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LIVE ISSUES IN DESCRIPTIVE LINGUISTICS

Kenneth L. Pike and Eunice V. Pike

The purpose of this listing is to allow graduate students with a minimum of effort to become oriented to current issues where debate and/or development is receiving considerable attention. This listing is obviously not complete (it is especially lacking in European materials). Nevertheless the demand for the bibliography has been heartening. It indicates a continuing interest on the part of graduate students as they attempt to sensitize themselves to changing currents of linguistic theory. This can be done better by their reading directly in sources expressing divergent points of view than by their being exposed to lectures in which such issues are predigested for them.

In the second edition the new topics which have been added, and the revision of statements of issues reflect the changing climate of debate. Note, for example, the emphasis upon models (sec. 2), the attention given to tagmemic and prosodic approaches to phonology (secs. 11-14), and the tagmemic and transform approaches to grammar (sec. 20). See also the new sections on translation (sec. 30), and literacy (sec. 25).

The selection of references, we are quite aware, reflects our biases. The student, however, can work toward his own balance by submitting himself to counter biases observed in the items reporting opposite points of view. For specific discussion of many of these issues and for further bibliography, the student may consult the treatment by KLP in *Language in Relation to a Unified Theory of the Structure of Human Behavior* (referred to below as Kenneth L. Pike, *Language I*, 1954; *II*, 1955; *III*, 1960). Asterisks attempt to suggest to the students those items in a section which will most readily lead to an awareness of the issue involved.

September 9, 1960

Kenneth L. Pike and Eunice V. Pike

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I. LINGUISTIC STRUCTURE

1. The Nature of Structure

Is structure innate in speech, or is it imposed by the linguist (see also secs. 3, 4)?

Kenneth L. Pike, *Phonemics*; Ann Arbor, 1947, esp. p. 64b.

*W. D. Preston, Review of de Goeje, *Études Linguistiques Caribes II*. Amsterdam, 1946, in *IJAL* 14.131-34 (1948). [Structure as imposed.]

*Charles F. Hockett, A note on 'structure', *IJAL* 14.269-71 (1948). [Comments on the review by Preston, structure as innate.]

Various authors, *Recherches structurales 1949*. Travaux du Cercle linguistique de Copenhague, Vol. 5. Copenhague, 1949.

J. R. Firth, Personality and language in society, *The Sociological Review* 42.37-52 (1950), esp. p. 42. [Structure as imposed.]

R. H. Robins, *Ancient and mediaeval grammatical theory in Europe with particular reference to modern linguistic doctrine*; London, 1950.

J. R. Firth, General linguistics and descriptive grammar, *Transactions of the Philological Society*, (1951), 69-87.

Zellig S. Harris, *Methods in structural linguistics*; Chicago, 1951, esp. p. 9.

Einar Haugen, Directions in modern linguistics, *Lg.* 27.211-22 (1951), esp. p. 222.

Knud Togeby, Structure immanente de la langue française, *TCLC* 6.7-282 (1951).

J. R. Firth, Report, (Reprint from the Preliminary Reports of the Seventh Linguistic Congress, London, 1952), pp. 5-9.

Charles F. Hockett, Review of Travaux du cercle linguistique de Copenhague, Vol. V. *Recherches structurales*, 1949, in *IJAL* 18.86-99 (1952), esp. p. 98.

*Fred W. Householder Jr., Review of Harris, *Methods in Structural Linguistics*, Chicago, 1951, in *IJAL* 18.260-68 (1952). [On "hocus-pocus".]

Charles F. Hockett, Short and long syllable nuclei, *IJAL* 19.165-71 (1953), esp. p. 165.

Zellig S. Harris, Distributional structure, *Word* 10.146-62 (1954).

Kenneth L. Pike, *Language* I, 1954. [Structure within the behavioral data; bibliographical discussion, pp. 20-21; etic-emic relations, chap. 2; trimodal structure, chap. 3.] III, 1960. [Interlocking, chap. 15.]

H. Galton, Is the phonological system a reality? *Archivum Linguisticum* 6.20-30 (1954).

*W. S. Allen, *On the linguistic study of languages*; Cambridge, 1957. [The linguist invents the facts, pp. 11-14.]

What is the nature of linguistic science? What elements make it a science, if any? How is it related to mathematics or logic?

Charles W. Morris, *Foundations of the theory of signs*, *International Encyclopedia of Unified Science*, Chicago, 1938.

*Leonard Bloomfield, *Linguistic aspects of science*; *International Encyclopedia of Unified Science*, Chicago, 1939.

*Benjamin Lee Whorf, *Linguistics as an exact science*, *The Technology Review*, 43.61-63, 80-83 (1940).

----, *Languages and logic*, *The Technology Review*, 43.250-52, 266, 268, 272 (1941).

Charles F. Hockett, *Biophysics, linguistics and the unity of science*, *American Scientist* 36.558-72 (1948).

----, Which approach in linguistics is 'scientific'? *SIL* 8.53-57 (1950).

Louis Hjelmslev, *Prolegomena to a theory of language*; Indiana University Publications in Anthropology and Linguistics, Memoir 7 of IJAL, 1953, esp. p. 5. [In reference to the nature of structure.] (Translation by Francis J. Whitfield, of *Omkring sprogteoriens grundlæggelse*, 1943.)

*Noam Chomsky, *Syntactic structures*; 's-Gravenhage, 1957.

Joshua Whatmough, *Mathematical linguistics*, *Proceedings of the Eighth International Congress of Linguists*, Oslo, 1958, pp. 62-73; discussion, pp. 74-91

Is it possible to have linguistics divorced from an epistemological base? from a psychological base (see also secs. 4, 22, 23)? What is the relationship between a theory of linguistics and a philosophical or psychological theory? What is the relationship between the native observer and language? or between the professional observer and his analysis of language?

A. P. Weiss, *Linguistics and psychology*, *Lg.* 1.52-57 (1925).

*Leonard Bloomfield, *Language*; New York, 1933. [A view divorcing linguistics from psychology.]

- Rudolf Carnap, *The logical syntax of language*; New York, 1937.
- *Wilbur Marshall Urban, *Language and reality: The philosophy of language and the principles of symbolism*; London, New York, 1939.
- Angus Sinclair, *The conditions of knowing*; London, 1951.
- *Rulon Wells, *Meaning and use*, Word 10.235-50 (1954).
- Yehoshua Bar-Hillel, *Logical syntax and semantics*, Lg. 30.230-37 (1954).
- Roger W. Brown and Eric H. Lenneberg, *A study in language and cognition*, Journal of Abnormal Social Psychology, 49.454-62 (1954).
- *Charles E. Osgood and Thomas A. Sebeok, Editors, *Psycholinguistics: A survey of theory and research problems*; Indiana University Publications in Anthropology and Linguistics, Memoir 10 of IJAL, 1954.
- *Benjamin L. Whorf, *Language, thought, and reality: Selected writings of*; Edited by John B. Carroll, Cambridge and New York, 1956.
- *Roger Brown, *Words and things*; Glencoe, Ill., 1958. [Includes reference to some recent studies of psychology in relation to language.]
- *Kenneth L. Pike, *Language III*, 1960, esp. pp. 113b, 115a, 116b, 117b-18a.

2. Models (and Nonuniqueness) in Linguistic Analysis and Description

What is the place of models in the understanding and description of structure (and see sec. 1)? To what degree can any model exhaust what we need to know about structure? What is the relationship of the use of models to views of nonuniqueness of structural solutions? (For types of models currently available, see sec. 20.)

- *Yuen Ren Chao, *The non-uniqueness of phonemic solutions of phonetic systems*, Academia Sinica: Bulletin of the Institute of History and Philology 4.363-97 (1934). [For early discussion of alternate solutions.] Reprinted in Martin Joos, Editor, *Readings in linguistics*; Washington, 1957.
- Zellig S. Harris, *Methods in structural linguistics*; Chicago, 1951. [For numerous alternate approaches to specific problems.]
- Angus Sinclair, *The conditions of knowing*; London, 1951, esp. pp. 149-50. [For the philosophical basis by which reality imposes limits to description, but does not lead to unique descriptions.]
- *Charles F. Hockett, *Two models of grammatical description*, Word 10.210-34 (1954). [For discussion of morphological models.]

- *Morris Halle, *The sound pattern of Russian*; 's-Gravenhage, 1959. [An approach to writing, by providing pronunciation rules for terminal strings (cf. Chomsky in sec. 19) rather than through bi-uniqueness rules of one-sound-one-phoneme (cf. sec. 9).]

F. R. Palmer, *Linguistic hierarchy*, *Lingua* 7.225-41 (1957-8).

Operational Models in Synchronic Linguistics: A symposium presented at the 1958 meetings of the American Anthropological Association, *Anthropological Linguistics* 1.1.1-37 (1959). [Articles by Voegelin, Carroll and others.]

- *Kenneth L. Pike, *Language as particle, wave, and field*, *The Texas Quarterly* 2.2.37-54 (1959). [Theoretical necessity for using several different models on one set of data.]

----, *Language III*, 1960. [Restrictions on emic models, pp. 38-42; alternatives to a trimodal model, p. 43.]

3. Postulates for Phonology and Grammar

What is the closest that we can come to a consistent logical statement of the assumptions behind linguistics? (See also sec. 5.)

- *Leonard Bloomfield, *A set of postulates for the science of language*, *Lg.* 2.153-64 (1926). Reprint *IJAL* 15.195-202 (1949).

W. Freeman Twaddell, *On defining the phoneme*; *Language Monograph* No. 16, Baltimore, 1935.

Edward Sapir, *The psychological reality of phonemes*, (1933). Reprinted in *Selected Writings of Edward Sapir*; Berkeley and Los Angeles, 1949, pp. 46-60.

Louis Hjelmslev, *Prolegomena to a theory of language*; Indiana University Publications in Anthropology and Linguistics, *Memoir* 7 of *IJAL*, 1953.

Kenneth L. Pike, *Phonemics*; Ann Arbor, 1947, esp. chap. 4.

- *Bernard Bloch, *A set of postulates for phonemic analysis*, *Lg.* 24.3-46 (1948). [See, also, more recent developments indicated with this reference in sec. 5.]

*Noam Chomsky, *Syntactic structures*; 's-Gravenhage, 1957. [The most serious attempt to show in tight logical statements, problems in language models from a logical point of view.]

B. Sliertsema, *Problems of phonemic interpretation II. Long vowels in a tone language*, *Lingua* 8.42-64 (1959).

4. Observable Native Reaction and Psycholinguistics as Sources of Postulates and Methodology

What is the relationship between the psychology of language and the analysis of forms of language? How can one correlate the observable reactions of speakers, as they themselves use or discuss their own or a foreign language, with the formal structures presented by the linguist?

- *Edward Sapir, The psychological reality of phonemes, (1933). Reprinted in Selected Writings of Edward Sapir; Berkeley and Los Angeles, 1949, pp. 46-60.
- *Kenneth L. Pike, Phonemics; Ann Arbor, 1947, esp. pp. 64b, 160b.
----, On the phonemic status of English diphthongs, Lg. 23.151-59 (1947).
- *Bernard Bloch, A set of postulates for phonemic analysis, Lg. 24.3-46 (1948).
- *Charles C. Fries and Kenneth L. Pike, Coexistent phonemic systems, Lg. 25.29-50 (1949).
- *Charles F. Hockett, Two fundamental problems in phonemics, SIL 7.29-51 (1949).
Kenneth L. Pike, More on grammatical prerequisites, Word 8.106-21 (1952).
- *Charles E. Osgood and Thomas A. Sebeok, Editors, Psycholinguistics: A survey of theory and research problems; Indiana University Publications in Anthropology and Linguistics, Memoir 10 of IJAL, 1954.
- *Kenneth L. Pike, Language II, 1955. [Bibliographical discussion, pp. 35b-36a, 66b; see also Native reaction, in indices of I, III.]
Sarah Gudschinsky, Native reactions to tones and words in Mazatec, Word 14.338-45 (1958).
Harry Hoijer, Native reaction as a criterion in linguistic analysis, Proceedings of the Eighth International Congress of Linguists, 1958, pp. 573-83; discussion, pp. 583-91.

5. Distribution as a Crucial Linguistic Concept

Is distribution usable as a criterion or technique of analysis for sounds or morphemes or syntax without reference to other items such as meaning (see also sec. 3)?

- *Kenneth L. Pike, Grammatical prerequisites to phonemic analysis, Word 3. 155-72 (1947). [Negative view.]

- *Bernard Bloch, A set of postulates for phonemic analysis, *Lg.* 24.3-46 (1948). [Positive view, for phonology.] Reply in Kenneth L. Pike, More on grammatical prerequisites, *Word* 8.106-21 (1952). Rejoinder in *Bernard Bloch, *Contrast*, *Lg.* 29.59-61 (1953). Further reply in Kenneth L. Pike, II, 1955, p. 39.

Zellig S. Harris, *Methods in structural linguistics*; Chicago, 1951.

Einar Haugen, *Directions in modern linguistics*, *Lg.* 27.211-22 (1951).

- *George L. Trager and Henry Lee Smith, Jr., *An outline of English structure*; SIL Occasional Papers No. 3, Norman, Okla., 1951. [Positive view, for grammar.]

Charles C. Fries, *The structure of English*; New York, 1952, esp. pp. 8, 74-75.

E. M. Uhlenbeck, The study of word classes in Javanese, *Lingua* 3.323-54 (1953).

- *Zellig S. Harris, *Distributional structure*, *Word* 10.146-62 (1954).

Hans Vogt, Phoneme classes and phoneme classification, *Word* 10.28-34 (1954).

- *Zellig S. Harris, From phoneme to morpheme, *Lg.* 31.190-222 (1955).

Paul Diderichsen, The importance of distribution versus other criteria in linguistic analysis, *Proceedings of the Eighth International Congress of Linguists*, Oslo, 1958, pp. 156-82.

Henning Spang-Hanssen, Typological and statistical aspects of distribution as a criterion in linguistic analysis, *Proceedings of the Eighth International Congress of Linguists*, Oslo, 1958, pp. 182-94. Discussion of the two above reports, pp. 194-213.

6. Immediate Constituents of Grammar and Phonology

Why is the concept of immediate constituents useful? What is the limitation to its relevance? Should immediate constituents be treated as a starting point in analysis or an end point thereof?

Leonard Bloomfield, *Language*; New York, 1933.

Otto Jespersen, *Analytic syntax*; Copenhagen, 1937.

- *Kenneth L. Pike, Taxemes and immediate constituents, *Lg.* 19.65-82 (1943). [Pyramiding structure based on an explicit theory of immediate constituents.]

Zellig S. Harris, From morpheme to utterance, *Lg.* 22.161-83 (1946).

- *Rulon S. Wells, Immediate constituents, *Lg.* 23.81-117 (1947). [Adds a rigorous approach to expansion, etc.]

- Eugene A. Nida, The analysis of grammatical constituents, *Lg.* 24.168-77 (1948).
- *Richard S. Pittman, Nuclear structures in linguistics, *Lg.* 24.287-92 (1948). [Contrastive criteria in analysis.]
- Eugene A. Nida, Morphology; Ann Arbor, 1949, esp. pp. 88-96.
- George L. Trager and Henry Lee Smith, Jr., An outline of English structure; SIL Occasional Papers No. 3, Norman, Okla., 1951.
- Charles C. Fries, The structure of English; New York, 1952.
[Diagrams internal structure as well as breaks.]
- Charles F. Hockett, Translation via immediate constituents, *IJAL* 20.313-15 (1954).
- Kenneth L. Pike, Language I. 1954, esp. pp. 130, 152b-53. III, 1960. [Bibliographical discussion pp. 27b-28.]
- Richard S. Pittman, A grammar of Tetelcingo (Morelos) Nahuatl; Language Dissertation No. 50, Baltimore, 1954.
- Seymour Chatman, Immediate constituents and expansion analysis, *Word* 11.377-85 (1955).
- Kenneth L. Pike, On tagmemes, née gramemes, *IJAL* 24.273-78 (1958).
[For immediate constituents as end points of analysis rather than starting points.]
- *Robert E. Longacre, String constituent analysis, *Lg.* 36.63-88 (1960).
[For discussion of theory of immediate constituents in reference to tagmemes.]

Should immediate constituents be postulated for a phonological hierarchy as well as for a grammatical one? How do clusterings of phonemes in syllable nuclei or syllable margins affect such an analysis? What is the relation between syllable clusterings and stress groups in reference to high-level phonology?

- Herman P. Aschmann, Totonaco phonemes, *IJAL* 12.34-43 (1946).
- *Kenneth L. Pike and Eunice V. Pike, Immediate constituents of Mazateco syllables, *IJAL* 13.78-91 (1947). [The initial attempt to apply immediate constituent theory to phonology.]
- Kenneth L. Pike, On the phonemic status of English diphthongs, *Lg.* 23.151-59 (1947), esp. p. 158. [For close-knit nuclei of syllables.]
- Eric P. Hamp, Componential restatement of syllable structure in Trique, *IJAL* 20.206-09 (1954).
- Robert E. Longacre, Rejoinder to Hamp's 'Componential restatement of syllable structure in Trique', *IJAL* 21.189-94 (1955).

- *Charles F. Hockett, *A manual of phonology*; Indiana University Publications in Anthropology and Linguistics, Memoir 11 of IJAL, 1955, esp. pp. 43-45, 72-74, 150-54. [A development of the immediate-constituent approach into a theory of macrosegments.]

7. Multiple Systems in Grammar and Phonology--Bilingualism, Style, and Coexistent Systems

How do bilingualism and differences of style affect the analysis of language systems?

William L. Wonderly, *Phonemic acculturation in Zoque*, IJAL 12.92-95 (1946).

- *J. R. Firth, *Sounds and prosodies*, Reprint (1949) from Transactions of the Philological Society, 1948, esp. p. 151. [For multiple systems even within a uniform style.]

- *Charles C. Fries and Kenneth L. Pike, *Coexistent phonemic systems*, Lg. 25.29-50 (1949). [An attempt to set up criteria for detecting the presence of alien fragments.]

Magne Oftedal, *The vowel system of a Norwegian dialect of Wisconsin*, Lg. 25.261-67 (1949).

- *Bernard Bloch, *Studies in colloquial Japanese IV: Phonemics*, Lg. 26.86-125 (1950). [Negative view of coexistent systems, p. 87.]

- *Einar Haugen, *Problems of bilingualism*, Lingua 2.271-90 (1950).

Charles F. Hockett, *Peiping morphophonemics*, Lg. 26.63-85 (1950). [Also negative view.]

Roman Jakobson, C. Gunnar M. Fant, and Morris Halle, *Preliminaries to speech analysis*; Cambridge, 1952.

Henry M. Hoenigswald, *The phonology of dialect borrowings*, SIL 10.1-5 (1952).

William Bright, *Linguistic innovations in Karok*, IJAL 18.53-62 (1952).

- *Leiv Flydal, *Remarques sur certains rapports entre le style et l'état de langue*, Norsk Tidsskrift for Sprogvidenskap 16.241-58 (1952). [Coexistent intrusions from various levels of society and time.]

Einar Haugen, *The Norwegian language in America: A study in bilingual behavior*, (two volumes); Philadelphia, 1953.

- *Uriel Weinreich, *Languages in contact*; New York, 1953. [A primer of bilingualism.]

Einar Haugen, Problems of bilingual description, Report of the Fifth Annual Round Table Meeting on Linguistics and Language Teaching, (Georgetown University) Monograph Series on Languages and Linguistics 7.9-19 (1954).

----, Problems of bilingual description, General Linguistics 1.1-9 (1955).

Joseph E. Grimes, Style in Huichol structure, Lg. 31.31-35 (1955). [On the phonemic status of stylistic variants.] Comment by Eric P. Hamp, Stylistically modified allophones in Huichol, Lg. 33.139-42 (1957).

Harold L. Klagstad, Jr. On a stylistic alternation in contemporary standard Russian, in For Roman Jakobson; The Hague, 1956, pp. 260-64.

Albert Bates Lord, The role of sound patterns in Serbocroatian epic, in For Roman Jakobson; The Hague, 1956, pp. 301-05.

Uriel Weinreich, On the description of phonic interference, Word 13.1-11 (1957).

Giuseppe Franciscato, A case of coexistence of phonemic systems, Lingua 8.78-86 (1959). [Phonemic systems in reference to dialect geography.]

Kenneth L. Pike, Toward a theory of change and bilingualism, (To appear in Studies in Linguistics.) [An attempt to show prerequisites for change; and a suggestion of bilingual hypersystems.]

----, Language II, 1955. [Congruent systems of phonology, with systematically-conditioned phonological variants, pp. 20b-21a, 23a, also, III, 1960, p. 76a.] Language I, 1954. [Morphemes systematically conditioned, p. 110a; tagmemes (néé gramemes), p. 125b.]

8. Interpenetration of Grammatical and Phonological Layers

Can there be a justification for rigid separation of morphology and syntax, or of other grammatical layers?

* Leonard Bloomfield, Language; New York, 1933, esp. pp. 178-83. [For word criteria.]

Kenneth L. Pike, Taxemes and immediate constituents, Lg. 19.65-82 (1943), esp. p. 76. [For difficulty in morphology-syntax division.]

* ----, Analysis of a Mixteco text, IJAL 10.113-38 (1944). [Noncoterminous phonological and grammatical boundaries.] See also ----, A problem in morphology-syntax division, Acta Linguistica 5.125-38 (1949).

----, The intonation of American English; Ann Arbor, 1945, esp. pp. 81, 171-72.

- * Zellig S. Harris, From morpheme to utterance, *Lg.* 22.161-83 (1946). [With formulas that pass over the boundary.]

Malcolm Guthrie, Bantu word division, International African Institute, Memorandum 22 (1948).

- * Charles F. Hockett, Two fundamental problems in phonemics, *SIL* 7.29-51 (1949).

Eugene A. Nida, Morphology; Ann Arbor, 1949.

- * George L. Trager, The field of linguistics; *SIL Occasional Papers* No. 1, Norman, Okla., 1949. [A model rigorously separating levels.]

- * Robert E. Longacre, String constituent analysis, *Lg.* 36.63-88 (1960). [For emic levels of phrase and clause.]

Kenneth L. Pike, *Language III*, 1960. [Criteria for emic levels in grammar, see chap. 11.]

How do phonological and grammatical units and hierarchies affect one another, and how are they related?

- * Leonard Bloomfield, The stressed vowels of American English, *Lg.* 11.97-116 (1935). [Phonemic distribution in lexical types.]

- * Kenneth L. Pike, Grammatical prerequisites to phonemic analysis, *Word* 3.155-72 (1947). [And continuation, *Word* 8.106-21, (1952).]

- * Charles F. Hockett, Two fundamental problems in phonemics, *SIL* 7.29-51 (1949).

Bernard Bloch, Studies in colloquial Japanese IV: Phonemics, *Lg.* 26.86-125 (1950).

J. R. Firth, Modes of meaning, *Essays and Studies*, 118-49, 1951.

Einar Haugen, Directions in modern linguistics, *Lg.* 27.211-22 (1951), esp. pp. 222-23.

- * George L. Trager and Henry Lee Smith, Jr., An outline of English structure; *SIL Occasional Papers* No. 3, Norman, Okla., 1951. [For insistence on analysis in terms of levels. With phonological preceding morphological, etc.]

Kenneth L. Pike, Interpenetration of phonology, morphology, and syntax, *Proceedings of the Eighth International Congress of Linguists*, Oslo, 1958, pp. 363-71; discussion, pp. 371-87.

- *----, *Language* III, 1960, esp. chap. 15. [For interpenetration described in reference to multiple hierarchies.] II, 1955, pp. 18-19, 39-40, 72-74. [For discussion of phonemes in relation to grammatical distribution.]

II. PHONOLOGY

9. The Phoneme

What kind of linguistic model uses the phoneme as a basic construct (see also secs. 11, 13)? What is the nature of a phoneme (see also secs. 1, 2, 4)? How is it related to distinctive or simultaneous features and prosodies (see also sec. 11)? How can a phonemic analysis be made (see also sec. 8)?

- *Edward Sapir, *Sound patterns in language*, (1925). Reprinted in *Selected Writings of Edward Sapir*; Berkeley and Los Angeles, 1949, pp. 33-45. [The classical statement of multiple systems based on a simple set of data.]

- *Morris Swadesh, *The phonemic principle*, *Lg.* 10.117-29 (1934).

- *W. Freeman Twaddell, *On defining the phoneme*; *Language Monograph* No. 16, Baltimore, 1935.

- *Morris Swadesh, *The phonemic interpretation of long consonants*, *Lg.* 13.1-10 (1937).

- *N. S. Trubetzkoy, *Principes de phonologie*; Paris, 1949. Translated from *TCLP* 7 (1939) by J. Cantineau.

Eli Fischer-Jørgensen, *Phonologie, Uebersichtsbericht über Arbeiten in germanischer und romanischer Sprache*, *Archiv für vergleichende Phonetic*, 5.170-200 (1941). [For a discussion of the literature.]

Kenneth L. Pike, *Phonemics*; Ann Arbor, 1947. [Analytical approach with exercises for the beginner.]

----, *Grammatical prerequisites to phonemic analysis*, *Word* 3.155-72 (1947).

- *Bernard Bloch, *A set of postulates for phonemic analysis*, *Lg.* 24.3-46 (1948).

Daniel Jones, *The phoneme*; Cambridge, England, 1950.

- *Zellig S. Harris, *Methods in structural linguistics*; Chicago, 1951.

- *Roman Jakobson, C. Gunnar M. Fant, and Morris Halle, *Preliminaries to speech analysis*; Cambridge, 1952. [The relation of the phoneme to distinctive features.]

Morris Halle, The strategy of phonemics, Word 10.197-209 (1954).

*Charles F. Hockett, A manual of phonology; Indiana University Publications in Anthropology and Linguistics, Memoir 11 of IJAL, 1955.

Eli Fischer-Jørgensen, The commutation test and its application to phonemic analysis, in For Roman Jakobson; The Hague, 1956, pp. 140-51.

*J. R. Firth, Papers in linguistics 1934-1951; London, New York, Toronto, 1957. [For the prosodic view. See also sec. 11.]

*Kenneth L. Pike, Language II, 1955, chap. 9. III, 1960, chaps. 12 and 15. [For the phoneme as a unit in one of several hierarchies.]

What is the relation of writing to speech--is writing language?

Leonard Bloomfield, Language; New York, 1933. [No.]

Louis Hjelmslev, Structural analysis of language, Studia Linguistica 1.69-78 (1948). [Yes.]

Ernst Pulgram, Phoneme and grapheme: A parallel, Word 7.15-20 (1951).

10. English Vowels

How do differences in theoretical models of linguistic structure affect the analysis of English vowels? For example, how does a theory of over-all pattern affect one's approach or description? Can there be one underlying analysis which covers all geographical, historical, and social English dialects? What is the analysis of [o] vs. [au] in various dialects of English?

*Leonard Bloomfield, The stressed vowels of American English, Lg. 11.97-116 (1935). [With distribution in grammatical units.]

*Morris Swadesh, The vowels of Chicago English, Lg. 11.148-51 (1935)--Revised, Lg. 23.137-50 (1947).

*George L. Trager and Bernard Bloch, The syllabic phonemes of English, Lg. 17.223-46 (1941). [An attempt, later developed by Trager and Smith, to work toward an over-all pattern.] A reply: Einar Haugen and W. Freeman Twaddell, Facts and phonemics, Lg. 18.228-37, (1942).

*John S. Kenyon, American pronunciation; Ninth Edition, Ann Arbor, 1943.

*Kenneth L. Pike, On the phonemic status of English diphthongs, Lg. 23.151-59 (1947). [Here /o/ and /au/ are given different analyses on the basis of psycholinguistic evidence and other supporting criteria.]

- *George L. Trager and Henry Lee Smith, Jr., *An outline of English structure*; SIL Occasional Papers No. 3, Norman, Okla., 1951. [All patterns are initiated by them--as we see this approach--on a lexical-phonological basis by choosing sets of dialectal variants found in certain lexemes. From this tacit assumption of lexemic-phonemic identity is developed an explicit system of over-all pattern through writing nine vocalic (phonetic?) points of reference. Currently the basis of the most wide-spread approach to the analysis of English vowels used by American linguists.] [For a review see James Sledd, *Lg.* 31.312-45 (1955). For a more critical review, J. D. O'Connor, in *le maître phonétique* 96.42-44 (1951).]

Daniel Jones, *An outline of English phonetics*; Eighth edition, Cambridge, 1956.

Hans Kurath, *The binary interpretation of English vowels*, *Lg.* 33.111-22 (1957).

Archibald A. Hill, *Introduction to linguistic structures: From sound to sentence in English*; New York, 1958.

11. Componential Analysis and Prosodies

Is there a unit more basic to phonology than the phoneme? If so, is its status similar to the phoneme in some way? or does it eliminate the usefulness of the phonemic concept (for which see sec. 9)? What is the theoretical place, in a language model, of simultaneous components of segments, as over against the segments themselves?

Travaux du Cercle Linguistique de Prague, Vols. 1-8; Prague, 1929-39.

- *Roman Jakobson, *Observations sur le classement phonologique des consonnes*, *Proceedings of the Third International Congress of Phonetic Sciences*; Ghent, 1939, pp. 34-41.

- *Zellig S. Harris, *Simultaneous components in phonology*, *Lg.* 20.181-205 (1944).

----, *Methods in structural linguistics*; Chicago, 1951, esp. chap.10.

Samuel E. Martin, *Korean phonemics*, *Lg.* 27.519-33 (1951).

A. Martinet, *Phonology as functional phonetics*, *Publications of the Philological Society* 15, London, 1949. [A review: Charles F. Hockett, *Lg.* 27.333-42 (1951).]

- *Roman Jakobson, C. Gunnar M. Fant, and Morris Halle, *Preliminaries to speech analysis*; Cambridge, 1952. [Distinctive features in reference to a universal phonetics of contrastive features.]

Helen Wong, Outline of the Mandarin phonemic system, Word 9.268-76 (1953).

H. Mol and E. M. Uhlenbeck, The analysis of the phoneme in distinctive features and the process of hearing, Lingua 4.167-93 (1954).

Kenneth L. Pike, Language II, 1955, esp. sec. 8.3. [Discussion of componential vs. segmental approach.]

*Morris Halle, The sound pattern of Russian; 's-Gravenhage, 1959. [A detailed exposition of the phonetics of Russian.]

What is the relationship between simultaneous components, as a type of construct, and prosodies? Between phonemes and phonematic units? What theoretical purposes is the prosody, as a construct, designed to serve? What is the range of types of prosodies, and what comprise their unifying characteristics?

*Kenneth L. Pike, Language II, 1955, esp. secs. 8.814, 9.73, 10.51. III, 1960, secs. 11.711, 13.82, 14.5. [An exposition of points of contact and differences between the prosodic approach and phonemic-morphemic views.]

Ethel Wallis, Simulfixation in aspect markers of Mezquital Otomi, Ig. 32.453-59 (1956).

*J. R. Firth, Papers in linguistics 1934-51; London, New York, Toronto, 1957. [A volume containing many of the original sources of the prosodic approach. Bibliography, especially of articles from the Bulletin of the School of Oriental and African Studies, and from Transactions of the Philological Society.]

R. H. Robins, Aspects of prosodic analysis, Proceedings of the University of Durham Philosophical Society, 1.1-12 (1957). [A useful introduction by one utilizing the approach.]

Studies in Linguistic Analysis; Special Volume of the Philological Society, Oxford, 1957. [Further papers reflecting the approach.]

12. The Relation of Tone to Intonation, to Segmental Phonemes, and to Voice Quality

What are the considerations which lead to a model of linguistics that treats tone phonemes and intonation phonemes as on a par with segmental phonemes, as over against a model which treats these as in some structural way sharply different from each other? What kind of empirical data and theoretical considerations make fruitful the two models, respectively? How can pitch phonemes be discovered, and described in their phonetic and morphophonemic relationships?

- *Kenneth L. Pike, *Tone languages*; Ann Arbor, 1948. [For specific analytical procedures, with bibliography and summaries of data.]
- *Bernard Bloch, *Studies in colloquial Japanese IV: Phonemics*, *Lg.* 26.86-125 (1950). [For tone and intonation combined into a single system, esp. pp. 95-97.]
- *Eunice V. Pike, *Tonemic-intonemic correlation in Mazahua (Otomí)*, *IJAL* 17.37-41 (1951). [For the separation of the two into distinct systems.]
- *Yuen Ren Chao, *Tone, intonation, singsong, chanting, recitative, tonal composition, and atonal composition in Chinese*, in *For Roman Jakobson*, The Hague, 1956, pp. 52-59.
- *Joseph E. Grimes, *Huichol tone and intonation*, *IJAL* 25.221-32 (1959).
- Wm. E. Welmers, *Tonemics, morphotonemics, and tonal morphemes*, *General Linguistics* 4.1-9 (1959). [With an emphasis upon the non-uniqueness of tone problems.]

What are the limits to the kind of items which can be fruitfully treated as suprasegmental? Why? What of nasalization, labialization, glottal stop, long components?

- *George L. Trager, *The theory of accentual systems. Language, Culture, and Personality (Essays in Memory of Edward Sapir)*; Menasha, Wis., 1941, pp. 131-45.
- Charles F. Hockett, *A system of descriptive phonology*, *Lg.* 18.3-21 (1942).
- Kenneth L. Pike, *Phonemics*; Ann Arbor, 1947, esp. pp. 63a, 65, 147b.
- *Einar Haugen, *Phoneme or prosodeme?* *Lg.* 25.278-82 (1949).
- Zellig S. Harris, *Methods in structural linguistics*; Chicago, 1951.
- Kenneth L. Pike, *Language III*, 1960, esp. chap. 13. [For an attempt to set up a hierarchy of various types of systems integrated with a suprasegmental and subsegmental hierarchy; bibliography on suprasegmentals, pp. 53-55.]

What are the problems in the analysis of English intonation?

- *Kenneth L. Pike, *The intonation of American English*; Ann Arbor, 1945. [With theory of intonation contours composed of sequences of four contrastive pitch levels on key syllables, relevant stress placement, and contrastive meaning. For earlier pedagogical application of this material, see Charles C. Fries and staff, *An intensive course in English for Latin-American students*; Ann Arbor, 1943.]

- *Rulon S. Wells, The pitch phonemes of English, *Lg.* 21.27-39 (1945).
[With intonation contours treated as morphemes, and based on four levels of pitch.]
- *George L. Trager and Henry Lee Smith, Jr., An outline of English structure; SIL Occasional Papers No. 3, Norman, Okla., 1951.
[With an attempt to abstract pitch contours from stress phenomena.]
- Charles F. Hockett, A manual of phonology; Indiana University Publications in Anthropology and Linguistics, Memoir 11 of IJAL, 1955.
- Dwight L. Bolinger, A theory of pitch accent in English, *Word* 14.109-49 (1958). [With discussion of relation of stress to pitch.]
- Archibald A. Hill, Introduction to linguistic structures; New York, 1958.
- Martin Kloster Jensen, Recognition of word tones in whispered speech, *Word* 14.187-96 (1958).
- Roger Kingdon, The groundwork of English intonation; London, New York, Toronto, 1958.
- Alan E. Sharp, Falling-rising intonation patterns in English, *Phonetica* 2.127-52 (1958).

What is the relation of voice quality to phonemic structure?

- Kenneth L. Pike, The intonation of American English; Ann Arbor, 1945. [Bibliography, pp. 5, 12-13, 181-84; an etic system of voice quality, pp. 99-104.]
- *Henry Lee Smith, Jr. An outline of metalinguistic analysis, Report of the Third Annual Round Table Meeting on Linguistics and Language Teaching; Washington D. C., 1952, pp. 59-66. [With voice qualifiers as units.]
- *George L. Trager, Paralanguage: A first approximation, SIL 13.1-12 (1958).
- *Kenneth L. Pike, Language III, 1960. [With voice quality as a sub-segmental system, pp. 45-47; bibliography of further material on voice qualifiers, etc., pp. 52-53.]

13. Junctures, Stress, and the Phonological Hierarchy

What type of linguistic model requires that phonetic phenomena at linguistic borders be treated as phonemes? What kind of linguistic model would avoid this judgment, and at what price? What kind of multi-hierarchical model can show the relationships between junctures at various levels of the phonological hierarchy and their integration with units of other linguistic hierarchies? How is the analysis of stress related to these problems?

Daniel Jones, The 'Word' as a phonetic entity, *Le maître phonétique*, 3rd series, 36.60-65 (1931). [For an early phonetic approach to juncture.]

- *George L. Trager and Bernard Bloch, The syllabic phonemes of English, *Lg.* 17.223-46 (1941). [For the first American attempt to treat juncture on a phonemic level.]

Bernard Bloch and George L. Trager, *Outline of linguistic analysis*; Baltimore: Linguistic Society of America, 1942.

Kenneth L. Pike, *The intonation of American English*; Ann Arbor, 1945, esp. pp. 30-41. [For intonation break, phonemic pause, and the like.]

William G. Moulton, *Juncture in modern standard German*, *Lg.* 23.212-26 (1947).

Kenneth L. Pike, Grammatical prerequisites to phonemic analysis, *Word* 3.155-72 (1947). [Emphasis on the fact that phonemic analysis starts from some kind of pronounced wholistic unit--utterance or discourse--which combines junctures at phonological, grammatical, and lexical boundaries in some relevant fashion. See, also, above, sec. 8.]

- *George L. Trager and Henry Lee Smith, Jr., *An outline of English structure*; SIL Occasional Papers No. 3, Norman, Okla., 1951. [The most widely used juncture treatment.]

W. F. Twaddell, Stetson's model and the 'supra-segmental phonemes', *Lg.* 29.415-53 (1953). [Relation of sub-laryngeal phenomena to juncture.]

- *Kenneth L. Pike, *Language II*, 1955. [For alternate analyses with juncture phenomena being phonemes at various levels of the phonological hierarchy, or as being componential features of high-level phonological units; see esp. secs. 9.6, 9.74.]

Noam Chomsky, Morris Halle, Fred Lukoff, On accent and juncture in English, in *For Roman Jakobson*; The Hague, 1956, pp. 65-80.

Robert P. Stockwell, J. Donald Bowen, I. Silva-Fuenzalida, Spanish juncture and intonation, *Lg.* 32.641-65 (1956).

- *Kenneth L. Pike, Abdominal pulse types in some Peruvian languages, *Lg.* 33.30-35 (1957). [Contrastive stress contours in which contrastive characteristics may occur elsewhere within the stress group than at the peak or at the border.]

- *R. K. Sprigg, *Juncture in spoken Burmese*, *Studies in Linguistic Analysis*; Oxford, 1957, pp. 104-38. [Approach to juncture through prosodies.]

Archibald A. Hill, *Introduction to linguistic structures*; New York, 1958.

John C. Crawford, *The tagmemic model applied to Totontepec Mixe phonology*; University of Michigan Dissertation, 1959 (unpublished).

*Ilse Lehiste and G. E. Peterson, Vowel amplitude and phonemic stress in American English, *Journal of the Acoustical Society of America* 31.428-35 (1959).

Howard MacLay and Charles E. Osgood, Hesitation phenomena in spontaneous English speech, *Word* 15.19-44 (1959).

Ilse Lehiste, *An acoustic-phonetic study of internal open juncture*, to appear in *Supplement to Phonetica*, 1960.

14. The Syllable

What kind of linguistic theory must be adopted before the syllable becomes a relevant unit? How is it possible to have alternate models, one of which includes the syllable, and the other which seems to leave no room for it? Granted that the syllables are linguistic units of a phonological hierarchy, what are the criteria therefor?

*J. R. Firth and B. B. Rogers, The structure of the Chinese monosyllable in a Hunanese dialect (Changsha), *Bulletin of the School of Oriental Studies* 8.1055-74 (1937).

*Louis Hjelmslev, The syllable as a structural unit, *Proceedings of the Third International Congress of Phonetic Sciences*, 1939, pp. 266-72, esp. p. 267.

Hans Vogt, The structure of the Norwegian monosyllables, *Norsk Tidsskrift for Sprogvidenskap*, 12.5-29 (1940).

William F. Edgerton, Stress, vowel quantity, and syllable division in Egyptian, *Journal of Near Eastern Studies*, 6.1-17 (1947).

Stanley Newman, Bella Coola I: Phonology, *IJAL* 13.129-34 (1947).

Kenneth L. Pike, *Phonemics*; Ann Arbor, 1947 (pp. 65, 90, 144-49). [With phonemic syllables proposed, pp. 64-65, 90.]

---, and Eunice V. Pike, Immediate constituents of Mazateco syllables, *IJAL* 13.78-91 (1947). [See also above, sec. 6.]

N. C. Scott, The monosyllable in Szechuanese, *Bulletin of the School of Oriental and African Studies* 12.197-213 (1947).

Eugénie J. A. Henderson, Notes on the syllable structure of Lushai, *Bulletin of the School of Oriental and African Studies* 12.713-25 (1948).

- Einar Haugen, Phoneme or prosodeme? *Lg.* 25.278-82 (1949).
- *R. H. Stetson, *Motor phonetics*; Second edition, Amsterdam, 1951. [With emphasis upon the necessity of the syllable as a basic construct, treated from a phonetic point of view.]
- J. Carnochan, Glottalization in Hausa, *Transactions of the Philological Society* pp. 78-109 (1952, reprint 1953).
- Elh Fisher-Jørgensen, On the definition of phoneme categories on a distributional basis, *Acta Linguistica* 7.8-39 (1952).
- Charles F. Hockett, Short and long syllable nuclei, *IJAL* 19.165-71 (1953).
- T. F. Mitchell, Particle-noun complexes in a Berber dialect (Zuara), *BSOAS* 15.375-90 (1953).
- J. D. O'Connor and J. L. M. Trim, Vowel, consonant, and syllable--a phonological definition, *Word* 9.103-22 (1953).
- *W. F. Twaddell, Stetson's model and the 'supra-segmental phonemes', *Lg.* 29.415-53 (1953).
- Charles F. Hockett, *A manual of phonology*; Indiana University Publications in Anthropology and Linguistics, Memoir 11 of *IJAL*, 1955. [A phonological hierarchy with a special reference to phoneme and syllable and some reference to a larger segment, esp. pp. 51-58.]
- *Kenneth L. Pike, *Language II*, 1955, esp. pp. 41-56. [In which the syllable is treated as an emic unit in the phonological hierarchy; bibliography, pp. 66-68.]
- Daniel Jones, *An outline of English phonetics*; Eighth edition, Cambridge, 1956.
- *Einar Haugen, The syllable in linguistic description, in *For Roman Jakobson*; The Hague, 1956, pp. 213-21.
- Ilse Lehist, Segmental and syllabic quantity in Estonian, *American Studies in Uralic Linguistics*, 1.21-82 (1960). [Syllable studies in reference to acoustic phenomena.]

15. Neutralization

When two phones contrast in one environment, but only one of the phones occurs in a second environment, what does phonemic theory do with this latter phone? If in certain environments two phones occur in contrast, but in another environment, neither of those phones occur, although a third phone occurs which, in the hearer's judgment, is phonetically half way between the other two phones, what is the phonemic interpretation of that

third phone? How must basic phonemic postulates be modified to treat such units as normal members of the structure--but not a member of another phoneme? When, in morphology, one phoneme is replaced by another, how is it to be described (and cf. sec. 18)?

*André Martinet, *Neutralisation et archiphonème*, TCLP 6.46-57 (1936). [And other articles in TCLP.]

B. Trnka, On the combinatory variants and neutralization of phonemes, *Proceedings of the Third International Congress of Phonetic Sciences*; Ghent, 1939, pp. 23-29, esp. 29.

*Bernard Bloch, *Phonemic overlapping*, Am. Sp. 16.278-84 (1941).

Kenneth L. Pike, *Phonemics*; Ann Arbor, 1947, esp. pp. 141-42.

Marshall D. Berger, *Neutralization in American English vowels*, Word 5.255-57 (1949).

Roman Jakobson, On the identification of phonemic entities, TCLC 5.205-13 (1949).

Daniel Jones, *The phoneme*; Cambridge, 1950, esp. pp. 92, 94, 97, 98, 100.

*Kenneth L. Pike, *Language II*, 1955. [Modification of phonemic theory to allow for fused contrastive ranges, see sec. 8.34. For further bibliographical references on neutralization, see also sec. 8.85.]

*C. E. Bazell, Three conceptions of phonological neutralisation, in *For Roman Jakobson*; The Hague, 1956, pp. 25-30.

16. Dialects

How do empirical studies of dialect geography affect linguistic theory in terms of sharpcut or fuzzy language boundaries? And how does the empirical study of dialects affect linguistic models in terms of description of over-all patterns or other features (see also sec. 10)? How is dialect analysis related to the study of bilingualism (see also sec. 7)? Must linguistic theory leave room in its models for some kind of hypersystem involving two or more dialects in the speech of a bilingual?

*N. S. Trubetzkoy, *Phonologie et géographie linguistique*, Appendix III to *Principes de Phonologie*; Paris, 1949, pp. 343-50. Translated from TCLP 4.228-34 (1931).

*Leonard Bloomfield, *Language*; New York, 1933, esp. chap. 19.

*H. Kurath, B. Bloch, and M. L. Hansen, *Handbook of the linguistic geography of New England*; Providence, 1939.

Albert H. Marckwardt, *Folk speech in Indiana and adjacent states*, *Indiana History Bulletin* 17.120-40 (1940).

- *Hans Kurath, A word geography of the Eastern United States; Ann Arbor, 1949.
- *Bernard Bloch, Studies in colloquial Japanese IV: Phonemics, *Lg.* 26.86-125 (1950), esp. p. 88.
- *George L. Trager and Henry Lee Smith, Jr., An outline of English structure; SIL Occasional Papers No. 3, Norman, Okla., 1951. [For over-all pattern.]
- E. Bagby Atwood, The verb forms of the Eastern U. S.; Ann Arbor, 1952.
- *Uriel Weinreich, Is a structural dialectology possible? *Word* 10.388-400 (1954).
- *Edward Stankiewicz, On discreteness and continuity in structural dialectology, *Word* 13.44-59 (1957).
- Harold B. Allen, Editor, Applied English Linguistics; New York, 1958. [Especially Linguistic Geography, Part III, pp. 137-91.]
- Witold Doroszewski, Le structuralisme linguistique et les études de géographie dialectale, Proceedings of the Eighth International Congress of Linguists, Oslo, 1958, pp. 540-64; discussion, pp. 564-72.
- Raven I. McDavid Jr., American English dialects, final chapter in The Structure of American English; New York, 1958, by W. Nelson Francis.
- Kenneth L. Pike, Toward a theory of change and bilingualism, (to appear in SIL).

17. Acoustic Phonetics

How has the study of acoustic phonetics forced modification in linguistic models? What, in addition, are its specific contributions to solving empirical problems of language analysis?

- R. K. Potter, G. A. Kopp, and H. C. Green, Visible speech; New York, 1947.
- Martin Joos, Acoustic phonetics; Language Monograph No. 23, Baltimore, 1948. [For an easy summary.]
- P. Delattre, The physiological interpretation of sound spectrograms, *PMLA* 66.864-75 (1951).
- Roman Jakobson, C. Gunnar M. Fant, and Morris Halle, Preliminaries to speech analysis; Cambridge, 1952. [For a theoretical model with distinctive features based on acoustic criteria.]

- G. E. Peterson and H. L. Barney, Control methods used in a study of the vowels, *Journal of the Acoustical Society of America* 24.175-84 (1952). [For the use of the spectrograph in analyzing vowels.]
- D. B. Fry, Duration and intensity as physical correlates to stress, *Journal of the Acoustical Society of America* 27.765-68 (1955).
- P. Delattre, A. M. Liberman, and F. S. Cooper, Acoustic loci and transitional cues for consonants, *Journal of the Acoustical Society of America* 27.769-73 (1955).
- , ----, and ----, Speech synthesis as a research technique, *Proceedings of the Sixth International Congress of Linguists*; London, 1956.
- R. Jakobson, and M. Halle, *Fundamentals of language*; 's-Gravenhage, 1956.
- Peter Ladefoged and D. E. Broadbent, Information conveyed by vowels, *Journal of the Acoustical Society of America* 29.98-104 (1957).
- C. Gunnar M. Fant, Modern instruments and methods for acoustic studies of speech, *Proceedings of the Eighth International Congress of Linguists*, 1958, pp. 282-358. [For excellent bibliography see pp. 353-58.]
- Eli Fischer-Jørgensen, What can the new techniques of acoustic phonetics contribute to linguistics? *Proceedings of the Eighth International Congress of Linguists*, 1958, pp. 433-78.
- Morris Halle, *The sound pattern of Russian*; 's-Gravenhage, 1959.
- Ilse Lehiste and G. E. Peterson, Vowel amplitude and phonemic stress in American English, *Journal of the Acoustical Society of America* 31.428-35 (1959).
- Kenneth L. Pike, Ralph P. Barrett, and Burt Bascom, Instrumental collaboration on a Tepehuan (Uto-Aztecan) pitch problem, *Phonetica* 3.1-22 (1959). Also, Burt Bascom, Tonomechanics of Northern Tepehuan, *Phonetica* 4.71-88 (1959). [Field testing of the hypothesis raised by the acoustic material.]
- Ernst Pulgram, *Introduction to the spectrography of speech*; 's-Gravenhage, 1959.
- Gordon E. Peterson and Ilse Lehiste, Duration of the syllable nuclei in English, *Journal of the Acoustical Society of America* 32.693-703 (1960).

III. GRAMMAR

18. Morphemic Analysis

How much structural analysis can be done by treating morphemes in their distribution without specific reference to higher layers of structure? or to meaning (cf. also secs. 3, 5)? What is the relation between-- and relative validity of--process versus allomorphic terminology? What is the theoretical relationship between morphemic analysis and phonemic analysis (cf. also sec. 8)?

Leonard Bloomfield, *Language*; New York, 1933.

*Zellig S. Harris, Morpheme alternants in linguistic analysis, *Lg.* 18.169-80 (1942). [Parallelism of morphemic to phonemic alternants.]

----, Yokuts structure and Newman's grammar, *IJAL* 10.196-211 (1944). [Early statement of difference between process and distributional description.]

George L. Trager, The verb morphology of spoken French, *Lg.* 20.131-41 (1944).

Robert A. Hall, Jr., Colloquial French substantive inflection, *French Review* 19.24-36 (1945).

*Zellig S. Harris, Discontinuous morphemes, *Lg.* 21.121-27 (1945).

*Bernard Bloch, English verb inflection, *Lg.* 23.399-418 (1947). [Note analysis of am, have, etc.]

*Charles F. Hockett, Problems of morphemic analysis, *Lg.* 23.321-43 (1947).

*Dwight L. Bolinger, On defining the morpheme, *Word* 4.18-23 (1948).

Eugene A. Nida, The analysis of grammatical constituents, *Lg.* 24.168-77 (1948).

*----, The identification of morphemes, *Lg.* 24.414-41 (1948).

----, *Morphology*; Ann Arbor, 1949. [Compare first and second editions 1946, 1949, for difference between process and distribution statements.]

C. E. Bazell, On the problem of the morpheme, *Archivum Linguisticum* 1.1-15 (1949).

*Rulon S. Wells, Automatic alternation, *Lg.* 25.99-116 (1949).

Dwight L. Bolinger, Rime, assonance, and morpheme analysis, *Word* 6.117-36 (1950).

- *Zellig S. Harris, *Methods in structural linguistics*; Chicago, 1951.
[The standard text of the distributional approach to descriptive linguistics.]
- *George L. Trager and Henry Lee Smith, Jr., *An Outline of English structure*; SIL Occasional Papers, No. 3, Norman, Okla., 1951.
[Note the handling of superfixes pp. 56-57; allomorphs, pp. 59, 72.]
- Carl L. Ebeling, *On the semantic structure of the Russian sentence*, *Lingua* 4.207-22 (1954).
- *Charles F. Hockett, *Two models of grammatical description*, *Word* 10.210-33 (1954). [Note the relation suggested between process and allomorphic analysis.]
- Sol Saporta, *Morph, morpheme, archimorpheme*, *Word* 12.9-14 (1956).
- Robert E. Longacre, *Trique tone morphemics*, *Anthropological Linguistics* 1.4.5-42 (1959). [For an attempt to avoid the use of zero in an intricate system of fusions.]
- *Kenneth L. Pike, *Language I*, 1954. [Bibliographical discussion of morpheme definition, pp. 96-100.] III, 1960. [Discussion of fusion and morphemic segmentation of a sequence, chap. 14; bibliographical discussion of process versus arrangement, pp. 62-63; bibliographical discussion of zero, pp. 64-65; zero in relation to fused tagmemes, pp. 58b, 64a, 65a, 74a; portmanteau morphemes or tagmemes, pp. 29b, 58b, 60b, 64a, 65a, 71, 74a, and bibliography p.64a.]

19. Syntax and Linguistic Units Larger than the Sentence

Can a fruitful methodology for analyzing syntax be developed? How are these analytical procedures theoretically related to evaluation procedures? What is the theoretical status of the clause? or of a subject? What kinds of units can be found which are formally identifiable but which are larger than the sentence? and how must linguistic theory and analysis be modified to accommodate such units? (For immediate constituents, see sec. 6; for relation of grammar to phonology, sec. 8; for literature, sec. 29.)

- *Eugene A. Nida, *A synopsis of English syntax*; [1943] Norman, Okla., 1960. [Immediate constituent analysis of English sentences.]
- *Charles C. Fries, *The structure of English*; New York, 1952. [Analysis via distributional classes in frames.]
- *Zellig S. Harris, *Discourse analysis*, *Lg.* 28.1-30 (1952); *Discourse analysis: a sample text*, *Lg.* 28.474-94 (1952). [For lexical structure of a text, and initial development of transform grammar.]

- R. H. Robins, Noun and verb in universal grammar, *Lg.* 28.289-98 (1952).
- T. F. Mitchell, Participle-noun complexes in a Berber dialect (Zuara), *Bulletin of the School of Oriental and African Studies*, 15.375-90 (1953).
- Zellig S. Harris, Transfer grammar, *IJAL* 20.259-70 (1954).
- Richard S. Pittman, A grammar of Tetelcingo (Morelos) Nahuatl; Language Dissertation No. 50. Baltimore, 1954. [With attempt at specifying a grammar as comprising a limited number of relationships.]
- *Noam Chomsky, Syntactic structures; 's-Gravenhage, 1957. [Analysis in terms of a model of transform grammar; the possibility of development of evaluation procedures discussed as a desideratum.]
- *Zellig S. Harris, Co-occurrence and transformation in linguistic structure, *Lg.* 33.283-340, (1957).
- M. A. K. Halliday, Some aspects of systematic description and comparison in grammatical analysis, *Studies in Linguistic Analysis*; Oxford, 1957, pp. 54-67.
- Robert B. Lees, Review of Noam Chomsky, Syntactic Structures; 's-Gravenhage, 1957, in *Lg.* 33.375-408 (1957).
- Charles F. Hockett, A course in modern linguistics; New York, 1958.
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20. Charting, Symbolization, and Presentation of Grammatical Structures

How can structure be diagrammed, symbolized, and presented? What kinds of grammar outlines result from adoption of particular models of description, or particular theoretical bases (see, also, items in secs. 18, 19)? What is the relationship between a diagrammatic presentation and presentation in statement form? What is the relative value of presentation by chart, by statement, and by combination of both? What is the relationship between such presentation and the preparation of materials for pedagogical use (see sec. 24)?

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IV. LEXICON, MEANING, AND CULTURE

21. Structural Analysis of Meaning

How can the meaning of a morpheme, or of an idiom, or other item be determined? Can meaning be analyzed structurally? What is the theoretical status of the meaning of a word, an idiom--or of a sonnet, or novel (see also sec. 29)?

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22. Ethnolinguistics

What is the relation of language to nonlanguage behavior (and see secs. 1, 23)? Does language determine thought? Are there structural analogies between language and games? language and ritual behavior? language and societal structure?

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Upon what theoretical principles can modern language textbooks be based?

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How can structural approaches be applied to historical matters (see also sec. 27)?

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VIII. LINGUISTICS AND THE ANALYSIS OF LITERATURE

29. The Relation of Linguistics to the Analysis of Literature

How do the techniques of linguistic analysis relate to the techniques of literary criticism? How do semantic components relate to the lexical structure of literary production? How are metaphor and image handled across the two disciplines?

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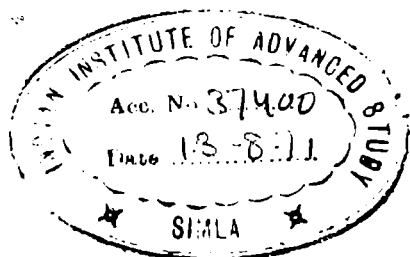
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