# LINGUISTIC SOCIETY OF AMERICA

Fortieth Annual Meeting

December 28-30, 1965

Chicago, Illinois

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# MEETING HANDBOOK


**INDIAN INSTITUTE OF ADVANCED STUDY**
**SIMLA**

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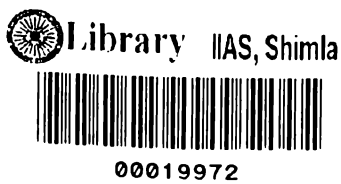


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# INTRODUCTORY NOTE

This handbook has been prepared by the Center for Applied Linguistics to serve as a guide to those attending the Fortieth Annual Meeting of the Linguistic Society of America, as well as to provide a permanent record of the papers presented at that meeting. It has been compiled and published with the approval of the Executive Committee of the Linguistic Society of America.

The Handbook consists of three parts: (1) the official program of the meeting; (2) the abstracts, as submitted, of the papers scheduled for delivery; (3) an author index. The abstracts are arranged in the order of the program, and in some cases are accompanied by handouts.

The idea for such a handbook was first suggested by the Center for Applied Linguistics following the winter 1964 meeting of the Linguistic Society of America in New York, and preliminary negotiations with LSA were carried out by Professor Martin Joos, at that time Visiting Director of the Center.

The Center is grateful to Professor A.A. Hill for his cooperation in providing the official program of the meeting, and copies of the abstracts and handouts.

# PROGRAM OF THE SESSIONS

Meeting of the Executive Committee on Monday, December 27, at 7:00 p.m., in Conference Rooms C and D.
All sessions except the Banquet will be held in the Ballroom. The Banquet will be held in the Oceanic Room.

## TUESDAY, DECEMBER 28

9:00 A.M. FIRST SESSION, Reading of Papers

1. Robert F. Brown (English Language Institute, Central Y.M.C.A. Community College, Chicago): Tones and Stress in Mayan. [10 min.]
2. Eric P. Hamp (University of Chicago): Chief Leemē and the Yosemite Dialect. [15 min.]
3. Yamuna Kachru (University of Illinois and School of Oriental and African Studies, University of London): Some Rules for Passive and Causative Sentences in Hindi. [20 min.]
4. Elmer H. Antonsen (University of Iowa): Suprasegmentals in Modern German. [20 min.]
5. Pierre Delattre (University of California, Santa Barbara): Investigating the Acoustic Cues of Distinctive Features. [20 min.]
6. Charles A. Ferguson (Center for Applied Linguistics): Toward a Typology of Imperative Systems. [20 min.]
7. E. Adelaide Hahn (Hunter College of the City University of New York): The Latin Gerund and Gerundive. [20 min.]

1:30 P.M. SECOND SESSION, Reading of Papers

8. Sydney M. Lamb (Yale University): On Expression and Content. [20 min.]
9. Adam Makkai (Yale University): The Two Idiomaticity-Areas in English and their Membership: A Stratified View. [20 min.]
10. Isidore Dyen (Yale University): Can Glottochronology be Saved? [20 min.]
11. Sheldon Klein (Carnegie Institute of Technology and System Development Corporation): Computer Simulation of Twenty-five Years in a Hypothetical Speech Community. [20 min.]
12. Paul L. Garvin (The Bunker-Ramo Corporation): Computer Simulation of Informant Work in Linguistics. [20 min.]
13. Sanford A. Schane (University of California, San Diego): The Morphological Structure of the French Verb. [20 min.]
14. Anna Granville Hatcher (Johns Hopkins University): The Origin of French de Introducing the Infinitive as "Logical Subject." [20 min.]

7:30 P.M. ANNUAL INFORMAL BANQUET FOR MEMBERS AND THEIR GUESTS

After the banquet the following address will be given:

PRESIDENTIAL ADDRESS by Yakov Malkiel (University of California, Berkeley): Linguistics as a Genetic Science.

## WEDNESDAY, DECEMBER 29

9:00 A.M. THIRD SESSION, Business Meeting

A. Minutes of the last meeting.
B. Report of the Secretary and action thereon.
C. Report of the Treasurer and action thereon.
D. Report of the Executive Committee and action thereon.

E. Report of the Committee on Publications and action thereon.

F. Reports of the Standing Committees, Special Committees, and Delegates and action thereon.

G. Report of the Nominating Committee and action thereon.

H. Appointment of the Committee on Resolutions.

I. Other business, proposed by any member of the Society.

10:30 A.M. FOURTH SESSION, Reading of Papers

15. Mario Saltarelli (Cornell University) and Marshall Durbin (Tulane University): A Semantic Interpretation of Kinship Systems. [20 min.]

16. Franklin C. Southworth (University of Pennsylvania): Meaning Discrimination in Lexicographical Research. [20 min.]

17. Marlys Wendell (Harvard University) and Volney Stefflre (University of California, Los Angeles and The RAND Corporation): Semantic Structures in Some Mexican Languages. [20 min.]

18. Jack Thornburg (Florida State University): The Gothic Vowel System. [15 min.]

1:30 P.M. FIFTH SESSION, Reading of Papers

19. Charles J. Fillmore (The Ohio State University): Deictic Categories in the Semantics of "Come." [15 min.]

20. Samuel Jay Keyser (Brandeis University) and Morris Halle (Massachusetts Institute of Technology): The Evolution of Stress from Old English to Middle English. [20 min.]

21. Chin-W. Kim (University of California, Los Angeles): Rules of Vowel Duration in American English. [20 min.]

22. William Labov (Columbia University): Co-Variation in Phonological Space. [20 min.]

23. Robert L. Oswalt (University of California, Berkeley): The Detection of Remote Linguistic Relationships. [20 min.]

24. Erica Reiner (University of Chicago): An Ancient Babylonian Transformation. [10 min.]

25. Paolo Valesio (Harvard University): Some Possible Traces of Common Romance Synthetic Future Forms in Late Latin Texts. [20 min.]

26. Alva Wheeler (University of California, Berkeley): Grammatical Structure in Siona Discourse. [20 min.]

7:00 P.M. SIXTH SESSION, Reading of Papers

27. Beatrice L. Hall (Hunter College of the City University of New York) and R.M.R. Hall (American Language Institute, New York University): The Child's Learning of Noun Modification. [20 min.]

28. George P. Lakoff (Harvard University): Stative Adjectives and Verbs in English. [20 min.]

29. Peter S. Rosenbaum (Thomas J. Watson Research Center, IBM Corporation): A Principle Governing Deletion in English Sentential Complementation. [20 min.]

30. Louis G. Heller (City College of the City University of New York) and James Macris (Hunter College of the City University of New York): Towards a General Linguistic and Nonlinguistic Sociocultural Typology and Its Dynamics. [20 min.]

THURSDAY, DECEMBER 30

9:00 A.M. SEVENTH SESSION, Reading of Papers

31. Dale Elliott (Center for Research on Language, University of Michigan) and Sandra S. Annear (Ohio State University): Derivational Morphology in a Generative Grammar. [20 min.]

32. Erica C. Garcia (Columbia University): Auxiliaries in Generative Grammar. [20 min.]

33. William J. Gedney (University of Michigan): Saek, A Displaced Northern Tai Language. [20 min.]

34. Curtis W. Hayes (University of Nebraska): Literary Analysis and Linguistics: A Study in the Prose Styles of Edward Gibbon and Samuel Johnson. [20 min.]

35. John Robert Ross (Massachusetts Institute of Technology): A Proposed Rule of Tree-Pruning. [20 min.]

36. Robert J. Scholes (San Jose Research Laboratory, IBM) and Edith Crowell Trager (San Jose State College): Phoneme Categorization of Synthetic Vowel Stimuli by Speakers of Spanish, Japanese, Persian, and American English. [20 min.]

37. Joseph K. Yamagiwa (University of Michigan): On Dialect Intelligibility in Japan. [20 min.]

## PAPERS READ BY TITLE ONLY

Paul Forchheimer (Adelphi Suffolk College, Adelphi University): Pairs of Strong, Intransitive and Weak, Transitive Verbs in Modern German.

# TONES AND STRESS IN MAYAN

Robert F. Brown, English Language Institute, Central YMCA Community College

Predictable stress occurs in all Mayan languages, but the presence of distinctive high and low tones has been detected in only three: Yucatec, Tzotzil (dialect of San Bartolomé), and Tzeltal (dialect of Aguacatenango). The interrelated features of tone, stress, and vowel length (for Yucatec) will be considered, and it will be shown that syllables in which the vowel has high tone are generated from underlying forms of the shape CVhC and CV?C. Supporting evidence is found in other Mayan languages, and in loan-words from Spanish and Nahuatl.

# CHIEF LEEMĒ AND THE YOSEMITE DIALECT

Eric P. Hamp, University of Chicago

The question has arisen whether the forms of Southern Sierra Miwok furnished by Chief Leeme contain [s̤] instead of [h] among the other few remaining SSM speakers represent a trace of a distinct Yosemite dialect or a personal idiosyncracy (including drunkenness̤). By comparison with the Central Sierra language it is shown that (a) such forms fall into 4 categories, and (b) Chief Leeme was imitating his notion of Central Sierra speech to heighten the impression that his local dialect was clearly characterized.

This then raises the interesting question of where in the ordered rules of Chief Leeme's grammar the rules accounting for this behavior are to be assigned. A solution is proposed.

While we know nothing about the Yosemite dialect, as it turns out, Chief Leeme's phoniness is interesting.

HANDOUT

Chief Leemē and the Yosemite Dialect

| | Chief Leeme | Central Sierra[1] | Southern Sierra | gloss |
|---|---|---|---|---|
| 1. | hu˙ʂu? | FB hu˙šuwija- | huhu- | buzzard |
| | ke˙ʂy? | | ke˙hu- | worm |
| | maʂ˙i? | FB maš˙i- | mah˙i- | we |
| | poʂkal | FB poškaly- | pohkal- | lung(s) |
| | poʂko? | FB posko- | pohko | ball |
| | tyŋ˙iʂy? | FB ʈyŋ˙išy- 'sole' | tyŋ˙ih- | heel[2] |
| | wat˙akʂa? | BG 159 wa´taksa[3] | watakha- | mountain lupin |
| | wyʂki? | FB wyški- | wyhki- | heart |
| | ?aʂe˙li? | FB ?aše˙li- | ?ahe˙liH- | coyote |
| | ?oʂ˙a? | FB ?oš˙a- | ?oh˙a- | woman, wife |
| | ʂala? | FB šala˙- | halaH- | feather |
| | ʂil˙o? | [4] | hil˙o- | handgame |
| | ʂokoʂ˙a? | FB šokoš˙a- | hokoh˙a- | cocoon rattle |
| | ʂoʂo˙loju? | BG 174 sosolo´yū | hoho˙loj- | nettle |
| | -ʂ˙y- | FB -š˙y- | -h˙y- | past tense |
| | ʂut˙e? | [5] | hute- | dance skirt |
| | ʂu˙leʂy? | FB šu˙lešku- 'ghost' | hu˙leh- | corpse, ghost |
| | ʂuʂ˙umi? | FB šuk˙umi- | huh˙umi-[6] | owl |
| | ʂyʂ˙y? | FB šyš˙y- | hyh˙y- | wood |
| 2. | to˙koʂu? | FB ʈo˙košu- | ʈolkoh-[7] | ear |
| | tyŋyʂ˙a? | [8] | tyŋha- | acorn top |
| 3. | haka˙ʂa? | BG 142, 179 saka´sa 'live oak' | haka˙ha- | golden cup oak |
| 4. | lo˙ʂo? | FB lo˙ho- | lo˙ho- | lazy |
| | pe˙ʂuna? | FB peh˙una- 'breechclout' | pe˙hunaH | buckskin |

Notes to the above forms

[1] FB = L. S. Freeland and Sylvia M. Broadbent, Central Sierra Miwok Dictionary with Texts, UCPL 23, 1960;
BG = S. A. Barrett and E. W. Gifford, Miwok Material Culture, Bulletin of the Public Museum of the City of Milwaukee 2. 117-376, 1933.

[2] Chief Leeme, here, seems to be using an underlying Southern form and meaning.

[3] Registered by BG as both Central and Southern, but presumably in error on the latter, as shown by Broadbent's glossary.

[4] BG 266 shows hī'llo as Central, but since the Southern equivalent is given as huhu this is here discounted, and the set is counted as a potential regularity.

[5] BG 228 gives as the Central term metikila; BG 221 registers hū'te as the Northern term for the ordinary buckskin skirt. The shape of the Central version of this etymon seems, then, uncertain.

[6] The underlying form here seems to be Southern, but the original form of the etymon needs to be clarified with further evidence. The Central form appears to be a cross with the cognate of Southern huki·m- 'to hoot (of an owl)'; I do not know of a way to connect huh·umi- with a cognate of Central šuš·u- 'bee'.

[7] On syllable-final *l cf. Southern haltal-, Central šawtaly- 'testicles'.

[8] I do not find a match for this in Central, but the attested form of Chief Leeme's diverges sharply from the Southern.

# SOME RULES FOR PASSIVE AND CAUSATIVE SENTENCES IN HINDI

Yamuna Kachru, University of Illinois and School of Oriental and African Studies, University of London

In this paper, a simple set of Constituent Structure and Transformational rules have been presented which derive the passive and causative sentences in Hindi.

The proposed rules capture certain important generalizations between passive and impersonal voices which have been ignored in the available descriptions of Hindi.

It has been argued here that the discussion of causatives does not belong to verb morphology, as found in the present grammars of Hindi, since that fails to reveal a) the interesting aspects of the structure of causative sentences, b) the tie-up between the causative and passive sentences, and c) the relevance of the discussion of passive and causative to other areas of Hindi verbal syntax.

# SUPRASEGMENTALS IN MODERN GERMAN

Elmer H. Antonsen, University of Iowa

A more economical phonemic transcription, marking only the opposition accented-unaccented, has been proposed for English by Chomsky, Halle, and Lukoff (1956). The proponents believe similar rules for determining stress variation also describe the data for German. The purpose of the present paper is to demonstrate that a more economical transcription can indeed be devised for German by recognizing the 'hierarchical organization of the utterance', but to do justice to this organization, it is essential that pitch phenomena be treated concurrently with stress, since pitch and stress are in fact concomitant features. The transcription I propose meets the fundamental requirement that phonemically distinct utterances receive different representations. It consists of segmental phonemes, open juncture /+/, terminal junctures /|, ↑, ↓/, a morphological accent /ˊ/, and a syntactic accent /°/. Since pitch is dependent on syntactic accents and terminals, as I demonstrate, it needs no representation. An important factor in the analysis of German suprasegmentals is the recognition of complex 'centers of utterance', or what I term '(syntactic) stress segments'. These segments are readily identifiable, and their extrapolation reveals an extremely simple basic structure for the suprasegmental morphemes in German. A perusal of the English translations of the German utterances analyzed demonstrates that the same technique of analysis applies equally well to English. The advantages presented by the proposed transcription include: (1) it is phonemically complete, since pitch and stress variations are predictable within the bounds of free variation, (2) it can be derived directly from the physical utterance on the basis of audible signals without recourse to

immediate constituent analysis, and (3) it permits a very high degree of uniformity of analysis, or concensus of opinion regarding the distinctive suprasegmental features, which confirms my belief that it accurately reflects structural features of the language.

HANDOUT

Suprasegmentals in Modern German

I. Segmental phonemes:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Consonants: | p | t | k | b | d | g | | |
| | f | s | š | x | v | z | ž | h |
| Resonants: | m | n | ŋ | | | | | |
| | | l | | | | | | |
| | | r | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Vowels: | reduced | lax | | | | tense | | |
| | | i | ü | u | i: | ü: | u: | |
| | ə | e | ö | o | e: | ö: | o: | |
| | | | a | | (ä:) | | a: | |

Suprasegmentals:

| | | |
|---|---|---|
| Junctures: | (morphological) | + |
| | (syntactic) | \| ↑ ↓ |
| Accents: | (morphological) | ˊ |
| | (syntactic) | ° |

II. (1) /kláid/ + /ər/ = /°kláidər↓/ 'dresses'

(2) sie 'she', besitzt 'owns', viele 'many', Kleider 'dresses'

{zíts} {fí:l} {kláid}

(3)(a) /zi:+bə+zítst+fí:lə+°kláidər↓/ = [$^{2}$zi bəzìtst fìlə $^{3}$klájdəʁ$^{1}$↓]

(b) /zi:+bə+zítst+°fí:lə+kláidər↓/ = [$^{2}$zi bəzìtst $^{3}$fí:lə klàjdəʁ$^{1}$↓]

(c) /zi:+bə+°zítst+fí:lə+kláidər↓/ = [$^{2}$zi bə$^{3}$zítst fìlə klàjdəʁ$^{1}$↓]

(d) /°zi:+bə+zítst+fí:lə+kláidər↓/ = [$^{3}$zí: bəzìtst fìlə klàjdəʁ$^{1}$↓]

(4) /zi:+bə+zítst+°fí:lə+°kláidər↓/ = [$^{2}$zi bəzìtst $^{3}$fí:lə $^{2}$klájdəʁ$^{1}$↓]

(5) /áin+°hórn↓/ = [$^{2}$àjn $^{3}$hóʁn$^{1}$↓] 'a horn'

/°áin+hórn↓/ = [$^{3}$ájn $^{1}$hɔ̀ʁn$^{1}$↓] 'unicorn'

/°áin+°hórn↓/ = [$^{3}$âjn $^{2}$hóʁn$^{1}$↓] 'one horn'

(6)(a) /ˈbré:mər+ˈhá:fən↓/ = [$^{3}$bʀê:məʁ $^{2}$há:fən$^{1}$↓] 'Bremen's harbor'

/bré:mər+ˈhá:fən↓/ = [$^{2}$bʀè:məʁ $^{3}$há:fən$^{1}$↓] 'Bremerhaven'

(b) /im+bré:mər+há:fən+ˈár+báitən+ˈmőxtə+ix+níxt↓/

'I wouldn't like to work in Bremen's harbor!'

(c) /im+bré:mər+ˈhá:fən+mőxtə+ix+níxt+ˈár+báitən↓/

'I wouldn't like to work in Bremen's harbor!'

III.(1) /ˈmé:rərə↓/ = [$^{3}$mé:ʀəʀə$^{l}$↓] 'several'

/ˈáin+ˈhórn↓/ = [$^{3}$âjn $^{2}$hóʀn$^{1}$↓] 'one horn'

/pri:ˈvá:t+kráŋkən+káse↓/ = [$^{2}$pʀi$^{3}$vá:t$^{1}$kʀàŋkənkʰàsə$^{1}$↓]

'private medical insurance group'

(2) /(di:+fá:nə+ist+)ˈšvárts+ˈró:t+ˈgólt↓/ = [$^{3}$ʃvâʀts $^{2}$ʀòt $^{1}$gól$^{1}$t↓]

'(The flag is) black, red, (and) gold.'

(3)(a) The last syntactic accent is always equal to stress degree 1.

(b) If the utterance contains more than one syntactic accent, the first equals stress degree 2.

(c) If there are three syntactic accents, the medial one equals stress degree 3.

(d) A single morphological accent equals degree 3, except when it immediately precedes a syntactic accent, in which case it equals degree 4, as do additional preceding morphological accents. (/áin+ˈhórn↓/ = [$^{2}$âjn $^{3}$hóʀn$^{1}$↓]) In rapid speech, morphological accents following a syntactic accent in compounds may have degree 4. (/pri:ˈvá:t+kráŋkən+káse↓/ = [$^{2}$pʀi$^{3}$vá:t$^{1}$kʀàŋkənkʰàsə$^{1}$↓].)

(e) Unaccented syllables represent stress degree 4, except those with /ə/, which have degree 5, as do others immediately preceding a syntactic accent.

(f) Example:

/de:r+˚tsvái+köpfige+˚á:dler | va:r+das+˚hó:+háits+tsáixən+de:r+
˚östər+ráixišən+mo:nar˚xí:↓/ =

[$^{2}$de$_{5}$ʁ $^{3}$tsvâ$_{2}$j $^{3}$ch$_{3}$œpf$_{4}$ɪg$_{5}$e $^{2}$ʔá:dl$_{1}$e$_{5}$ʁ$^{2}$ | $^{2}$va$_{4}$ʁ da$_{5}$s $^{3}$hô:$_{2}$hà$_{4}$jts$^{3}$ts$_{4}$àjç$_{5}$en de$_{5}$ʁ
$^{2}$ʔœ$_{3}$st$_{5}$ɐʁà$_{4}$jç$_{4}$ɪʃ$_{5}$en mona$_{4}$ʁ$_{5}^{1}$ç$_{1}$í:$^{1}$↓]

'The two-headed eagle was the emblem of the Austrian monarchy.'

IV.(a) (same as II,3,a)

{zi:} + {bə} + {zíts} + {3 sg.} + {fí:l} + {pl.st.acc.} + {˚kláid} + {pl.↓} ≠

(b) (same as II,4)

{zi:} + {bə} + {zíts} + {3 sg.} + {˚fí:l} + {pl.st.acc.} + {˚kláid} + {pl.↓} ≠

(c) (same as II,3,b)

{zi:} + {bə} + {zíts} + {3 sg.} + {˚fí:l} + {pl.st.acc.} + {kláid} + {pl.↓}

(d) (same as b, above, retranscribed)

{zi:} + {bə} + {zíts} + {3 sg.} + {˚} + {fí:l} + {pl.st.acc.} + {˚} + {kláid} + {pl.} + {↓}

V. (1) /es+zól+˚mórgən+˚frü:+˚ré:gnəʁ↓/

(a) [$^{2}$ɛs zɔ̀l $^{3}$mô$_{2}$ʁgən $^{2}$fʁ$_{4}$ỳ $^{1}$ʁé:gnən$^{1}$↓] (straightforward)

(b) [$^{2}$ɛs zɔ̀l $^{1}$mô$_{2}$ʁgən $^{2}$fʁ$_{4}$ỳ $^{3}$ʁé:gnən$^{1}$↓] (disbelief)

(c) [$^{2}$ɛs zɔ̀l $^{2}$mó$_{3}$ʁgən $^{2}$fʁ$_{4}$ỳ $^{2}$ʁé:gnən$^{1}$↓] (resigned disgust)

'It's supposed to rain tomorrow morning!'

(2) /es+zól+˚mórgən+˚frü:+˚ré:gnən ↓ ˚zá:ktə+de:r+˚mán↓/

[$^{2}$ɛs zɔ̀l $^{1}$mô$_{2}$ʁgən $^{2}$fʁ$_{4}$ỳ $^{3}$ʁé:gnən$^{1}$ ↓ $^{1}$zâ:ktə de$_{5}$ʁ $^{1}$mán$^{1}$↓]

'"It's supposed to rain tomorrow morning!" said the man.'

(3) /es+zól+˚mórgən+˚frü:+˚ré:gnən ↑ ˚zá:ktə+de:r+˚mán↓/

[$^{2}$ɛs zɔ̀l $^{1}$mô$_{2}$ʁgən $^{2}$fʁ$_{4}$ỳ $^{3}$ʁé:gnən$^{3}$ ↑ $^{3}$zô:ktə de$_{5}$ʁ $^{2}$mán$^{1}$↓]

'"It's supposed to rain tomorrow morning?" said the man.'

(4) /es+zól+˚mórgən+˚frü:+˚ré:gnən ↑ ˚zá:ktə+de:r+˚mán↑/

[$^{2}$ɛs zɔ̀l $^{1}$mô$_{2}$ʁgən $^{2}$fʁ$_{4}$ỳ $^{3}$ʁé:gnən$^{3}$ ↑ $^{3}$zâ:ktə de$_{5}$ʁ $^{3}$mán$^{3}$↑]

'"It's supposed to rain tomorrow morning?" said the man?'

(5) /es+zól+˚mórgən+˚frǘ:+˚ré:gnən | ˚zá:ktə+de:r+˚mán |
(unt+˚des+vé:gən+dǘrfən+vi:r+káinə+féstən+˚plǟ:nə+máxən↓)/
[$^{2}$ɛs zɔ̀l $^{1}$mô$_{R}$gən $^{2}$f$_{R}$ỳ $^{3}$$_{R}$é:gnən$^{2}$ | $^{2}$zâ:ktə de$_{R}$ $^{2}$mán$^{2}$ |
($^{2}$ unt $^{3}$dêsvègən dỳ$_{R}$fən vi$_{R}$ kʰàjnə fèstən $^{2}$plé:nə màxən$^{1}$↓)]
'"It's supposed to rain tomorrow morning," said the man,
("and for that reason we musn't make any definite plans.")'

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# INVESTIGATING THE ACOUSTIC CUES OF DISTINCTIVE FEATURES

Pierre Delattre, University of California, Santa Barbara

When attempting to synthesize speech by rule one looks for, and sometimes finds, complex acoustic features which seem to meet the two conditions of "distinctive features" of phonemes. Each complex feature is exclusively shared by all the members of a category of phonemes having either the same place or the same manner of articulation, and is capable of distinguishing at least one phoneme from another by itself. These complex acoustic features can generally be further dissected into simple acoustic features which have been called acoustic correlates, or acoustic cues, in the research literature. It is therefore convenient to distinguish three levels of phonetic realization below the semantic level of the morpheme -- the level of the phoneme, that of the distinctive feature of phonemes, and that of the phonetic cue of distinctive features. By spectrographic synthesis on speech machines it is possible to isolate the acoustic cues, vary their dimensions, and judge by ear their separate role in linguistic perception; to tell how many cues are needed for an acoustic feature to acquire its distinctive function; to find out which cues are essential and which are redundant among the many that are suggested by spectrographic analysis and articulatory observation. A description of the present state of search for the acoustic features of French consonants, at the distinctive as well as the cue levels, may help to describe distinctive features at the articulatory and the perceptual levels.

# TOWARD A TYPOLOGY OF IMPERATIVE SYSTEMS

Charles A. Ferguson, Center for Applied Linguistics

This paper studies the imperative systems of a variety of languages in order to arrive at a useful classification and to discover possible universal features of imperative systems. A distinction is made between primary imperative systems, which are used primarily for commands and requests, and secondary imperative systems which are principally used for other purposes but may be used for commands. Imperative systems of thirteen languages are summarized under eight headings. Of these, the first four refer to grammatical categories in the primary imperative systems; the others cover additional morphological details, secondary systems, the facts of negation, and the position of imperatives in the clause. The information is analyzed in terms of the presence (+) or absence (-) of twenty-four particular features. The classification provides a distinctive profile for each of the sample languages as a basis for some generalizations. Seven hypotheses and a number of sub-hypotheses are formulated about the characteristics of imperative systems of all languages.

# THE LATIN GERUND AND GERUNDIVE

E. Adelaide Hahn, Hunter College

Much written about these forms seems wrong to me.

A. Gerund is called active and gerundive passive. But gerund can be "passive" (urit videndo femina), and gerundive can be "active" (puppis pereunda est). Actually, both are voiceless like most non-finite verb forms; but intransitive forms seem active, transitive forms seem passive.

B. Early construction lucis tuendi copia is explained as due to contamination, or as having one genitive depend on other. I believe the two genitives were originally in apposition.

C. There were three competing constructions: a) lucis tuendi copia; b) lucem tuendi copia (lucem object of gerund); c) lucis tuendae copia (gerundive, which won out). Explanations: gerund and gerundive not connected (unlikely); c generated b, because Oscan and Umbrian show only gerundives (gerunds might have gotten lost); b generated c (how?). I think a generated c. Why recognize (as is always done) gerund in eius videndi (of a woman) but gerundive in eius conveniundi (of a man)? In viri potestas videndi and argento comparando fingere fallaciam, I believe videndi and comparando were originally gerunds used as appositives (not gerundives as is usually assumed), but they looked as if they modified viri and argento, hence they generated gerundives (as ambiguous Hittite gerund in -as, misinterpreted, generated gerundive). But type tui videndi (of a woman) persisted, presumably because tui and videndi looked alike.

D. Gerund is said to lack nominative and (except with prepositions) accusative. I believe originally it had all cases. Infinitive (originally dative or locative) became indeclinable,

mainly restricted to nominative and accusative; and gerund served in other cases, losing nominative and accusative except with prepositions, where infinitive was impossible. But in agitandumst vigilias (Plautus), poenas timendumst (Lucretius), monendum test (Catullus), etc., I find it easier to accept nominative gerund than transitive gerundive. Were these transferred to indirect discourse we would have accusative gerunds.

E. Gerund is parallel to verbal noun (curandum est and curatio est, but influence of curatum est changed it to gerundive), and to infinitive (est mihi dicendum and est mihi dicere, habeo dicendum and habeo dicere); yet dicendum is considered gerundive.



# ON EXPRESSION AND CONTENT

Sydney M. Lamb, Yale University

The terms expression and content are used in connection with what is perhaps the best known of several important distinctions made in the linguistic theory of the late Louis Hjelmslev (H.). In his Prolegomena to a Theory of Language, H. shows that these two entities must be separated from one another since if they are kept together one can analyze linguistic material only down to minimal signs, whereas by separating them one can analyze down to smaller units.

Although this is a valuable and important distinction, it has a shortcoming which it shares quite widely with other linguistic theories, namely that the line of reasoning was not carried far enough. H.'s content-form is actually not a single unified structure, like his expression form, but a conflation of separate structures, as may be demonstrated by following his own line of reasoning. Boiled down to its essentials, his argument is that chains of expression-form are of two types, which may be called minimal sign-expressions and non-minimal sign-expressions. A non-minimal sign-expression is one which has components such that its corresponding sign-content is the combination of the sign-contents which correspond to those components; and a minimal sign-expression is one which does not have such components. Consider, then, a sign-expression such as undergo. Applying H.'s line of reasoning one must conclude that it is a minimal sign-expression, and that the same conclusion must be reached with regard to go through with, go in for, go back on, go crazy. But if none of these is to be partitioned into morphemes (i.e. minimal signs, in H.'s terminology), then how do we account for the

corresponding past tense forms underwent, went through with, etc.?

The solution is to recognize that there are two sign systems involved here, not just one, hence three planes, not just two. The middle plane is content relative to the lower one and expression relative to the upper one. Under and go are minimal in the lower system, while undergo is minimal in the upper one.

# THE TWO IDIOMATICITY-AREAS IN ENGLISH AND THEIR MEMBERSHIP: A STRATIFIED VIEW

Adam Makkai, Yale University

The theoretical work done by Hockett in idiom formation as presented in his Course (1958) together with Householder's "Linguistic Primes" (Word, 1959) and Malkiel's "Studies in Irreversible Binomials" (Lingua, 1959) is re-evaluated from a stratificational point of view as presented in Lamb's "The Sememic Approach to Structural Semantics" (American Anthropologist, 1964).

It is suggested that the term idiom needs to be redefined. It is explained why monomorphemic lexemes do not qualify qua idioms and it is demonstrated that idiomaticity occurs in English (and most natural languages) on two different strata: The lexemic and the sememic.

A set of formal criteria and a definition with restrictions and consequences are presented for the lexemic idiom in the first idiomaticity area (lexemic stratum), and the membership of the area is demonstrated by a number of relevant examples.

This is followed by a similar set of formal criteria and a definition with restrictions and consequences for the sememic idiom in the second idiomaticity area (sememic stratum), and the membership of the area is demonstrated by a number of relevant examples.

It is suggested that the two idiomaticity areas jointly constitute the idiom-structure of a language and that this idiom-structure is as characteristic typologically of the language as are its phonology, morphology, and syntax.

Additional observations concerning the generatability of idioms (whether lexemic or sememic) are presented together with criteria concerning the identification of idioms both in a source-language and a target-language.

# CAN GLOTTOCHRONOLOGY BE SAVED?

Isidore Dyen, Yale University

In his article "The Mathematical Models of Glottochronology" (Lg. 38.11-37) Chrétien claims that the mathematical models of glottochronology lead to mathematical inconsistency. It can be shown that his proof of inconsistency involves inescapably an assumption which no one else makes and perhaps he was not aware of himself.

# COMPUTER SIMULATION OF TWENTY-FIVE YEARS IN A HYPOTHETICAL SPEECH COMMUNITY

Sheldon Klein, Carnegie Institute of Technology and System Development Corporation

A system for performing Monte Carlo simulations of group language interaction has been successfully tested in several computer runs using an extremely simple model of linguistic interaction. The initial test population consisted of fifteen adults and five children, each represented by a phrase structure generation-recognition grammar. The grammars and the frequency parameters associated with their individual rules were not necessarily identical. During the course of a run some individuals died and others were born. Newborn children acquired the language of the community. The units of interaction consisted of conversations which were produced by the grammars of speakers and parsed by the grammars of auditors. The linguistic structure of a conversation determined changes in its auditor's grammar.

Decisions in the system were made with random numbers in reference to weighted frequency parameters. The goal of the experiment was to obtain essentially identical results for the population as a whole from several computer runs which differed only in the choice of random numbers referred to in decision making processes. Such results were obtained: even though the fate of individual members of the speech community varied widely in the different trials, the mean values of the frequency of the grammatical rules in the total population were very similar at identical time periods in each run.

# COMPUTER SIMULATION OF INFORMANT WORK IN LINGUISTICS

Paul L. Garvin, The Bunker-Ramo Corporation

This paper is a contribution to the present controversy over "discovery procedures". It discusses the possibility of simulating by a computer program the activities of a linguistic analyst conducting informant work. The computer can communicate with the informant by means of display equipment and receive inputs from him through a keyboard. The simulation is therefore at the present state of the art limited to a literate informant of a language with an alphabetic writing system.

Informant work is considered a form of scientific discovery. From the standpoint of computer simulation, discovery is considered related to game-playing: it is a game played against nature. The heuristic programming principles used in simulating games, namely, trial routines and evaluation routines, are therefore considered applicable to the proposed computer simulation of informant work. The linguistic principles required for the development of these two types of routines are based on the universal and near-universal assumptions underlying the conduct of informant work. These will be discussed in some detail, and the particulars of simulating the early phases of informant work, namely, the elicitation of paradigms, will be presented.

# THE MORPHOLOGICAL STRUCTURE OF THE FRENCH VERB

Sanford A. Schane, University of California, San Diego

The French verb exhibits a rich morphological system since most verb stems can be conjugated for seven tenses and six persons in addition to the infinitive and the participles. The purpose of this paper is to formulate a set of rules which not only will account for this morphological complexity but also will be of structural significance for the language as a whole. Since the data to be treated are so extensive, the paper will be restricted to a consideration of the present, imperfect, and subjunctive tenses of verbs within the three regular conjugations.

Every finite verb form can be represented as a sequence of four morphemes: stem + conjugation marker + tense marker + person marker. A given morpheme is in all cases represented by the same phoneme or sequence of phonemes, thereby eliminating the necessity of postulating allomorphs of a morpheme. The appropriate phonemic representation is then obtained by applying an ordered set of morphophonemic rules to the underlying morphemic forms. These rules account for the phonological alternations observable in particular environments. The rules will, in addition, furnish an explanation for certain morphological and phonological phenomena observable within the verb conjugation: the absence of a liaison consonant in the third person singular of the present tense in first conjugation verbs and of the subjunctive in all conjugations; the homophony which occurs in certain persons in the imperfect and subjunctive tenses of all verb conjugations.

# THE ORIGIN OF FRENCH de INTRODUCING THE INFINITIVE AS "LOGICAL SUBJECT"

Anna Granville Hatcher, Johns Hopkins University

When, in French, the Infinitive (representing the "logical subject") is characterized by an introductory predication with être, it is always immediately preceded by the preposition de ("c'est une folie, c'est dangereux, d'agir ainsi"). Basically the same construction is found in Old French from the early twelfth century on: "bone cose est d'aprandre". Side by side with this infinitival construction Y est de X (est Y de X, de X est Y) was that in which X represents a noun: "bone cose est de pais".

The origin of this apparently ungrammatical de has been the subject of much debate. Of the three main theories, that of Clédat ("de of specification"), has been almost entirely ignored by later grammarians, that of Meyer-Lübke ("de of relation [= 'in regard to']") has been rejected by all who mention it, while Tobler's theory has won almost unlimited acceptance: that de refers to 'source' and bone cose est de pais means 'a good thing comes from peace'.

But if so many grammarians have accepted Tobler's hypothesis, there can be only one rational explanation: that the prestige of this great pioneer of French syntax was so absolute that his theory was accepted uncritically. Of the many glaring flaws revealed by a close analysis of his study (Vermischte Beiträge I, 5: "de ein 'logische Subjekt' einführend") I shall mention only one: according to Tobler, the de found with impersonal verbs ("A moi n'afiert d'amer si hautement") is the result of a contamination of (the original) Y est de X, representing, apparently, one of the last stages of the development. But the truth is that

the impersonal construction is attested long before Tobler's "original" type.

We must, then, begin with the impersonal construction containing de, where the presence of the pronoun is easily enough explained, and we will see that this was the first of three developments (involving the same principle but representing a difference of word material) of which the last was bone cose est de pais, d'aprandre.

# A SEMANTIC INTERPRETATION OF KINSHIP SYSTEMS

Mario Saltarelli, Cornell University
Marshall Durbin, Tulane University

We deal with the interaction of linguistic structures and kinship structures in contribution to semantic theory. Whereas traditionally kinship studies consider sets of "kin-terms" used in a culture and the system of usage that can be induced from them, we propose as object of study certain iterative processes which seem to characterize the relations among the elements of a potentially non-finite set of "kin-types", and their relevance as field properties (features) of the corresponding entries in the lexicon of the grammar used by the culture in question. The following is such system for American kinship.

| Kinship Rules | | Lexicon | | | | |
|---|---|---|---|---|---|---|
| | | | x | y | z | |
| x,x,x,... | | P1,P2,... | - | - | | → Fa,gFa,... |
| | | | + | - | | Mo,gMo,... |
| 1. x → P | /__ $\bar{x}$ | | - | + | + | Un,gUn,... |
| | | | ... | | | |
| 2. x → O | /__ P | O1,O2,... | - | - | | → So,gSo,... |
| | | | + | - | | Da,gDa,... |
| 3. x' → Sp | /__ $\bar{x}$'' | | - | + | | Br,Nep,... |
| | | | ... | | | |
| 4. X → X+1 | | Sp1,Sp2,... | - | - | | → Hu,FaL,... |
| | | | + | - | | Wi,MoL,... |
| | | | - | + | - | BrL,SoL,... |
| | | | ... | | | |

The kinship rules apply cyclically on the initial set of elements x (a variable over {♀,♂}). They yield a non-finite set of indexed kin-types, subsumed under the major categories Parent, Offspring, and Spouse. These are subcategorized for the minor categories x, y, z, respectively sex, generation, and extention. In the lexicon the finite set of kin-terms used in the vocabulary of English is

uniquely associated with the respective kin-types generated by the kinship rules.

The theory of linguistics envisaged by Chomsky (1965) gives the lexicon of a grammar as a set of entries, each containing phonological, syntactic, semantic, etc. features. It seems that for a richer semantic interpretation of linguistic structures lexical entries must contain also field features, kin-types in kinship, and the general linguistic theory must assume a characterization of the extralinguistic system in question, Kinship rules 1-4. This disambiguates the multiple mappings of kinship terms. For example English cousin for its paraphrased father's cousin, father's brother's son, etc., or Italian nipote 'nephew, grandchild, niece, etc.', and so forth.

# MEANING DISCRIMINATION IN LEXICOGRAPHICAL RESEARCH

F. C. Southworth, University of Pennsylvania

This paper discusses techniques for evaluating definitions of words to be used in dictionary entries. The particular problem focussed on involves the distinction between range of meaning and multiple meaning (polysemy). The criteria to be used are chosen with a view toward reflecting the meanings of words as seen by the speakers themselves, rather than from an external cross-cultural viewpoint.

As an illustration, English hot can be said to have different referential ranges in hot soup and hot flame. The decision whether these represent two distinct ranges of meaning, or two parts of a single vague range (such as "in the higher temperature range associated with the head noun in the particular context") depends on several things: (1) the amount of information carried by hot in environments where it is less limited by context (such as hot metal); (2) the types of paraphrases available for hot in the several contexts; (3) the availability of other semantically related words (such as opposites, antonyms, classifiers) and the ways in which these are distributed relative to the various contexts in which hot occurs.

This research has evolved from work in the Marathi-English Dictionary Project at the University of Pennsylvania, under contract with the U. S. Office of Education. Examples will be given from English and from the Marathi materials in the Dictionary Project files.

# SEMANTIC STRUCTURES IN SOME MEXICAN LANGUAGES

Marlys Wendell, Harvard University
Volney Stefflre, University of California, Los Angeles and
The RAND Corporation

The point of this paper is to present some substantive data collected on Spanish, Yucatec and Nahuatl. The data includes estimates of distributional similarity of pairs of forms, estimates of degrees of synonymity of pairs of forms, and estimates of fine grained word class structures. The techniques used in obtaining these estimates include informant generated data matrices and informants' direct estimates using rating, ranking and sorting procedures. The correspondences found between the different independent estimates obtained using these techniques suggests that (1) small samples of frames (50 - 150) give fairly reliable estimates of forms distributional similarity, and (2) naive informants can be trained fairly quickly to make direct estimates of distributional similarity, partial synonymity, and word class structures that correspond to those obtained through the longer more complicated procedures.

# THE GOTHIC VOWEL SYSTEM

Jack Thornburg, Florida State University

It has usually been taken as axiomatic that description of a language must precede theorizing about the history of the language. At least for extinct languages, however, it may be preferable to apply criteria of simplicity to the whole grammar. Gothic may be taken as an example. The assumption that Wulfila's orthography is a phonemic notation underlies Hamp's theory (Lg. 34, page 359 ff.) that Gothic had nine vowels and no complex nuclei whatever. Ideal in its own terms, this necessitates extremely complex historical statements. If, however, we assume not that Wulfila's orthography is phonemic, but rather that it is never phonemically ambiguous the historical grammar of Gothic can be considerably simplified. We may then set up for Gothic the vowel phonemes /i ɨ u
e o
a / and assume that /h/, /y/ and /w/ were semivowels. With this system maximum simplicity will be achieved by assuming that Wulfila wrote ⟨i ai au⟩ for /i e o/, and ⟨ei e o⟩ for /iy ey ow/. Then it is probably best to assume that what Wulfila wrote ⟨iu u a⟩ was /ɨh uw ah/ when accented, elsewhere /ɨ u a/, and thus that /y/ occurred after /i/ and /e/, /h/ after /ɨ/ and /a/, and /w/ after /u/ and /o/. This vowel system is more probable than Hamp's, however this in itself would not justify a less rigorous theory of Gothic orthography. Its advantage lies in its leading to simpler historical statements, in particular for the fate of PG */°/ in Gothic, and thus achieving greater simplicity in the total grammar.

# DEICTIC CATEGORIES IN THE SEMANTICS OF "COME"

Charles J. Fillmore, The Ohio State University

The semantic analysis of English expressions containing the verb COME requires an understanding of (A) a type of semantic rule which I shall call "supposition rule"[1], (B) a type of sentence ambiguity involving the relation "supposes" (so that a sentence W can be said to ambiguously suppose either sentence X or Y), and (C) the inter-working of the categories of person, place, and time deixis.

The present study will show how a simply stated supposition rule will reveal why it is that the sentence (1) I WILL COME TO THE STATION AGAIN TOMORROW supposes either (1a) I AM AT THE STATION NOW, (1b) YOU ARE AT THE STATION NOW, or (1c) YOU WILL BE AT THE STATION TOMORROW; that (2) I WILL COME THERE AGAIN TOMORROW supposes either (2a) YOU ARE AT THE STATION NOW or (2b) YOU WILL BE AT THE STATION TOMORROW; that (3) YOU CAME TO THE STATION YESTERDAY supposes either (3a) I AM AT THE STATION NOW or (3b) I WAS AT THE STATION YESTERDAY; that (4) WE WILL COME TO THE STATION AGAIN TOMORROW supposes either that WE is inclusive and (4a) WE ARE AT THE STATION NOW or that WE is exclusive and either (4a), (4b) YOU WILL BE AT THE STATION TOMORROW or (4c) YOU ARE AT THE STATION NOW; while (5) WE WILL COME THERE TOMORROW supposes only that WE is exclusive and either (5a) YOU ARE THERE NOW or (5b) YOU WILL BE THERE TOMORROW.

It is believed that these properties of COME are shared only by one other English verb, BRING (apparently not in all idiolects). It will be pointed out that suppositions involving alternation of the category 1st/2nd person hold for

English but not for translations of COME in many other languages.

The paper will conclude with a brief sketch of the requirements of a general theory of deixis.

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[1] On the nature of such rules, see my mistitled "Entailment rules in a semantic theory," The Ohio State University Project on Linguistic Analysis, Report #10, pp. 60-82, 1965.

# THE EVOLUTION OF STRESS FROM OLD ENGLISH TO MIDDLE ENGLISH

Samuel Jay Keyser, Brandeis University
Morris Halle, Massachusetts Institute of Technology

The stress system of Old English is examined and the major characteristics of that system are described. These include:

(1) initial stress in monomorphemic major lexical items such as héafodu 'head';

(2) initial stress in compound nouns such as gárholt 'spear';

(3) the alternation between initial stress in derived nouns such as ándgiet 'intelligence' and non-initial stress in the verbs from which they are derived such as ongietan 'to understand';

(4) the alternation between initial stress in compound verbs such as aé fterfolgian 'to pursue' and non-initial stress in the verb phrases from which they are derived such as folgian aé fter.

The rules which account for analogous characteristics in the stress system of Middle English are given and a comparison between these rules and those for Old English is made. The major difference between the two systems is pointed out, namely, that Middle English has replaced the Germanic stress rule which supplies initial stress to monomorphemic major lexical items with the Old French stress rule which assigns stress to major lexical items on the basis of the length of their ultimate and/or penultimate syllables.

An attempt is made to explain why Middle English underwent this change and to discuss the theoretical consequences of this change.

# RULES OF VOWEL DURATION IN AMERICAN ENGLISH

Chin-W. Kim, University of California, Los Angeles

In the introduction, the paper discusses the scope of phonetic specification, i.e., how detailed and specific should the rules of the phonological component of a grammar be in converting the abstract representation of morphemes at the level of classificatory phonemics into real sounds at the level of physical phonetics. Pertinent statements by various linguists are reviewed and discussed. The writer's own view is then given.

This view is illustrated with rules of American English vowel duration. Experimental data show that the length of English vowels ranges from 100 msec to 400 msec, and that there are four factors that influence the length; (1) the tenseness of the vowel, (2) the degree of openness of the vowel, (3) the voicing of the following consonant, and (4) the manner of articulation of the following consonant. The paper discusses the degree and the nature of effects of these features on vowel duration, i.e., how much does each feature influence the vowel length; and which effects are contingent upon physiological constraints of the human vocal mechanism (and therefore not relevant in phonetic specification), and which are language-dependent, hence parts of the system of English (and therefore must be accounted for by the phonological rules of English grammar).

The rules are then formulated so as to assign appropriate values of length of vowels. Implications of these rules are discussed, and finally, some examples that are explained by these rules are given.

# CO-VARIATION IN PHONOLOGICAL SPACE

William Labov, Columbia University

Investigations of phonological variables in New York City and on Martha's Vineyard provide quantitative data for 13 cases of ordered variation within and across structural boundaries. Eleven of the variables reveal linguistic change in progress. The shift of any one variable along one articulatory dimension appears to be correlated with extra-linguistic, social factors; the generalization of the shift to other units of the system appears to be the result of internal, structural relations.

In New York City, multiple correlations are found among six variables of the vowel system: (eh), (oh), (ah), (aw), (ay) and (oy). The relations established are examples of co-variation: a small change in the value of one variable is regularly associated with a corresponding change in the value of another. The evidence of co-variation can help to resolve theoretical alternatives as to the underlying structure of the vowel system. Front-back symmetry is established in two cases; in two other cases, first elements of diphthongs in different sub-systems are identified. The generalizations of linguistic changes to various elements of the vowel system do not appear to be simplifications of distinctive feature rules in their present form. Important structural inferences can be drawn from co-variation of low and mid vowels, parallel to the findings of Moulton for Swiss German. In New York City, the raising of (oh) is closely correlated with the backing of (ah). Distinctive feature theory provides no rationale for such co-variation between compactness and gravity: a feature analysis is required which preserves the geometry of phonological space.

# THE DETECTION OF REMOTE LINGUISTIC RELATIONSHIPS

Robert L. Oswalt, University of California, Berkeley

Hypotheses of linguistic relationships are most commonly supported by citations, in the languages concerned, of items similar in form and meaning, the presumption being that the greater the number, the surer and closer the relationship. However, the number depends on many factors besides the degree of relationship between the languages; it depends on the size of the vocabularies available and on the amount of looseness the linguist allows himself in judging semantic and phonetic similarity. It is generally assumed that the number of chance agreements is small.

A computer program has been developed to determine the expectable number of chance resemblances between two languages under any of many optionally variable criteria of similarity--with remotely related languages the number is never inconsequential. The procedure gives the probability of the resemblances between two languages being due to chance and thus, complementarily, tells when the languages are significantly similar.

The method has been tested against ten well-known languages of the Old World--seven Indo-European, one Finno-Ugric, one Altaic, and one Dravidian--and applied to six little-known languages of Sapir's Hokan-Siouan superstock. It is proving to be a powerful tool in demonstrating that some hypotheses of linguistic relationship are unfounded and in discovering other unproposed links between languages.

# AN ANCIENT BABYLONIAN TRANSFORMATION

Erica Reiner, University of Chicago

In Sumero-Akkadian word lists of ancient Babylonia some Sumerian constructions -- from the Sumerian point of view nominalized relative clauses -- are given two translations or equivalences: an Akkadian relative clause, and a nominal compound which seems to be ungrammatical. This compound consists of an adjective with an ending -am followed by a noun in the genitive case. If the -am ending is analyzed as the accusative singular ending, the construction is ungrammatical because a genitive after an accusative is excluded. However, the ending -am can be analyzed as a morphophonemic alternant of the bound form of the adjective, homophonous to the accusative. In fact, the seemingly ungrammatical construction -- which is sparsely attested in literary texts, too -- is an intuitive transformation of the Akkadian clause, used by the ancient scribes in the process of translation, and can most simply be explained with the transformational method.

# SOME POSSIBLE TRACES OF COMMON ROMANCE SYNTHETIC FUTURE FORMS IN LATE LATIN TEXTS

Paolo Valesio, Harvard University

It is traditional in Romance linguistics to consider the new synthetic verbal formations in the various Romance languages (which constitute the paradigm of the future and the paradigm of the so-called "conditional") as the result of the morphological fusion into a single form of an original Latin phrase (e.g., 1st p.sg. of the future: L.CANTĀRE HABEŌ > It. canterò, Fr. chanterai, Sp. cantaré, etc.). In this tradition it is also implicitly assumed (although the specific problems of this reconstruction are not explicitly discussed) that the intermediate step between the Latin phrase and the Romance single word must be some sort of synthetic form with the structure: * CANTAR-AIO, which existed in the late period of Common Romance (or "Vulgar Latin").

In the linguistic literature on this subject, only one direct attestation of a Common Romance intermediate form is quoted: a form daras ( < DARE HABĒS ) which appears in a Latin text of the late VI century. In the present paper we suggest the possibility that three other verbal forms, from three different Late Latin texts, may be added to this list. One of them, daret (used as the translation of an earlier dabit) may be considered as a direct attestation of a synthetic future. Another form, contingerit (instead of the expected contigerit) may be considered as the product of a linguistic mixture of a synthetic future form and other forms. Finally the third form, feram, which appears in a passage of the Bible (Vulg. $^{4}$Reg. 18,14) may be considered as an indirect attestation of the existence of a synthetic future pattern. We suggest that the variants of the quoted passage (which are discussed in the paper) imply the

existence of a form * feram as 1st p. sg. future form of făcĭo, alongside the form feram as 1st p. sg. of the future of the Classical Latin verb ferō.

These suggestions are followed by the discussion of some wider problems connected to them: namely, the evolution of the verb ferō in the Romance Languages, and the morphological structure of * feram and of the other forms. Finally, some general implications and methodological perspectives pertinent to these suggestions are briefly discussed.

# GRAMMATICAL STRUCTURE IN SIONA DISCOURSE

Alva Wheeler, University of California, Berkeley

In my description of Siona grammar[1] I have posited structure on the discourse level in order to explain the fluctuation in occurrence of certain grammatical elements of the sentence, the correlation of some of these grammatical elements with the attitudes of the speaker, and the relationship of sentences to each other. I have taken this position because of the failure of a descriptive grammar based only on sentence structure to generate a body of language easily intelligible to the native speakers of Siona.

In this paper I shall describe: (1) how a set of enclitics, which occur with nominal elements of a sentence to mark their relationship to the predicate, depend for their selection on the degree of focus attributed to them as elements in the discourse structure; (2) how the occurrence of various mood and tense suffixes are determined by the attitudes of the speaker; and (3) how certain arrangements of morphemes in clause structure function primarily as signals of the relationship of various discourse elements to each other within the total discourse structure.

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[1] Data for this description have been gathered under the sponsorship of the Summer Institute of Linguistics, Santa Ana, California, and will serve as thesis material for my doctoral dissertation at the University of California, Berkeley.

# THE CHILD'S LEARNING OF NOUN MODIFICATION

Beatrice L. Hall, Hunter College of the City University of New York

R. M. R. Hall, American Language Institute, New York University

It is a commonplace of modern linguistics that the child "has complete control of the structure of his native language" by the time he has reached (according to the linguist you read) the age of 5, 6, or 7. While this may be true of phonological and morphological structures, a little observation of the speech of children in the early years of primary school raised in our minds serious questions as to the extent to which it is true on the syntactic level.

In order to examine this, we chose to investigate the child's control of various head and modifier constructions. On the basis of tests given to over 1500 elementary, junior high, and high school students in the New York City public schools, representing all of the ethnic and socio-economic backgrounds of the area, we have come to the following conclusions:

1. The child's ability to synthesize kernel sentences of the type "I have a ball. It is red" into "I have a red ball" is developed earlier than his ability to analyze such embedded sentences into their constituent parts.

2. There seems to be a definite hierarchy of the structures which the child learns to synthesize; this seems to correlate quite well with chronological age and not with such other factors as IQ, reading achievement, or home background. The ability to analyze sentences, on the other hand, shows a definite correlation with reading achievement.

From our analyses of the test results we have some substantive recommendations to make concerning the design of elementary school reading materials.

# STATIVE ADJECTIVES AND VERBS IN ENGLISH

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We will show that a number of seemingly disparate grammatical phenomena in English can be accounted for by the hypothesis that all verbs and adjectives are subcategorized with respect to a property which we will call "stative." Stative verbs and adjectives (S) do not take the following grammatical constructions, while non-statives (NS) do:

1. Imperatives:
   - S: *Know that I am here. *Be tall.
   - NS: Slice the salami. Be cautious.
2. Progressives:
   - S: *John is knowing that. *John is being tall.
   - NS: John is slicing the salami. John is being cautious.
3. Do-something:
   - S: *What I'm doing is hearing the concert.
     *What I'm doing is being tall.
   - NS: What I'm doing is listening to the concert.
     What I'm doing is being careful.
4. Occurrence within adjectival complements:
   - S: *John was good at considering Harry a fink.
   - NS: John was good at sharpening knives.
5. Occurrence with manner adverbials:
   - S: *John considered Harry a fink well.
   - NS: John sharpened knives well.
6. For-phrases:
   - S: *John knew that fact for his teacher.
   - NS: John learned that fact for his teacher.

# A PRINCIPLE GOVERNING DELETION IN ENGLISH SENTENTIAL COMPLEMENTATION

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A central problem in the description of English sentential complementation where sentences are embedded into noun phrases and verb phrases is the apparent complexity of the specification of the terms in the identity relation which must obtain between some noun phrase in the main sentence and the initial noun phrase in the complement sentence if the deletion of the latter is to be defined. For instance, the following examples reveal four distinct distributions of these pairs (where the complement sentence is indicated by brackets and the deleted noun phrase by parentheses): (1) I hate [(I) to go]; (2) I defy John [(John) to go]; (3) I sold the boat [(I) to make money]; and (4) I expect it of you [(you) to be here on time]. From the fact that the pairs of noun phrases in the identity relation have different distributions in the structures underlying the above examples follows the necessity of positing at least four versions of the transformation deleting the initial noun phrase of the complement sentence. This proliferation of rules fails to capture the transparent generality of the deletion operation throughout the sentential complement system.

A significant generalization, one which obviates the need for more than one deletion transformation, can be affected by establishing a principle which specifies the conditions which a pair of noun phrases in the identity relation must meet <u>for all distributions</u>. This principle, the "erasure principle," asserts that the terms in the identity relation must be the initial noun phrase of the complement sentence and that noun

phrase in the main sentence which is separated from the former in the phrase structure by the least distance, where distance is defined in terms of the number of independently motivated branches in the phrase structure configuration underlying an arbitrary sentential complement construction. With the incorporation of the erasure principle into the linguistic theory, one transformation is sufficient to account for the initial noun phrase deletion in complement sentences thereby allowing the generalization that such deletion is a unified phenomenon in English sentential complementation.

# TOWARDS A GENERAL LINGUISTIC AND NONLINGUISTIC SOCIOCULTURAL TYPOLOGY AND ITS DYNAMICS

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In our forthcoming monograph Parametric Linguistics, we outline a general typology of linguistic systems, based on a function-to-manifesting-mark correlation, and show that only Type I (one-function-to-one-manifesting-mark) systems are stable but that all other types (1) display synchronic instability which (2) leads to diachronic evolution toward the Type I stability via specific additive or subtractive resolutions. Type IV (more-than-one-function-to-only-one-manifesting-mark) systems have special synchronic-aesthetic impact, and they underlie some noncasual uses of language such as those seen in puns and certain types of poetry.

The analysis initiated by an example recently presented to Heller by his student Deborah Posner suggests not only that there are nonlinguistic sociocultural analogues of the types of linguistic systems that we depict but that both linguistic and nonlinguistic systems may be subject to the same laws, resolve internal instabilities, and evolve toward Type I stability in the same way. The sociocultural analogue of a Type IV system (pun type) evokes the same synchronic reaction (laughter) as its linguistic correlate. Preliminary evidence suggests the following postulates: 1. Linguistic systems are microsystems embedded in a sociocultural macrosystem. 2. The same principles govern all parts of the system. 3. Therefore, the dynamics governing a microsystem (such as the linguistic) may be tentatively accepted as applicable to the macrosystem. Hence one has a linguistic model for sociocultural dynamics and evolution.

# DERIVATIONAL MORPHOLOGY IN A GENERATIVE GRAMMAR

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One of the aspects of the ability of fluent speakers to create novel utterances is word formation. A distinction is made among three different word-formation processes: derivation, inflection, and compounding; the first of these is then examined within the framework of the generative grammar.

The productivity of derivational processes and its relationship to syntactic productivity are discussed. The conclusion is reached that derivation productivity should be revealed in the grammar since the speaker can:

1. recognize a relationship between a stem and complex words consisting of that stem plus derivational affixes,
2. recognize recurrent partials,
3. recombine these elements into new formations.

We argue for two different types of morphological derivation, one syntactic, as in

Alphones's knowledge of Gaston's illness won them over

and one which we term lexical derivation, which appears not to be related to syntactic processes, as, for example, the addition of -ly to gentleman to form gentlemanly. This latter type of derivation may be characterized by the addition to the grammar of a set of rules of a type differing somewhat from the other types of rules which the generative grammar has been shown to require. The function of these rules and the distinction between these two types of derivation are illustrated.

# AUXILIARIES IN GENERATIVE GRAMMAR

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This paper assumes acquaintance with the basic principles of generative grammar. It examines the way in which the recently introduced notion of "syntactic feature" affects our understanding of what an auxiliary is.

The paper then discusses some formal problems that arise in the generation of "aspectual" modifiers. The conclusion reached is the rather paradoxical one that formal criteria and simplicity alone may prove unsatisfactory principles on which to base a generative grammar.

# SAEK, A DISPLACED NORTHERN TAI LANGUAGE

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Saek or Sek, spoken in a small area to the east of Tha Khek in Laos and in two villages across the Mekhong River in Northeastern Thailand, has been known for some decades from published wordlists. On the basis of these materials, which are brief and of doubtful phonological accuracy, various opinions as to the genetic affiliation of Saek have appeared; although Haudricourt has argued for years that Saek is a Tai language of the Northern Tai group, others, including a recent prestigious American publication, have classified it as Mon-Khmer. Field work done in one of the Saek-speaking villages of Northeastern Thailand in the spring of 1965 has led to our first knowledge of the Saek tone system. This now permits us to prove by systematic comparative analysis that Haudricourt's opinion is correct; the tonal system of Saek can be explained historically only by assigning it to the Northern Tai group, otherwise spoken mainly in parts of Southern China. It differs from other Northern Tai languages, however, in preserving certain old initial consonant clusters, and also in having participated in some of the more recent sound changes of Tai languages in the Laos-Thailand area in which it is now located.

# LITERARY ANALYSIS AND LINGUISTICS: A STUDY IN THE PROSE STYLES OF EDWARD GIBBON AND SAMUEL JOHNSON

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The methods of linguistic science, it has been shown, can aid the literary scholar, and for proof one has only to look to recent meetings of the Linguistic Society, where papers have appeared centered around literary subjects: for example, "The 'Windhover' Revisited" and just recently, "Linguistics and Literary Analysis." This paper further explores this tradition and is in the main an application of the recent model of linguistic science to the explication of intuition concerning the ability of sensitive readers of literature (and I include linguists) to recognize familiar prose styles. It is an understatement to say that this has been a "hot" item in recent linguistic literature. Papers are just now beginning to appear, and doubtlessly others are taking shape, concerning the "power" of a transformational generative grammar to distinguish prose styles. The ultimate test, however, of any "power" that a model might have is in its ability to distinguish between two similar yet intuitively different styles, such as the prose styles of Gibbon and Johnson. Traditionally these styles are often grouped together and are labeled as "grand", "majestic", and "complex." Yet a sensitive reader has the ability to distinguish between these two styles and if given passages can easily identify their authors. The point of this paper is then to determine whether the TG has the ability to capture this difference. This paper is organized thus: one hundred sentences were chosen at random from works of the two authors. Each sentence was first rewritten into simple source sentences and the history of each (a detailed analysis of certain selected transformations which the textual sentence could be assumed

to have undergone) was then shown. Each use of a specific transformation was tabulated and the significance, if any, noted. The conclusion is thus: the difference between Gibbon's and Johnson's styles does not rest upon the types or frequencies of the transformations each uses in expressing content. In other words, relative complexity of sentence structure does not serve to separate the two authors. The difference, if any exists, must lie in extra-linguistic criteria, for example, in the use of imagery, irony, satire, point of view and so forth. What this paper has shown is that the TG approach to syntax is one of the many tools that an analyst may use. It can aid and thus enhance a description of style, but a description must sometimes go beyond the mere tabulation or explication of transformational structures.

# A PROPOSED RULE OF TREE-PRUNING

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Present theories of derived constituent structure make the assertion that both his and new in the noun phrase his new house are dominated by the node sentence (S), for both are derived from relative clauses in the underlying structure. This counter-intuitive result can be avoided if a tree-pruning rule is added to the grammar which deletes the node S just in case it does not branch, i.e., in case it immediately dominates only one node. This paper discusses four other syntactic problems which seem to be solvable by postulating such a rule.

Firstly, relative clauses can normally be moved to the end of a sentence by a rule of Extraposition; thus, (1) and (2) will be derived from the same source

(1) A man who was from Philadelphia got sick.

(2) A man got sick who was from Philadelphia.

But note that if the rule deleting who was is applied, the extraposition is no longer possible.

(3) A man from Philadelphia got sick.

(4) *A man got sick from Philadelphia.

The addition of the proposed tree-pruning rule would correctly block (4), for the phrase from Philadelphia would no longer be dominated by S after the subject of the relative clause, who, has been deleted.

Secondly, it has long been noted that particles (such as up in call up) cannot be moved around "complex" noun phrases, but no satisfactory definition of the term complex has been forthcoming. I propose the following definition: a complex NP is one dominating the node S. Used in conjunction with

the tree-pruning rule, the definition explains the difference in acceptability between (5) and (6):

(5) *I called a man who was old up. (complex NP)

(6) I called an old man up. (non-complex NP)

Thirdly, I suspect that the fact that the NP that girl is relativizable in (8) but not in (7) is attributable to the fact that when the is in (7) is optionally deleted, the node S vanishes:

(7) John is taller than that girl is.

(7') *A girl who John is taller than is.

(8) John is taller than that girl.

(8') A girl who John is taller than.

Finally, an example having to do with word order in Latin will be discussed.

# PHONEME CATEGORIZATION OF SYNTHETIC VOWEL STIMULI BY SPEAKERS OF SPANISH, JAPANESE, PERSIAN, AND AMERICAN ENGLISH

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This paper will describe an attempt to derive vowel phoneme inventories from native speakers' reactions to synthetic vowel stimuli of known acoustic characteristics and, in so doing, to eliminate the limitations imposed by the phonetic talents and linguistic background of the analyst. We presented native speakers of Spanish, Japanese, Persian, and American English with a tape recording of vowel-like sounds generated by a speech synthesizer. Their range covered the first and second formant frequencies generally associated with adult male speakers (i.e. F1 = 250-850 cps. and F2 = 800-2600 cps.). The native speakers were asked to associate each of the 69 different stimuli with one of a list of key words or with the category 'none'. The key words were drawn up on the basis of standard descriptions checked with a native speaker. The results of this experimentation will be considered with respect to its implications for the standardization of the description of phonemes as psycho-acoustic realities.

# ON DIALECT INTELLIGIBILITY IN JAPAN

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This paper is a report on the results obtained when 65 students at Keiō University were asked to give translations in standard Japanese of brief selections from ten different Japanese dialects.

Better understood even than the dialect of one's own region of longest residence was that of Kyoto. The Kōchi dialect was also well understood. The results indicate that a core group of dialects from Tokyo south through Nagoya, Kyoto, Osaka, the Island Sea, Kōchi, and Kumamoto, spoken in the cultural, industrial, educational, and governmental "heartland" of Japan, are developing an increasing number of mutually intelligible elements.

Passages that were not understood were generally left untranslated. Many of the errors in translation came from misinterpretations of dialect forms that bore close resemblance to standard language forms. From the questionnaires that were distributed at the time the tests were given came the answers to such questions as "Which dialect was the easiest to understand, and why?" The influence of TV, radio, and the movies on the understanding of the Kyoto dialect is frequently mentioned. Finally, this paper reflects on the literature of dialect distance, beginning with the article by C. F. Voegelin and Z. S. Harris in the Proceedings of the American Philosophical Society (1950) and ending with Hans Wolff's critique in Anthropological Linguistics (1959).

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