics and make of it a separate discipline.

A few quotations from Jespersen's *Fonetik*, a book that came out in instalments in the years 1897-1899, will illustrate how far the 19th century had got in this matter. I give the quotations not in the Danish original but in my own translation. On p. 407 we read: "The phonetic symbol [m] is really a group-name for a number of sounds." Later in the same passage we find: "By careful listening one can hear how a consonant that we take to be identical in a series of words is not so, strictly speaking..." Jespersen points out like variations in his discussion of the vowels. He also deals with what he calls the phonetic economy of a language. To quote (p. 611),

> Certain differences which in some languages play a very important part and are used to distinguish words otherwise identical play no part at all or almost none in other languages. Thus, in French and English the distinction between [s] and [z] is important; in Danish there does not exist a single word-pair in which this distinction affects the meaning and we find, in consequence, that [z] can be used in careless Danish speech instead of [s] without making any trouble.

In these passages, along with others that I have no time to quote, we clearly have, in germ, the discipline which the Prague school was later to develop under the name *phonology* and to distinguish sharply from phonetics. In this country the same discipline usually goes by the name *phonemics*, an unhappy formation but one that has established itself and must be put up with, though the happier *phonemetics* still sometimes occurs (thus, in Joshua Whatmough's recent book *Language*).

The technic of isolating phonemes by setting up oppositions was no invention of modern times. In Iceland, as Einar Haugen has pointed out, a grammarian of the 12th century made systematic use of this technic, and one may reasonably believe that the same procedure underlies the development of syllabic and alphabetic writing in antiquity. Indeed, it is hard to see what other method could have been used to determine the syllables and sounds that needed representation. Unhappily the early analysts of human speech did not

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give us any body of doctrine, any exposition of their way of solving the problem; the syllabaries and alphabets themselves are all we have. These were used at first for legal records and the like but in time they served also to record poetry and prose and made possible the rise of literature, in our sense of that term, and civilization as a whole. In other words, the culture which we have inherited owes its very existence to the phonemicists of prehistoric times.

In those ancient days, and all the way down, almost to the present, linguistic and literary studies went hand in hand. A familiar example is Dr. Samuel Johnson, known to fame both as a lexicographer and as a man of letters. Here the important thing is, not that we have cases of the kind but that these were taken as a matter of course. The publishers of Johnson's dictionary, when they decided to bring out such a work, turned to a man of letters as the right man to serve as editor. This traditional union has not wholly vanished even in our own times. Thus, the editor-in-chief of the last edition of the big Merriam-Webster dictionary was William A. Neilson, a specialist in Elizabethan dramatic poetry, and the general editor of the new edition now under way is Philip B. Gove, an authority on prose fiction. But there is a difference between the two editors, a difference indicative of present trends: Neilson was always first and foremost a literary man, and his work as lexicographer remained a mere sideline, done on a part-time basis, whereas Gove, after making a name for himself in literary scholarship, shifted to lexicography, which has become his main interest.

In English studies we medievalists have held out longest against the separation of linguistics from philology and criticism. Medievalists of the past generation like Henry Sweet and Eduard Sievers did notable work not only as phoneticians and grammarians but also as editors of literary texts. Even Otto Jespersen, whose publications, throughout a long and fertile scholarly career, were almost wholly linguistic, concerned himself also with literary matters, in his teaching at any rate. Let me quote a passage from his farewell lecture, given at the University of Copenhagen upon the occasion of his retirement:

In my teaching, I may have done more for language than for literature, though I have always given exercises in literature, chiefly on some works of supreme merit: Beowulf (especially in its relation to old Scandinavian tradition), Chaucer, Marlowe,
Shakespeare, Burns, Shelley, and Browning. I have laid the chief weight on a minute understanding of the text, but I have never lost sight of literary points of view and hope to have imparted to my hearers some of my own enthusiasm for the great poets. My greatest enjoyment, and no doubt that of my hearers as well, has been in my Chaucer classes,...

In my student days I had the privilege of listening to some of Jespersen's lectures and saw a good deal of him in his home and elsewhere, and I can bear witness to his interest in literary problems.

In the same lecture Jespersen gives his views on language study, and I will quote part of what he says:

As for linguistic investigation in particular, I would especially emphasize three things: First, that of understanding the texts as a pure matter of philology in the narrow traditional meaning of the word: to penetrate into the innermost thoughts of the best men and women. Next, to see what speech is and therewith what the human soul is. Speech is the noblest instrument to bind man to man, and thought to thought, and therefore deserves study on its own account. Unless one understands speech, one knows nothing of the nature of thought. ... Thirdly, it is by speech as by literature, or best by both combined, that one comes to understand the people from whom they emanated. ...[Linguistica, p. 10].

It will be of interest to take up each of these three points in turn. From the first point, "understanding the texts as a pure matter of philology," one may conclude that Jespersen looked upon philological study as a branch of linguistics. Certainly this was the view of his younger colleague and compatriot, the late Holger Pedersen, my old master, who defined philology thus: "a study whose task is the interpretation of the literary monuments in which the spiritual life of a given period has found expression." He went on to say, "... it is clear that the process of interpretation requires first of all an insight into a linguistic system and that it must proceed according to linguistic rules; it is therefore undoubtedly a linguistic task, even though it does differ from a purely linguistic study for the sake of the language alone."  

Philology in Jespersen’s and Pedersen’s sense of the term is very much in vogue nowadays, though the fashionable name for this kind of work is no longer philology but rather explication. Moreover, the explicators, or some of them, are well aware that such work is not possible without a thorough knowledge of the language in which the text is written. One of my colleagues is working on the poems of the 19th-century American poet Emily Dickinson. He tells me that he has found it needful to make a special study of her kind of English in order to explicate these poems. Not only did many literary words and phrases, as well as colloquial ones, have connotations in those days that they lost in the 20th century, but the meanings proper, the denotations, cannot safely be reckoned the same for the American English of the two centuries. My colleague has found it illuminating, for instance, to look up in dictionaries of Emily Dickinson’s own time the words she used in her poetry. Here he has found nuances of meaning that would not have occurred to him if he had relied solely on his knowledge of current American speech.

My colleague is exceptional among the specialists in American literature. Not many of these have any particular interest in the study of American speech. Most of them are content to leave this subject to the medievalists. Or perhaps it would be better to say that they see no reason to take this subject away from the medievalists, who started systematic study of American English long before there were any specialists in American literature. A group of medievalists founded the American Dialect Society back in the 1880’s and to this day the membership of the Society is made up largely if not chiefly of medievalists. The fact of the matter is, many of us whose chief interest lies in the Middle Ages like to think of ourselves as taking all knowledge for our province. We know we can’t make it but we try anyhow. And what we lose in depth we gain in breadth. Of course one ought to have and usually does have one or more points of specialization within one’s field, whatever that field may be, but it is a mistake to confine oneself to these points unless one is willing to take the consequences, which are: all depth and no breadth. In practice, I suspect, few investigators are really content to be narrow specialists. Their narrowness slips up upon them gradually and they do not become fully aware of their state until it is too late for them to do anything about it. If they are good enough, this awareness will come before it is too late. It will dawn upon them that they need more breadth in order to delve deeper and they will mend their ways accordingly. I do not mean to imply, however, that a linguist
who is nothing but a linguist need be reckoned a narrow specialist on that account. The linguistic field is too vast and varied for that.

We come now to the second of Jespersen’s three points. He begins thus: "to see what speech is and therewithal what the human soul is." It would hardly do to take this utterance literally. We may be sure that linguistics, however great its achievements, will never fathom the soul, and this for the simple reason that the soul is something beyond the reach of words. But presumably Jespersen meant only that human speech is the key to human psychology. If so, what he says is in line with his later statement that "unless one understands speech, one knows nothing of the nature of thought." Such views are widespread but probably wrong. As Ferdinand de Saussure put the matter,

Il n’est jamais sans intérêt de déterminer le type grammatical des langues ... et de les classer d’après les procédés qu’elles emploient pour l’expression de la pensée; mais de ces déterminations et de ces classements on ne saurait rien conclure avec certitude en dehors du domaine proprement linguistique.3

Let me illustrate with a grammatical feature of the Germanic languages. The Germanic verb had no future tense and English accordingly inherited only two tenses, the present and the preterit. But it does not follow that the language had no means of expressing future time. The various devices used for this purpose in Old, Middle, and Modern English take care of the matter well enough. Still less would one be justified in concluding that the ancient Germans had a defective sense of time, being able to tell the difference between present and past but not between present and future. I take another example from the realm of vocabulary. Here every language has its imperfections, of course, and the want of a word may make expression awkward upon occasion. Thus, Germanic had no word for tail as such, though it did have separate words for the tail of a horse, the tail of a cow, the tail of a sheep, and so on. We have no right to conclude, however, that the speakers of Germanic were unable to make generalizations. At most we may say that in this particular case no compelling need for a generic term had arisen.

3Ferdinand de Saussure, Cours de linguistique générale, Payot, Paris, 1949, p. 312.
Jespersen goes on to say, "Speech is the noblest instrument to bind man to man and thought to thought and therefore deserves study on its own account." Here the adjective noblest is a bit bothersome; most of us nowadays would prefer a word less highly charged with emotional values. But there can be no doubt whatever that speech is the most important of the many instruments that humanity uses for communication. I am now trying "to bind man to man and thought to thought"; that is, I am trying to communicate with my audience. And I am using speech as my instrument in so doing. If I did not have this instrument at my disposal I should not know how to proceed. In fact, of course, this round table about speech would be impossible without speech. Jespersen's argument, then, comes to this: since speech is so important in human affairs, it is worth studying for its own sake. I should prefer to say: speech is worth studying for its own sake irrespective of its importance in human affairs. I do not know how to draw the line in such matters. Is there any subject so unimportant that it is not worth studying for its own sake? There is another way of looking at the problem: how can we tell what the importance of a subject is until we have investigated it for its own sake? We usually take it for granted in scientific investigation that all things are interrelated, that all existence is of a piece. If so, anything is worth investigating, however unimportant it may seem. But if we look at things from an everyday, practical point of view, the force of Jespersen's argument must be allowed, and we may reasonably agree with his conclusion, the very conclusion that I reached at the beginning of this talk.

Jespersen's third point reads as follows: "it is by speech as by literature, or best by both combined, that one comes to understand the people from whom they emanated." This dictum is allied to the one that de Saussure challenged in the passage I quoted just now. The dictum is too sweeping, besides, leaving out, as it does, everything except language and literature, though nobody would deny that knowing the language and the literature of a people helps one greatly in coming to understand the people. But the great trouble with the dictum is that it presupposes success or at any rate holds out high hopes, hopes unlikely to be fulfilled. I am myself an American born and bred. I think I know the language of my native country pretty well, and I have at least a gentlemanly knowledge of the literature. But how well do I understand the American people, my own people? None too well, I fear. If that is so, how far is a foreigner likely to get? Will he ever really come to understand us, however good his knowledge of our speech and our literature? I venture to doubt it.
In his farewell address Jespersen shows himself a man of his time, a time when people had more faith than we now have in the ability of the human animal to get to the bottom of things. His words about language also reveal a feeling that linguistics needs to be defended, that the work of the linguist needs justification in terms of the humanistic disciplines as a whole. Of course linguistics belongs to this group of disciplines. But does its value lie in its function as a tool whereby the philologist can determine the meaning of a text and the anthropologist can determine the features of a culture? Or is it a study worth while in its own right, a subject to which a scholar may properly give his full time and attention? I am not a full-time linguist myself. I have done as much work in philology as in linguistics and have dabbled in other disciplines besides, not to mention what the college catalogs so absurdly call "creative writing." But I am convinced that if I had limited myself to linguistic investigation my intellectual life would not have suffered thereby. I should know more about some things and less about others but the total would have come to much the same. One is guided in these choices partly by taste and inclination, partly by circumstances. The medievalist and the classicist are expected to be at home in language and literature alike. The modernist, in the English field at least, commonly restricts himself to language or literature as the case may be. But whether one is a full-time or part-time linguist, one's investigations in the linguistic field are not likely to be fruitful unless they deal with language as such. In the words of Ferdinand de Saussure, *la linguistique a pour unique et véritable objet la langue envisagée en elle-même et pour elle-même.*

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APPENDIX 1

Program of the Seventh Round Table Meeting

FIRST SESSION—Friday, April 13, 1956, 9:30 a.m.

WELCOMING REMARKS:

Reverend Frank L. Fadner, S. J.
(Regent, School of Foreign Service)

L. E. Dostert
(Director, Institute of Languages and Linguistics)

Paul L. Garvin (Institute of Languages and Linguistics)
(Chairman of the Seventh Round Table Meeting)

PANEL: Approaches to Syntax

Henry Lee Smith, Jr., (Chairman) (Department of State)
Superfixes and Syntactic Markers

Leonard Newmark (Ohio State University)
The Word as a Descriptive Unit

W. Nelson Francis (Franklin and Marshall College)
An Interim Syntax for the Classroom

Gerald Dykstra (Columbia University)
Emic Proportion

Paul L. Garvin (Georgetown University)
Operations in Syntactic Analysis

LUNCHEON MEETING—Friday, April 13, 1:30 p.m.

Archibald A. Hill, (Speaker) (University of Texas)
Who Needs Linguistics?
SECOND SESSION—Friday, April 13, 3:00 p.m.

PANEL: The Teaching of English as a Foreign Language

Robert Lado, (Chairman) (University of Michigan)

Edwin T. Cornelius (U. S. Information Agency)
The Role of the Native Speaker in the Teaching Situation

Bernard Choseed (Georgetown University)
The Problem of Linguistically Diversified Classes

Robert L. Allen (Columbia University)
Graphic Grammar: The Use of Colors to Teach Structure

Archibald A. Hill (University of Texas)
Terminology: Some Conflicts and Compromises

Robert Lado (University of Michigan)
Problems in Learning the Culture

RECEPTION—Friday, April 13, 6:00 p.m.
Offered by Georgetown University, Faculty Lounge

THIRD SESSION—Saturday, April 14, 10:00 a.m.

PANEL: Perspectives of Linguistic Science

Paul L. Garvin, (Chairman) (Georgetown University)

Fred W. Householder (Indiana University)
Rough Justice in Linguistics

Ward H. Goodenough (University of Pennsylvania)
Cultural Anthropology and Linguistics
Alphonse Juilland (University of Pennsylvania)
Perspectives in Linguistic Science

A. C. Reynolds (Stromberg Time Corporation)
Mathematical Linguistics—A New Discipline

CLOSING LUNCHEON—Saturday, April 14, 1:15 p.m.
Kemp Malone, (Speaker) (Johns Hopkins University)
Linguistics and Humanistic Study

APPENDIX 2

Membership of the Seventh Round Table Meeting on Linguistics and Language Teaching
13 to 14 April, 1956

Adamson, Rowena L.  Georgetown University
Akalovsky, Alexander  Institute of Languages and Linguistics
Allee, John Gaye  George Washington University
Allen, Robert L.  Columbia University
Allen, Robert L., Mrs.  Columbia University
Allen, Rolfe L.,  Dep't. of the Army, G3
André, M.  Georgetown University
Ani, Moukhtar  Georgetown University
Atsal, Ülkü  Institute of Languages and Linguistics
Austin, William  Institute of Languages and Linguistics
Battle, Allen  Catholic University
Bechhan, Ralph S.  American Language Center
Bel, Fikret  Institute of Languages and Linguistics
Bidwell, Charles E.  Foreign Service Institute
Binda, H. Jeffrey  Institute of Languages and Linguistics
Bowen, J. Donald  Foreign Service Institute
Brooks, Elizabeth  Howard University
Canu, Jean  Institute of Languages and Linguistics
Carter, Marion E.  D. C. Teacher's College
Castiglione, Pierima  Washington, D. C.
Castaneda, Gloria
Castiglione, Salvatore
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Châtain, James
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Clubb, William G.
Cook, Harriet B.
Cook, Mary Jane
Cornelius, Edwin T.
Cossard, Monique
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Davis, A. L.
Delaney, Barbara
Despuray, Rev. Gustave
Doré, Marguerite
Dostert, L. E.
Dunn, Priscilla
Dykstra, Gerald
Eddy, F. D.
Evans, Richard
Fadner, Rev. Frank L., S.J.
Fargo, Nancy Lou
Faxtei, Jatinna
Fernandez, Cecilia
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Fitzgerald, Susan
Forreira, Stella Louise
Francis, W. Nelson
Francis, Mrs. W. Nelson
Frank, John G.
Gardiner, Catherine
Garvin, Paul L.
Glenn, Edmund S.
Goodenough, Ward H.
Grisgone, Tatjana
Hathaway, Robert L.
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Silva-Fuenzaleda, I.

Sister Mary Cuthbert, SCMM

Sister Margaret Therese S.N.D.

Sister Mary St. Joseph, S.N.D.

Smith, Henry Lee

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Stromberg Time Corporation

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University of Richmond

Conference Board, Washington

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U. S. Information Agency

International House, New Orleans

Foreign Service Institute

Catholic University

Trinity College

Trinity College

Dep't. of State

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