Linguistic Society of America

FIFTY-FIRST ANNUAL MEETING
DECEMBER 28-30, 1976
PHILADELPHIA, PENNSYLVANIA

Meeting Handbook
The LSA Secretariat has prepared this Meeting Handbook to serve as the official program for the Fifty-First Annual Meeting of the Linguistic Society of America. The abstracts (arranged in alphabetical order by author) are photocopies of originals submitted to and accepted by the LSA Program Committee. The Program Committee was chaired by Janet Dean Fodor and consisted of Eve Clark, John Fought, Sally McIendon, Ernst Pulgram, Ivan Sag, and Michael Silverstein.

We would like to take this opportunity to formally acknowledge the help which has been given by the Philadelphia Local Arrangements Committee. This Committee was chaired by Ivan Sag, University of Pennsylvania, and consisted of Gerald Ferere, St. Joseph's College; Ellen Prince, University of Pennsylvania; George Cardona, University of Pennsylvania; Gary Millsark, Temple University; Rosane Rocher, University of Pennsylvania; and William Labov, University of Pennsylvania.

We hope that this Meeting Handbook will be a useful guide for those attending the meeting, as well as serve as a permanent record of the 51st Annual Meeting.

INTRODUCTORY NOTE

The LSA Secretariat

December 1976

CASH BARS

Cash bars are scheduled from 8:30 p.m. until 10:00 p.m. on 27 December and from 5:30 p.m. until 7:00 p.m. on 28 December in Salon DE. Byron Bender, the Director of the 1977 Linguistic Institute to be held at the University of Hawaii, and members of the Institute faculty will be available at the Cash Bar on 28 December to discuss the plans for the Institute and answer inquiries.

RECORDING OF SESSIONS

The Linguistic Society has made arrangements with Track 2 Taping of Rockville, Connecticut to tape record sessions at the 1976 Annual Meeting. All papers presented by authors who have given their permission will be taped, as well as the discussion period following the papers. Cassette tapes will be available for purchase by meeting participants approximately 25 minutes after each session is recorded.

Each three hour session will be taped in two ninety minute segments with one segment available for $5.50 or the entire session on two tapes for $10.00. In addition, Track 2 Taping offers a special discount for quantity orders.
1976 LSA ANNUAL MEETING
Philadelphia, Pennsylvania
General Information

Registration, Job Placement, LSA Book Exhibit

Registration for the 1976 LSA Annual Meeting will be conducted in the North Lobby. The Job Placement Center will be located in Salons A, B and C. Salon H will be the site of the LSA Book Exhibit.

<table>
<thead>
<tr>
<th>Day</th>
<th>Registration</th>
<th>Placement</th>
<th>Book Exhibit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>7:00-9:00 PM</td>
<td></td>
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</tr>
<tr>
<td>Tuesday</td>
<td>8:00 AM-4:00 PM</td>
<td>8:30 AM-6:00 PM</td>
<td>10:00 AM-2:00 PM</td>
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<tr>
<td>Wednesday</td>
<td>8:00 AM-4:00 PM</td>
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<tr>
<td>Thursday</td>
<td>9:00 AM-Noon</td>
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<td>8:30 AM-Noon</td>
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SPECIAL INTEREST HIGHLIGHTS

<table>
<thead>
<tr>
<th>Day</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>Monday</td>
<td>LSA Executive Committee 9:00 AM-5:00 PM</td>
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<tr>
<td></td>
<td>Cash Bar 8:30-10:00 PM</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Cash Bar 5:30-7:00 PM</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Past Presidents' Breakfast 8:00-10:00 AM</td>
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<tr>
<td></td>
<td>LSA Business Meeting* 2:00-4:30 PM</td>
</tr>
<tr>
<td></td>
<td>&quot;Suggested Meaning&quot; 4:45 PM</td>
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<tr>
<td></td>
<td>Wine &amp; Cheese Reception 6:15-7:45 PM</td>
</tr>
<tr>
<td></td>
<td>LSA Resolutions Committee: Lynn Waterhouse, Chairman, Robbins Burling and Bruce Fraser.</td>
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</tbody>
</table>

TUESDAY, 28 DECEMBER 1976

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Syntax I: Levi, Herbert</td>
</tr>
<tr>
<td>9:30</td>
<td>Phonology I: Blazer</td>
</tr>
<tr>
<td>10:00</td>
<td>Romania: Ladezogol</td>
</tr>
<tr>
<td>10:30</td>
<td>SPECIAL INTEREST HIGHLIGHTS</td>
</tr>
<tr>
<td>11:00</td>
<td>Novo: Hrgen, &amp; Iverson</td>
</tr>
<tr>
<td>11:30</td>
<td>Book Exhibit: Vanderslice, Lennig</td>
</tr>
<tr>
<td>2:00</td>
<td>Syntax II: Cole</td>
</tr>
<tr>
<td>2:30</td>
<td>Phonology II: Hyman</td>
</tr>
<tr>
<td>3:00</td>
<td>Romania: Tai</td>
</tr>
<tr>
<td>3:30</td>
<td>SPECIAL INTEREST HIGHLIGHTS</td>
</tr>
<tr>
<td>4:00</td>
<td>Novo: Harris, Gandour, &amp; Harshman</td>
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<tr>
<td>4:30</td>
<td>Book Exhibit: Haiman, Chleck, Thomas</td>
</tr>
<tr>
<td>5:00</td>
<td>LSA Business Meeting</td>
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WEDNESDAY, 29 DECEMBER 1976

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Language Acquisition: Shetz, Harris</td>
</tr>
<tr>
<td>9:30</td>
<td>Morphology: Harris, Kaseman</td>
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<tr>
<td>10:00</td>
<td>Discourse Analysis: Allen, Duranti, &amp; Kaneal</td>
</tr>
<tr>
<td>10:30</td>
<td>SPECIAL INTEREST HIGHLIGHTS</td>
</tr>
<tr>
<td>11:00</td>
<td>Past Novo: Watkins, Wallace, Kantor</td>
</tr>
<tr>
<td>11:30</td>
<td>Book Exhibit: Lieberman, et al.</td>
</tr>
<tr>
<td>2:00</td>
<td>LSA Business Meeting</td>
</tr>
<tr>
<td>4:45</td>
<td>Presidential Address</td>
</tr>
<tr>
<td>6:15</td>
<td>Wine &amp; Cheese Reception</td>
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</tbody>
</table>

THURSDAY, 30 DECEMBER 1976

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Semantics: Rodman, Nolen, &amp; Mannet</td>
</tr>
<tr>
<td>9:30</td>
<td>Psychology I: Frankenfield, Jensen</td>
</tr>
<tr>
<td>10:00</td>
<td>Phonology III: Jensen, McIntire, &amp; Yamada</td>
</tr>
<tr>
<td>10:30</td>
<td>Sociology: Beaug, Kupin</td>
</tr>
<tr>
<td>11:00</td>
<td>Psychology II: Beaug, Kupin, Cowgill</td>
</tr>
<tr>
<td>12:00</td>
<td>Linguistics: Krashen, et al.</td>
</tr>
<tr>
<td>2:00</td>
<td>Linguistics: Kantor, Jeffers</td>
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</tbody>
</table>

*LSA Resolutions Committee: Lynn Waterhouse, Chairman, Robbins Burling and Bruce Fraser.
### TUESDAY, 28 DECEMBER 1976

#### MORNING

<table>
<thead>
<tr>
<th>SYNTAX I</th>
<th>Salon FG</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair: Bruce Fraser</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Judith N. Levi (Northwestern U) Complex Nominals: Nouns of Limited Variety &amp; Unlimited Length</td>
<td></td>
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<tr>
<td>9:30</td>
<td>Ivan A. Sag (U Pennsylvania) Maximalization &amp; Reconciliation of Deletion</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Noriko McCawley (U Chicago) Why Tough-Movement is Impossible with 'Possessive Break'</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SYNTAX II</th>
<th>Salon FG</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>Chair: Samuel Jay Keyser</td>
<td></td>
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<tr>
<td>2:00</td>
<td>Peter Cole (U Illinois) The Grammatical Role of the Causee in Universal Grammar</td>
<td></td>
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<tr>
<td>2:30</td>
<td>Timothy Light (U Arizona) Word Order &amp; Word Order Change in Mandarin Chinese</td>
<td></td>
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<tr>
<td>3:00</td>
<td>James Tat (Southern Illinois U) Temporal &amp; Spatial Scopes &amp; Word Order in Chinese &amp; Japanese</td>
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</tbody>
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#### AFTERNOON

<table>
<thead>
<tr>
<th>LANGUAGE ACQUISITION</th>
<th>Salon FG</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair: Lila R. Gleitman</td>
<td></td>
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<tr>
<td>1:00</td>
<td>Marilyn Shatz (CUNY) Form &amp; Intent: Mothers’ Questions to Children</td>
<td></td>
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<tr>
<td>1:30</td>
<td>Catherine J. Garvey (Johns Hopkins U) Some Ways of Asking Conversational Requests</td>
<td></td>
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<tr>
<td>2:00</td>
<td>Jean Berko Gleason (Boston U) Parental Judgments of Children’s Language Abilities</td>
<td></td>
</tr>
</tbody>
</table>

### WEDNESDAY, 29 DECEMBER 1976

#### MORNING

<table>
<thead>
<tr>
<th>PHONOLOGY I</th>
<th>Salon J</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>Chair: James E. Hoard</td>
<td></td>
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</tr>
<tr>
<td>9:00</td>
<td>Robert K. Herbert (Ohio State U) Phonological Explanation in Phonetics</td>
<td></td>
</tr>
<tr>
<td>9:30</td>
<td>Shmuil Bolozky (Tel Aviv U &amp; U Illinois) On Surface Phonetic Constraints in Fast Speech</td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Peter Ladefoged (UCLA) The Inadequacy of Feature Specifications</td>
<td></td>
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<tr>
<td>10:15</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:30</td>
<td>George Clements (Harvard U) Phonological Coalescence</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Catherine Ringen (U Iowa) &amp; Gregory Iverson (U Wisconsin) On Constraining the Theory of Exceptions</td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td>Ralph Vanderslice, Autonomous Phonology, Phonic Overlap &amp; the Red Herring of Invariance</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PHONOLOGY II</th>
<th>Salon J</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair: Wolfgang Dressler</td>
<td></td>
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<tr>
<td>2:00</td>
<td>Larry Hyman (U Southern California) A Reanalysis of Tonal Domain</td>
<td></td>
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<tr>
<td>2:30</td>
<td>Jean-Marie Hombert (UCLA) Tone Space &amp; Universals of Tone Systems</td>
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<tr>
<td>3:00</td>
<td>Break</td>
<td></td>
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<tr>
<td>3:30</td>
<td>Graham Thurlow (Cal State U, Fresno) The Origins of Buremur Creaky Tone</td>
<td></td>
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<tr>
<td>4:00</td>
<td>Jack Gandour (Bell Labs) &amp; Richard Harmanon (U Western Ontario) A Cross-Language Study of Tone Perception</td>
<td></td>
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<tr>
<td>4:30</td>
<td>Deborah Ostlek (Stanford U) A Continuum of Stress Types</td>
<td></td>
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<tr>
<td>5:00</td>
<td>Richard S. Pittman (SL) The Exploratory Potential of Voice Register Theory</td>
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#### AFTERNOON

<table>
<thead>
<tr>
<th>DISCUSSION ANALYSIS</th>
<th>Salon K</th>
<th>3</th>
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<tbody>
<tr>
<td>Chair: Winfred P. Lehman</td>
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<tr>
<td>2:00</td>
<td>Glendon Drake (San Diego State U) Verb on Language</td>
<td></td>
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<tr>
<td>2:30</td>
<td>George Dukelow (Johns Hopkins U) Resumptive Pronouns: An Essay in IEI?</td>
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<tr>
<td>3:00</td>
<td>Robert Jeffreys (Ohio State U) &amp; William Lipitacco (U Delaware) The Expression of Purpose in Indo-European</td>
<td></td>
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<tr>
<td>3:30</td>
<td>Break</td>
<td></td>
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<tr>
<td>4:00</td>
<td>Josh Ard (Indiana U) A Reanalysis of the Origin of Definite Adjectives in Baltic &amp; Slavic</td>
<td></td>
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<tr>
<td>4:30</td>
<td>Linda Kopp Thomas (U Texas) Morphologization of Palatalization in Russian Verbs</td>
<td></td>
</tr>
<tr>
<td>5:00</td>
<td>Alice Faber (U Texas) A-Alternations in Biblical Hebrew &amp; Northwest Semitic</td>
<td></td>
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</tbody>
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The following rules for motions and resolutions were prepared by William Equi, Stephen Hale and the LSA Executive Committee at its June 1973 meeting. LSA members are urged to vote on these resolutions and to consider the following resolutions at the Business Meeting.

1. **Definition of a Motion**
   A motion is any proposition calling for action by the Society. The Executive Committee may preclude action by the Society, or the membership, but a motion expresses the opinion or feeling of a group. Resolutions express "the sense of the majority of the membership," and motions express "the sense of the majority of the membership.""
<table>
<thead>
<tr>
<th>Time</th>
<th>SEMANTICS Salon F</th>
<th>AFTERNOON</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>Celia Merrill (U Texas) Truth, Meaning &amp; the Paraphrased Performative</td>
<td>3:00</td>
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<tr>
<td>11:00</td>
<td>Frank Roberts Brandon (UNICAMP) Grammatical Relations and Scope</td>
<td>4:00</td>
</tr>
<tr>
<td>11:30</td>
<td>Per Kristian Halvorsen (U Texas) Transformational Syntax &amp; Model Theoretic Semantics for Pseudo-Clefts</td>
<td>4:30</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>PSYCHOLINGUISTICS I Salon J</th>
<th>PSYCHOLINGUISTICS II Salon J</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Glenn Frankenfield (U Maine) Language Out of Context: Schizophrenia</td>
<td>2:00</td>
</tr>
<tr>
<td>10:00</td>
<td>Marilyn McClaran (UCLA) Lateralization Studies, Language &amp; The Social Sciences</td>
<td>3:00</td>
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<tr>
<td>10:15</td>
<td>Break</td>
<td>3:15</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Time</th>
<th>PHONOLOGY II Salon K</th>
<th>INDO-EUROPEAN II Salon K</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>John T. Jensen (U Ottawa) Reply to &quot;Theoretical Implications of Hungarian Vowel Harmony&quot;</td>
<td>2:00</td>
</tr>
<tr>
<td>10:00</td>
<td>T.D. Griffin (Wichita State U) Middle High German, a Voicing Language</td>
<td>3:00</td>
</tr>
<tr>
<td>10:30</td>
<td>Marianne M. Williams (SUNY) Levels of Consciousness of Linguistic Structure</td>
<td>4:00</td>
</tr>
</tbody>
</table>
| 11:30 | Robert Rankin (U Kansas) The Unmarking of Quapaw Phonology: A Study of Language Death | | | "abstracts"
The abstracts which appear in this Meeting Handbook are photocopies of the originals submitted to the LSA Program Committee. Infelicities of style, grammar, punctuation and spelling are the responsibility of the authors.

The structure of English compound nominals is investigated in this paper within a framework of derivational morphology similar to that proposed by Aronoff (1974) and by Siegel (1974). It is claimed that only such a theory permits an explanation of the phonological and semantic variance exhibited by compounds. Previous analyses have been either transformational (Lees, 1960) or descriptive (Marchand, 1969). It is argued here that transformational rules cannot be used to derive compounds, and that the variance shown by compounds is a natural consequence if a morphological derivation is assumed. Some of the evidence for variance in structure involves 1) consonant changes which may occur at the internal boundary and 2) vowel reduction in the second element of the compound, for example:

1) paid-cake/*paid-cleaner 2) wood-lam/*bear-lam
new-paper/*new-piece straw-blwri/*field-blwri

It is shown that an analysis using re-adjustment rules to delete an internal word boundary (e.g. Selkirk, 1972) is insufficient since it fails to capture the fact that the pattern of phonological variance is mirrored by a variation in the semantic transparency of the compound (X-Y) with respect to its elements [X] and [Y]. The alignment of the phonological and semantic facts can best be accounted for by proposing underlying forms which differ in boundaries and bracketing. The following are proposed as examples of three types of compounds, derived by three different morphological operations:

1) [X#Y#] 2) [X#Y#] 3) [X#Y#]

Type 1 is non-idiosyncratic both in form and in meaning. Phonological disturbances do not occur at the juncture and the meaning of the compound is a function of the meaning of its elements. The second elements of type 2 compounds have representations similar to the stress-neutral suffixes such as -ful, -er, and they share some characteristics of these suffixes. Type 3 compounds have a weakened internal boundary which permits the operation of assimilation rules and predicts a low degree of semantic transparency. Implicit in the proposals made here is the position that morphological representations must be constrained in explicit ways, for example, as suggested in Brame’s (1974) Natural Bracketing Hypothesis. The data from compounds provides some support for the strong version of Brame’s hypothesis.

References

A Reanalysis of the Origin of Definite Adjectives in Baltic and Slavic

W.P. Lehmann in his book Proto-Indo-European Syntax and in an article in Proto-Baltic has claimed that definite adjectives in Baltic and Slavic are syntactic archaisms developed at a time when the languages were SOV languages, which according to his analysis they should have been at the time of the breakup of the Proto-Indo-European speech community. In this paper I will show that internal evidence from Baltic and Slavic motivates a quite different explanation of the origin of definite adjectives which does not imply contemporaneous SOV order at all. The crux of Lehmann's argument is that the definite adjective—etymologically an adjective with a fused post-posed demonstrative (j)—developed directly from a relative clause position before the restricted noun with a clause final relative marker, a pattern typologically associated with SOV languages.

A further look at the data, however, motivates a different explanation. The primary shortcoming of Lehmann's analysis is that the supposedly erstwhile relative marker, rather than appearing in last position among elements from the putative original relative clause, stands in second position in the noun phrase: when two adjectives are conjoined in early Slavic texts the j-marker follows the first adjective, not the second. Moreover, in Old Lithuanian for definite adjectives derived from verbs with prefixes the j-marker is placed between the prefix and the stem of the adjective.

praiašėkusioj (~ pra-ja-šėkusioj = Mod. Lith. prašėkusioj)

Phonological factors also pose problems for Lehmann's analysis. The resultant shape of definite adjectives in Baltic and Slavic seems to reapt and relatively late fusion of adjective and demonstrative, while under Lehmann's analysis definite adjectives should have developed quite early in the history of these languages. I will demonstrate that the source construction of the Baltic and Slavic definite adjective is not one lost in the primeval days of these families, but rather one parallel to one still extant in parts of the Slavic world. In North Russian dialects a particle t- (derived from another demonstrative) is placed in second position in NP's as a marker of definiteness:

zlaja-ta žena/ žena-ta zlaja "evil woman"

The definite adjective resulted from this construction when the cliticized definite marker (the earlier one, j-) became restricted to adjectives and subsequently became reinterpreted as an adjectival desinence.

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Weakening Chains and the Histories of Some Spanish Consonants

James Foley contends that there are types of assimilations which are not phonetic in nature and therefore must be given purely phonological interpretation. On the basis of the phonological interpretation apparent to Foley is that /s/ is strengthened in proximity to the stronger /l/ but not in the vicinity of weaker /n/.

More recent work by Joan Hooper supports a theory of Natural Generative Phonology in part on the basis of the apparent evidence for a system of phonotactic constraints in standard Spanish dialects. In Hooper's 1973 UCLA Dissertations, the syllable is selected as the basic unit for stating such phonotactic constraints which are restrictions on the sequences of consonants clustering around a nucleus and which are statale in terms of rankings along a scale of relative phonological strengths. Hooper's Positive Condition on syllable structure is similar in conception though not in detail to the notion of strength conditions advanced by the work of Foley. Relying on data from standard American dialects of Spanish, especially the Miami Cuban dialect of Spanish, this paper will present evidence that neither Foley's phonological approach nor Hooper's semi-phonetic approach offers a particularly useful method for assigning strength values to capture phonological relationships between segments, especially as these function within the syllable as a basic unit.

This paper is primarily concerned with motivating the concept of "phonetic" strength chains as an alternative to Foley's innovative but still unworkable system of purely "phonological" strengths. A starting point will be to demonstrate that some of the phenomena Foley cites as crucial examples from standard American dialects of Spanish after the retention of schwa after deurr (as mentioned in preceding papers, or monophthongization of /au/ to /o/ before dentals) and as being fully "uninterpretable in a phonetic system" indeed do have a natural phonetic explanation within a system of Natural Phonology as proposed by David Stampe. A larger issue will be a claim here that a developing theory of strength chains based on pure phonetic (i.e., Articulational constraints) is sufficiently capable of explaining a wide range of assimilatory behavior among the segments mentioned by Foley and Hooper, along with other synchronic as well as diachronic phenomena.

The argument advanced here is based largely on a notion of weakening chains or target chains in Natural Phonology, a concept first applied by Larry Neslly (1973 C.L.S. Conference) and a direct outgrowth of the theory of Natural Phonology being advanced piecemeal by Stampean phonologists. This paper makes three controversial claims: (1) Foley's purely phonological scales of relative strength have little if any empirical support and are, in fact, repeatedly contradicted by the evidence from Spanish; (2) the purportedly phonological and phonetic consonantal strength hierarchies which are part of Hooper's system of Natural Generative Phonology err primarily in her assumption that positions of phonological strength are statable exclusively or even prominently in terms of the syllable; and (3) the phonetic weakening chains suggested originally by Neslly provide the most desirable account of relative synchronic strengths of segments as well as the most supportable explanations for linguistic change. A consideration of Hooper's arguments and the Spanish data on which they are based reveals that Natural Generative Phonology fails to handle with its Positive Syllable Structure Condition the distinction between syllable-initial and word-initial positions as conditioning factors on synchronic phonological processes. Diachronic developments in the historical evolution of Spanish grammar are also cited as relevant.
On Surface Phonetic Constraints in Fast Speech

The purpose of this paper is to show that the emergence of surface phonetic constraints (SPC's) in fast speech that are not found in normal speech, and the frequent relaxing of normal speech SPC's in fast speech, constitute a problem for Natural Generative Phonology (NGP) with its single level analysis and no-ordering condition. For instance, in Modern Hebrew fast speech, obstruent clusters must be uniform in voicing, but NGP provides no way of excluding this constraint from applying in normal speech as well (where it should not apply). Similarly, though Modern Hebrew does not allow stem-geminates in normal speech, this restriction is often violated in fast speech and must thus be excluded from it. The problem is further complicated by the gradual change affecting SPC's with the increase of speech tempo. Attempts to resolve this difficulty by means of discerning a number of discrete levels of fast speech (cf. Rudes 1976 "Lexical Representations and Variable Rules in NGP") are rejected for the lack of independent evidence. It is proposed that a separate level of fast speech is indeed inevitable, but that within fast speech, the ordering of rules and development of constraints are predictable from the change in tempo on universal grounds. For instance, in normal speech, Modern Hebrew sonorant consonants must be flanked by a vowel on at least one side; in fast speech liquids and nasals may occur in -C position provided that they are syllabified; in faster speech they may be syllabified in the same position; and at an even faster tempo the liquid or nasal may sometimes be deleted. It will be shown that this sort of development is predictable by general principles, and that to assume discrete levels of fast speech would be an indirect and unnatural way of capturing this predictability. Principles of the development of SPC's in fast speech, four general principles are proposed. For the laxing of normal speech constraints in fast speech, it is suggested that:

(1) The greater the incompatibility of sequences with an existing language-particular constraint, the less likely are the constraints to be violated; e.g. constraint on SPC clusters will be easier to violate in a European language than in Japanese.

(2) The greater the violation of universal constraints on syllable-structure (as in Hooper's 1973 dissertation), the less likely are the constraints to be relaxed; e.g. a constraint on syllable-initial glides followed by a consonant is less likely to be violated than a constraint on syllable-final glides followed by a consonant. Hooper's (1976 "Constraints on Schwa-Deletion in American English") interpretation of Zwicky's (1972) English data in "Note on a Phonological Hierarchy in English" is discussed in this context.

For constraints found in fast speech only, it is proposed that:

(1) The faster the tempo of speech, the greater the likelihood of restricting clusters to ones that are assimilated in some way; e.g. the above-mentioned restriction on obstruent clusters in Modern Hebrew.

(2) The faster the tempo of speech, the more likely are the restrictions on the occurrence of weak elements; e.g. certain restrictions on sequences of unstressed vowels in Modern Hebrew. Most general principles are properly defined, it should be possible to predict the development of SPC's in fast speech without assuming distinct levels within fast speech.
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English Vowel Alternation Is Psychologically Real

English vowel alternation was subjected to an experimental test for psychological reality. It is assumed that a linguistic generalization is psychologically real if it serves as a variable in mental processing. It was hypothesized that if the pattern of vowel alternations in English facilitates the learning of novel forms exemplifying correct English alternations and if it interferes in the learning of novel forms exemplifying alternations not found in English, then it is psychologically real.

The alternations were embedded in novel adjective-noun pairs, e.g., the correct ey/I alternation in the pair subk[ay]pe/subk[I]pity. Corresponding to each correct exemplar, four word-pairs with non-English alternations served as control conditions; thus, the controls for the ey/I alternation were: mal[ay]de/malp[ay]dity, purg[ay]te/purg[ay]tity, surf[ay]te/surf[ay]menity, dist[ay]ne/dist[ay]nity. There were, therefore, 25 stimulus pairs. The word pairs were presented orally to 20 university students as paired-associates to be learned, using the study-test technique. In the study phase, subjects heard and repeated all 25 word pairs. In the test phase, they were presented with only the adjective forms, and the task consisted in supplying the noun forms.

The results showed that, in all three learnability indices used, the class of correct English alternations were learned significantly more readily than the class of non-English alternations, and, furthermore, their knowledge of these correct English alternations interfered in the learning of the non-English alternations. It was concluded that the vowel alternation generalization in English is psychologically real.

In an attempt to reconcile the positive results of the present experiment with the negative results of two previous productivity studies on English vowel alternation, a distinction is proposed between psychological reality and productivity, whereby a productive process is considered to be necessarily psychologically real, but that a psychologically real process need not be productive. Thus, English vowel alternation is psychologically real, and will be shown to be so in psychological reality experiments; however, productivity tests will reveal that it is not productive. A scale of "psychological productivity" is proposed; in this scale, surface phonetic processes would rate high, and purely morphological, non-phonetically conditioned processes would gravitate toward the lower end.
Phonological Coalescence

Coalescence processes are those which affect two or more segments, modifying both or else deleting one and modifying the other. Such processes are commonplace and particularly characteristic of rapid and informal speech (cf. English can't = [kæt]). They share as a common property the fact that the resulting segment (or segments) is typically an articulatory "blend" of the original segments. Why should this be so?

In attempting to answer this question two theoretical treatments of coalescence are examined. Standard generative phonology allows rules to operate only upon phonemic segments; thus a rule defined upon a certain feature (or feature complex) applies to the entire phoneme characterized by that feature (or complex). Within this framework, coalescence processes are treated in terms of transformational rules applying to two (or more) phonemes characterized by the features mentioned in the structural description of the rule. The second approach, that of autosegmental phonology (Goldsmith 1976a, 1976b, Clements 1976) takes the feature, rather than the phoneme, as the basic unit of phonological description. It treats coalescence processes in terms of operations defined directly upon features themselves. Two such operations are posited to account for coalescence: feature deletion and feature metathesis. These are shown to account for a variety of mutual adaptation, fusion and interversion processes in a number of languages including Ga, Mongolian, Catalan, Dakota, and Icelandic.

The properties of the two descriptive models are contrasted. The transformational format is unable to distinguish in a principled way between the "natural" coalescence processes that "blend" phonemic segments from the "unnatural" coalescence processes that do not. On the other hand, the autosegmental approach draws this distinction sharply. In its terms, coalescence processes are just those that result from the metathesis and deletion of features; hence, no new features are added to representations, and the forms which result are of necessity simplifications (blends) of the original forms.

The Grammatical Role of the Causes in Universal Grammar

Over the last ten years two major approaches to syntax have been prominent in generative grammar: autonomous syntax and semantically based syntax. The former approach is most frequently associated with the recent work of Chomsky and colleagues, but it also characterizes work in Relational Grammar developed in various forms by Perlmutter, Postal, Johnson, Keenan, and Comrie inter alia. The semantically based approach to syntax is exemplified in the work of Fillmore, Croft, Morgan, McCawley and others. This paper is a crosslinguistic study of causatives, the purpose of which is to compare the range of autonomous syntax and semantics with respect to a major problem in the syntax of clause union (CU) causatives. The problem is the following: What factors determine the derived grammatical role (grammatical relation/case) of the causee (or underlying complement subject (UCS)) in such causatives? A wide variety of surface constructions (see below) are possible in different languages. Are there any valid crosslinguistic generalizations?

It has been widely noted (Aissen, Comrie, Perlmutter & Postal) that in many languages the complement subjects (CSs) of transitive verbs appear as indirect objects. This has led to the hypothesis that the underlying role of the causee is determined by the purely grammatical factor of transitivity. There are, however, a wide variety of counter examples to this hypothesis: e.g. in Japanese transitive CSs may be marked accusative (e.g. to be marked accusative (e.g. [kuro]; in Bolivian Quechua transitive CSs may be marked dative (e.g. [man]; in Bolivian Quechua transitive CSs may be marked dative (e.g. [man]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]; in Bolivian Quechua transitive CSs may be marked instrumental (e.g. [wan]).)

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Latin vis 'thou wilt', and the Power of Morphology to Affect Phonology

This paper presents a solution for a detail of Latin historical grammar with implications for the power of morphology to affect phonology, and exemplifies a sound law applying to just one item. Most forms of Latin volo 'I will' come clearly from an athematic root present *wel-mi etc., with cognates of same or similar meaning in Germanic, Balto-Slavic and Indo-Iranian. But the 2d singular present indicative *vel is very aberrant in shape, and, since W. Froehse, Benzenberger's Beiträge 5, 167 and R. Cathoff, Rheinisches Museum 24. 156 (both 1881), has mostly been thought to come from a different root, *vel or *velus, seen in Veio Sessia velis 'thou turnest thy attention toward' (meaning established by W. P. Schaad, Melanges ... Renou (1960) 515-524).

But there is no need to posit this suppletion if we consider sufficiently the outcome of *velal's 2d singular, *welal. It is widely accepted that the Latin conjunction velar 'or' is the regular outcome of this *velal, through *velal > velall velol and that vis reflects a replacement for *velal in its primary function as a 2d singular verb form, *velol being no longer clearly recognisable as such because it did not end in -el. I suggest that the replacement consisted not in suppletion by *velal, but in resuffixation of -el, giving *velall. This form was phonetically unique in having a (long) velar before 1 before a; Early Latin 1 before a consonant other than itself was otherwise velar, as shown by the backing of the preceding vowel in forms like pellis, past participle of pellis 'I drive', and the cluster ll normally occurred only between vowels. This unique combination of (long) front 1 plus velar did not remain, but instead underwent a unique sound change to le, a combination frequent in Old Latin, and comparable e. to the regular development of palatal l to l in all positions in standard Modern French. The development of Old Latin *velal (quasi-attributed in Frisson 9.6) to Classical Latin vis is quite regular.

(A) vis is a geminate in some respects anticipated by W. Oorgen, Über Aussprache, Vokalismen und Betonung der lateinischen Sprache 2 (1870) 279, and by F. Nücheler, Rheinisches Museum 36 (1881) 259, who is followed by at least 6 other scholars, of whom the most recent that I have noted is W. V. Niest, Grammatik der lateinschen Sprache 2 (1922) 292. But Oorgen derives *velal by a sporadic loss 1 of 1 in velal. and Nücheler et al. derive vis (allegedly attested in the very early Duens inscription) from velal by an ad hoc and phonetically unlikely change of velar 1 before a to le. If my explanation of vis is correct, it is a case where morphological patterning has caused a previously non-existing sound combination (long) velar plus a- to arise, and some evidence that when the resulting combination was very aberrant and very limited in lexical distribution, it is liable to be replaced soon by a combination that conforms to existing patterns.

My view, if accepted, also rules out all possibility that the letters VOLIS on the Duens inscription are an early form of vis 'thou wilt', which in turn reduces to almost zero the likelihood that the preceding strophe PARADIX, a passive-deponent infinitive, with an ending containing El, or an inexplicably early example of from mel.
Toward a Probabilistic Automata Model of Some Aspects of Code-Switching

Specific interest in code-switching is almost entirely limited to the last 15 years, and has included research primarily in the alternating use of Swedish and English, Greek and English, Hindi and Punjabi, two dialects of Norwegian, German and English, Spanish and English, Yiddish and English, and secondarily between several other pairs of languages. Among the list of poorly understood phenomena in code-switching are (1) seemingly unpredictable switching, and (2) the possibility of formal, complex rules underlying different code-switching patterns. It is these open questions which modeling might illuminate.

During the past decade, probabilistic automata have been used to model many aspects of nondeterministic, intelligent behavior (Pat, 1971; Narendra and Thathachar, 1974). Thus it is natural to try to model code-switching with probabilistic automata in an attempt to improve our understanding of code-switching and its relation to language use and intelligence. The model presented in this paper will provide guidance for quantification, and allow comparisons between patterns of actual code-switching and code-switching as generated by the model. As is usual in modeling, inconsistencies are expected to provide guidance for further refinement of the theory and development of the model.

Assumptions used in designing the model at its present state of development are (1) that context-invariant "chunks" of information delimit important boundaries in the synthesis of speech (motivated to some extent by Miller, 1967, "The Magical Number Seven"); (2) that a bilingual's choice of language can be modeled by a regular grammar; (3) that the context of a discourse can be encoded into a finite string; (4) that the context string as encoded largely determines the state of the probabilistic automaton, and thereby also determines the set of probabilities used to choose a language; and (5) that the probabilities of switching words, phrases, and sentences can be measured with reasonable accuracy for different types of bilinguals (Valdes-Fallas, 1974; LSA paper). Goals of the model at this stage of development are (1) to clarify code-switching for lexical need, (2) to clarify apparently random code-switching, (3) to clarify the dependency of code-switching upon context, and (4) to provide a vehicle for further refinement in the theoretical development of this complex process.
Veblen on Language

This paper proposes to discuss the following points: 1) that Thorstein Veblen (1857-1929) was a neglected pioneer in the sociology of language in America; 2) that the examination of such early (1899) and relatively isolated sociolinguistic commentary helps to identify and understand the conditions of mind which give rise to such analysis, and thus to provide some insight into the heightened interest in language and society in recent years; 3) that Veblen's analysis, though still contemporary in many of its aspects, was out of the mainstream of the development of sociolinguistics. Veblen's sociolinguistic comment did not create a revolution as did his economic comment, nor did he participate in the continuity of development that has led in recent years to a formal linguistics sub-field speciality of the sociology of language. The paper concludes by commenting on this last point in terms of the problem of the opposition between revolution and continuity in the history of linguistic thought (Hymes 1974).

Veblen's initial commentary on sociolinguistics appears in his classic, The Theory of the Leisure Class (1899). Subsequently, he continued his comment in two anthropological essays (1913), and in a preface to his translation of an Icelandic saga (1925). Although these commentaries are brief, he does establish several 'modern' and widely agreed upon premises on the nature of language and society: 1) the co-determination of language and society (1899, 1925), 2) the notion of sociolinguistic variability (1899), 3) the symbolic nature of language varieties (1899), 4) the notion of pidginization as a sociolinguistic process (1913), and 5) status and prestige as linguistic forces (1899, 1913).

Intellectually, Veblen was part of the movement which coalesced around the turn of the century and was marked by a philosophical attack on all formal systems of thought. Underlying Veblen's analysis was his assumption that people behave irrationally, his alienation, and his idealization of the scientific mind. Veblen was exceptional among the members of this movement in including language in his criticism of systems and formal abstractions. He was also exceptional in being a scholar of language and society outside of the Boas-Bloomfield-Sapir continuity.

Veblen's isolation and lack of influence in the sociology of language rests in marked contrast to his enormous influence in other areas of social science. The reason for this is fixed in the absolutist, prescriptive, linguistic tradition shared by the educated, intelligent, but non-linguist audience that Veblen addressed. Brief connection is also made with Fishman's (1972) notion of the history of science, nor with the related historical theories regarding the role of revolutionary figures in the history of linguistics.
Resumptive Preverb Deletion in IE?

Sequences of the form preV+V₁...+V₁ have been interpreted as results of an Ik process of "resumptive" preverb deletion applied to underlying sequences of the form preV₁+V₁...+preV₁+V₁, in which the simplex retains the semantic force of the preceding compound verb. But we must be convinced of the necessity, not just of the possibility, of assuming such a construction before ascribing it to IE. To do this we collect all instances of the sequence preV+V₁...+V₁ in the NV, in the prose portions of the Th, and in the Iliad. First, we discard cases in which the "reduction" has an obviously etymological cause (e.g. RV 1.132.6). We next discard "intended oppositions", in which the semantic distinction between compound and simplex is the point of the whole passage, e.g. RV 8.46.9. In the remaining examples, we can detect no difference between compound and simplex: we must use parallel-passages to continue the investigation. To prove a simplex resumptive, 1. the compound must elsewhere occur in the same environment as the simplex (otherwise the deletion hypothesis is impossible to prove); 2. the simplex must not recur in the same environment (if it does, the deletion hypothesis is unnecessary: we are faced with a chance collocation). 5 passages (out of 30 of the formal type) in the NV, none (of 6) in the Th, and 11 (or 40) in the I. pass this double test. The Eg-Vedic examples are all objectionable for textual reasons, and all the evidence consists of compounds and simplexes which do not differ in meaning anyway: the strongest type of evidence for the theory is totally lacking. Their interpretation as chance collocations, a priori likely, is suggested by the existence, hitherto unnoticed in sequences of the form V₁...+preV+V₁ (49X NV, 3X Th, 5X ThS, 111). Thus even the very recurrence of the first type of sequence is no proof of the reality of "resumptive" preV deletion. Finally, a hypothesis of an "any-order" preV deletion is disproven by the multitude of nondeleted sequences (preV₁+V₁...+preV₁+V₁): 29X RV, 31X ThS, 46X I.11).

If preverb deletion was a living process in classical Greek, it seems to have been an innovation, since the oldest Greek and Indic literary texts provide no evidence that it was inherited.
This paper will present evidence against Perlmutter's Shadow Pronoun Hypothesis (1972) - in particular, his explanation of apparent violations of the Complex NP Constraint (interpreted as a constraint on deletion) in Arabic to be due to a rule of Subject Pronoun Drop and not Shadow Deletion. Crucial to Perlmutter's account is the claim that pronoun drop rules are always optional and that they are insensitive to the structure in which the pronoun occurs. This enables him to relate the deletion of the pronoun in the complex NP in (1) below to the general rule that drops subject pronouns in Arabic as illustrated in (2).

1. da ilwallad; illi šuft ilbint; illi (huwwa); darab-ha; This is the boy that I saw the girl who he hit her

2. (huwwa) darab-ha He hit her.

An investigation of the conditions under which subject pronouns are deleted in Arabic, however, does not support Perlmutter's claim. For example, subject pronouns are obligatorily deleted in a relative clause if the pronoun is coreferential to the head of the immediately dominating relative clause.

3. *da ilwallad; illi huwwa; darab ilbint This is the boy who he hit the girl

4. da ilwallad illi q darab ilbint This is the boy who hit the girl

Furthermore, there are cases where the pronoun cannot be deleted in a complex NP.

5. da ilwallad; illi šuft ilraagil, illi huwwa, darab-ū; This is the boy who I saw the man that he hit him;

6. *da ilwallad; illi šuft ilraagil, illi q,darab-ū; Cases like these cannot be handled by Perlmutter's hypothesis since they show that the deletion of the subject pronoun in Arabic is controlled by the structure in which it occurs. Neither can they be handled by a Shadow Deletion Rule since this is sensitive to Island Constraints violated in (1).

The behavior of subject pronoun deletion in Arabic will be shown to follow from a more general principle of deletion in language - a principle that predicts that a pronoun cannot be deleted if the structure intervening between the pronoun and its antecedent includes another possible controller for that deletion. The application of this principle will be demonstrated with respect to Arabic and English deletion rules.
A-I Alternations in Biblical Hebrew and Northwest Semitic

Barth's Law is the accepted name for alternations in the imperfect prefix vowels in Biblical Hebrew. According to the usual statement, these person prefixes are of the shape Cα- (C=Ca) if the following stressed vowel is high; when followed by a non-high stressed vowel, the prefix is of the shape CI. It is shown that the prefix could, as easily, be described in terms of syllable structure; the prefix vowel is a if the syllable is closed and i if it is open. Relevant examples are: 2Qm 'you will rise,' coph 'you will sing,' riškav 'you will lie down,' and tisqor 'you will close.' A decision between the two possible descriptions can be made on the basis of an environment in which the two criteria, syllable structure and vowel height, conflict. The alternation between the passive perfect forms nım6l and nimm6l 'was circumcised' in Genesis 17:26 provide conclusive evidence in favor of a solution based on syllable structure.

It is then shown that positing a general rule changing a to i in initial unstressed closed syllables, in addition to providing a unified account of these and other alternations in the verbal system, helps account for alternations in some noun declensions (zaqān 'elders,' but záone- 'elders of ...) but creates problems in the treatment of other noun classes (e.g. milāx 'king,' malax- 'kings of...'). This leads to a discussion of rule generality and whether or not a restriction on the aì rule so that it can only apply to forms of a certain level of morphological complexity will allow for an adequate description of the fact. It is concluded that, while synchronic description of the facts may be possible, the only adequate explanation will be found in a historical investigation of the origins of the aì change in earlier stages of Northwest Semitic.

In a sociolinguistic study of the verb phrase in Southern White English, a pattern of change in progress was observed. The 14 variables studied showed that certain variants were increasing, others decreasing, and yet others stable across time within the community, and that each variable's change was progressing in a wave sensitive to age, social class, sex, and rural/urban origins as suggested by Bailey (1973).

It is possible that these apparent changes were a reflection of age grading, since there are no earlier records of speech in that community. However, the variants that are decreasing are all older forms of English than those which are increasing and are dying or non-existent outside Southern White and Black English. This suggests that age grading is not the primary factor here, but rather language change moving through the community.

The variables examined were the standard and nonstandard variables of NP plural agreement; plural was, is; singular don't; irregular preterit and past participles; ain't; negative concord; passive be and got; perfective done; a+verb+ing; double models; liketa; and negative concord. The data base consisted of tape recorded interviews with 80 natives of Anniston, Alabama, and nearby rural areas. The informants were teenagers and adults over 65 of the working and upper classes. The methodology is based on Labov (1966) and Labov et al. (1966).
A class of exceptions to Grimm's Law, as modified by Verner, is characterized by Proto-Germanic root-final */~p/-, */~t/-, */~k/- where Grimm/Verner rules lead us to expect a voiced or voiceless alveolar. E.g.: Gothic hweites etc. 'white': PIE *Hwehs- I 'gleam', West Norse flatr 'flat': PIE *Flatr- I 'spread out', OE hopian 'hope': Latin cupiunt 'desire'. Some show regular forms next to them in Germanic: Go diuva etc. 'deep', but OE dyfan/dyfan 'dive' (PIE *De-vehhs- 'sink into'). A related phenomenon are the voiceless stop geminates of the type PGmc *likkr- 'lick' (Go bi-laigen), some to the same roots: PGmc *tupak- 'ship'.

The distribution points to inner-Germanic conditioning, not PIE root-alternants, as the source. This applies particularly for PGmc */~p/-, since the voiced labial slot appears to have been a hole in the PIE matrix of stops. But direct evidence of phonotactic conditioning (cp. *taikni/-za- 'sign': PIE *Teiaks- 'show', OHG tripocian: OE drie 'dry') is scant; and examination of stem-formational patterns — *-verbs (or extensions) and weak nouns preponderate among the geminates, simple thematic adjectives among the non-geminates — is also inconclusive.

Kluge (PIR 9 (1884) 170 ff.) proposed to account for this class by means of phonological neutralization of pre-Germanic stops before */~n/-, together with assimilation of the nasal: cp. Welsh dyfan 'deep', OE diuva, Bottom: Go diuva. Kluge's proposal failed to win general acceptance (Klumann, Pr. Gram. 13 (1911), 130 ff.) mainly on stem-formational grounds: the only PIE nasal formation regularly built to this set of roots is, in fact, the nasal-infix present, and Kluge's proposal could not account for the *likkr-class (Klumann, Ros. Postverb. (1932), 160-169).

A tendency observable in other branches of Indo-European, however (cp. Gr. sepeti: OInd yuṣṭiti, L iunus, or within Old Indie (later) ruṣṭiti (earlier) rāṣṭiti leads me to believe pre-Germanic has systematically remodelled old /~n/- into new /~n/-suffix stems, which then by Kluge's rule yielded the *likkr-verbs of historical Germanic. This morphological basis in turn provides decisive support for the rule itself. Cp. e.g.: OE pencian 'strove': L lang/o-terteg- 'touch', PGmc *drupan- 'drip': Gk thronoos 'clot' (*~bh-), and, within Germanic, OE krywan etc. 'pream': PGmc *prībh/þrīrhm- (L: 1. trīëti 'damage', L torquus, pre-6th *s) pluck- 'luck': OHG ko-lingan, PGmc *stirk-: OE STRONG etc. 'strong'.

If so, the geminates as well as simplexess are much older than currently thought, their popular character is a consequence rather than cause of their deviation from patterns of related forms, and Germanic preserves a reflex of PIE /~n/-suffix stems.
A Cross-Language Study of Tone Perception

The construction of a universal linguistic-phonetic theory raises questions regarding the nature of phonetic properties or features and the extent to which these features are utilized across particular languages that differ phonetically and/or phonologically. This paper reports on an investigation of the perceptual nature of tone features and the extent to which these features are utilized in 2 typologically and phonologically distinct 'tone' languages - Thai and Yoruba as compared to 1 'non-tone' language - English.

The experimental task involved paired-comparison judgments of dissimilarity for 13 synthetic speech-like stimuli that differed with respect to the level, rate-of-change, direction-of-change of fundamental frequency as well as duration. The method of analysis was based on an individual differences model for multidimensional scaling in which individuals are assumed differentially to weight the several dimensions of a common psychological space. The multidimensional scaling analysis for the pooled English-Thai-Yoruba subjects results in a 5-dimensional tone space that has been interpreted as (1) average pitch, (2) direction, (3) length, (4) extreme endpoint and (5) slope.

The differential weighting of these dimensions or features for a given individual reveals that the perception of tone, to a large extent, depends on the linguistic (both phonetic and phonological) status of tone in his native language. Thus, the 'direction' and 'slope' dimensions are found to be more heavily weighted by the Thai and Yoruba subjects than by the English subjects. The 'slope' dimension, in turn, is most heavily weighted by the Thai subjects - which suggests that the weight or 'salience' of a given dimension may be influenced more by its role on the underlying phonological level than the surface phonetic level. Thai, unlike Yoruba, exhibits contour tones in its phonemic inventory although Yoruba does exhibit derived surface phonetic contour tones. The results of a 1-way analysis of variance for each of the 5 dimensions and a stepwise discriminant analysis of the language groups further point to the linguistic-phonetic nature of these perceptual dimensions.

Earlier proposed phonological features of tone - [+ CONTOUR], [+ RISING] and [+ FALLING] find support in a regression analysis into the 5-dimensional perceptual tone space.

Although much attention has been directed to the relationships between questions and their answers, there has been little research on the relations between questions and their antecedents, i.e. the textual occasion of questions in discourse. A large proportion of questions produced in conversation are not topic introducers or "openers" or the kinds of robust requests for information usually examined in the study of speech acts, but are, instead, dependent questions (DQ), directly contingent on the preceding act of the conversational partner. Such questions fulfill a variety of functions (ritual, pragmatic, and referential); however, their integration into the text can be described in a fairly simple model that indicates 1) what component they select from the antecedent utterance(s) and 2) how they determine the form of the answer they request concerning that component. The selection and the determination processes are relatively independent. For example, following the utterance, We just bought a budgerigar, a DQ can specifically select the final noun phrase, but can request a confirmation, e.g. A budgerigar? or a repetition, e.g. A what? Other components of the antecedent could also be selected, e.g. You did what?

An experiment with 16 adult subjects supported a set of predictions derived from the model in which Intonation plays a key role. Following an utterance such as Henry knows a friend of yours, the direction of pitch of the dependent question, e.g. 'who versus whose led reliably to choice of the responses, Henry and That Greek fellow, respectively. Further, the pattern held for all Wh-questions.

The bulk of this paper presents an analysis of the dependent questions produced by 48 preschool children recorded in peer dyads. It will extend and develop the model from previously reported types of DQ to those that 1) select some potential, but implicit or unexpressed material from the antecedent utterance and 2) determine an answer that elaborates on that antecedent (rather than repeats, confirms or further specifies some selected component of the antecedent). Some of the sources of the queried material, e.g. pragmatic or semantic presuppositions of the antecedent, will be proposed and evidence of inferential processes underlying the questions will be provided.

The following is representative of the DQ type, potential request for elaboration, examined (Speakers are a girl, 3:1 and a boy, 3:3; the dependent questions are underlined).

B: I got my poor Teddy bear.
G: Is he sick?
B: No.
G: Well, what's the matter with him then?
B: He's too tired to.....(mumbles)

The analysis of the short but common sequences formed by antecedent + DQ + answer supports a distinction between "having a turn" and "having the floor". Further, such sequences provide a natural unit for the examination of discoursal ellipses and anaphora, both of which are highly characteristic of such sequences.
Parental Judgements of Children's Language Abilities

As young children's language develops, the input language provided then by adults becomes increasingly complex. Little is known, however, about what cues parents attend to in modifying their speech to children over time; specifically, little is known about parents' awareness of their own children's current stage of linguistic development, even though parents' utterances have been shown to correlate with children's utterances in complexity. The purpose of this study is to find out what parents know about their own children's language.

This paper describes a measure designed to determine parents' knowledge of their children's language abilities, and will present results from a first group of subjects. In the study, mothers and fathers are shown a broad language assessment measure we have devised, and individually asked to predict how their children would perform on each item. The children are subsequently given the test, and parents' and children's responses are compared. Subjects are 12 first-born, middle class children aged 3-5, and their parents. The study is in progress. We intend to show 1) the kinds of conscious knowledge parents have about their children's language—whether, for instance, parents predict better what a child will say (e.g. two houses) or what the child comprehends, and 2) the relationship between accuracy of parental prediction and linguistic pro vocity, as measured by our test, on the part of the child.

We hypothesize that parents who are better tuned to their children's language will have more verbal children, and that some kinds of language abilities may be more predictable than others—parents may know more about children's vocabularies than syntax, for instance. The study has relevance to theories of language acquisition, and especially to an understanding of the interaction between parents' language and children's language.

Middle High German, a Voicing Language

According to Trubetzkoy, in archiphonemic neutralization the unmarked member of a privative opposition is realized in the position of neutralization. This approach to markedness is dependent upon the language. Between /t/ and /d/, for example, if /t/ is unmarked, voice is pertinent in the language; while if /d/ is unmarked, tension is pertinent in the language (Trubetzkoy 1969:76-7). Thus, in archiphonemic neutralization in a voicing language, /t/ should be realized; while in archiphonemic neutralization in a tensing language, /d/ should be realized.

The difference between voice and tension is indicative of a conflict. Where Welsh, a tensing language, has word-final neutralization as in the word pair tag /tag/ 'fair' — tecach /Tekax/ (comparative), German, a voicing language, has word-final neutralization as in the word pair tag /Tak/ 'day' - tag /tag/ (plural). At first glance, it would appear that that which is unmarked in Welsh is marked in German and vice versa, but markedness only applies to oppositions of phonological pertinence, oppositions which must be present for communication (compare Jakobson 1962:9). The traditional analysis of Middle High German (Eis 1950:27) holds that it was a tensing language. This analysis is based upon the dialect of Upper German as it is spoken today (compare Wright 1959:16), which is in fact a tensing language. (The other dialects rely upon voice contrast.) This analysis, then, is based upon a modern dialect and ignores the fact that languages do change, and they can change their opposition relationships just as readily as anything else, as has indeed happened in the history of German.

A more reliable method of determining the Middle High German phonological structure is through the use of phonological alternations found in the manuscripts. Between A.D. 900 and 1200, all High German dialects had voiced /t/, /b/, /d/ as unmarked. In Upper German, as it is spoken today, the final devoicing rule of King 1969:47 holds. In which word-final position became a position of neutralization. In this position of neutralization, archiphonemic /t/, not /d/ was realized. Thus, as the voiceless member was realized, it was the opposition of voice which was subject to markedness. As voice was the marked opposition, voice must have been phonologically pertinent, and therefore present in the structure and pronunciation of the language.

In maintaining this analysis over the traditional, we imply that Upper High German must have changed back to a voicing language sometime during the last seven centuries. This is quite plausible, as Yiddish, a closely related dialect, developed the auslaut phenomenon and subsequently lost it (as pointed out in Kliparsky 1968), becoming at least less of a voicing language. Given such fluctuations between historical stages, it is far better to form our analyses from evidence based on the historical period involved, taking into consideration known phonological behavior.
Conditionals as Topics

Conditional protases in Hua, a Papuan language of New Guinea, occur with a final suffix mo, which appears elsewhere in the language only on nouns. In fact, only two kinds of NP cannot appear with mo: those which qualify other NP, as in pig skin and His dog, and those which appear in the vocative case. Functionally, the former are adjectives, the latter, sentences.

At the same time, it is only the presence of this suffix which distinguishes conditional protases from relative clauses, both sharing one set of personal endings. Relative clauses in the future tense correspond to hypothetical conditionals: hisima 'which he will do' vs. hisima + mo 'if he will do (it)'. Relative clauses in the non-future correspond rather to given conditions, which in English are morphologically unrelated to hypothetical conditionals: hima 'which he did' vs. hima + mo 'given that he did it'.

This paper explores the reasons for the similarity of conditional clauses to NP on the one hand and to relative clauses on the other, arguing that conditions are topics of their sentences: immediate constituents of S which embody old information. Given conditions, like relative clauses in general, are presuppositions. Hypothetical conditionals - suppositions - are hypothetical givens. Counterexamples to more traditional definitions of conditionals, involving notions like the 'cause-consequent' relationship of the protasis and apodosis, or the 'hypothetical nature' of the protasis, are easy to find not only in Hua, but in languages like English as well.

Typologically, our analysis will further account for two rather widespread morphosyntactic parallels: that between conditionals and polar questions, and between conditionals and left-dislocated constituents.
Inversion as a Rule in Universal Grammar: Georgian Evidence

In recent years, linguists have hypothesized the existence of a finite set of universal rules, many of which compose its grammar. Some linguists have argued for a rule of "Psych Shift" or "Flip," which would make the initial direct object the subject and the initial subject the indirect object. In general, discussions of this putative rule have not been totally convincing, since the languages being considered offered little evidence on either side of the question.

In this paper I will consider diverse syntactic rules in the grammar of Modern Georgian and show that they strongly support a rule, "Inversion," which makes the following changes in Grammatical Relations:

1. Direct Object → Subject
   Subject-Chômeur → Indirect Object.

It is first shown that for a large number of verbs in Georgian, one Series of tenses requires that the initial subject be in the dative case, while the initial direct object is in the nominative. (3) illustrates this; notice the different case marking pattern in (2).

2. gleki tesavs marcevlbe.
   farmer-NOM sows-PRES seeds-DAT
   "The farmer is sowing seeds."

3. gleks turnse dautseavs marcevlbe.
   farmer-DAT apparently has-sown-PERF seeds-NOM
   "Apparently the farmer has sown seeds."

It is then argued that gleks "farmer" must be initial subject and final indirect object in (3), while marcevlbe "seeds" is initial direct object and final subject. Arguments are based on full pronoun reflexivation, possessive reflexivation, case marking, person agreement, and supplementation of the verb root for number or animacy of the direct object.

I then introduce a set of verbs that requires this same case marking pattern in all three of the Series of tenses of Georgian verbs. These are the so-called affective verbs, such as miqvarka, "I love you" and ginda, "you want it." Arguments based on facts similar to those enumerated above support the same change (1) of Grammatical Relations for all tenses of these affective verbs.

Finally, the complex rules of Number Agreement and Former Term Marking are introduced. It is shown that each of these rules can make the correct predictions in the grammar only if Inversion is stated as in (1), both for the affective verbs and for the type illustrated in (3).
Phonological Explanation in Phonetics

As a reaction against the very formal and abstract conceptualization of explanation in orthodox generative phonology, there have been a number of treatments in recent years of the thorny question of what constitutes an explanation in linguistics. Additionally, there have been numerous attempts to explain specific synchronic and diachronic phenomena in phonology by reference to physiological and acoustic phonetics.

Simultaneous with the development of these trends, there has been a growing awareness that just as we have come to respect more of a theory of phonology than that it be taxonomic, so too there must be a theory of phonetics explain why certain sound changes commonly occur whereas others rarely or never do, our theory of phonetics must explain why some speech sound types commonly occur, some rarely, and some never although they are all within "the sound-producing capabilities of man." This concern is not novel; the principles of least effort and maximal perceptual contrast have long been cited as functional explanations in phonetics. All of the recent sophisticated phonetic work in this regard has dealt with constraints of the human articulatory, auditory, and neural mechanisms and their mirroring in the universal feature system (Lieberman 1970), with the built-in articulatory constraints on the vocal tract which delimit the range of expected sounds (Lindblom 1972), with the acoustically "natural points of articulation" (Stevens 1972), etc. Although these avenues of research seem very fruitful, it is clear that they will not be able to account for all the data on the frequency of occurrence of sound types.

In this paper, I shall examine the relationship between two "exotic" speech sounds: prenasalized and postnasalized consonants. Intuitively, both types seem equally complex phonetically involving in the one case a raising and in the other a lowering of the velum within a single consonantal segment; however, prenasalized consonants occur much more frequently than postnasalized ones in the world's languages. This fact requires explanation. Specifically, I shall argue that this relative frequency can be accounted for by reference to the universal greater tolerance for nasal-offset than oral-offset syllables and to processes responsible for the development and realization of NC and CN clusters as unit segments (typically in open syllable languages). That is, in many primarily CV languages, e.g. Tikar, a Bantoid language of Cameroon, all closed syllables end in a nasal; the opposite case of exclusively non-nasal closed syllables does not seem to occur. I claim that the development and realization of both types of semi-nasal consonants is conditioned by processes designed to preserve the surface CVCV structure of these languages. The greater frequency of prenasalized consonants is thus explained by syllable structure preferences and various processes which preserve and optimize that syllable structure. In this respect, I shall argue that not only does phonetics explain phonology, but that phonological explanation has a role in a theory of phonetics as well.

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Close as an Alternative Method of ESL Placement and Proficiency Testing

Recent research in language testing suggests that the close procedure is a useful evaluative tool for ESL specialists. The question asked here is can a close test be substituted for more complicated ESL testing procedures with substantial savings of time and effort and without significant loss of information? Work to date indicates high correlations between close test results and total scores on established ESL proficiency measures. Thus the possibility of stream-lining both placement procedures at language centers and ESL proficiency evaluation in general is suggested. The TOEFL and the placement examination now used at the Center for English as a Second Language (CESL) at Southern Illinois University are the criterion measures against which a close test is evaluated. The close test and the CESL placement test are administered to over 100 incoming foreign students arriving at SIU during the fall of 1976. The close test is being scored twice: first, responses corresponding exactly to the deleted words are counted as correct (close-exact), and second, responses that are grammatical and contextually appropriate are counted as correct (close-acceptable). To check the validity of the close test against the established criterion measures, simple correlations are computed for the total and subtest scores of the TOEFL and the CESL placement test with the exact and acceptable close test scores. With approximately half of the data collected, the results show high positive correlation between the close scores and the total on both the TOEFL and CESL placement examination. The close-exact correlates with the TOEFL at .77 and with the CESL placement test at .78. The close-acceptable correlates with the TOEFL .87 and with the CESL placement test .85. The two scoring methods correlate at .97. All correlations are significant beyond the .01 level. The preceding correlations are sufficiently high to conclude tentatively that close testing could be used as an ESL placement and proficiency measure. Furthermore, the differences between the correlations of the close-exact and the close-acceptable with the criterion measures are non-significant. This result agrees with earlier findings that no important information is lost by using the exact-word method which is much easier to apply.
In a recent article Katz and Langendoen argue against Karttunen's proposal that 'holes', 'plugs', and 'filters' are necessary to describe presuppositional properties of complex sentences. They claim that the notions 'holes' and 'plugs' can be formalized as a 'heavy-parenthesis wipe-out rule' (HPWR) and that 'filters' are unnecessary to account for presuppositional phenomena. They contend also that contextual presuppositions, as advocated by Karttunen, are unnecessary to account for presupposition in natural language. In this paper it is argued that Katz and Langendoen's arguments against Karttunen's positions are not compelling.

Katz and Langendoen claim that: "No presuppositions of a component sentence in a complex sentence are presuppositions of the entire complex sentence if they are associated with expressions that appear in a plug." They use the HPWR to "demonstrate" that the claim is valid. However, consider the following examples:

1) I forgot to let out the cat.
2) I didn't forget to let out the cat.
3) I regret that I forgot to let out the cat.
4) I don't regret that I forgot to let out the cat.
5) I regret that I didn't forget to let out the cat.
6) I don't regret that I didn't forget to let out the cat.

Under ordinary interpretations sentence 1) implies that I didn't let out the cat while sentence 2) implies that I did. Therefore, forget (in the forget to constructions above, not in the sense of forget that) is a non-factive verb and is a 'plug.' But examples 3 through 6 show that the complement of forget can be a presupposition of the whole. Both 3) and 4) imply that the cat wasn't let out; both 5) and 6) both pass the negation test for presupposition. But this means that the claim quoted above is incorrect and that the HPWR is a useless formalism.

Katz and Langendoen propose that the statementhood of the owl is nocturnal "does not depend on there being some actual owls(a)-past, present, or future-- referred to by its subject." If this proposal is correct, then the example is paraphrasable as if owls exist, they are nocturnal. However, it is easy to exhibit a statement showing clearly that the subject of a generic sentence is referred to, for example, the dodo is nocturnal. Since dodos are extinct, the statement is false. It is incorrect to speak of dodos using as precisely because the dodo is referred to in the generic example. The falsity of the statement does not depend on the supposed nocturnality of dodos. It seems, then, that Katz and Langendoen's claim that: "In generic sentences, the presupposition is wiped out, but the truth conditions remain..." is false.

Finally, Katz and Langendoen point out that Karttunen's example supporting contextual presupposition does not have a single interpretation as Karttunen apparently believes. Katz and Langendoen claim that the ambiguity of the example means that rules of pragmatics (PRAG) must be invoked in cases such as this, not contextual presupposition. But the notion of contextual presupposition does not depend on the examples having a single interpretation. Katz and Langendoen state that "It is not important or possible to specify the nature of the rules that comprise PRAG." In the absence of some statement of the rules and principles of PRAG, one is forced to conclude that Katz and Langendoen have given at best merely a terminological alternative to Karttunen's notion of contextual presupposition.
A Reanalysis of Tonal Downstep

Over the past twenty years a number of languages have been described with a pitch characteristic known as tonal downstep (Welmers, Winston, Schachter, Stewart, Gleason, Pike, Hyman and Schuh etc.). While most of the languages so described are African, the phenomenon is known to occur in Mexico, in other parts of the Americas, and elsewhere.

In this paper a close look is taken at the phonology of tonal downstep and a new definition is proposed. In languages such as Akan, Igbo, Efik, Zhu, L, the basis of which general statements have been made, tonal downstep has the following properties: (1) Tonal downstep can apply to H (high) tone only; (2) A three-way opposition between H, 'H (downstepped high), and L (low) is possible only after a nonlow tone (H or 'H), while only a two-way opposition is found after pause or L; (3) An 'H establishes a terrace which prevents a subsequent H tone from being realized at a higher pitch level; and (4) The process of downstepping a tone is recursive, thereby producing, theoretically, an infinite number of pitch levels, e.g. H-'H-'H-'H-'H is realized on five successively lower pitch levels. These four generalizations have served as evidence that a third pitch level between a true H and a L is a 'H rather than a M (mid) tone. The process of downstepping has been argued to be a phoneme, a juncture, or a process. In fact, most tonologists generally regard it as a syntagmatic process (e.g. Pike) lowering a high tone one step from the pitch level of a preceding (nonlow) tone.

Recent investigations into the Grassfield A language of Cameroon have falsified generalizations (3) and (4). (1) A L can also be downstepped (L-L vs. L-'L); (2) The opposition L-H vs. L-'H can exist in addition to H-H vs. H-'H; (3) An "upstepped" H tone can follow a 'H in the same tone phrase, thereby destroying the terracing effect of terraced level tone systems (Welmers). This leaves us with generalization (4): a downstep process is known to exist only when an infinite number of pitch levels is theoretically possible (as opposed to Welmers' discrete-level languages, where a limit is set on the number of contrasting pitch levels).

These findings suggest the uniqueness of tonal downstep as a paradigmatic process, whose effect is to lower a given tone, thereby producing, theoretically, an infinite number of pitch levels. However, regardless of context, one step from the pitch level it would have been if it had not been downstepped. Thus, in a sequence L-'H, the downstepped H is realized one step lower than a nondownstepped H would have been in that position. This, despite the fact that the 'H is actually higher in pitch than the preceding L syllable. The same definition is shown to cover the more well-known case of H-'H, where 'H is realized one step lower than a H would have been in that position. By looking at the process as affecting a tone paradigmatically, a general statement concerning all kinds of tonal downstep can be made.

This paper is a progress report on a long-term project to explicate the prehistory and history of complex sentence structures in Indo-European. The expression of purpose is currently under investigation. Detailed statistical data concerning the constructions under discussion, which are currently being developed with the aid of mechanical computation, will be included in the paper.

On the basis of comparative evidence from Indic, Latin, Greek, and to a lesser degree from Hittite and Germanic, it is suggested that we might recognize two (or pre-) IE purpose constructions of two types: (1) temporal nouns (vms.) in the dative (dat.-loc.) case, and (2) relative (or pre-relative) constructions. Dat.-loc case vms. commonly develop as, among other things, infinitives (infs.) of purpose. Infs. that derive from accusative vms. and from vms. in other cases, such as the Classical Sanskrit (Cl.Skt.) inf. in -tum, and the Latin (Lat.) supine are late developments, as is apparent from the textual record (Jeffers, 1975). Note the common use in Old Lat. of infs. (+ dat.-loc. vms.) in purpose constructions, and the invariable use of dat.-loc. infs. in Cl.Skt., where -tum of Cl.Skt. is restricted to object complement contexts.

Besides inf. propositions, the ancient languages make widespread use of finite subordinate clauses for the expression of purpose. The standard subordinate clauses found in these constructions are derived from relative (rel.) particles plus some clitic element: i.e., Lat. ut < *kوه-ta; Greek (Gr.) ὅς < ὅς, i.e. instabl *ye/o, or ὅς ὅς, and Skt. यत्र < *ye/o-tro, and also yad. All of these languages, at least at their earliest stages of attestation, show straightforward rel. clauses of purpose; i.e., clauses introduced by a rel. pronoun. For example, (1)

Certi est hominem conloqui qui possis videri huic fortis.
Ti am resolved to speak up to him to make him think I'm tough.
Plautus, Amph., 339.
(2)
Send someone to give a sign (lit. who give a sign).
Eurip., I.T. 1209.
(3)
...tvaya kaścitamathah samāśyānīyo yo vipatpratikaram karoti
...you should take refuge with someone competent to protect you
Pan 192.

It appears that these rel. clauses of purpose represent relics of the earliest type of finite subordinate clause of purpose. Recall that the use of the particles *ye/o and *kOH-o in Anatolian and Old Lat. brought their earliest roles as sentence connectors (Watkins, Celikoglu, 1969). A following clitic (for non-clitic) pronoun commonly highlights the focus of the relationship between the sub- and super-ordinate clauses. In a correct analysis of the Lat. rel. clause of purpose (Pepicello, LSA Summer 1973, to appear), we see a reflection of this feature of early IE purpose clauses. As genuine rel. pronouns develop at the period of differentiation, perhaps through the contraction of the sequence rel. particle + clitic pronoun, other sequences of *ye/o, or *kOH-o + clitic come to be isolated as markers of subordination in purpose constructions.

All other purpose constructions noted in the early dialects are shown to be late and language specific developments.
Ignoring prefixes, the vowels of any word in Hungarian generally agree in the feature [back]. The interesting cases where they do not can be divided into two: (i) the root contains only front nonround vowels (so-called neutral vowels) and requires back vowel suffixes (hufnak); (ii) mixed vowel roots containing a neutral vowel followed by a back vowel (bildnak); (iii) mixed vowel roots containing a back vowel followed by a neutral vowel (radnak); (iv) irregular roots containing vowels differing in [back] where none is a neutral vowel (sofornek). Vago (1976) analyses these as follows: the underlying vowel of (i) is "abstract," the underlying vowels of (ii), (iii), and (iv) are like the surface vowels, and vowel harmony applies to suffixes but not within roots. Vago needs to state vowel harmony (VH) three times: (a) as a morpheme structure condition (MSC) within roots; (b) as a rule of adjacent assimilation; and (c) as a rule of non-adjacent assimilation that skips neutral vowels. Vago's analysis raises a number of theoretical issues which will be examined in this reply. Since I agree with the abstract analysis of (i), I will not address this problem here. I dispute the necessity of splitting VH into three processes, and argue that only the adjacent assimilation rule (b) is necessary to describe all the relevant facts. Morpheme structure conditions are unnecessary if VH applies within roots. Non-adjacent assimilation is unnecessary if appropriate underlying forms are assumed and if exceptions are treated as in Kisseberth (1970). In this analysis, which distinguishes between context exceptions and input exceptions, forms like bika are input exceptions to VH, but not context exceptions, so that adjacent VH correctly assimilates the suffix vowel to the last vowel of the root. If forms like Tibor are treated similarly, the diminutive form Tib-nak is correctly predicted to be harmonically front.

In forms like radumak, VH applies iteratively to produce radumak, with absolute neutralization (Ab) correctly giving radumak. Forms like affor are treated as input exceptions like bika. Doubts such as Amento (Amestó) are treated as vacillating between [VH] (i.e., regular vs. input exceptions). My analysis generates exactly the same range of facts as Vago's analysis, but is simpler in requiring only one VH rule instead of two VH rules of the sort of HSO's. In addition, my analysis allows Vago's rule with respect to a number of theoretical questions. My VH rule conforms to the relevancy condition proposed in Jensen (1974), whereas Vago's rule (c) does not. My treatment calls into question Kissypersky's 1973a constraint on the application of rules to non-derived forms, since VH applies within roots. While Vago appeals to the Elsewhere condition of Kissypersky (1973b), my analysis makes no claims about its status, since only one rule of VH is involved. In my solution the historical change of e.g. "Józsefeli" to Józsefi is explainable in terms of opacity, while it is not in Vago's analysis. Vago gives no empirical evidence to favour his more complex solution over mine.

In the absence of other deciding factors, the simplicity metric may be invoked in favour of my analysis.
The Antipassive Construction and the Case Against Relational Grammar

Relational grammar resembles some earlier grammars in that (1) it considers syntactic relations like subject to be independent of meaning, and (2) it is concerned primarily with sentences rather than texts. But semantic and textual features are just what governs the use of the antipassive construction in Inuktitut (Bergsland). Hence recent attempts to explain antipassive constructions in a relational framework cannot hope to achieve their goal of universal validity.

Inuktitut has two active two-argument constructions: the ergative and the antipassive. The proposition 'man saw dog' can therefore be expressed in two different ways, as follows:

**ERGATIVE**

\[ \text{man-ERG dog -ABS see -indic.-trans.-he/it} \]

**ANTIPASS.**

\[ \text{inuk-\textit{\textbullet}} \text{glumix-mik taku-v -uq} \]

The abbreviation ERG stands for ergative, ABS for absolutive, and OBL for oblique case.

An important fact about Inuktitut is that ergative subjects figure in relative clauses only if the direct objects of the matrix and of the relative clause are coreferential (Bergsland 1955:49). On the other hand, absolutive NPs are freely accessible to relativization.

Restrictions on the ergative NP's accessibility to relativization have been interpreted in a relational framework by D.E. Johnson (1976). Johnson noted similar restrictions in other languages, sometimes involving coreferent deletion in addition to relativization. He concluded that, universally, antipassive constructions were derived by a rule whose effect was to change an ergative subject into an absolutive one, so it could be accessible to rules that bar ergative NPs. However, in Inuktitut and some other languages (e.g. Chukchee, Dargva) the antipassive occurs also as a simple sentence, where neither relativization nor coreferent deletion has taken place. The antipassive form of 'man saw dog' above proves this. Nothing in relational grammar suggests a way to explain when a simple sentence is ergative and when antipassive.

In my view, both the choice of simple-sentence construction and accessibility to relativization are easily explained in terms of semantic and textual conditions. My study of North Baffin Island texts showed that in Inuktitut an active construction is ergative only when its patient's DOs are coreferential (Bergsland). The construction is antipassive and the case against relational grammar.

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A History of the Sanskrit Gerund

This paper will (1) offer a diachronic account of the Sanskrit gerund (ger.), and (2) present some suggestions concerning the syntactic development of ger. clauses in Early Indic.

3) It is clear that the Old Indic ending reflects, for the most part, regrammatized instrumental (-tvā, -yā, -tyā) or locative (tvā) verbal noun (vn) suffixes, and that they are to be associated etymologically with Old Indic infinitives (inf.) in -tu, -ti, and -i. The dominance of instrumental/locative nominalizations in the prehistory of Sanskrit gerunds is consistent with the facts that the ger. is always equated to the logical subject of the main verb, and that the action of the ger. phrase always precedes or is concurrent with that of the main verb.

The later usage can be compared with the consecutive use of the Japanese gerund in -te and with the Turkish consecutive gerund in -ip and may be seen to be associated with the strong tendency toward OV structure in the development of Indic.
In an important study, Avery (1881) made a count of all clauses involving the relative pronoun Vā- in the Rigveda and found that out of nearly 4000 passages the relative clause followed its matrix clause in 50.0 percent of the cases and preceded its matrix clause 46.8 percent of the time (certain marginal positions complete the total). It seems to have gone unnoticed, however, that in those cases in which the sā/tā- pronoun occurs in correlative sequence with the Vā- relative the sā/ tā- order predominates by a wide margin over the Vā- order. In this paper it is claimed that the reason for the aberrant frequency in the ordering of correlative elements in this one sequence type as opposed to all other relative clauses is the strongly anaphoric nature of the sā/tā- pronoun. In order to demonstrate this we contrast the employment of sā/tā- with that of svaṁ, the other major demonstrative pronoun in Vedic. Several kinds of evidence reveal that svaṁ is solely a deictic pronoun in the Rigveda and as such is opposed in usage to the anaphoric sā/tā- demonstrative. The distinction between anaphoric and deictic reference in the Rigveda is clarified with regard to several other types of pronouns, and it is argued that the sā/tā- ... Vā- sequence is merely a stylistic inversion on the part of the Vedic vardi of the basic Vā- ... sā/tā- construction. This can best be seen in hymn I.4, where the two different types occur within a few stanzas of each other:

1. a. Īndras prycha ... yās te sākshitya ā váran (I.4.4bc)
   'Ask Indra ... who is better than thy friends.'

1. b. yó nūyo (a) váñx mahān ... tásā Īndrasya gāyata (I.4.10a.c)
   'The one who is a great stream of wealth ... to that one, Indra, sing.'

The fundamentally anaphoric nature of sā/tā- in the Rigveda as well as the predominance of the Vā- ... sā/tā- ordering of correlative clauses involving this pronoun furthermore provide us with strong evidence for an OV type ordering of relative and matrix clauses in an archaic Vedic correlative sequence.

References


In a previous LSA paper (Winter, 1975), a model of adult second language performance was described in which second language acquisition was distinguished from second language learning. Acquisition involves the "creative construction" process present in child first language acquisition, while learning refers to conscious internalization of linguistic rules. It was proposed that adult second language production may involve both acquired and learned systems. The acquired system acts to initiate the utterance while the learned system is used as a Monitor, which inspects and sometimes alters the output of the acquired system. In this paper, we report on two studies that confirm and clarify aspects of this model.

The first study bears on the reality of the acquisition-learning distinction. Subjects were advanced performers of ESL who were linguistically sophisticated but naive with respect to our hypothesis and current research in language acquisition. Subjects were asked to choose the correct English sentence from among three or four examples, and to indicate the basis on which they made their judgments (e.g. "It feels/sounds right"; "I know and use the grammar rule.") As expected, all subjects "of nearly 100% correct. Analysis of the self-report data revealed that most items were performed by "feel", and some linguistically simple aspects of grammar were done by "rule" rather than by feel. This latter result argues against the position that second language performers use rules first as a "crutch" until performance becomes automatic. It will be suggested that the "feel/sounds right" self-report reflects language acquisition.

The second study addresses the domain of Monitor use. In the previous paper, it was reported that adult L2 performers show a "natural order" (the same difficulty order shown by children acquiring English as a second language) for grammatical morphemes in oral production, where a great deal of Monitoring is unlikely. In written tests, this order does not emerge. It was suggested that this change was due to the intrusion of conscious linguistic knowledge. To test the reliability of this result, and to determine whether the modality change played any role in the change in difficulty order, we asked adult ESL students to write free compositions under two conditions. Our first group simply wrote as much as possible, without worrying about accuracy. The second group was instructed to focus on form. As predicted, difficulty order for grammatical morphemes correlated highly with previous child and oral adult studies, while the order found in the second group did not. This shows that the "adult natural order" effect is reliable and not limited to oral production. It is suggested that it is instead related to the use of language as communication. When focus is on form, the conscious grammar, the Monitor, may intrude. When the performer is interested only in communication, and processing time is limited, only acquisition is involved.
Tongue Twisters

This report covers the initial stages of an ongoing program of research on tongue twisters and their implications for normal speech production. Spontaneous speech errors have received considerable attention in recent years, and attempts have even been made to induce similar errors. (Baars and Hotley, 1974). But a neglected and potentially revealing source of data is those phonetic sequences traditionally called tongue twisters, which appear to be characterized by repetition of similar segments and to be especially sensitive to rate of articulation.

The classic tongue twister is one which induces errors at "normal" speaking rates, but I assume that tongue-twisterliness is a continuum, with the degree of tongue-twisterliness indicated by:

a) the probability of error at a given rate of repetition, and
b) repetition rate for error free performance.

In an attempt to operationalize the notion of tongue-twisterliness, as a preliminary to investigating its sources, I have conducted experiments using these two measures as dependent variables and stimuli consisting of CVVC and VCVC sequences. Both measures produced a consistent ranking of the stimuli, and both correlated highly with each other and with intuitive judgments of the "difficulty" of producing a sequence. (E.g., "Saffa" was repeated more slowly and caused more errors than "papabob").

Other (tentative) results include:

a) Though the tongue-twisterliness of a sequence is a reliable function of its constituents, the contribution of any given phonetic segment is not predicted by its feature composition (on a standard feature analysis).

b) The tongue-twisterliness of a sequence is not a simple additive function of the tongue-twisterliness of its constituent segments; interactions between these segments are significant.

c) The relative order of segments and their relation to the stress pattern both appear to affect tongue-twisterliness. This suggests that Schourup (1973) is at least partly correct in his suggestion (based on intuitive data) that abstract variables of patterning are relevant to tongue-twisterliness. These patterning effects will be pursued in further experiments with more complex stimuli.

d) A particularly interesting result was that tongue-twisterly sequences not only were produced relatively slowly but showed a significant deceleration over the course of twelve repetitions. This suggests that the complexity of these sequences is not simply due to the complexity of the articulatory gestures themselves but rather to some problem of recovery from those gestures before they can be repeated.

The generalizations stated here are based on initial data from nine subjects. Further data will be available by the time of the 8th meeting.


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Intonation is a MCP

Green 1976 presents a considerable amount of data under the rubric Main Clause Phenomena (MCP). As she and others have noted, there are certain syntactic constructions and lexical items which occur freely in main clauses but only under very restricted and seemingly idiosyncratic conditions in subordinate clauses. This paper presupposes such a notion and argues that all intonational and sentence-accent phenomena can be considered MCP.

It has been observed that certain intonation contours cannot be embedded. Cutler 1974 observes numerous restrictions on the embeddability of ironic tone-of-voice; we can say Austin is a real swinging town, meaning it isn't, but not, in the same way, "Bill realizes that Austin is a real swinging town." Similarly, Liberman and Sag 1976 point out that what they call the "contradiction contour" cannot occur on subordinate clauses. We can say:

Elephantiasis isn't incurable! (to be written: Elephantiasis isn't incurable!)

But not "Medical science has shown that elephantiasis isn't incurable!" We can, of course, perfectly well say: "Medical science has shown that elephantiasis isn't incurable, but if we do, we're making a claim about what medical science has done, not about the nature of elephantiasis. The "pragmatic" part of Green's remarks about MCP is relevant here: if we put the "contradiction contour" only on the embedded clause, we seem to be making a claim about elephantiasis, and the point of the main clause Medical science has shown that... becomes unclear.

But the contradiction contour can be embedded in exactly the sorts of environments discussed by Green. The following is a possible narrative:

When the doctor first told me I had elephantiasis I really got depressed and morbid and I was all set to end it all. But then I got thinking about it, and I realized that elephantiasis isn't incurable and what the hell was I getting so upset about?

The contradiction contour is quite naturally embedded in the main clause. I realized that... there is no conflict between the intent of the intonation and the content of the main clause. The similarity to Green's findings about other MCP is striking.

Evidence from other intonational phenomena will be presented to show that all intonations, not just specific contours, can be considered MCP. This has implications for the further study of both intonation and of MCP. The point is not so much that intonations cannot be embedded, but rather than intonation is a whole-sentence phenomenon. It gives the hearer pragmatic information about the nature of the speech act, or, more simply, it helps the hearer understand what the speaker is trying to get across, the point he is trying to make. Considering intonation will steer us away from conclusions about MCP based solely on syntactic transformations and help us to see the significance of such "whole sentence" effects in their fullest perspective.


The main object of this paper is to present examples of phonological contrasts that have been previously neglected. Systems of phonological features for describing the contrasts that occur in the languages of the world have been proposed by Chomsky and Halle (The Sound Pattern of English) and by Ladefoged (Preliminaries to Linguistic Phonetics and A Course in Phonetics). It will be shown that both these systems are observationally inadequate. Ladefoged's work is slightly more comprehensive, but he has failed to take into account many phonetic facts and phonological contrasts. For example, he is wrong in saying that there are no velar laterals. Evidence will be given from Eastern Highland languages of Papua New Guinea showing that these occur and contrast with both dental and alveolar laterals. This evidence also indicates that Chomsky and Halle are wrong in saying that "this feature (lateral) is restricted to coronal consonantal sounds". Ladefoged is incorrect in saying that languages do not contrast more than 6 places of articulation, as will be shown by data involving contrasts among seven nasals in Yanuwa (Northern Territories, Australia). Ladefoged also neglects the possibility of contrasting bilabial and alveolar trills of the kinds found in Austronesian languages such as Titan and Kele. Recordings and other instrumental data on all these sounds will be presented.

Both Ladefoged's and Chomsky and Halle's theories can be patched up to take into account these and other examples of observational inadequacy. But the more this is done the more it appears that these theories are simply ad hoc systematizations of the data. A principled statement of the elements required within a phonological theory must start by proposing linguistic primitives that can be justified on non-linguistic grounds.

During three months of field work in Paris, conversations with working and middle class Parisians were recorded. Results of an acoustic study of the vowels, performed using linear prediction to extract the formant frequencies, show previously unreported variation in the frontness of /u/ and /o/. Furthermore, many of the backer variants of /u/ and /o/ are heavily overlapped and are not clearly identifiable as /u/ or /o/ when presented to the native speaker in near phonetic isolation. This would lend support to the functionalist explanation for the fronting of back vowels (Martinet 1955).

Labov, Yaeger and Steiner (1972) present massive spectrographic data which give concreteness to Martinet's model of chain shifting. They classify all chain shifts into four patterns, one of which is of particular interest in French. In this chain shift, back vowels are raised from low to mid or mid to high or both, and at the same time mid or high back vowels are centralized or fronted. This pattern was the source of the Modern French high front rounded vowel. Old /o/ was raised to /u/ and old /u/ was fronted to /y/.

This study shows that the dynamics of the chain shift /o/\rightarrow /u/\rightarrow /y/ are still active in Paris dialect. Variation in the frontness of /u/, as perceived and as measured by second formant frequency, causes the phoneme's frontest variants (e.g. after /t/) to approximate [u]; its backest variants heavily overlap /o/ and are often indistinguishable from it. Some speakers show considerable fronting of /o/, especially in closed syllables. This latter fact would support the basic functionalist axiom: that merger occurs most readily when the merging phonemes carry the least functional load. Since French /u/ occurs almost exclusively in open syllables, the fronting of /o/ in closed syllables would pose no functional problem. Note that there is no articulatory universal at work here, since in Philadelphia English the situation is exactly reversed: it is the /o/\'s in closed syllables that lag behind the open /o/\'s in the fronting process.
Complex Nominails: Nouns of Limited Variety and Unlimited Length

Many linguists, including Lees 1960, Chomsky and Halle 1968, and Jackendoff 1975, have claimed that nominal compounds like apple pie and steam iron are themselves syntactically noun (but cf. Levi 1975, where they are included under nonpredicative NPs). This claim has, however, been treated in such a self-evident assumption that virtually no syntactic evidence is ever offered in its support. Few linguists have realized, however, that precisely the same claim should be made about expressions with nonpredicating adjectives (e.g. presidential refusal, apple cake). The fronted (non-phrasal) stress of many CNs (e.g. coffee tables are usually too crowded to put it on), regardless of length and internal complexity, must be dominated on the surface by a N node.

Since (1) and (2) have been argued in previous research, this paper will focus primarily on substantiating (3). The arguments include at least these:

a) CNs may appear with affixes normally used only on Ns, not NPs, as in: (cf. copy editor], post-Arab summit realities, anti-gun control forces; major syntactic arguments that all CNs should be made about expressions with nonpredicating adjectives (e.g. presidential refusal, apple cake

b) Placement of predicating adjectives treats CNs as Ns, not NPs: the American invasion is composed of millions of them; the American invasion was unjustified. (cf. America's invasion... *The American invasion was unjustified.

c) The American invasion was carefully reviewed. (cf. A president's appointment

1) The formation of CNs can produce nominals of unlimited length but of strictly limited internal variety [namely, binary combinations in any order of these two units: N and N], and

2) providing syntactic arguments that all CNs, regardless of length and internal complexity, must be dominated on the surface by a N node.

Development of Vowel Production in Infants

The development of vowel production in five infants growing up in monolingual English speaking environments has been followed over the period of 16-160 weeks of life. Tape recordings have been made at intervals of at least two weeks of the infants and their mothers "conversing". Special recording techniques, sound spectrograms and computer-implemented acoustic analysis yield fundamental and formant frequencies and durations of the infants' utterances. The data address several theoretical issues:

1- The infants do not appear to mimic the lower formant frequencies of their mothers' speech. As they begin to produce the vowels of English they produce formant frequency patterns that are high in frequency (F2 ranges from 5 - 6 kHz) and appropriate to the short lengths of their supralaryngeal vocal tracts. The formant frequencies of some vowels fall as the infants mature, e.g., F1 of /U/ for one infant falls from 1.0 to 0.5 kHz. These data are consistent with the presence of a hypothetical, innately determined neural mechanism that "normalizes" the speech signals perceived by humans in terms of estimated supralaryngeal vocal tract length. The infants never hear any vowels that have non-high formant frequency values of the vowels that they can produce with their short supralaryngeal vocal tracts. They nonetheless produce vowels that have formant frequency patterns that approximate those of adult speech after appropriate corrections for the smaller size of infants' supralaryngeal vocal tract are made.

2- Individual differences in the emergence of various vowels exist but all the infants gradually enlarge their vowel repertoires. At 16 weeks we can perceive tokens of the vowels /i/, /e/, /a/, /ae/, /U/ and /u/. F1 of /U/ for one infant falls from 1.0 to 0.5 kHz. The vowels that occur later are /a/ and /i/ still later. The vowels /o/, /e/ and /u/ hardly ever occur. The data suggest that the acute axis in English develops before the grave axis. The infants do not produce all known sounds of all languages during the babbling period.

3- The formant frequency patterns of the infants' /i/ and /a/ vowels have acoustic correlates consistent with the phonetic features hypothesized by Jakobson, Fant, and Halle as salient for the classification of these vowels. F1 and F2 converge for /a/ producing a mid-frequency spectral peak. F1 and/or F2 are high for /i/, producing a high-frequency spectral peak.

4- The acoustic analysis indicates the gradual emergence of a vowel triangle defined by the first and second formant frequencies. At 16 weeks the five vowel sounds that occur all overlap when plotted on F1 - F2 axes. The different vowels perceived gradually cluster into different areas of the F1 - F2 plot. The boundaries of the acoustic vowel space also enlarge throughout the period as /ε/, /α/, and /i/ emerge.
Parents' efforts to adjust their speech so as to provide their children with an appropriate grammatical model have long been documented, especially in middle class American settings. This desire to assist the child with his/her first incursions in grammar is also evident in Korean and Brazilian middle class parents. It will be suggested in this paper that: 1) the strategies available to parents for this purpose reflect cultural practices and are sensitive to constraining characteristics of the target language; 2) children develop their own strategies in response to parental input, which has the effect of setting nationalities apart with regard to children's initial hypotheses concerning grammar, even at a very early stage.

The data in this paper were collected in a naturalistic situation, at the homes of the subjects, in Providence, Rhode Island, Rio de Janeiro, Brazil, and Seoul, Korea. Parental utterances which constituted responses to their children's preceding utterances were categorized with respect to the form and content of the children's utterances. Children's utterances were categorized with respect to success or failure in approximating the target language (e.g. Brazilian children are far more successful in learning inflections than prepositions). This study looks in particular detail at children's continued attempts at learning grammar through repetition, substitution, hesitation and circumlocution. The investigators were careful not to bias their analysis by assuming a priori that the same analytic categories would be appropriate for all three languages.

Our results suggest that quite early on in the process of acquiring language Brazilian, American and Korean children orient themselves towards diverse aspects of grammatical structure, relying on different cues in the three languages to work out basic sentence frames. Grammatical complexity develops in several ways which are not always predicted by MLU. If these results are further substantiated by data from other languages, an important methodological consequence follows: namely, that MLU cannot be utilized as a cross-linguistic measure of grammatical development, since it does not provide for the computation of operations which leave no trace on the surface (some of which are acquired quite early in Portuguese and Korean). The authors further suggest that more work must be done on differences in linguistic and cultural input before any claims can be made concerning universal features of early grammar.

This paper presents a classification of American English folk definitions in terms of the semantic relationships of which they make use. In addition, we shall show that there is a close correlation between the type of word being defined, i.e., its syntactic class and semantic field, and the specific semantic relationship or relationships which tend to appear in its definition. The data consist of 583 "list definitions", definitions elicited by presenting an informant with a list of words to be defined, and 319 "natural definitions", definitions which arise in the course of talk not concerned with definition as such.

The analysis of these definitions resulted in a classificatory system consisting of five major and seven non-major semantic relationships. The major relationships occur with much greater frequency than do the others, not only overall but within specific subsets of the data (e.g., natural vs. list definitions, definitions elicited from speakers of a particular educational level); overall they account for approximately 75% of the data. These five relationships are similitude, field inclusion, situation, description, and function. All the relationships (major and non-major) are very broad and most can easily be seen to include two or more subtypes of relationship. For example, similitude includes synonymy, antonymy and comparison, and field inclusion covers not only placement of a term within a hierarchy ("shirt, a piece of clothing...") but also its placement in any way within a semantic field ("cold, indicates temperature"; [field goal] "what they do in football...").

Initially, an attempt was made to classify the data using more specific categories, along the lines of the system proposed by Casagrande and Hale in their analysis of Papago folk definitions.1 The American English data, however, are much more varied (Casagrande and Hale's data consist solely of list definitions of common Papago words, elicited mainly from a single informant) and a system of the level of specificity of Casagrande and Hale's would be too large to be really useful. We will discuss the need for fairly broad categories and the reasons for analyzing definitions in terms of the specific categories chosen, including the fact that words in particular semantic fields tend to be defined using the same semantic relationships. Finally, it will be shown that the five major relationships have more in common than mere frequency: they form a natural group in that it is exactly these relationships which either describe the lexical item itself or place it within its own semantic field. This fact, along with their frequency of occurrence, suggests that all definitions could be formalized (e.g., in a lexicon) in terms of these five relationships.

Why Tough-Movement is Impossible with 'possible'

Tough-Movement (or Deletion) is a governed phenomenon. To my knowledge, nobody has been able to pinpoint just what is the common denominator of Tough-Predicates. However, it has often been suggested that tough TPs revolve around the meaning of 'easy/difficult' in an intuitively understood sense. Also, it has been a long tradition in generative grammar to treat 'possible' as an accidental gap with regard to Tough-Movement:

(1) John is easy/difficult/to please.

I think this familiar practice implicitly assumes the following: All TPs share some properties in common. 'possible' also share these properties, and yet somehow it fails to undergo TH. In other words, it is claimed that 'possible' is qualified to be a full-fledged member of TPs.

In this paper, I will challenge this widely accepted view. I show that there are many important properties of TPs which are shared by 'impossible' but not by 'possible', which strongly suggests that there is inherently semantic reason why TH is impossible with 'possible'. For example:

(3a) My husband has been impossible to live with.
(3b) My husband has been extremely difficult to live with.

I contend that (3a) is simply a more emphatic and more emotive version of (3b). Notice that (3a) cannot be used by a woman who has actually been separated from her husband. (4) is ungrammatical.

(4) My husband has been impossible to live with. He has been in prison for the last 5 years, you know.

While 'impossible' is often very close to 'extremely difficult', 'possible' cannot be used either to mean 'easy' or 'extremely easy'.

I) 'emphatic/emotive/subjective' property

Klima (1964) noted that a subset of TPs act like Negatives;

(5) It was difficult to find anything/*something. In Paris.

Now, Postal failed to recognize the inherent relationship between his and Klima's observations; in American culture, the emotive, subjective and strongly NEGATIVE feelings of the speaker are often linguistically realized with the help of 'obscene' words. I claim that those slangish expressions are really emphatic/subjective/emotive/exaggerated counterparts of 'easy/difficult'.

(6) This question is anything/*something to answer.

Now, what about our 'possible' and 'impossible' (3a) and (7):

(7) This steak is impossible to chew unless you have teeth of brass. Of course, they are highly emotive, subjective, emphatic and exaggerated statements. Quite importantly, 'possible' totally lacks this 'emotional/subjective/emphatic' property.

III) 'barely possible'

The popular treatment will completely fail to explain the difference between (8) and (9);

(8) John is barely possible to live with.
(9) *? is barely possible to factor.

IV) Poss-Ing Complementizer

'possible' is uncomfortable with a Poss-Ing Complementizer, but not 'impossible'. Compare (10) and (11);

(10) Please John is easy/difficult/impossible/possible.
(11) For me to please John is easy/difficult/impossible/possible.

In this paper I examine several such applications of the model. The conclusion reached is that while not denying the validity and importance of the neurophysiological findings in context, caution is to be recommended against the premature and categorical process function assumptions which relate to hemispheric location, in order to avoid a sort of modern phrenology. None of the authors examined has presented his hypothesis with any intention of defending cultural imperialism or of denigrating non-Western-scientific modes of thought. Nevertheless, as these and other writings on this topic find their way into the educated public readership, they will inevitably speak to a deeply held biological bias, more or less unconscious, about the biological constraints on human performance and human differences--the same bias that resonated to the writings of Jensen, Eysenck and Herrnstein. Extreme caution is therefore in order when presenting the educated public results of such seemingly scientific impeccability as differential EEGs among socially and linguistically defined groups (TenHouten and Kaplan 1973).

An examination of the dual functions of language--as an information processing and storage system and as a device for accomplishing social interaction, plays the central role in this critique, for it is largely as a consequence of ignoring this dual functioning of language that other, less enlightening conceptual dichotomies such as "abstract" vs. "concrete" and "verbal" vs. "nonverbal" have come to dominate the field. These two functions interact in speech and in language-mediated thought, but they may be teased apart in animal models, in a model of evolutionary development (Mattingly 1972), and conceptually for investigative purposes. The two functions cross-cut the many things participants may be doing in an interactive situation or experimental context, and, as Labov and also Cole and Scribner (1974) have demonstrated, what they may be doing may be radically different. The relation of this online activity to their long term memory store is so little understood that ascription of some ill-understood performance to some hemispheric localization appears to be premature.
Shadowing is an experimental task in which a subject repeats back (shadows) a stimulus prose passage as quickly as she/he perceives it. Previous shadowing research has been done in the auditory mode with hearing subjects shadowing tape-recorded stimuli. Our research focuses on shadowing in the visual mode with deaf and hearing signers shadowing videotaped stimuli. In a preliminary experiment, we discovered that response latencies of deaf native signers for visual shadowing of American Sign Language (ASL) were the same as latencies reported for auditory shadowing of English. The response latency range in the visual task fell between 250 and 1000 msec, as compared to 250 to 800 msec in English (Marslen-Wilson, 1973). This finding is exciting since it indicates that rate of speech perception is not dependent upon language modality, but rather upon higher order functions.

We had expected response latencies to be longer, especially since the stimulus tape included a considerable number of pantomimes. This variable (increased use of pantomimes) would seem to reduce predictability of structure and thereby increase response latencies and number of errors.

Another dramatic result was that native hearing signers experienced extreme difficulty when they attempted the task, while native deaf signers performed it easily. This suggests that the ability to shadow successfully is strongly influenced by the subject's primary modality of communication.

In our current experiment, we ask native signers (deaf and hearing) to shadow a pair of stories in ASL. One story includes pantomimes while the other does not. We are examining response latencies and errors in order to explore the influence of pantomimes on the rate of processing. In addition, we are comparing data from deaf subjects to that of hearing subjects, seeking possible explanations for the disparity between the performances of the two groups.

The study of auditory shadowing has led researchers to make certain claims about language processing. Because these claims have been based on speech perception experiments, it is crucial to extend the scope of the research beyond the auditory modality. Our studies in visual shadowing provide significant insight in this direction.


**Visual Shadowing: Examining Language Processing in Another Mode**

The possible assimilation of truth-conditional semantics with the use theory of meaning implicit in the performative analysis poses an intriguing problem undertaken to solve by David Lewis in "General Semantics." Contradictions within and counterexamples to some of his major proposals provide evidence that his is hardly a proven theory. To classify performative sentences as declaratives, as Lewis does, requires a self-descriptive reading, which he acknowledges, though he has just previously drawn a distinction between the performative and the self-descriptive uses of a sentence such as "I command you to be late." Lewis' primary point in making the distinction in uses is to state that this distinction need not involve a distinction in meanings.

Since he prefaces this statement with the position that the performative use is likely to be true, while the self-descriptive use is likely to be false, his denial of a distinction in meanings is inconsistent with his truth-conditional semantics. Central to Lewis' argument is the proposal that non-declaratives are to be treated as paraphrases of their corresponding performatives (i.e. they have the same truth-values), but such is not the case with examples like "I promise that I'll be there," true on the occasion of its performative utterance, and its corresponding paraphrase "I'll be there," where truth-value depends upon future conditions. Given the obvious difficulties encountered in assigning truth-values to performatives, I propose that truth-conditional semantics apply only to the propositional content of a performative, while treatment of the illocutionary force comes under a system of pragmatics.

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A Historical Parallel Between Passives and Adjectives

In modern Portuguese the passive is formed with *ser* 'to be', a passive participle in *-DO* and an agent phrase in *por* 'by'. Although the modern construction shows most of the properties typical of passives, in earlier stages of the language it has different structures. In fact, I show that in the medieval period: 1- the *por*-phrase occurred freely with all types of verbs and adjectives, both in the active and in the passive, having a status parallel to that of an agent phrase, having true adjectival status, occurring in conjoined structures of the type: sou ensujada e feia e corrupta e cheia de desonra pelos maus prelados 'I am dirty and ugly and corrupt and full of bad fame by the bad prelates'. (Orto do Espeso)

Thus, the ancestors of the modern passive is naturally analyzed as a base-generated structure, parallel to the regular verb phrase type *"ser AP"*, with the *por*-phrase originating at the S node. During the course of the medieval period this construction acquired the characteristics of the previously extant de-passive through reanalysis and evolved to its modern form. The association of passive participles with adjectives continues to be so strong, however, that there has been a continuing tendency over the centuries to restrict the *-DO* (*-ED*) ending to compound tenses formed with *ser* 'have' and to restrict participles with the surface form of adjectives to the passive. This involves the creation of new elements of both types (ex: *pagar* 'to pay'; *pagadopago*).

The continuing tendency to associate passive participles with adjectival morphological forms shows that it is wrong to attribute the differences between the medieval and modern constructions to a change in the status of this element; rather, the change is in the status of the *por*-phrase, which has been demoted from a sentential adverb at the S node to a regime at the AP node. This involves the creation of new elements of both types (ex: *pagar* 'to pay'; *pagadopago*).

The cycle has been used in English to account for the placement of stress to block vowel reduction in some words (e.g., prior stress in *expect* blocks vowel reduction in the second syllable of *expectation*). Various proposals have been made for doing away with the cycle, but most of them can be dismissed in one or two ways: (1) they are ad hoc (e.g., Liberman 1975 prestresses *ic* nonfinal to produce 4 stress, as in *elasticity*), or (2) they are insufficient (e.g., Sett 1974 omits crucial forms; Lee 1969 does accept the cycle for pairs like *equilvocate*/*equilvocation*).

I propose a principle of stress assignment (accompanied by two adjustment rules) which improves upon the cycle and competing proposals, for all but one class of phenomena. The Constant Contour Principle is as follows: when suffixal material is added to the end of an existing word and primary stress moves to the right of its previous position, then the stress contour remains the same. Examples are *equilvocate*/*equilvocation*, *identify*/*identification*, and *elastic*/*elasticity* (this last pair causes some analysts—e.g., Halle 1973—problems).

The first adjustment rule, from Hill and Nessly 1973, is that word-internal 3-1 stress sequences are often avoided (by shifting stress to the left). The rule applies, for example, optionally to *elasticity*, moving 3 stress to the left and leaving the 4 unreduced; the result is *elasticity*. An example of obligatory application is *expectation* to *expectation*. The second adjustment rule, from Chomsky and Halle 1968, reduces pretonic, nonipital vowels in open syllables, as in *analytic*/*analyticity* (*analyticity*). In *"cyclic"* phenomena, both adjustment rules apply only to words in which stress has shifted to a suffix.

The Constant Contour Principle plus the two adjustment rules correctly produce the stress contour in the vast majority of examples of *"cyclic"* application. Some exceptions, such as *compensate*/*compensatory*, are in fact irregular, and can be traced to an historically earlier pair *compensate*/*compensatory*.

The analysis of *"cyclic"* stress has four advantages over the cycle analysis: (1) it explicitly states that the function of the cycle is to preserve stress contours, (2) it narrows the application of *"cyclic"* stress to words where stress has shifted to suffixes, (3) it accounts for all variants such as *elastic*/*elasticity*, and (4) it excludes such irregular pairs as *compensate*/*compensatory*.

The analysis that I propose does not account for *"cyclic"* stress in pairs like *permit*/*permit*. Such pairs have been attacked by Ross 1972, Oehrle 1972, Liberman 1973, and Aronoff 1976 on grounds that the nestings are incorrect, that many words lack similar pairings (e.g., *report*), and that the analysis violates strict cyclicity. These pairs should be discarded as irregular, or else they should be handled by some new principle, since they have different properties from the phenomena discussed above. Both phenomena, if valid, should not be combined under the excessively broad notion of the cycle.
A Continuum of Stress Types

Traditional descriptions of word-level stress have contrasted "fixed" stress with "free" stress (Hyman 1975a, O'Connor 1973) and established a dichotomy of stress types by which the stress behaviors of all languages presumably may be defined. "Free" stress is capable of falling on different-numbered syllables in different words; "fixed" stress always falls on the same syllable with respect to word or morpheme boundaries. Recently, Hyman (1975b) has revised his dichotomy of stress types to contrast "free" stress with "grammatical" stress, the latter category including deaccentual and morphological stress. This paper explores the feasibility of abandoning these dichotomous treatments of word-level stress in favor of a system which regards different types of stress as points along a continuum.

An analysis of the stress behaviors of 125 languages suggests that simple two-way distinctions between stress types are inadequate because they may misclassify certain stress types, and because they fail to account for some well-attested types of stress behavior. For example, the type of "fixed" stress which always falls on a particular stem syllable of a word may ultimately resemble "free" stress by the time several affixes are added to the word. And the type of stress known as heavy-syllable stress (as in Latin) is not easily classified as either "free" or "fixed".

The alternative system which is being proposed for classifying the stress types of various languages consists of a continuum of stress types. The common denominator of this continuum is phonetic prominence, and the poles of the continuum are "Linguistic Function" and "Linguistic Predictability". For all the types of stress behavior encountered in the corpus of 125 languages, there is an inverse relationship between degree of linguistic function and degree of linguistic predictability manifested. That is, those stress types which perform more "work" linguistically (i.e., which tell the listener more about a word in terms of boundaries, grammatical class, semantics, etc.) are less predictable phonologically (i.e., their rules for placement are more complex or even indefinable). Conversely, those stress types whose placement is easily defined or predicted provide less linguistic information about a word. For instance, phonemic stress in German, which is completely unpredictable phonologically, provides essential semantic information for some pairs of words (e.g., billow/below). And heavy-syllable stress contributes little toward the interpretation of an utterance, but the rules for its placement are straightforward.

Besides being more general, the advantage of this system over the binary treatments described above lies in its predictive power. If a language manifests several types of stress behaviors, they will very likely be adjacent types on the stress continuum, as is the case in English. Also, when historical pressures cause the stress behavior of a language to undergo changes, the language will very likely pass through, but not skip, adjacent types on the stress continuum.

The ordering of stress types along the continuum of stress will be spelled out as completely as possible. Synchronic and diachronic examples of the predictive power of this system will also be provided.


The Metaphony of /e/, /o/ in Central and Southern Italy

Although the metaphony (umlaut) of /e/, /o/ results in [i], [u] in all the metaphonizing dialects of Central and Southern Italy, that of /e/, /o/ does not exhibit such uniform results. The various monophthong and diphthong can be accounted for by assuming two original results: raising to [i], [u] and diphthongizing to [ie], [uo], with no connection between the two. Rohlf's and Meyer-Lübke have espoused this view. A second view, the diphthongizing hypothesis, held by Schütz, is that all dialects originally diphthongized; a third, the raising hypothesis, held by Lausberg and Kengel, is that all dialects originally raised. The purpose of this paper is to show that the raising hypothesis is inadequate and to present evidence, hitherto ignored, in favor of the diphthongizing hypothesis.

Advocates of the raising hypothesis cannot adequately account for the appearance of diphthong. Lausberg's structural account which attributes their appearance to a desire to avoid confusion between primary /e/, /o/ and secondary [i], [u] fails because the latter appear only in the environment for metaphony while the former appear as [i], [u] in that environment; so there is no possibility of confusion. Kengel's purely phonetic account links the appearance of the diphthongs to the strong stress accent of 3. Italian dialects. If it were correct one would expect primary /e/, /o/ to diphthongize also since they are phonetically indistinguishable from secondary [i], [u]; they do not diphthongize however. There is the existence of a dialect on the border of the area having monophthongs that is in the process of monophthongizing its metaphonic diphthongs. The data for this dialect is taken from the Linguistic Atlas of Italy and S. Switzerland. At point 615 Leonessa (Rieti), /e/ in the environment for metaphony appears as [ie] (e.g., [vyěnti], [fyě:mu]) except after /ə/ where it appears as monophthong [i] or a diphthong with weak first element [ie] (e.g., [66:gu], [6:ęndv]). /o/ in the environment for metaphony is at a more advanced stage of monophthongization; [o] appears everywhere (e.g., [gə6esi], [nə:və]) except after bilabials, where we find the diphthong [ə:o] (e.g., [pə6:šu], [mmə:örți]).


The Explanatory Potential of Voice Register Theory

The explanatory potential of Voice Register Theory is so remarkable that a summary of its most promising developments is overdue. The single opposition - constricted vs. expanded pharynx - most simply described as accomplished by advancing or retracting the tongue root (ATR vs. RTR) accounts for the following:

1. Breathy (ATR) vs. creaky (RTR) voice quality in such languages as Sedang and Halang (Mon-Khmer) and some languages of India.

2. The Indic voiced aspirates - bh, dh, gh (ATR).

3. The extensive retroflexion of consonants in Tamil and other Dravidian languages (RTR).

4. Turkish and Mongolian vowel harmony. ATR gives the front set, RTR the back set.

5. Two-pitch tone languages such as Chepang (Tibeto-Burman). ATR lowers, RTR raises the pitch.

6. Languages such as Thakali (Tibeto-Burman) with more than two tones. A contraction of two successive A syllables gives low, of two successive R syllables gives high, of A followed by R gives rising, of R followed by A gives falling.

7. Appearance of the "wrong" features in reflexes of obviously cognate words from two related register languages. Different register harmony rules in the two languages result in varying dominance or recessiveness of register features.

8. The incredible vowel inventories of languages like Epem and Bu (M-K). A three-vowel language with two registers may have 6 different vowel qualities in each of two successive syllables. Contracting the two into one without loss of contrast is accomplished by preserving 36 (6 x 6) different possible vowel qualities.

9. Four laryngeals in a language such as Jinghpaw-Kachin (T-B), in which voiceless stops may close high pitch syllables, voiced stops may close low pitch syllables, glottal stop and h may close either.

The principal value of the insights of this theory lies in the relating of phenomena previously considered unrelated.
On the Alleged Differences Between Word Formation Rules and Lexical Redundancy Rules

Aronoff (1976) attempts to provide a description of morphology which is compatible with the framework of generative grammar. The central part of his system consists of Word Formation Rules (WFRs) which operate after the rules of syntax and (for the most part) before the phonological rules. Through these WFRs, morphologically more complex words are built up from less complex ones.

Jackendoff (1975) uses another approach. He defines an evaluation metric which counts independent information in the lexicon: redundancy rules (RFRs) to capture regularities (full or partial) which exist in the lexicon, thereby reducing the total amount of independent information there.

The two systems aim in somewhat opposite directions. Aronoff is more interested in word formation and has only a little to say about word analysis, while Jackendoff discusses it at length, leaving only a few paragraphs for word formation. Both agree that to a large extent, the two types of rules are inverses of each other, but Aronoff claims that Jackendoff has 'no external constraints on the notion redundancy rule', whereas his own RFRs are limited to just the WFRs. This paper attempts to show that there need not actually be a difference between the descriptions the two systems make and that the two models approach being notational variants.

In several ways, the systems are clearly equivalent, e.g., the lack of extrinsic ordering of the rules, the existence of full words in the lexicon (as opposed to morphemes), the handling of back formations. Some of the similarities are obscured, however, because of the different concerns of the systems. This paper will discuss some of these.

In general, Aronoff has paid attention to the more productive rules, while Jackendoff has worried more about the less general phenomena. So, for instance, Jackendoff discusses the regularities that WFRs like {RE}SE (a rule 'to indicate how often they are used together, i.e., how productive the rules are in a given case', whereas Aronoff will have to specify how non-productive a WFR must be before it ceases to be a rule at all.

The major point of this paper is that when Aronoff claims that by limiting RR to the WFRs 'the scope of the notion redundancy rule is automatically reduced considerably, and to a point where it embodies an interesting claim', he is overestimating somewhat, since each WFR not only specifies a phonological operation, but also contains a list (of indeterminate length) of possible forms of the base, each with 'some index of productivity and [semantic] coherence associated with it'. Furthermore, any other stem not listed may also undergo the rule (unless it is subject to a negative condition on the WFR), presumably also with a coherence index. This greatly expands the possible generalizations which can be captured even with this supposedly restricted notion of RR.

Corresponding to WFR's indices of productivity, each RR in Jackendoff's lexicon has a cost of referral (based on its productivity), which indicates how much of an actual saving the RR will produce in the total information count of the lexicon. So, many of the regularities expressed by Jackendoff's RFRs are semi weak (i.e., costly) that they do little to reduce the information content of the lexicon, in effect admitting that they are not much worth capturing. While these two models make many non-overlapping empirical claims which must still be investigated before declaring that the two are notational variants, their basic workings are potentially very similar and other more external considerations (such as the implications for the rest of the grammar) should perhaps be valued in judging which of these can be the more enlightening for future research.

Quapaw is a member of the Dhegihan subgroup of Siouan languages. The last speaker able to produce sentences not previously memorized died in 1975. Many non-speakers can still produce word lists and sentence fragments, but with phonological inventories that have been systematically reduced, series by series.

The reductions are not simply those that would result from an extreme case of Anglicization however. In the main, conflation has produced a less marked but nonetheless recognizably Quapaw inventory. In a few instances changes clearly matching English inventory and pattern are noted.

In general the mergers are as follows. (1) Glottalized fricative are realized as the corresponding plain fricatives. (All speakers) (2) Glottalized and aspirated stops merge with the corresponding tense (geminate) unaspirated stops. N.B. that Anglicization would have resulted in a merger with the more English-like aspirates. (Speakers one generation removed from fluency.) (3) Retroflex shibibials deretroflex. (Speakers two generations removed from fluency.) (4) Voiceless lax stops voice sporadically (first generation) or generally (second generation). Vocing of this series occurred in closely cognate languages prehistorically however, and was already in progress in Quapaw 150 years ago. (5) Nasal vowels denasalize sporadically. (Second generation from fluency.) (6) \E \( \rightarrow \) \E 〈\V, but is better preserved in clusters where it may assimilate to place of articulation of the following consonant. (All speakers.) (7) Vowel quality generally preserved, but, (8) Word final \E and \E both centralize to \E 〈. (Second generation from fluency.)

The order and types of reductions fit our general notions of markedness well. It is surprising that the influence of English phonetic rules is not more apparent. (cf. Hamp, 1968)

The study of language death can contribute materially to our understanding of synchronous and diachronic phonology. (cf. Dressler, 1972). Along with the study of acquisition, aphasia, drunken speech, pidginization, regular historical development, statistics from the phonological inventories of the world's languages, etc., the phenomena observable in language death deepen our understanding of markedness and linguistic change.

References:

On Constraining the Theory of Exceptions

One way a lexical item can be exceptional is to fail to condition (rather than fail to undergo) some phonological rule. In The Sound Pattern of English (Chomsky & Halle, 1968:380), such exceptional items are marked with a diacritic, such as [+d], which triggers a contextually restricted readjustment rule; this readjustment rule then introduces the appropriate negative rule feature, e.g.:

V → [-rule n] / [V] + [d] + C₀

Kisseberth (1970) and Coates (1970), however, point out that the readjustment rule approach allows for the possibility that exceptional morphemes may block a rule's application even though these morphemes form no part of the input to the rule. Thus, if rule n had the effect of simply stressing morpheme initial vowels (V → [+stress] + C₀), the readjustment rule stated above could block g's application even though the configuration of preceding morphemes is presumably irrelevant. Since no exceptions of this sort are known to occur, i.e., the offending morpheme is always at least a potential input to the rule, such application is blocked, Kisseberth and Coates abandon the readjustment rule approach and propose instead that environmental exceptions be handled by context rule features of the form [-context rule m]. As is empirically warranted, this device assures that such morphemes will always be within the domain of a rule to which they are exceptions.

The purpose of this paper is two-fold. First, it is argued that neither the readjustment rule approach nor the context rule feature device is sufficient to account for certain violations of regular vowel harmony in Turkish. Specifically, in this language all vowels in a word generally agree in their value for the feature [back]. (Although loanwords frequently violate this restriction, vowels in suffixes attached to such disharmonic loans generally agree with the backness of the last vowel in the root.) However, there are some roots in which the last vowel is front but take vowel-suffixes (e.g. fevki 'top', fevak 'the top'), and still others in which the last vowel is back that take front-vowel suffixes (e.g. hazfi 'suppression', hazi 'the suppression'). To claim that these two classes of exceptions both fail to condition regular vowel harmony, either by virtue of adjustment rules or of context rule features, is insufficient because, if the underlying representation of the definite article is /-i/, then hazfi can be derived but not fevki; alternatively, if the underlying representation is /-a/, then fevki can be derived but not hazfi. In order to uniquely account for the exceptionality of both classes, it is necessary to subject them to a diacritically triggered rule which reveals that their harmonic properties are precisely opposite to those of the regular cases:

V → [-a back] / [V] + [d] + C₀

Second, it is proposed that all environmental exceptions are to be accounted for by rules which express positive subregularities, not by context rule features. It is further argued that rules which introduce ordinary negative rule features must be context-free.

Some Remarks on Pragmatics and Presupposition

Jerrold Katz and D. Tereence Langendoen have published a highly provocative paper ("Pragmatics and presupposition," L.A., March, 1976) in which they claim that presupposition is a purely semantic phenomenon independent of context. Although we do not take issue with that view directly, we nonetheless find that some of the argumentation given by K&L in arriving at their conclusion is suspect. The paper we propose examines several points of this argumentation, which are of interest in their own right. In each case we reveal serious linguistic and/or philosophical difficulties that cannot be facilely answered. The unity of our paper is not based on its subject matter, which is diverse, but on the common role each point assumes in K&L's argument for their main thesis, a thesis of such significance that very close scrutiny is warranted. (Also, some of the points which we dispute in K&L's article can be traced at least as far back as Quine.)

K&L claim that the referential positions in propositions can be syntactically defined and hence formally represented in the grammar (by enclosure within heavy parenthesis). In their view, then, a verb of propositional attitude such as believe creates a non-referential position in the subject of its complement and this is precisely what accounts for the suspension of the existential presupposition of the subject of come in (1) when it is embedded under believe, as in (2).

(1) Santa Claus came last night.
(2) Bob believes that Santa Claus came last night.

According to K&L, then, the speaker is not committed to a belief in Santa Claus. But the account does not bear up under examples such as (3).

(3) The police believe that the escapees are heading north, where usually the existence of the escapees is presupposed. Based on this and other examples, we claim that the notion of referential position is insufficiently defined, and that since in K&L's view the semantic property of presupposition depends on it directly, that notion is also insufficiently defined.

Also essential to K&L's thesis is their claim that the utterance meaning of a sentence token is formally representable as the grammatical meaning (or context free meaning) of a sentence type different from the sentence type for that token. So, for example, on the occasion of a sarcastic uttering of (4)

(4) John is a fine friend.

a pragmatic function determines the utterance meaning as identical to the grammatical meaning of the sentence type (5):

(5) John is a poor friend.

We claim, contrariwise, that the utterance meaning of a sarcastic rendering of (4) is not adequately expressed as the meaning of any sentence type, and that a sarcastic (ironic, etc) meaning can only arise out of a sarcastic utterance and can never be context free and can therefore never be a sentence type meaning. Support for this claim comes from the fact that (6a), when the first clause is uttered sarcastically, is totally incongruous, whereas (6b) is quite ordinary.

(6) a. John is a fine friend, so don't ask him for a favor.
b. John is a poor friend, so don't ask him for a favor.

Other examples (some involving indexicals) also suggest that there are utterance meanings that can not be mapped onto sentence type meanings in the way K&L propose. If this indeed is the case, then the entire matter of how meanings are assigned to tokens is reopened, and this in turn forces a reevaluation of the role of presupposition in the grammar.
Maximization and Recoverability of Deletion

As is well known, there are many diverse patterns of ellipsis in the English comparative clause. Two of these are illustrated in (1) and (2). Sentences such as

(1) Annie drank more scotch than Jim drank \( \phi \). \( \phi = \text{much scotch} \)
(2) Annie drank more scotch than Jim drank \( \theta \). \( \theta = \text{bourbon} \)

are generally derived by a transformation known as Comparative Deletion (CD). Two of these are illustrated in (3) and (4). In the derivation of (2), the value of (3) is simply \( \phi = \text{scotch} \) and \( \theta = \text{null} \). A further demonstration of how her formulation of a maximization principle, her Relativized A-over-A Principle, which ensures that the value of a particular target predicate is maximal with respect to adjacent context predicates, interacts with this analysis to predict such facts as the ungrammaticality of (4).

 Crucially, B's proposal requires that RAOP maximization be dependent upon the principle of recoverability of deletion (ROD). ROD must rule out certain proper analyses first. RAOP then ensures that of the remaining proper analyses, only the one wherein the value of the target predicate is maximal is admissible. Assuming a role of language, the value of CD-SD, this is necessary in order to guarantee that the maximal identical deletion target is actually deleted (e.g. to allow recovery of deletion). RAOP maximization is the maximization of recoverability of deletion.

There is evidence against this dependency of the two principles in question. Grosz (1973) observes the ungrammaticality of sentences like (5), involving Verb Phrase Deletion (VPD).

(5) *I couldn't lift this rock, but I know a boy who can \( \phi \) and bend acrowbar.

\( \phi = \text{lift this rock} \)

This is why some researchers have suggested that RAOP maximization be dependent upon the principle of recoverability of deletion (ROD). ROD must rule out certain proper analyses first. RAOP then ensures that of the remaining proper analyses, only the one wherein the value of the target predicate is maximal is admissible. Assuming a role of language, the value of CD-SD, this is necessary in order to guarantee that the maximal identical deletion target is actually deleted (e.g. to allow recovery of deletion). RAOP maximization is the maximization of recoverability of deletion.

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VDP thus obeys (one part of) Ross' Coordinate Structure Constraint (CSC). One of the primary motivations for A-over-A in the first place, however, is to establish a general principle which has CSC as a particular case. Thus *(5) should, in B's theory, be explained by RAOP. But in (6), VPD is non-recoverable. Assuming the aforementioned dependency, therefore, incorrectly allows sentences like (6) to be generated.

(6) \[ \text{VP} \]

\[ \text{VP} \]

\[ \text{VP} \]

This lack of generalization can be avoided by assuming the independence of VPD and RAOP. Given two proper analyses, if the target predicate's value is non-maximal in one, and non-recoverable in the other, the prediction is that no deletion is possible. This correctly accounts for *(5). But this means that (4) cannot be ruled out by RAOP, a happy result, as many speakers find sentences like *(4) 'natural' rather than totally unacceptable. The position that (4) should not be ruled out by an immutable metatheoretical principle such as RAOP is further supported by the acceptability of such sentences in contexts like (7).

(7) Speaker A: Annie drank more scotch than Jim drank bourbon.

Speaker B: No, you've got it all wrong. Annie drank more scotch than Jim drank scotch (not bourbon).

The response analyses should give some indications of the importance of relating form-function pairs to the context for the child. The early input to young language learners consists of multiple form-function relationships. It may be precisely because this variation in expression exists that structural relations between sentences can be learned indirectly. If some understanding of intention is derivable from non-linguistic circumstances, then the child may be able to compare permissible expressions of function for structural relationships.

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(7) Speaker A: Annie drank more scotch than Jim drank bourbon.

Speaker B: No, you've got it all wrong. Annie drank more scotch than Jim drank scotch (not bourbon).

The response analyses should give some indications of the importance of relating form-function pairs to the context for the child. The early input to young language learners consists of multiple form-function relationships. It may be precisely because this variation in expression exists that structural relations between sentences can be learned indirectly. If some understanding of intention is derivable from non-linguistic circumstances, then the child may be able to compare permissible expressions of function for structural relationships.
Evolution of Stress and Vowel Length in Sri Lanka Portuguese

This paper will demonstrate that the Batticaloa dialect of Sri Lanka Portuguese (and Indo-Portuguese creoles) has undergone a typological change from a language in which vowel length is a predictable consequence of stress, to one in which vowel length must be lexically represented, but stress is predictable.

In Standard Portuguese (SP) the position of stress must be indicated in the lexicon for at least some items. Stressed vowels are then lengthened by a low level rule. In Batticaloa Portuguese (BP) a variety of phonological changes and borrowings have brought long and short vowels into contrast:

1. BP [ss]: BP [s] 'skin' < SP 'pelle'
2. a) BP [gy] 'today' < SP hoje
   b) BP [gy] 'eye' < SP olho
3. a) BP [diza] 'get down' < SP descender
   b) BP [f] 'mass' < SP massa

Stress and vowel length remain closely interrelated. All surface long vowels are stressed, and a word may contain at most one phonetically long vowel. Stress falls on the last underlying long vowel of a word, or on the first prefix of a word containing no long vowel. A later rule reduces all unstressed long vowels to short vowels, giving alternations such as those in 4) and 5). It will be noticed that in non-initial syllables underlying short vowels are always unstressed; underlying long vowels may be stressed: their length (represented by [-]), however, is less than that of long initial syllable vowels (represented by [:]). It is in fact possible for stressed vowels in non-initial syllables to lose their length entirely, since the surface feature of stress remains as the indication of underlying length. This phenomenon is particularly likely in closed or final syllables and in allegro speech. This distribution of stress and length results in the alternations in 6) and 7) when a prefix is added to an item with an initial syllable long vowel.

4) a) BP [do:z] → [diz] 'two'
   b) BP [dizer] → [dozer] 'second'
5) a) BP [oy] → [oy] 'eye' (= 2 b)
   b) BP [oy+a] → [oya] 'see'
6) a) BP [di:ya] → [dijya] 'day'
   b) BP [mediy] → [mediy] 'midday'
7) a) BP [tem] → [tem] 'is'
   b) BP [lofetem] → [lotem] 'will be'
   c) BP [nuntem] → [untu nem] 'is not'

To recapitulate: vowel length must be lexically represented in BP, though on the surface it serves as the sole feature distinguishing minimal pairs only in non-initial syllables. In non-initial syllables the predictable feature of stress always coincides with length and may even take over its function.

As Batticaloa Tamil (BT), in which all BP speakers are bilingual, has both contrastive vowel length and predictable stress, its influence can be attributed to its influence the evolution of the features in BP. The lengthening of original short stressed vowels in loans from BT as in 8) and 9) argues for a period in which the earlier situation referred to above (lexical stress plus a low-level lengthening rule) obtained. Other, presumably more recent, loans such as 10) do not show this lengthening. The change to the new system must, therefore, have come via areal convergence due to the typological pressure of Tamil, rather than as a direct result of the original (in this case re-) pidginization.

8) BP [bdìph] 'sp. of insect' < BT [vàpdu] id.
9) BP [kì:] 'paddy' < BT [kìlu] id.
10) BP [gapil l] 'money' (competes with /differu/) < BT [gàpl] id.

The purpose of this paper is to propose an integrated theory of Chinese adverbial placement in which several discrete generalisations previously proposed can be subsumed under one single principle and to show that adverbial scope in linear modification in Chinese and probably in other languages can be understood basically in terms of temporal or spatial range.

The proposed principle can be stated to the effect that if the state of affairs or action denoted by the verb occurs within the temporal or spatial range of the state expressed by the adverbial, then the adverbial must be placed before the verb; if it doesn't, then the adverbial must be placed after the verb.

It will be shown that this principle accounts for the following and several other phenomena of Chinese adverbial placement.

(A) While time adverbs and adverbial clauses can only occur before the verb, duration and frequency adverbs and until clauses can only occur after.

1) ta suitian zou-le
   *ta zou-le suitian
   He left yesterday.
2) ta zou-le san tian le
   *ta san tian zou-le
   He has left for three days.

(B) While preverbal place adverbials denote the locations of actions and states of affairs, postverbal ones denote the locations of participants of actions.

3) ta sai chuang-li ku
   *ta ku sai chuang-li
   He is crying in the kitchen.
4) ta diao sai shui-li
   *ta sai shui-li diao
   He fell in the water.

(C) With respect to instrumental and manner adverbs, the preverbal position is used in the description of one particular event, whereas the postverbal position is used for general statements.

5) ta hen kui de pao-le
   *ta pao-le (de) hen kui
   He ran away very quickly.
6) ta pao de hen kui
   *ta hen kui de pao
   He runs fast.

(B) For those manner adverbs describing mental states of actors, the preverbal position entails that mental states accompany actions, the postverbal position entails that mental states exist after actions.

7) ta hen gaoxing de wann
   *ta wann de hen gaoxing
   He is playing very happily.
8) ta wann de hen gaoxing
   He is very happy from playing.

This principle will be extended to account for the fact that Chinese time adverbs always precede place adverbials and others, and the fact that if adverbial X is semantically in the scope of adverbial Y, then Y is always ordered after X. Further applications of temporal and adverbial scopes to other areas of word order in Chinese will be suggested. Theoretical implications regarding the notion of semantic scope will be discussed.

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Temporal and Spatial Scopes and Word Order in Chinese
Children's Comprehension of Pronominal Subjects and Missing Subjects in Complicated Sentences

Comprehension data from children 3 to 5 years old indicate that children's rules for determining the referent of missing subjects rely on linear relationships between the subject and a sentence-internal NP to establish an anaphoric relationship and ignore command relationships between the uninterpreted subject and its possible sentence-internal antecedent. Comprehension data from a second experiment with children 3 to 5 years old tested pronominal subjects in structures identical to the structures of the first experiment, which contained missing subjects. The results indicate that children are using the same rules to determine the referent of a pronominal subject as were used to determine the referent of a missing subject.

Four sentence types were used, and three of the four types contained two clauses. In experiment I, one of the clauses in each of the multiple clause sentences had a missing subject, and in experiment II, the same clause contained a pronominal rather than a missing subject. Examples of the sentences used are the following:

**Experiment I**

A. Conjoined Sentences:

(1a) The duck jumps over the horse and stands on the rabbit.

(1b) The duck jumps over the rabbit.

B. Sentences with sentential subjects:

(2a) To kiss the lion would make the duck happy.

(2b) For him to kiss the lion would make the duck happy.

C. Sentences with verbal complements:

(3a) The sheep tells the duck to jump over the horse.

(3b) The sheep tells the duck to jump over the horse.

D. Simple Active Declarative Sentences:

(4a) The duck bumps into the horse.

(4b) The duck bumps into the horse.

Twenty-four children for each experiment were asked to act out tokens of each of the above sentences with the same animals. Three animals were used for the child to manipulate regardless of whether two or three animals were mentioned in the sentence. This was done to determine whether there was any tendency for children to use all the animals put even when only two were mentioned.

Children's responses to the four sentence types investigated indicate that they are using the same rules to determine the referents of missing subjects and pronominal subjects when they occur in identical structures. In an adult grammar, the presence of pronouns is unrestricted, and the position of sentences where the pronoun both commands and precedes a possible antecedent. That is, the antecedent of a pronoun may occur within the same sentence as the pronoun, or the pronoun may refer to something not mentioned in the sentence and its antecedent is determined from the context of the utterance. The fact that children have a highly preferred reading for pronominal subjects which is identical to the reading given missing subjects in identical structures indicates that they are using the same rules to determine the referent of a subject type. The pattern of responses indicates that children use a rule of non-coreference based solely on linear relationships and ignore command relationships.

**Experiment II**

A. Conjoined Sentences:

(1a) The duck jumps over the horse and stands on the rabbit.

(1b) The duck jumps over the rabbit.

B. Sentences with sentential subjects:

(2a) To kiss the lion would make the duck happy.

(2b) For him to kiss the lion would make the duck happy.

C. Sentences with verbal complements:

(3a) The sheep tells the duck to jump over the horse.

(3b) The sheep tells the duck to jump over the horse.

D. Simple Active Declarative Sentences:

(4a) The duck bumps into the horse.

(4b) The duck bumps into the horse.
On Interpreting "The Indian Interpreter"

In 1912 J. Dyneley Prince published, with a detailed analysis, a list of 261 words and phrases that constitute the majority of known attestations of a Traders' Jargon once used between Delaware River Whites and Indians. This list, which Prince found next to a deed dated 1684 in a manuscript volume he calls the Salem (N. J.) Records, is entitled "The Indian Interpreter". Lexically, the material is almost entirely Delaware, though with some dialect variation. Otherwise the Jargon is, according to Prince, 'almost grammatically and based chiefly on English construction.' (508). In this paper I present some results of a morphosyntactic study of the 83 items in the list that contain more than one morpheme; and I discuss the implications of these results both for assumptions about this Jargon's origin and for general theoretical questions about the nature and origin of pidgin and creole languages.

In spite of the paucity of data, the Jargon material clearly exhibits a number of typical pidgin-like features, in particular a morphology simpler than that of either language Prince mentions as a contributor to its structure, Delaware or English. But the grammar, what there is of it, matches our expectations neither for English (even a 'simplified' version) nor for any of the well-known pidgins and creoles with European vocabulary bases. The two most striking deviations are the ordering of negative particles relative to a subject pronoun and a verb, and the relative positions of a verb and its object:

$\text{\$220. matta ne kamuta neg. 1st steal sg.}$

$\text{\$157. shalea ooon hatee more snow have}$

Such constructions give a strong indication of various things this Jargon is not: 'based chiefly on English construction'; a pidgin whose structure results from the direct or indirect influence of an unbroken chain of pidgins and creoles going back to the original Lingua Franca (the monogenesis hypothesis); or a pidgin which, like other pidgins and creoles, is the result primarily of the operation of universal tendencies of language structure.

I suggest that it is, instead, a pidgin which, like other pidgins (and creoles), derives its grammatical structure primarily from the typologically unmarked and shared marked features of the native languages of its original speakers. I also claim that sociolinguistic as well as linguistic considerations argue against the participation of any European language in its original explanation.

In this paper I present some results of a morphosyntactic study of the 83 items in the list that contain more than one morpheme; and I discuss the implications of these results both for assumptions about this Jargon's origin and for general theoretical questions about the nature and origin of pidgin and creole languages.

The largely random distribution of 'creaky' tone in Modern Rangoon Burmese can be explained by the successive layers of historical development. As the morphophonemic variant of otherwise level and heavy toned words, this tone occurs in specific syntactic and semantic slots: as the tone of somewhat less than 400 words, it occurs primarily with verbs, nouns, and particles but also with adverbs, pronouns, vocatives and kinship terms, and interjections.

Comparative evidence establishes that the initial layer of about 50 forms was inherited from proto-Lolo-Burmese tone *3. The additional 350 forms represent a development internal to the history of Burmese. Internal reconstruction shows that the tone developed through the phonetics of the juxtaposition of old level-toned, initially-voiced roots and the general particle *k-ray. The morphophonemically varying creaky tone developed from *k-ray in the pre-head slot of modifier-head constructions; the lexical creaky tone developed from juxtaposition to a post-verbal use of *k-ray. Naturally verbs are the largest group with lexical creaky tone. Native nouns marked with creaky tone, the next largest group, developed historically from originally verbal creaky-toned roots. Similarly most frequently creaky-toned particles evolved from creaky-toned full verbs. Adverbs also display an earlier verbal origin.

Social Stratification and Linguistic Forms of Factory Workers

This paper examines language in a factory setting and focuses on: (1) language workers use to express attitudes toward jobs, work areas and coworkers (Labov 1966; Hall 1966; Hymes 1974); (2) communicative behavior workers exhibit in relation to their socially defined status (Mills 1956; Leopold 1970; Fishman 1970); and (3) speech forms workers use for particular situations and styles (Bernstein 1964; Bright 1966; Gumperz, Hymes 1972).

The paper reports that: (1) workers socially stratify their work environment with the labels they use for other workers and jobs (Labov 1966); (2) there is a correlation between the social stratification the workers recognize and the linguistic behavior they exhibit (Gumperz 1964); and (3) the preferred linguistic forms for careful and casual speech of workers may be correlated with the social categories they represent (Labov 1966; Gumperz, Hymes 1972).

A china factory was examined as a speech community using a case method of research with personal and participant observations and interviews. The characteristics and background of the community, the factory, and the workers were explored (Arensberg 1947; Beynon, Blackburn 1972). A sample of 151 informants was selected by the criteria of plant seniority and departmental affiliation (Tway a,b,c, 1975). A reading isolated the dialect of informants as careful speech and a questionnaire presented in a conversational manner probed the workers' environments and their definitions of them (Labov 1966; Shuy, Wolfram, Riley 1968). Photographs of workers in the factory were used to stimulate work-related conversations and to help elicit casual speech during the interview (Tway a,b,c 1976). The photographs also provided information about the nonverbal communication of workers (Hall 1959; Sebeok et al.1964; Birdwhistle 1970). Conversations observed outside the interview were used to support the analysis of speech styles.

The results of the study support certain notions about communicative behavior and socio-economic phenomena which the previous studies cited above have shown, and validate the usefulness of certain sociolinguistic field techniques discussed above. The study also contributes new information about the relationship between work, status and language, and new information about field techniques which can enhance future sociolinguistic studies.
The Vedic Trochaic Gayātrī

The Vedic trochaic gāyatṛ-- xxx/x-x-x differs from the regular gāyatṛ-- xxx-x in that it makes more frequent use of a caesura after the fourth or fifth syllable. A caesura occurs in 94.2% of trochaic gāyatṛ verses, as opposed to only 71.4% in gāyatṛ verses.

We are, of course, dealing with vastly different corpus sizes. The corpus of clearly octosyllabic trochaic gāyatṛ verses is nearly 500; the corpus of regular octosyllabic verses (including anuṣṭubh, pankti, and mahāpānkti verses) probably approaches 12,000. Nevertheless, the difference between 94.2% and 71.4% is so great that it seemed to call out for an explanation. And an explanation there was.

As Nagy has observed (Comparative Studies in Greek and Indic Meter, 1975, p. 166), the basic form of the Vedic octosyllable is represented by xxxu-ux. This coincides exactly with what Watkins ("Indo-European Metrics and Archaic Irish Verse," Celtica, 1965, p. 205) has termed the "irregular" gylonic in Greek.

There is a lack of specificity in the first four syllables of this form, contrasting with specificity in the last four. Thus, in the Rig-Veda, word-end in the regular octosyllable occurs at its expected frequency. Compare the trochaic gayātrī xxx-x/-x. In this, the contrast between lack of specificity in the first four syllables and specificity in the last four does not exist. Thus, a caesura divides the beginning from the ending of the line.

There is an explanation also for most of the 5.8% of the trochaic gāyatṛ lines that do not show word end after syllables four or five. The vast majority of these show a compound seam occurring either after the fourth or fifth syllable. The few that fail to show a compound seam can be explained in other ways.

VIII.2.13a revaḥ id revastah stotah --/-/-u-/--

is, according to Geldner ad loc., "ein deutlicher Wink an Indra. The repetition of revaḥ-- reinforces Geldner's position, as does the line's failure to show word end after either the fourth or fifth syllable.

VIII.81.7c ādānātāraśya vedaḥ u-u-/-

is, coming from the lips of a brahman, an oxymoron. Failure to show the appropriate caesura reinforces this interpretation.

Finally, VIII.79 is a poem sui generis. The unknown author has rebelled against the traditions of the category of trochaic gāyatṛ. He has created a poem which treats trochaic gāyatṛ as behaving in a manner identical with regular gāyatṛ.

Thus, a dichotomy is established between trochaic gāyatṛ and the regular octosyllable.

STEPHEN WALLACE

Interplay of Voice, Aspect, and Mode: The Semantics of Verbal Prenasalization in Malay

This paper challenges the widely-held current opinion that the essential semantic difference between plain (with zero or non-nasal prefix) and nasalized (with nasal prefix) verb forms in Malay is one of voice, or, according to some authorities, focus. Intensive fieldwork on the Malay dialect of Jakarta, Indonesia, reveals instead that the distinction between plain and nasalized verb forms--a crucial feature of the verb and, hence, of many utterances in Malay--lies in a complex interaction of the semantic categories of voice (passive vs. active) or focus (goal-focus vs. agent-focus) together with aspect (simple vs. habitual, punctual vs. durative, static vs. dynamic) and mode (actual vs. potential, executed vs. attempted), with the precise meaning depending upon the context.

Examined are pairs such as negilint and (dililit)--'see' vs. 'be seen' according to contemporary interpretation--where in actual fact the semantic difference is sometimes 'watch, observe' (durative aspect) vs. 'see, catch sight of' (instantaneous aspect); or 'able to see' (potential mode) vs. 'see' (actual mode); as well as 'see' (active voice/agent focus) vs. 'be seen' (passive voice/goal focus). In succinct terms, the basic semantic contrast is between a vague, general activity and a clear, specific act. The present analysis is seen to agree with that of some earlier scholars of Malay (esp. Winstedt) rather than that of most modern investigators, whether their approach be structural or transformational-generative.

These semantic phenomena in a western Austronesian language are briefly compared to similar recently reported features in eastern Austronesian (Polynesian) languages. Reference is then made to hypotheses, generally accepted among Indo-Europeanists, of the original identity of the Proto-Indo-European perfective aspect and mediopassive voice, and of other relationships between verbal categories (esp. aspect, tense, and mode) in the development of the Indo-European languages. The conclusion is that such fundamental verbal categories are not necessarily as distinct formally or semantically as we often think; the diachronic evidence from Indo-European and the synchronic evidence from Austronesian, especially Malay, show an unappreciated ambiguity and possible crossover between categories which deserve closer attention in our attempt to understand semantic structure and semantic change.
I. Clitics are elements whose behavior is jointly conditioned by syntactic and phonological properties. The multiplicity of regulating factors predicts the existence of a gradient of clitleness rather than the binary opposition of clitic vs. non-clitic which has been commonly accepted. Furthermore, the assumption that clitics are naturally connected to the syntactic surface is called into question since both non-superficial syntactic and non-underlying phonological factors are crucial for clitic behavior. The evolution of the relevant aspects of the clitic systems from Latin to Romance (here represented by Spanish) will be used to substantiate these claims.

II. Clitics occur in two common types:

Type A: They appear as unstressed elements in the surface string wherever a corresponding non-clitic form of the same constituent could occur. Such clitics are phonologically derived from their (stressed) non-clitic counterparts by productive phonological reduction processes resulting in a series of increasing clitiness (e.g. E: him - hkm - in - in I saw him yesterday).

Type B: They occur only in one (or more) specified position(s) in the surface string (second position, with verb, or other) as a result of having undergone a clitic placement rule to this effect. Such clitics cannot necessarily be derived from strong counterparts by productive phonological reduction rules (e.g. Sp. in clitic vs. en/lo non-clitic 'it, that' in no lo he dicho 'I did not say it' vs. no lo dicho eso), or they do not even have a non-clitic counterpart (Sp. 'PRO' only clitic in habla espanol 'Spanish spoken').

Type A and B subsystems may cooccur in a given language; e.g. in Latin A and B, in English only A, in Romance only B. With regard to type B clitics a language may have two subgroups, one which is moved to position x, the other to position y (e.g. in Pashto to second position and to the verb). -- In the diachronic dimension there are frequent shifts from one subtype to another; but their direction always conforms to the following necessary sequence of events (in the case of any change at all):

- non-clitic -- becomes clitic type A -- becomes clitic type B

The first phonological reduction takes place as a function of semantic non-prominence of the element concerned; the syntactic repositioning in the second step is in response to the low perceptibility of the (now heavily) reduced clitized element.

III. The type B clitics of Latin disappear in Romance (ne question particle, -que 'and'); original Latin type A clitics (is, ine 'he', etih ('he is')) are also dropped in most cases. An original demonstrative, ille ('that'), developed type A forms (Sp. es/lo) which changed to type B clitics in pre-literary Romance in their pronominal function ('him'), but they remained type A clitics in their function as definite articles ('the'). While these pronominal type B clitics were still dependent in Medieval Spanish on sentence stress in addition to constituent structure (they followed the first-stressed major constituent: el Cid, lo dix'o vs. e dixo, lo el Cid 'and the Cid said so') they became immobilized in Modern Spanish so as to precede or follow the verb according to morphosyntactic categories (finite vs. non-finite forms, etc.). Similar evolutionary chains of progressive clitization along the predicted lines will be presented from Spanish.

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Providence Island Sign Language

LANGUAGE is not a neatly and clearly bounded universe. The calculation of the potential of or the limits of the ability called LANGUAGE must be based on the range of varieties of actually existing languages. It follows that the more any particular language is systematically atypical, the more that language reveals the potential of language. Therefore linguistic theory, whose goal is the discovery of the limits of LANGUAGE, is most advanced by the investigation of the atypical and the extraordinary varieties of language.

This paper will discuss one such atypical linguistic system, Providence Island Sign Language. Providence Island Sign Language is employed primarily by deaf people living on a small isolated Caribbean island. The citation of four facts will serve to dramatize the extraordinary nature of PISL: 1) PISL is a manual-visual language rather than an oral-aural language; 2) PISL is not related to any other known Sign language; 3) PISL is employed by a community of signers which is quite unlike the sort of signing community found in industrialized societies (because deaf people are integrated to a large extent into the daily activities of the rest of the island's population). These characteristics indicate that PISL is not only a unique language, but a unique Sign language.

Because the PISL community is extremely small, isolated, and cohesive, the sign code is more context dependent than the sign codes found in industrial societies. Two specific examples illustrate this context dependence. 1) Providence Island signers make greater use of indexic signs for a wider variety of reference than do signers of other Sign languages. Referents that are a part of the common experience of islanders and that are normally visible, such as the ocean, mountains, and towns, are expressed by indexic signs. 2) Facial and/or sound expression plays a more significant role in distinguishing meaning in PISL than in other Sign languages. Facial and/or sound expression not only serves to distinguish such syntactic features as questions and negations but also is an integral part of many signs such as BAD, BOAT, FAST, etc., and in fact distinguishes a number of lexical sets like DOG, PIG, CAT and HOW, ASK, DON'T-KNOW. Historical changes in American Sign Language indicate that over time facial expression in a given lexical unit is either lost or transferred into a purely manual unit. The continued common use of facial expression to carry meaning in PISL is another indication of the cohesive nature of the community and of the context dependent nature of the code.

These two characteristics and others such as handshape formation, color and kinship terminology indicate the context dependent nature of PISL. This context dependence appears to be a product of isolation of signers and may change with the recent improvements in intra-island transportation, which allows more frequent contact between deaf people from different villages. If the frequency of contact of deaf people from different villages increases with time, we can expect a more context independent code to develop. For example, we would predict a change in potentially ambiguous forms like SLEEP to mean the name of one's own village.
Classification of nouns according to shape is widespread in the languages of the world. Paul Friedrich (1970) argues that "the overt, obligatory morphology of perhaps the majority of the world's languages functions partly to express categories of shape, and that such categories are probably universally present in the semantic substructure of all languages." The numeral classifiers and classificatory verbs of Tarascan reveal three basic categories: "longish, flattish, and roundish."

In North America, the native languages of the Southeast classify nouns according to position. The three Muskogean position verbs, stand, lie, and sit, co-occur freely with animate nouns. Inanimates are more restricted, but their distribution with respect to position verbs makes it clear that the classifying principle is orientation, not shape.

In Siouan, this system has apparently progressed from a position classification, most evident in Chivere-Winnebago and Mandan, to a more arbitrary shape system in Dhegiha and Biloxi.

In families such as Athapaskan, where shape has been assumed to be primary, position was probably primary historically. Davidson et al (1963) have concluded that the categories clearly shared by all three branches of Athapaskan are just those that correspond to the position verbs of the Southeast: long, fabric-like (flat), and round, in addition to animate. Evidence from Eyak further strengthens this hypothesis of the historical primacy of position. Krauss (1968) reports that Eyak animate nouns are classified according to position and that the Eyak stem -ti, cognate with the Navajo Class III (animate) neuter stem -ti, specifies prone position.

Shape systems, then, appear to reconstruct as position systems. Position classification can also be seen to have been grammaticalized into a complex definite article system indicating shape in Dhegiha Siouan. In Athapaskan, position has combined and intersected with other categories such as number and texture. In North America, at least, the evidence suggests that position is primary and shape derivative.

Realizing the cultural and social value of their native language at a time when their children are no longer learning it, a group of Mohawk teachers at Caughnawaga, Quebec, has devoted considerable time and energy to the construction of a national orthography and effective language classes. Over a period of five years they have studied general linguistic theory, Mohawk linguistics, and pedagogy. Their experiences in applying their theoretical knowledge in the accomplishment of their goals should be of interest to other native groups who share their concerns and to theoretical and consulting linguists curious about the accessibility to a native speaker of his unconscious linguistic knowledge.

The teachers devoted considerable time to the study of general phonological theory and set themselves the task of determining the optimum level of abstraction of phonological representation for their needs. After concentrated practice at a variety of levels, it became clear that the complexity of both the morphologically and phonologically conditioned rules of their language rendered all levels above a traditional phonemic level impossible for them to record or interpret. They found they did not have conscious native speaker intuitions about levels above this, and could derive them only by applying complex linguistic techniques, when they could derive them at all. Since they do not now, and never will have vast quantities of written materials, spellings which must be memorized are not practical. The system they did devise is highly successful; it employs 11 symbols, can be read and written with ease and confidence by native and non-native speakers alike, and has been taught in less than half an hour.

Speakers are generally unaware of the morphological components of words, particularly of derivational and most inflectional affixes, until sufficiently detailed orthographic representations of forms can be compared visually. Even as experienced analysts, speakers often forget which phonological segments correspond to which semantic features of a word. The knowledge gained through morphological analysis proved indispensable, however, in the construction of effective language courses. Children are now spontaneously producing morphologically correct words which they have never heard.

Most syntactic theory is based on the recognition of the sentence as a fundamental unit. In languages such as Mohawk, which lack strong literary traditions and established rules of punctuation, sentence delimitation is not always obvious. Since all verbs always appear in their full, finite forms, rather than as participles of infinitives, main predicates cannot always be easily identified. Intonation is a good clue to paragraph separation, but cannot be relied upon for all sentence boundaries. This suggests that the concept of the sentence might bear closer examination and refinement, both in Mohawk and in general linguistic theory.
Negative Incorporation in FSL and ASL

Recent research in sociolinguistics has demonstrated the need for looking at language in a dynamic framework, that is, not for imposing the traditional synchronic–diachronic dichotomy on linguistic studies. This paper attempts to test variation theory with historically related visual languages, French Sign Language (FSL) and American Sign Language (ASL), by examining variation in the use of Negative Incorporation in the two languages. Popular opinion states that ASL developed solely from FSL after initial contact in 1816. However, Negative Incorporation presents some evidence that ASL developed from the creolization of FSL and Sign Languages already existing in the U.S. before 1816.

Data for this study was collected from 144 deaf American signers and from 60 deaf French signers. Informants from the U.S. were chosen on the basis of geographic location (northeastern vs. northwestern), parentage (deaf or hearing), age of acquisition of signs (before and after six), and education. The French informants were selected primarily on the basis of region. French deaf informants represented the cities of Paris, Toulouse, Albi, and Marseilles.

The results of this study support viewing languages in a dynamic framework, since traditional static theories have no formal mechanism to handle the inter and intralingual variation that occurred in this study. The patterns of variability were shown to be the same for all signs undergoing Negative Incorporation except GOOD. GOOD undergoes categorical Negative Incorporation in ASL, while no French signers use Negative Incorporation with GOOD. We hypothesize that this problem with the data is due to early creolization in American Sign Language.

Negative Incorporation is a phonological process of assimilation of Verb + Not in FSL. This assimilation began affecting FSL verbs before 1816. Otherwise, there could be no Negative Incorporation in ASL, since ASL NOT has no formal relationship to FSL NOT. ASL NOT probably came from some sign variety in America, since old and modern FSL do not have cognates for ASL NOT. The assimilated Negative forms of FSL verbs remained as single units in ASL.

These lexical units apparently became generalized into a grammatical rule in ASL with the Negative Incorporation of ASL GOOD into ASL BAD during the creolization of FSL and existing varieties of signing in the U.S. circa 1816. FSL and ASL GOOD are cognates. FSL BAD became ASL WORSE. Cereolized ASL GOOD then had no single lexical unit for BAD or this unit lost in competition with BAD as a Negative Incorporation of GOOD, GOOD then gradually moved to its appropriate place in the implicational pattern because of its phonological characteristics.

Finally, Negative Incorporation of GOOD has become categorical. Further support for the salience of the Negative Incorporation grammatical rule in ASL comes from overgeneralization of deaf children's signing and hearing adult hypercorrections. This rapid restructuring of phonological assimilation into a grammatical rule would argue for creolization as opposed to natural internal language change.

By viewing Negative Incorporation in a dynamic framework, we are able to describe the variable usage of Negative Incorporation as a phonological process in FSL and as a grammatical process in ASL, to argue for possible early creolization of ASL, and to show the historical continuum between FSL and ASL despite heavy restructuring.

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