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INTRODUCTORY NOTE

We would like to take this opportunity to formally acknowledge the help which has been graciously given by the San Francisco Local Arrangements Committee, Clara Bush, Chairman, and the Committee consisting of Jagdish Jain, John Lamendella, Will Leber, Helen Patton, Orrin Robinson, Jesse Sager and William Yovman have arranged the California Wine Tasting through the Wine Institute, written a sightseeing guide to San Francisco, undertaken to provide institutional housing for students during the meeting, prepared a guide to restaurants to be available at registration and provided student assistance in the actual running of the 3 1/2 day meeting. The Secretariat expresses its appreciation and thanks for this, and all the other help they have provided.

We hope that this Meeting Handbook will be a useful guide for those attending this meeting, as well as serve as a permanent record of the 50th Annual Meeting.

Begay Atkinson
LSA Secretariat
December 1975

CONVENTION MESSAGE CENTER

Through the courtesy of Pacific Telephone, there will be a Telephone Message Center at the meeting. Incoming messages will be received at the Message Center and recorded by the attendants. The name of each person for whom a message is received will be listed on a magnetic board. Please check the Message Center periodically to avoid missing calls. There is no facility for paging. The Center has been assigned San Francisco telephone number (415) 788-1274.

BILINGUAL SYMPOSIUM

A Bilingual Symposium: Building a Research Agenda, sponsored by the National Institute of Education and coordinated by the Center for Applied Linguistics, has been designed to promote exchange between professional linguists and educators.

Symposium sessions will treat linguistic research which can be applied immediately to the challenging needs of bilingual education programs. At the same time, a forum will be provided for linguists and practitioners to work together to develop priorities for future research in linguistics. Through such dialogue, linguistic research can be made more responsive to bilingual education planning and practice. Participants will include prominent research linguists, noted practitioners of bilingual education, representatives of private foundations and government and federal agency representatives.

Topics to be covered include language acquisition and proficiency assessment, language structure, semantics and pragmatics, sociolinguistics and the ethnography of communication. Brief presentations of research in these areas will be made, followed by discussion of their relevance to bilingual education needs.

EXPERIMENTAL LINGUISTICS

This symposium brings together a collection of papers concerned with the processes by which linguists and other language scientists accumulate reliable, researcher-independent linguistic information for the purpose of testing linguistic theories. The approach is multifaceted, ranging from the philosophical bases of linguistic theory, to mathematical techniques for interfacing theoretical models and empirical data, to observational and experimental techniques for collecting relevant linguistic data.

The first paper, "Empirical syntax and semantics of children's speech," deals with a number of problems inherent in the linguistic analysis of large corpora of natural spoken language. A probabilistic model is presented for the analysis of syntactic structures. Extending the model to account
for semantic structures presents new theoretical problems of model verification.

The second paper presents "Some child language and sociolinguistic constraints on linguistic metaphor." Unlike the preceding paper, it reports experimental procedures for eliciting children's semantic interpretations of sentences. The focus is on using these experimental data for English while clauses to choose among competing theories of grammar, in this case generative and interpretive semantics.

The third paper, "Extending a corpus: language games for analyzing pragmatics," integrates both naturalistic and experimental means of collecting linguistic data. It deals on the one hand with the role of pragmatics in grammar, and on the other with the processes by which pragmatic competence is acquired. The presentation will include a videotape of this corpus extension technique, used to ensure that the linguistic situations of interest will occur in the observed interactions.

Finally, the symposium will consider the role of "The ideal speech community in empirical research of linguistic study." The use of idealizations in theory construction in computational linguistics is extended to cover linguistic idealization of the homogeneous speech community. When an idealization is made the consequent of an empirical hypothesis, it is possible to bridge the gap between theoretical linguistic research of idoles and the experimental research in linguistic communities.

The set of four papers and their position in a general framework of experimental linguistics will be reviewed by an invited commentator. Participants will be invited to respond and comment on the audience will be encouraged.

ASSOCIATION FOR COMPUTATIONAL LINGUISTICS

The Association for Computational Linguistics will sponsor a session on Tuesday afternoon, 30 Nov., in the Cliff Room. The abstracts of the papers to be presented may be found on page 151.

SAN FRANCISCO

[Note: The ISA Secretariat would like to thank the Chairman of the San Francisco Local Arrangements Committee, Clara Bush, and her colleagues for providing the following information on San Francisco.]

Novel Transportation

Walking: San Francisco is a walker's town. Its distinctive ethnic neighborhoods can best be appreciated on foot (Chinatown,

Golden Gate Park, North Beach, the Mission District, Nob Hill, Pacific Heights, Van Ness, the Waterfront, etc.). In fact, you can walk over the Golden Gate Bridge.

Biking: You can rent bikes in North Beach to Ashbury to explore Golden Gate Park.

Outside elevator: Take the glass outside elevator to the top of the Fairmont Hotel for a day or night view of the city.

Bay ferries: Take a commute ferry to Sausalito (Mediterranean village turned 20th century colony) or to Tiburon's restaurants and shops--or take a sightseeing cruise on the Bay or the cruise for a tour of Alcatraz Island.

The Muni system: Ride the famous San Francisco cable car system (National Historical Landmark with Cable Car Barn Museum), the street cars, the buses or BART (Bay Area Rapid Transit). BART represents the latest in computer-operated transport, including the longest underwater tunnel in the world, connecting San Francisco and Oakland under the Bay. (Ride near the front of the train to watch the accelerators, recorded on the digital speedometer. Special tourist deal: Between 9:00 a.m. and 7:00 p.m., you can ride the round trip over the system. Without getting off.)

There's a 49 Mile Scenic Drive for which distinctive signs are posted throughout the city. Maps are available and auto-tours can be rented.

Dining Out in San Francisco

The city is rich in ethnic restaurants, coffee houses, and fascinating food markets which feature the groceries, meats and baked goods dear to specific cultures. A list sampling favorite restaurants among the range of possibilities will be available to registrants at the meeting; in addition to the expected ethnic cuisine found in the various districts, specialties to look forward to in San Francisco include Basque, Cuban and West Indian, Filipino, Greek, Hungarian, Indian, Indonesian, Korean, Mexican, Middle Eastern, Russian, Scandinavian, Thai, and Vietnamese. In my opinion, plan to sample the local Dungeness crab, Pacific salmon, and the famous San Francisco sourdough bread.

Entertainment

The San Francisco Opera season is over in December and the regular ballet season hasn't begun yet. Fortunately, however, there will be the traditional holiday ballet performances of The Nutcracker Suite and other performances of The San Francisco Symphony, productions by San Francisco's famous repertory company, the

Francis Drake's The Golden Hinde which landed near The Golden Gate in 1578, then there's the Maritime Museum, including the Hyde Street Pier restored as a turn-of-the-century wharf. Nearby you'll find San Francisco's unique and delightful Wine Museum.

Near the Marina: There's the Palace of Fine Arts (a restored Pan-Pacific Exposition building designed by Mayeck) which now houses the Exploratorium, a museum for sensory exploration in science and technology.

In Golden Gate Park: You'll find the California Academy of Sciences, including the Aquarium and the Planetarium--also the Conservatory, the Botanical Gardens. There, too, is the deYoung Museum and the Brundage Collection of Asian Art, also the Japanese Tea House and miniature gardens dating from the 1894 Exhibition.

Along the Pacific Coast: There's the Fleishhacker Zoo, Cliff House, Seal Rock and Bird Rock. Most of the year, and especially in winter, sea lions inhabit the rocks and islands off the coast--since 1867 they have been declared to be "natural" sea lions. Seventeen miles to the north, the Golden Gate Bridge is Muir Woods National Monument, the closest stand of California's magnificent redwood trees.

Elsewhere in the city: There's the Mission Dolores, established in 1776, the northwesternmost of the famous California missions along the trail of the Spanish padres, El Camino Real; there's Lombard Street ("crookedest street in the world" with eight terraced switchbacks on a 40° slope); there's Octagon House; there's the Golden Gate Produce Market where restaurants open at 2 a.m.--and more, much, much more.

For up-to-date information about events scheduled for December in San Francisco, consult The Bay Guardian or the Sunday Chronicle-Examiner (pink section).
1975 LSA ANNUAL MEETING
San Francisco, California

General Information

Hyatt Regency Meeting Rooms
Bayview Room (A; B) .................................................. Street Level
Board Room .................................................. Street Level
Embarcadero Room (A; B; C; D) ................................ Intermediate Level
Golden Gateway Ballroom (A; B) ......................... Street Level
Pacific Room (Exhibit Hall) .................................. Ground Level
Regency Room .................................................. Intermediate Level
San Francisco Room (A; B) ................................ Intermediate Level
Sealcliff .................................................. Street Level

Registration, Job Placement, LSA Book Exhibit
Registration for the 1975 LSA Annual Meeting will be conducted in the Golden Gateway Ballroom Foyer. The Job Placement center will be located in the Pacific Room. Golden Gateway B will contain the LSA Book Exhibit.

Registration
Sat: 11:00 a.m.-2:30 p.m.
Sun: 8:00 a.m.-4:30 p.m.
Mon: 8:00 a.m.-4:30 p.m.
Tues: Closed

Special Interest Highlights
Sat: LSA Executive Committee 9 a.m.-5 p.m. Board Room
Bilingual Symposium 2:5 p.m. Golden Gateway A
Cash Bar 8-10 p.m. Ballroom Foyer
Sun: Past Presidents Breakfast 8:10 a.m. Regency Room
Cash Bar 5:30-7:30 p.m. Ballroom Foyer
Mon: California Wine & Cheese Party 5:30-7 p.m. Embarcadero A, B
($3.00 per person. Purchase tickets at Registration Desk.)
Symposium on Experimental Linguistics 8-11 p.m. Golden Gateway A
Tues: LSA Business Meeting* 8:30-11 a.m. Golden Gateway A
Presidential Address: The Pertinence of Peirce to Linguistics 11 a.m.-Noon Golden Gateway A

*LSA Resolutions Committee: Dwight Bolinger, Chmn., Kostas Kazazis, and Robin Lakoff.
### Sunday, December 28

#### MORNING

<table>
<thead>
<tr>
<th>Time</th>
<th>Session 1</th>
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<th>Session 3</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Bilingual Symposium—Golden Gateway A</td>
<td>Psychology—Phonetics—San Francisco B</td>
<td>Indo-European I—Seassult</td>
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<tr>
<td>10:00</td>
<td>John Lauer, U Michigan; Semantics. Disc: Duc Khoi, VUU</td>
<td>John E. Iwata, Columbia U; Disc: William M. Cavalli, U Texas; Disc: J. Markman, U Pennsylvania</td>
<td>Indo-European I—Seassult</td>
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<tr>
<td>11:00</td>
<td>Charles Pyle, U Michigan; Pragmatics. Disc: Luis F. Allensworth, U Cincinnati</td>
<td>Rupprecht, U Konstanz; Disc: Bernard Spilker, U Maryland; Disc: Larry Stock, U Arizona</td>
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#### AFTERNOON

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<tr>
<td>2:00</td>
<td>Ralph Fosnot, Georgetown U; Sociolinguistics. Disc: William Miller, Teachers C</td>
<td>Psychology—Language Acquisition—San Francisco A</td>
<td>Native American Languages I—Seassult</td>
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<tr>
<td>3:00</td>
<td>Break</td>
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<tr>
<td>5:00</td>
<td>Rudolph C. Troike, CAL; Summation</td>
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<tr>
<td>9:00</td>
<td>Synthesis: Golden Gateway A</td>
<td>Psycholinguistics - Neurobiolinguistics: San Francisco A</td>
<td>Bilingualism: San Francisco B</td>
</tr>
<tr>
<td>10:00</td>
<td>Robert Freed, Purdue U: Arguing for the Syntactic Cycle</td>
<td>John J. Oghara, Cal Berkeley: Manner of Particle</td>
<td>Carol W. Platt, U Texas: Austin, Syntactic Constraints on Code-switching: A Quantitative Study of Spanish/English</td>
</tr>
<tr>
<td>11:00</td>
<td>Adrian Almogny and Adrienne Lehrer, U Arizona: NP-Subject Quantifiers and the Problem of Determining the Head of an NP</td>
<td>Lynn Wasmuth and Deborah Fein, Trincos SI: C. Language and Behavior in Autistic and Schizophrenic Children</td>
<td>Peter C. Lincoln, U Hawaii: Acknowledging Dual-Linguism</td>
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<td>History of Linguistics - Embacadero A, B</td>
<td>Psycholinguistics - San Francisco A</td>
<td>Syntax-Semantics: San Francisco B</td>
</tr>
<tr>
<td>2:30</td>
<td>Yakov Malkov</td>
<td>James L. Fodor, U Maryland: Variation in, Nonmeanings: The English Stroke System</td>
<td>Charles Shortridge-B冗nke</td>
</tr>
<tr>
<td>3:00</td>
<td>John J. Oghara, Cal Berkeley: Manner of Particle</td>
<td>Ivan A. Sag, MIT: Grassmann's Law: Limited at Any Speed</td>
<td>Susan F. Smolensky, U Texas: Austin, Syntactic Constraints on Syntactic Evidence</td>
</tr>
<tr>
<td>4:00</td>
<td>Charlotte Baker, U Cal Berkeley: Regulators and Turn-taking in American Sign Language Discourse</td>
<td>David Michaels, U Connecticut: A Problem in Phonology: Allomorphy</td>
<td>Break</td>
</tr>
<tr>
<td>5:00</td>
<td>Lyn Miles, U Connecticut: The Use of Sign Language by Two Chimpanzees</td>
<td>Michael S. Fries, UCLA: On a Canonical of Absolute Reasoning</td>
<td>Alice Dawson, SUNY-Stony Brook: Causal Connections and Reason Adverbials</td>
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#### 5:15 p.m.

- Golden Gateway A, B
- Symposium on Experimental Linguistics Chair: Silvio Grassia
Tuesday, December 30
MORNING

8:30-11 a.m.
LSA Business Meeting—Golden Gateway A
Chair, Thomas A. Sebba

Resolutions Committee: Dwight Balinger, Chairman, Kostas Kazazis, and Robin Lakoff

The following rules for motions and resolutions were prepared by William J. Gastey and the LSA and approved by the Executive Committee at its June 1973 meeting. LSA members are urged to follow these ground rules in order to have their motions and resolutions considered at the Business Meeting.

Members wishing to propose motions under 2d (below) should initiate such actions through the Executive Committee prior to the Business Meeting.

This may be accomplished by sending motions to the LSA Secretariat for inclusion on the Executive Committee agenda, prior to the 30 December 1973 meeting. Resolutions may be introduced by contacting any of the above members of the Resolutions Committee prior to the Business Meeting.

RULES FOR MOTIONS AND RESOLUTIONS

Ground Rules for Motions and Resolutions

1. Definition: A motion is any proposal calling for action whether by an officer of the Society, the Executive Committee, or the membership.

2. Procedure regarding motions: 2 a. Motions are in order only at the duly constituted annual business meeting. Voting is restricted to members of the Society. Motions may be initiated by the Executive Committee or from the floor.

2 b. Motions initiated by the Executive Committee require a two-thirds majority of members voting at the meeting.

2 c. Motions initiated from the floor, if they receive affirmative vote of a majority of members voting at the meeting, are then to be submitted to the Executive Committee to a mail ballot of all members of the Society in the new issue of the LSA BULLETIN. Passage requires a majority (over 50%) of the individual membership.

2 d. If a member wishes to introduce a motion, but prefers to avoid the delay involved in 2 c above, he may submit his motion in advance to the Executive Committee before their regular meeting preceding the business meeting at which the motion is to be introduced, with a request that the Executive Committee, by majority vote of the Committee, approve the introduction of the motion at the business meeting as a motion initiated by the Executive Committee (see 2 b above).

3. Procedure regarding resolutions.

3 a. Resolutions may be introduced at the annual business meeting or at any special meeting of the Society, such as the summer meeting.

3 b. A resolutions Committee consisting of three members will be appointed by the President prior to the beginning of each regular or special meeting. Any member wishing to introduce a resolution must submit it to the Resolutions Committee, which, in addition to its traditional duty of formulating resolutions of thanks and the like, will have the duty to make sure that the language is clear, and that duplication is avoided. The Resolutions Committee may meet in advance for this purpose or may, if necessary, retire to caucus during the course of the meeting.

3 c. A resolution expressing the sense of the majority of the meeting requires for its passage the affirmative vote of a majority of the members voting at the meeting.

3 d. If at least ten members present at the meeting desire a resolution to be introduced, a resolution may be introduced by the members present and the resolution will be referred to the Resolutions Committee for consideration.

11:00 Presidential Address: The Paradox of Forces in Linguistics

Tuesday, December 30
AFTERNOON

1 Syntax—Semantics I—Golden Gateway A
Chair, Dwight Balinger

2 00 Guy Carden, Yale & M.T.: Appositive Relative and Singular Quantifers

2 30 Samuel Epstein, U Cal-San Diego: A Pragmatic Account of the Negative Transformatiop/ Phenomenon

3 00 Frank Roberts Brandt, Genent Uniputio Professional & Fid U Rio de Janeiro: Quantification, Negation, and the Semantico-Syntax of Relativism

3 30 Elizabeth M. Fidler, U Illinois: A New Look at SOT

4 00 Break

4 30 Robert Hietz, U Cal-Santa Barbara: The Evidence for Dated Qualitative Frame-clauses

5 00 James T. Hering, U So Ca: Indirect Acts and Pre-Acts

2 Experimental Phonetics—San Francisco A
Chair, John Ogbah

2 00 M. F. Dorman, Lehman C & Hastings Labs, A. M. Liberman, Hastings Labs and Lawrence J. Raphael, Lehman C: Silence as a Cue to the Perception of Stop Sequences

2 30 Donna Erickson, Hastings Labs & U Connecticut; A Laryngeal Description of That Town

3 00 Jean Marie Lombert, UCLA; Development of Tones from Vowel Height

3 30 Break

4 15 Edward T. Purcell, U So Ca: Pitch Peak Location and the Perception of Sino-Croation Word Tone

4 30 Terrance M. Healey, U Connecticut: Arguments for Acoustically-oriented Features for Vowels

5 00 William G. Ewan, U Cal Berkeley: The Linguistic Phonetic Basis for the Intonational Pitch for Vowels

3 Syntax IV—San Francisco B
Chair, James McCawley

2 00 John Y. Hou, U So Ca: Normal Modifiers in Mandarin Chinese

2 30 Shigio Tomake, U Hawaii: Case Ordering

3 00 Noreen A. McGay, U Chicago: Reexamination of Relativization in Japanese

3 30 Taro Kageyama, U So Ca: Sentence Accessibility

4 00 Break

4 30 Kashii Waki, Syracuse U: Praxe, Elizabeth Riddle, Two Marathi References and Their Implications for Causative Structure

5 00 Anuradha Sanket, UCLA: A Surface Structure Constraint in Hindi

4 Historical Linguistics—Embarcadero A, B
Chair, Ernst Parngam

2 00 Sarah - Gray Thomson, U Pittsburgh: Grammatical Change in Progress—Meyer Grammar

2 30 Daniel A. Dinnere, Indiana U and Andrea Ross, U Wisconsin: On the Extinction of Ruler Rederring

3 00 Break

3 30 Benjamin K. Tou, U Cal-San Diego: Unidirectional Change in Natural Syntax


4 30 Elena E. Baron, L Illinois-Urbana, I am not sure: Lexical Change in Present-day English

5 00 William H. Jacobson, Jr., U Nevada: Historical Implications of the Western Basque Tonal Accent

5 Language Pedagogy—Embarcadero C, D
Chair, Walt Whilam

2 00 Harvey A. Danieli, Rosary C: Robert Gundich and Rae Moses, Northwestern What Teachers Believe: An Historical Investigation of Language Activities and the Implications for Bidialecticism in the Schools

2 30 Mark L. Schneck, Penn St: University of Another Look at Educational Surveys: Quantitative Results

3 00 Break

3 30 Stephen D. Kressen, U So Ca: A Model of Adult Second Language Performance

4 00 Suzette Haden Elnon, San Diego & U The Pedagogical Case for Case

4 30 J. Romanica Cavern, U Illinois: Reading, Syntactic and Contrastive Analysis

6 ACL Session—Seadff
Chair

2 00 Robert Smith and Lee Blaine, Stanford U: Use of Natural Language in Computer Proof Checking

2 30 Jonathan Allen, MIT: A Model for Fundamenetal Frequency Based on Communication Function

3 00 Ralph Weischedel, U Call-Irvine: A System for Computing Presuppositions and Entailments

3 30 G. C. Goldszmidt, Union C and E. C. Chytilski, GE Corp: Natural Language Analysis in a Func- tion Oriented System

4 00 F. Theut: Role of Negation: Grammatical, Semantical, and Pragmatical

4 30 Linda Messick, Vassar C: Claim Structure Grammar
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.
NP-like Quantifiers and the Problem of Determining the Head of an NP

Certain quantifier expressions, such as a number of, a group of, etc., which we call NP-Q's, exhibit significant characteristics of NP status, as shown by the following diagnostic criteria: (a) occurrence with an article or possessive ("a number of", "our group of"), (b) occurrence with adjectival modifiers ("a large number of"), (c) occurrence in the plural ("several groups seen"). This has led certain linguists (e.g. Jackendoff 1968) to analyze the NP-like quantifiers (NP-Q's) as heads of their containing NPs: \( \text{NP} \rightarrow \text{NP-Q} \rightarrow \text{NP} \) and hence as parallel with NPs such as a portrait of John (\( \text{NP} \rightarrow \text{NP-Q} \rightarrow \text{NP} \)). We will argue that this analysis is incorrect for two reasons. First of all, NP-Q's never function as heads of corresponding genitive constructions:

1) a portrait of John → John's portrait  
2) a number of people’s number

Secondly, NP-Q's do not allow the expected exoposition of the PP complement, which is normally possible with a complement to a head of a NP:

3) a number of pictures of John were taken \( \rightarrow \) a number of pictures were taken of John  
4) a review of a movie with Marlon Brando was published in the Times → a review was published in the Times of a movie with Marlon Brando

Even more puzzling is the fact that a type of exoposition which is normally banned is possible with NP-Q's:

5) a. a number of pictures of John were taken \( \rightarrow \) a. a number of pictures were taken of John  
6) b. a number of pictures were taken of John \( \rightarrow \) b. a number of pictures were taken of John

We show that if NP-Q's are not heads of their containing NPs, but rather subordinate to the heads, the facts of (iii)-(vi) are explained in a way consistent with the NP-cycle hypothesis argued for in Akmaian (1973).

\[ \text{NP} \rightarrow \text{NP-Q} \rightarrow \text{NP} \rightarrow \text{a number of} \]

This analysis predicts certain facts about number agreement, which are born out by (vii), where the NP-Q need not agree with the verb.

7) A box of books were on the table.

This could never happen with a true head followed by a PP complement as in:

8) A book about shanks were on the table.

A closer look at the various quantifiers shows a gradation ("squin") from least NP-like to most NP-like, with certain productive devises for turning full NPs into quantifiers, such as -ful, in a roomful of people. The more an NP-Q resembles an independent lexical item (such as 'e box'), the more likely it is to govern no. agreement (cf. 'a box of books was on the table', but 'a number of books was on the table'). This duality is plausible, given the gradation mentioned above.


Jackendoff, R.S. (1968) "Quantifiers in English", *Foundations of Linguistics*, 4, 82-442

Developmental psycholinguists generally agree that children in the early stages of language development regularly use language for the apparent purposes of obtaining desired objects and of moving adults to perform tasks for them. Even before single-word commands such as more, cookie, and look appear, pre-verbal children frequently use a repeated nasalized schwa sound (usually accompanied by index finger pointing) for this "conative" function. (Cf. Jakobson, 1968)

Despite the prominence of imperatives in the published child language data, there has been a notable lack of discriminating analysis of these structures. The imperative (you) hit ball is not distinguished from the declarative (i) hit ball in most grammars of child language since children at the stage of language development regularly omit the pronouns in both kinds of sentences. Brown (1969) reports that the imperatives of the children in his longitudinal study could not be considered to be transformationally derived in the early stage and imperatives were only marked by such words as glimme and glimme in later stages. The grammars of both Bloom (1970) and Schlesinger (1971) also fall to differentiate between imperative and declarative forms.

In the present paper, the author argues for a propositional-constitutic analysis of imperatives. In this paradigm, commands are viewed as but one of a number of different possible manifestations of the underlying proposition "Speaker desires X." Data from a 14-month longitudinal study are used to support the suggestion that such variously constructed child utterances as cookie, want a cookie, I need a cookie, can I have a cookie, give me a cookie, give me a cookie, and let's have a cookie have a propositional synonymy which distinguishes them from other types of declarative and interrogative sentences. The data further indicate that in the expression of Speaker desires X, the child's rule-governed stylistic variation between 1 and 3 years of age is such a reflection of her growing social awareness as it is of her linguistic competence.

The view presented here on the basis of empirical data raises serious questions about the viability of the theoretical goal you will deletion rule for children's imperatives. It also offers a simpler explanation for the utterance Can I have a cookie? than that provided by the performatives analysis: I REQUEST YOU TO TELL ME WHETHER YOU PERMIT ME TO HAVE A COOKIE OR NOT. . . .
Languages reflect distinct systems for orienting predicated objects and events in relation to the spatio-temporal center of the language user (the ego-centric of Damourrette and Pichon, 1911-1940). These systems may be described as marked or unmarked according to whether or not they express orientation towards the spatio-temporal center of the language user (hereafter C). It appears that, in general, verb systems in Indo-European languages express orientation towards C but those in many African and Asian languages do not express such orientation. For example, in an Afro-Asiatic language such as Hausa the verb system has no formal marker that orientates temporally a predicated event (hereafter E) towards C. Hence the same verb form is used to predicate E as having occurred by some reference point (hereafter D), whether D (which may be expressed adverbially) precedes C:

\[
\begin{align*}
\text{E} &\rightarrow \text{C} \quad \text{Yesterday we returned,} \\
\text{D} &\rightarrow \text{C} \quad \text{Now we have returned,} \\
\end{align*}
\]

or follows C:

\[
\begin{align*}
\text{C} &\rightarrow \text{E} \quad \text{Tomorrow we shall have returned,} \\
\end{align*}
\]

As evidenced by the glosses, the verb form changes in English as the temporal relation of E to C changes.

In the domain of spatial predication English and Hausa differ in a parallel way. For example, in English C is oriented towards R, as illustrated by the following:

\[
\begin{align*}
\text{C} &\rightarrow \text{BALL} \quad \text{The hat is in back of the ball.} \\
\text{C} &\rightarrow \text{HAT} \quad \text{The hat is in front of the ball.} \\
\end{align*}
\]

The ball, serving as E, lacks an intrinsic front-back axis; it is assumed to be oriented towards C, the point in space at which the language user is located. Hence the hat is normally represented as in back of the ball.

A Hausa speaker, however, does not orient R towards C, as evidenced by the following:

\[
\begin{align*}
\text{C} &\rightarrow \text{BALL} \quad \text{Hula yana gaban tala.} \\
\text{C} &\rightarrow \text{HAT} \quad \text{The hat is in front of the ball.} \\
\end{align*}
\]

This paper discusses ways to influence children's responses to sentences such as "Is Kathy easy to see?"

Carol Chomsky has shown that syntactic development is not complete in children in the five to ten age range. Specifically, she has shown that children interpret constructions which are exceptions to Rosenbaum's Minimum Distance Principle as if they were not exceptions. A six-year-old child was blindfolded and asked, "Is Kathy easy to see or hard to see?" Usually responds that Kathy is hard to see: The object of the infinitive phrase "easy to see" is taken to be the NP immediately to its left, so it's not Kathy who is doing the seeing. Chomsky claims that only when confronted with a situation which semantically permits no other interpretation (such as "Stairs are hard to climb") will the child adopt the adult interpretation.

By testing twenty-eight kindergarteners on structures like those used by Chomsky, it was shown that her thesis is fundamentally correct. Only six children said that the blindfolded Kathy was easy to see. We also tested these children in a situation where a non-blindfolded doll is placed behind a fogged glass shield. Although an MDP-regular interpretation was semantically possible, all but one of the children said that this Kathy was also hard to see. Half the children did the blindfold test before the glass test, and half the other way. Unexpectedly, the six children who correctly answered the blindfold question were among the fourteen who were asked the glass question first. This is significant at the $p \leq .05$ level. Thus we showed that physical and conversational environment can reverse the interpretation of "Is Kathy easy to see?" for many five-year-olds. The factor in children's selections of an interpretation is what seems reasonable to them, based on the physical setting and the thread of the conversation.
Correlatives and Relatives in Old English and Modern English

In Old English, many correlative constructions were used to connect subordinate and main clauses. In these correlative constructions, the relationship between the two clauses is indicated by the presence in each clause of a corresponding demonstrative element. The Old English correlational element to be discussed in this paper is the frequently used temporal adverbial *þa*, which functioned both as an adverb, the equivalent of Modern English *then*, and as a subordinating conjunction, equivalent to Modern English *when*. The use of *þa* for correlation is demonstrated in examples such as:

Orosius 128.5: *þa Darius geseah þæt he oferwæten beon wold, þa wold he hisan... forespillan* "When Darius saw that he would be overcome, then he wanted... to kill himself."

In this paper, I will argue that such correlative constructions in Old English were really relative clauses embedded in the pro-adverbial *þa*, similar to Modern English *when-then* sentences in which the when-clause is a relative clause embedded in the pro-adverbial *then*. I will argue that both *when and then* in such Modern English sentences are pronounisations of some underlying, possibly abstract, temporal prepositional phrase and that *when* is the relativisation of this phrase, which is used to embed the subordinate clause in then in the main clause. The difference between the Old English and Modern English constructions is on the surface, in the choice of the relative pronoun; today we use the interrogative *when* whereas in Old English the adverb *þa* was used. The when-clause in Old English is a relative one is clear from the difference in word order in the two clauses.

I will discuss optional deletions of *then* in these correlative constructions, possible in Old English, but more frequent in Modern English: the use of both *when* and *then* when a surface temporal prepositional phrase is present; the use of another then in those clauses as in the Old English example:

W.3. Matthew 9:8: *spleclice þa þa sceo menigege þis genawon, þa ondrédon hyg hym and waldron God* "Truly then when (or 'when' then) the many saw this, then they feared him and glorified God" and in similar Modern English sentences. In addition, I will discuss other correlatives used in similar relative clause constructions as well as in subordinate clause or complement constructions in both Old English and Modern English. In conclusion, I will consider how such an analysis of correlatives clarifies some aspects of English adverbs.

Possible Words

This paper is concerned with the manner in which facts about the world and society interact with the word-forming patterns of a language (in this case, English). The interaction will be viewed as one between two components of a grammar: the syntactic or morphological and the pragmatic. The pragmatic provides a filter through which the individual words produced by the morphology and/or syntax must pass.

I will give an example. I have a cold and am confined to my bed. You, the reader, bring me juice and aspirin and generally minister to my needs. I may say to you, "You're a good nurse." Note that I may not say, "You're a nurse," unless you are one. The first sentence, "You're a good nurse," may be paraphrased (roughly) as "You perform the functions of a nurse." The general pattern is as in (1):

(1) Z be a $X_{adj}$ $Y$

The general pattern of the paraphrase is as in (2):

(2) $z$ performs the functions of a $y_{Xadj}$

It can be demonstrated that $Y$ in (1) is being used in a new sense and that (1) is a productive pattern for introducing new senses (or words) into the language. Now, if we look at individual instances of (1), we discover differences in acceptability:

(3) (i) You're a good teacher.
(ii) You're a good surgeon.
(iii) You're a good chair.
(iv) You're a good prime-minister.

It is not difficult to imagine a circumstance in which one would say (i) of a person who may or may not be a teacher by profession. (ii) is a little more difficult to place, it could be said if someone were removing a splinter for example. (iii) can be said jokingly. (iv) is impossible unless the person addressed is indeed prime-minister. The variation is seen to be caused by a single pragmatic factor: the ease with which one who is not a $y_i$ may perform the function of a $y_i$. A teacher teaches; a nurse performs surgery; a chair is for sitting on; but what characteristic function or activity of a prime-minister can be performed by one who does not hold that title?

We thus see that, though the pattern in (1) which generates new senses of $Y$ is autonomous, the acceptability of individual instances of the pattern, each $y_i$, is governed by a pragmatic notion, independent of (1). The pragmatic thus acts as a filter on the syntactic product.

The paper deals with other more complex facts which are susceptible to similar sorts of analysis: it will be shown that the set of agent nouns is limited by the pragmatic notions of "characteristic activity" and "natural kind". The mysteries of compound participial adjectives (e.g. "chain-smoking vs. mistake-erasing") will also be touched upon.
Regulators and turn-taking in American Sign Language Discourse

This paper provides an initial characterization of the multi-channel behaviors used to regulate dyadic conversation in American Sign Language (ASL). These behaviors are first classified according to the 'regulator' categories of Wiener and Devoe (1974) and then discussed in terms of the turn-taking system formulated by Duncan (1973). Special attention is given to the unique role of eye contact in conversations of deaf persons. Eye contact (+EC) is found to be one of the most powerful regulators in ASL discourse since no potential 'speaker' can initiate a turn until the desired addressee gives +EC to that speaker. Shifts in speaker eye contact are also found to signal information-unit boundaries and to vary systematically with syntactic function.

In ASL, initiation, continuation and shift regulators (each subdivided into speaker and addressee forms) are composed of systematic variations in the use of postural shifts, signing speed, 'rest' positions, facial displays, the holding and/or raising of signs, indexings, head-nodding, palm orientation, and eye contact. Data on each of these variations is selected from a corpus of ASL elicited from two dyads of native deaf signers.

Finally, observed differences between the kinds and uses of regulators employed by deaf and hearing interactants are considered as contributing significantly to conflicts encountered in deaf-hearing communication situations.

Lexicology is the most easily observed type of linguistic change, and one that is too often ignored by theorists. It does not go unnoticed in the popular press, however, where it is seen as evidence of the death of English, or of its moribundity, a reflex of the decay of our moral and natural resources. This pessimistic attitude is not new; suspicion of language change seems a social-linguistic universal. The confusion of grammar and semantics does little more than instill in others a sense of linguistic insecurity that produces further innovation.

In fact, the lexicon of present-day English is changing rapidly and regularly, and a description and explanation of this change is necessary for any comprehensive diachronic theory. An examination of a corpus of 500 new words collected during 1975 provides the basis for a typology of lexical change and both supports and suggests modifications for the theories of language change of Weinreich, Labov, and Herzog (1968), and Samuel (1972).

Both linguistic and extra-linguistic factors influence lexical change. Many neologisms are nonce words, e.g., babylift, coined during the evacuation of children from Cambodia and South Vietnam, and phone out, referring to the loss of telephone service in parts of New York City after a fire. Inventions and discoveries generally require new names for themselves (creosatic memory), and sometimes cause changes in older forms (e.g., the spread of videotape caused the shift from the film form, now largely for what had previously been the only kind of tape); and social and political movements (e.g., the women's movement) may generate entire vocabularies. Some neologisms are technical (post pericardiotomy syndrome) or stigmatized (mula, 'transporter of narcotics') and may therefore never transcend their original registers. Phonological transcription of speech and hypercorrections are increasingly noticeable in some print media (compositions, signs, advertisements provide forms like men's briefs, straight, of 'have'; and phrases that are irregular, e.g., "If the broadcaster is optimistic his report", indicating that the standard written language is shifting to assimilate features of nonstandard language.

The rarest neologisms are unique words, created from scratch (yuck, xerox); words that contain new or uncommon morphs combined with more ordinary ones (climatronics); and revivals (confectioned). Less rare are new combinations of old morphs (ethnonoetics); borrowings from other languages (yakusa) or cultures (beer and hug), or from specialized (nontraditional student) or nonelite dialects (drop); words created by analogy (dissectigate); and words modified to fit new syntactic slots (abortional, lame-duckiness). New functions may be given to existing words (lay out, retreat) and existing words may be combined to form phrases which act as single semantic units (tomato stretch, checkbook journalism).

Lexical change usually involves material already present in the language system or in that of a contact system. It occurs in all idiolects and registers (contrary to the traditional notion, it is not more frequent in poetic than in ordinary discourse), in response to definable linguistic forces, in various degrees of consciousness; and its diffusion, while not necessarily predictable (and subject to the influence of lexicographer-observers as well as users), can be mapped according to a number of specific linguistic, social, and psychological variables.
The most widely accepted picture of the distribution and structures of the native languages of California has been largely shaped by the work, during the first half of the twentieth century, of A.L. Kroeber. However, there were other scholars in the field of California Indian languages whose manuscript materials provide new insights into the linguistic situation in aboriginal California. One of these scholars was C. Hart Merriam. We intend to present an analysis of two vocabularies left by Merriam in order to show that they are evidence for two dialects of Chumashan, Emigidano and Allilikik, both previously thought to have been entirely unrecovered. Emigidano was cited by Kroeber as Chumashan, Allilikik as Shoshonean. Merriam's materials provide enough adequately recorded forms to allow a determination that both of these dialects were in fact Chumashan.

The manuscript entries are written in system of phonetic transcription, based roughly on English spelling, which Merriam himself developed. The vocabularies were recorded in or around the year 1905. Merriam’s entries are sufficiently well recorded to allow direct comparison with other Chumashan languages (and in the case of borrowings, with languages from other linguistic stocks such as Yokuts and Shoshone). For example:

Indian people: Emig. hool-koo-koo; Barb. hu₄-kuh-ku₄; Vent. si-ku-ku; Ines. ma-kuh-ku

man: Allilikik a-taj₄-haht; Vent. fa-ta₄-xa; Barb. fa₄-hsi; Ines. fa₄-hsi

blood: Allilikik ah₄; Vent. ta₄-an; Barb. fa₄-xu₄-le; Ines. fa₄-xu₄-

The Merriam vocabularies not only allow a determination of Emigidano and Allilikik as Chumashan, but also are sufficient to allow subgrouping within the family: Emigidano can be grouped with Barbareho, Allilikik with Ventureño.

German-speakers apparently have as part of their competence the ability to produce noun phrases such as the following:

der zusammengebrissene Kram
das merkwürdige schon lange da stehende Kanal.
eine in vielen Hinsichten nicht mehr zu rettende Analyse

It has been thought for some time that such constructions derive from "relative clauses," and it has more recently been shown that only certain, not all, relative S's can be so transformed. The paper is an attempt to elucidate and extend our knowledge of the kinds of constraints that exist on transforming relative S's into prenominal (and postnominal) relative modifiers, hereafter abbreviated as PRMN and PPRMN.

A generative-transformational model is used to demonstrate briefly knowledge current in the literature, e.g., Kotsch and König, working with a transformational model, Weber, Helbig, and Schenkel with dependency grammar, and Keenan with linguistic universals. It is shown, for instance, that the NP of the relative S coreferential with the head noun must be the subject of its S, which suggests that only a small proportion of relative S's can be preposed in German. Information available in the handbooks (e.g., Curme, Duden) regarding the proposing or reduction of auxiliaries is explicated fully. The general question usually asked, namely what kinds of relatives do PRMN's come from and how, is treated in terms of two more specific questions: 1) what is the SD of relative S's which lead optionally to PRMN derivation and 2) precisely what transformations does PRMN derivation itself entail? It is shown that the derivation consists of three ordered transformations: 1) adjectivalization (OPT) 2) preposing (conditionally OBL) and 3) preposing (OBL for restrictive relative S's). The first T is shown to be the crucial one, in that it substitutes the copula for the three AUX's of the input SD, i.e., 1) dummy AUX marked for tense 2) non-copular SEIN 3) passive AUX. The remaining two transformations are then relatively unproblematical. Some feature marking found in König's work is carried out in detail with regard to transitivity, passivity, and aspect, and it is shown that 1) tense marking is eliminated with the deletion of the copula 2) the two participles, while they do not signal tense, do signal perfective and non-perfective aspect unambiguously, except when the past participle is marked passive 3) the past part. with underlying passive is partially ambiguous just because the passive AUX *JEHND* marked for the aspect of the higher S is deleted - an ambiguity reflected of course in the language itself. It is shown further that there is a close binary fit between the constraint that blocks PRMN derivation when 1) the relative S contains a perfective transitive verb on the one hand and 2) a non-perfective transitive verb in the passive on the other. Feature markings on VB and AUX make explicit the system of binary opposition underlying 3) construction that is well known for its cognitive and grammatical complexity.
Quantification, Negation, and the Semantic Isolation of Sentence

The purpose of this paper is to propose some tentative universals about the interaction of the scope of Quantifier (Qn) and Negative (Neg) based on data from English, Swahili, Japanese, and two dialects of Portuguese. In English, the interaction of Many and Not was studied by Lakoff (1971 "On Generative Semantics" in Steinberg and Jakobovits eda: Semantics, Cambridge U. Press) and Jackendoff (1972 Semantic Interpretation in Generative Grammar, MIT Press). Each found his position strengthened: L. found a need for Global Derivational Constraints (and Generative Semantics) and J. a need for Surface Semantic Interpretative Rules (and Interpretative Semantics). For all four languages, I will show that L. is mostly right and that J. is wrong. The data concerns scope interaction of many and not. If many is in the scope of not, the meaning is equivalent to an affirmative S with few. If not is in the scope of many, something is denied about many individuals. All four languages have patterns where the difference in scope is expressed by a command relationship in which one of the elements Qn or Neg is in an embedded S (relative clause). In simple S, Qn/Neg interaction is determined by relative order. All four permit the Qn in NP and the Neg in V, English and one dialect of Portuguese permit Neg before Qn under NP in Subject position. In Object position this is strange in English, ungrammatical in Portuguese. Japanese has the order Qn Neg-V with Qn nevertheless within the scope of Neg. I first conclude that (1) command is a more basic relationship than order in these cases (2) order within simple S relevant to scope is not the order of production in speech, but a dependency rule in which object always is in the scope of V. Based on this, I choose most of Lakoff's analysis. The major change I make is to propose a universal Neg Lowering Rule which with the rest of the analysis permits the restriction of the base in these cases by allowing unrestricted lowering of Neg to main V for each of the four languages. That all the Neg to the lower V on Qn are seen as generalizations of the rule to other V. Thus, the minor dialect difference within Portuguese can be explained. These results are relevant to the Generative vs. Interpretive Semantics controversy, as noted, and also in that semantic and syntactic structure are equivalent in most cases. Also, I disagree with Jackendoff's objections to the generative solution, since the Passive does not need to be restricted given the formulation of Neg Lowering in this paper. Further, if Neg is generated in the base as part of NP with Qn, then the dialect difference in Portuguese would be in the base and unexplained and the fact that such NP are strange in object position in English and ungrammatical in Portuguese would be unexplainable. In fact, the Passive would give J. problems with this last fact. My general conclusion is that Generative Semantics, at least in the case of Neg/Qn scope interaction, offers a more promising approach to the problem of restricting the base and finding language universals.
A Thousand Years of Alfric's Grammar

Alfric's Old English Latin Grammar (c. 995) was the first grammar written in English and the first Latin grammar in any vernacular. Its remarks on contrasts between Latin and English provide the earliest linguistic commentary on English. Throughout its millennium-long history, the Grammar and its appended Glossary have continually played a role in the study and teaching of languages and in the English grammatical tradition.

In its medieval period it was an important tool for the study of Latin. The unusually large number and wide distribution of manuscripts in which the Grammar and Glossary are extant and to which the extant manuscripts attest demonstrate the popularity through the eleventh and twelfth centuries of these works, as does the annotation and glossing in Latin, Old French, and English in the manuscripts. The famous Worcester scrivie with the tremulous hand even saw fit to make a complete Middle English version in the thirteenth century. From this period stems the Vocabularium Corniicum, a translation of the Old English parts of the Glossary into Old Cornish, thereby providing our earliest major source for the study of the Brythonic languages, just as the Worcester text is a valuable tool for the study of West Midland English in the early thirteenth century.

In the modern period the Grammar and Glossary have figured in the study of Old English and in the basic grammatical tradition. In the sixteenth century they were a major force in the rediscovery of Old English as scholars studied, annotated, and copied them—Talbot and Landen in the 1580's (I have discovered a hitherto unrecognized transcript by Landen which preserves an early, now-lost manuscript of the Glossary), Nowell and Joscelyn among others in the 60's and 70's. Somner appended a copy of the Grammar (from a transcript by Junius) to his publication of an Old English dictionary in 1659 as a complement to the dictionary in the study of Old English. When Elizabeth Elstob published the first Old English grammar in English (1715), she based it primarily on Alfric's Grammar and used his vernacular grammatical terminology as an answer to those who like Swift disparaged the language and called for an academy. The use of the Grammar and Glossary for the study of Old English was enhanced in the nineteenth century by publication of texts, especially Turks's (1866). In addition to several twentieth-century studies of the grammatical vocabulary, the Grammar has recently been used by Elisabeth Closs Traugott in her History of English Syntax. Yet the Grammar has also influenced the tradition of English grammar through its use by Ben Jonson (1623) when he was writing the first grammar of English. Besides its role in the tradition and its precedent for presenting the subject in the vernacular, Alfric's Grammar uses a theological basis for explanation (volto takes no imperative because man's will must be free) which reflects a continual attempt to root grammar in something more permanent than convention.

A number of verbs in Old English could occur without surface subjects, usually taking preverbal dative or accusative objects. As Middle English was developing rigid SVO order, these impersonal constructions were replaced by constructions with dummy subjects or the proposed objects were reanalyzed as subjects. I argue that a number of aberrant cases of the reanalysis of impersonal constructions provide evidence that the notion 'subject of a sentence' cannot be defined in terms of any single property. Three sets of data will be given where proposed objects were reanalyzed as subjects while retaining their object case morphology: (1) cases where the main verb agree with a preceding object case pronoun, e.g. he sileo they sell; (2) where the subject of a personal construction is related to the object of a preceding impersonal: his ophinc his guilt and het his midsead 'he resounces his guilt and betters his midsead'; and (3) where the impersonal with a proposed object takes a second accusative object, not regular for impersonal constructions: swetese his bunces, he 'they appear to him most sweet'. In set (1) verb agreement but not nominative case marking characterizes the subject, whereas in (2) and (3) neither agreement nor case marking characterizes the subject. While confirming the multi-factor definition of 'subject of' given in Keenan 1974, this data calls into question the rigidity of the Promotion Hierarchy in the form given there; the Promotion Hierarchy predicts that derived subjects most easily acquire initial position, case marking, and verb agreement, in that order, whereas in set (1) agreement was acquired before case marking. An output constraint requiring surface structures to have overt subjects seems to have been added to the grammar of Middle English, but if no one property is sufficient to characterize subjects how such a constraint is to be stated is unclear.

References:
Some Consequences of Presupposition Failure in the Discourse of Children

Crucial to the development of the child's communicative skills is his acquisition of the ability to produce well-formed speech-acts. This paper advances and supports the claim that in order to produce a speech-act which is to be judged appropriate by the listener, the child must hold certain presuppositions about what the listener knows with respect to some domain in the real world. Learning to produce a given type of speech-act is seen, in part, as learning the particular set of presuppositions attached to a given type of speech-act. Conversely, various aspects of an ill-formed speech-act may be viewed as the consequence of either the absence or failure of one or more presuppositions associated with that speech-act.

Evidence supporting this claim is found in sets of directions (that is, telling how to get from one place to another) elicited from children between three and nine years. The set of directions was chosen for investigation because it is a highly structured speech-act with respect both to content and form and because its function is highly specific, highly listener-oriented.

A general set of presuppositions are proposed which we claim must be held by the speaker if he is to produce a 'successful' set of directions. In general terms, this set of presuppositions will determine, in part, what the speaker chooses to say and how he chooses to say it. More specifically, the speaker's presuppositions regarding his listener's knowledge will determine the domain of the set of directions he produces, the points in space and the paths linking them that he identifies, the determiners he chooses, and his usage of anaphoric devices. Finally, it is demonstrated that these presuppositions are arranged in a hierarchical structure such that failure of a presupposition at a particular position in the hierarchy will predict failure of other presuppositions below it, with attendant consequences to the speech-act itself.

In this paper, I shall first examine the accounts of certain word order data given by Greenberg (1966), Lehmann (1973), and Vennemann (1973) and then propose a principle of language structure which collapses much of their accounts and relates word order phenomena more closely to language acquisition strategies. The co-occurrence of certain word order patterns, for example, verb-object and head noun-modifier order as opposed to object-verb and modifier-head noun order, has often been described as the generalization of a relation between modifier and modified, operator and operand, etc. Given this analysis, the relative verb and object patterning is assumed to be key in determining the relative modifier and modified order in other constructions.

Greenberg's (1966) and Vennemann's (1973) accounts of such word order correspondences provide little more than a restatement of the modifier/modified description. Lehmann (1973) proposes to account for the modifier/modified generalization as well as certain typological characteristics of a language (e.g., why SOV languages tend to be agglutinative, etc.) with his structural principle of language: modifiers are placed on the opposite side of a basic syntactic element from its primary concomitant. However, this structural principle gives no necessary primacy to the verb and object patterning and makes incorrect or ambiguous predictions with respect to several word order patterns. For example, given, within Lehmann's position, that the direct object is the primary concomitant of the verb, Lehmann's structural principle predicts that an indirect object should precede the verb in a VO language and follow the verb in a OV language; in fact, verb-direct object-indirect object-direct object-verb are the normally observed orders. The fundamental role of the verb and object positioning in bringing about word order changes in a language suggests that the verb and object relationship may be of special significance to the language learner. I propose that there is a strong tendency in the language acquisition process to keep the main verb and object noun as close together as possible. Assuming that elements belonging to the same syntactic category (NP, VP, etc.) group together in surface structure, this principle implies that, for example, nominal modifiers are optimally placed after the object noun in VO languages and before the object noun in OV ones; that auxiliaries, negative particles, and other verbal qualifiers should precede the verb in VO languages and follow it in OV ones; and that there should be few languages in which verb and object are split by the subject NP, i.e. VSO languages (OSV, VOS, and CVS languages appear to be undesirable on independent grounds - cf. Greenberg (1966)).

Aside from accounting for most of the word order data presented in the above studies, the principle which I propose allows us to focus on the acquisition of verb and object constructions and on formal linguistic properties of the verb and object relationship in seeking explanations of word order data. The possibility that the verb and object are acquired as a unit or single lexical item at the early acquisition stages may be instructive.

Appositive Relatives and Singular Quantifiers

In standard analyses, restrictive relatives are derived from an underlying structure with the relative clause embedded in the NP it modifies, while appositive relatives are derived from underlying performativel-level conjunctions by a rule of Appositive Clause Scooping. More recently, Thompson has argued that appositive and restrictive relatives both come from underlying conjoined sentences.

This paper provides evidence to support the standard analysis by examining a construction in which restrictive relatives act like subordinate clauses while appositive relatives act like surface conjoined sentences.

Consider number agreement with the "singular" quantifiers each and every:

In simple sentences informants hesitate between singular and plural anaphors:

1. a. Everyone did his best. (correct school grammar)
   b. Everyone did their best. (common in speech)

Subordinate clauses work the same way, with the singular anaphor possible or preferred:

2. Everyone claimed that he knew the answer. (complement)

3. Everyone started work as soon as he finished breakfast. (adverbial)

When the anaphor appears in a separate conjunct, however, only the plural is possible:

4. a. Everyone likes Jane, and he likes Sally, too. (he cannot be coreferent with everyone)
   b. Everyone likes Jane, and they like Sally. (they can be coreferent with everyone)

Examining more complicated examples, we find the following generalization:

5. Each and every take singular pronoun anaphors only if the quantifier commands the anaphor.

As expected, restrictive relatives act like other subordinate clauses and permit singular anaphors:

5. a. Everyone is looking for the woman who he loves. (he is coreferent with everyone)

Appositive relatives, however, act like separate conjuncts and require plural anaphors:

5. b. Everyone is looking for Jane, who they love. (they are coreferent with everyone)

These facts would be explained if the number-agreement generalization (1) is applied to a stage in the derivation where, as in the standard analysis, restrictive relatives were subordinate clauses while appositive relatives were still separate conjuncts.

References


Bayes' Theorem, Subjective Probabilities, and Linguistic Argumentation, or How to Argue Convincingly Without Convincing Anyone

In an attempt to resolve "Hume's problem of induction" (i.e., that it seems to be impossible to arrive at true theories using inductive inference), Wesley Salmon, in The Foundations of Scientific Inference (1966), proposes a solution which makes extensive use of a result from probability theory known as Bayes' Theorem. There are two aspects of Salmon's proposal which seem to provide significant insights into the form taken by current argumentation in linguistics: according to Bayes' Theorem, an hypothesis is relatively highly probable in the light of some favorable evidence if (1) the hypothesis was highly probable to begin with, and/or (2) the evidence would be improbable unless the hypothesis were true. Furthermore, a slight revision of Salmon's proposal, in which prior probabilities are assigned subjectively, can account for the fact that a given argument can be convincing to one person and still be quite unconvincing to another.

Although the first aspect of Bayes' Theorem mentioned above can be of some use in understanding the success of proposals such as those given in Weiser (1974, 1975), this paper will focus on the second aspect, which seems to be more prevalent (at least overtly) in linguistic argumentation. In particular, three well-known linguistic arguments and the rejoinders to them will be examined from this point of view. The arguments are Kiparsky's (1968) argument in favor of the brace notation, Lakoff's (1970) argument for global rules, and Ross's (1970) argument in favor of higher perfectives, and the rejoinders are found in Stampe (1972), Baker and Braine (1972), and Searle (1975), respectively.

In addition to this discussion and a more extensive treatment of Bayes' Theorem itself, there will be some discussion of this subject from the point of view of the philosophy of science, as this conception has only a limited compatibility with the Chomsky-Popper falsificationism which is so prevalent in current linguistics.
Evidence from psycholinguistic experiments supports a theoretical model of reading which entails the testing of expectancies the reader sets up as he processes sentences. These expectancies are based on language specific perceptual strategies. The study of the types of confusions and comprehension breakdowns arising from the application of native language strategies when reading a foreign language is valuable for two reasons: it sharpens the characterization of perceptual strategies and the role they play in second language acquisition, and it lends some clarity to the debate about the value of a priori and a posteriori approaches to contrastive analysis.

This paper presents examples of comprehension difficulties which occur when native speakers of Japanese, Persian and English set up expectancies based on perceptual strategies in their respective languages when reading foreign languages. Negation is indicated in the verb phrase in Japanese and English, but since Japanese is an SOV language the negative element occurs in sentence final position. The effect of adhering to the strategy "exact negation clause finally" is that Japanese fail to pick up the negative element in reading English. Persian and English restrictive relative clauses employ different syntactic devices for indicating the NP which the clause modifies. In English this is accomplished through a weak condition of agreement between the relative pronoun and the NP and a pragmatic principle, "select the NP to the immediate left of the relative pronoun." Relative clauses in Persian are introduced by a subordinator ke, whose only function is to mark the beginning of the clause; the antecedent NP appears somewhere within the clause as a pronoun. In reading English, Persians equate the relative pronoun with ke, expecting the antecedent to be signaled as it is in Persian. In certain cases where the subject of the higher sentence could agree with the verb of a subordinating clause, e.g., We met the man who said, a coordinate reading results: He met the man (and he said...). The major syntactic process for establishing coreference in Hindi is deletion, in English it is pronominalization. Serious confusions arise when the native speaker of English reads Hindi and searches for the pronominal signal he has learned to expect as the indices of coreference.

Although the types of comprehension problems described here cannot be predicted with perfect accuracy from a contrastive analysis, a fact which argues for the a posteriori approach, some a priori generalizations about possible errors can be made. In fact both positions have relevance for the investigatory and pedagogical application of contrastive analysis.

This paper reports on a cross language investigation of thematicization in verb-initial languages undertaken to establish and explain universals of thematicization. Previous accounts (e.g., Fillmore 1972,库恩1972, 1975) have not considered data from VSO or VOS languages, but an understanding of thematicization in these languages is important because of the possibility that in them the direction of thematicization is reversed.

I first present evidence showing that the status of sentence elements with respect to the semantic features theme (topic) and rhyme (comment) is strongly correlated with surface word order type. In SVO languages there is an unmarked order of theme + rhyme, but in VSO and VOS languages the order is reversed to rhyme + theme. For example, in equational sentences the predicate nominal is (in the unmarked case) always the rhyme. This yields the order + theme + rhyme for SVO languages and rhyme + theme for verb-initial languages:

(1) ojeno ajw3g6 doctor
   'Otieno is a doctor'
   (Luo, Nilo-Saharan, VSO)
(2) khipherc6k t kipe't doctor
   'Kibet is a doctor'
   (Nandi, Nilo-Saharan, VSO)
(3) mongogamet si juan doctor theme
   'John is a doctor'
   (Tagalog, Austroasiatic, 'VOS')

(4) is appropriate in answer only to the question 'what is Otieno?' not 'who is the doctor?'. Hence Otieno is the theme in (1).

Although the unmarked order for the association of constituents with theme and rhyme in verb-initial languages is rhyme + theme, all such languages seem to have rules of thematicization which front sentence constituents which are shown, producing the order theme + rhyme:

(4) kipe't k6 khipherc6k t doctor
   'Kibet is a doctor' (Nandi)
   (5) mongogamet si juan manqaga'mat doctor
   'John is a doctor' (Tagalog)

SO languages need not have resources for producing the order rhyme + theme. In Luo an inverted order (rhyme + theme) for the elements in (1) above can only be achieved by clefting:

(6) ajw3g6 j6 gi m6t(eno t6 n doctor
   'a doctor is what Otieno is'
   (Luo)

(4) and (5) however are not semantically clefs and have the same logical structure as (2) and (3) respectively.

The existence of marked thematicization in VSO languages producing theme + rhyme order requires explanation. I argue (and present supporting data from natural conversations) that marked thematicization is found under discourse conditions of marked topic continuation and topic shift. That is, when (1) an expectation that topic talk on a given topic is finished is controverted by continued talk on the same topic or when (2) an expectation that topic talk will continue on the same topic is controverted by an unprepared topic shift, it is necessary for a speaker to indicate to the listener what the (unpredictable) topic is. A third type of situation where marked thematicization is expected (and is found) is with the establishment of a new discourse topic after the previous one has been closed. Here that a new topic will come is predictable, but what it will be is not. In all of these situations speakers always establish a new topic first before proceeding with topic talk. Unmarked thematicization in verb-initial languages is limited to a fourth situation where topic continuation is expected and occurs. Here, with the topic predictable, it is possible to have rhyme + theme order. A portion of the syntactic processes found in VSO and VOS languages is therefore directly attributable to the requirements of various kinds of discourse situation.
The Serrano Absolutive: Making the Most of Your Morphemes

Many Uto-Aztecan languages are characterized by a special noun suffix most often called the "absolutive". The details differ slightly for each language displaying this suffix, but most generally it marks the noun as being otherwise uninflated (rather than indicating any particular morphosyntactic category). That is, the absolutive is suffixed to prevent a noun stem from appearing bare.

In Serrano, a Uto-Aztecan language of Southern California, this classical definition of absolutive holds for the most part. Thus, a noun like haví-t 'blanket' drops the absolutive (the -t suffix) when the plural suffix is added (haví:m 'blankets') or when a possessive prefix is added (ná-haví 'my blanket'). The only systematic exception to this loss of the absolutive is with the suffixation of the accusative morpheme, -í: haví-t-i 'blanket (ACC)', not haví-t.

A morpheme which marks no morphological category or syntactic function would seem to be a choice candidate for re-analysis or even complete loss. While both have happened in other Uto-Aztecan languages, the absolutive in Serrano has been generalized to a new syntactic environment and has gained a new syntactic function. Specifically, it indicates that the noun to which it is suffixed is coreferential to a pronominal copy (a prefix, in all cases) elsewhere in the sentence. Thus, it is found in the following construction.

1. N1 - ABSOLUTIVE PRO2 - X

(X in this schema stands for a possessed noun, a postposition, or a nominalized verb--the only elements which may take pronominal prefixes.) Given this syntactic environment, the absolutive may appear in places it would normally drop (as on possessed nouns) and even in places it could normally never appear (as on demonstrative pronouns and proper names). The following examples illustrate this use.

2. ná:ní-kú'í pá-yíka
   my-pet-ABS dog it-toward
   'toward my (pet) dog'

3. h'aan-t 'a-na
   John-ABS his-father
   'John's father'

Why would a language innovate an overt marker of coreference? A functional explanation seems possible: since word order in Serrano is remarkably free, the coreferential elements of (1) are not necessarily contiguous; therefore, the use of the absolutive suffix may disambiguate potentially ambiguous situations. Compare (4) and (5), for example.

4. h'aan 'a-táhtáy-iva hawayt ของเขา
   John his-work-when always sing
   'John always sings when he works.'

5. h'aan hawayt 께서
   John always sing Mary-ABS her-work-when
   'John always sings when Mary works.'

The absolutive suffix is required in (5) to make clear which of two possible nouns is the subject of the embedded verb, while in (4) there is no potential ambiguity so the absolutive is not required, even though the syntactic environment of (1) is met.
Referential Semantics

The recent upsurge of interest in semantics by linguists requires a thorough scrutiny of the philosophical bases of the major positions in the field. This paper will show that both interpretive semantics and generative semantics are in essence translation schemes in which abstract entities, either "semantic markers" or "semantic primes" are said to represent the meanings of sentences and words. The limitations of translation schemes, either as models of linguistics behavior or as explanatory devices of that level of grammar called semantics will be presented. Current work in philosophy of language suggests that only a primitive theory of reference can be the basis of a non-vacuous semantic theory.

A primitive theory of reference would give the relationship between a predicate and its extension. A fertile area of evidence concerning the relationship between a predicate and its extension is historical semantics. If a predicate, a general term for example, is a symbol for a category of the particular culture's experience with the environment, then changes in the properties of a category (the facts concerning the extension of a term) should lead immediately to perceived shifts in "meaning". (Meaning is in quotes because that term has no status in referential semantics, yet there is a phenomenon of "acceptable definition of a word" which would correspond to "meaning". What this must have been at any point in history can be historically recorded to a degree of accuracy necessary to prove semantic shift occurred. Borrowing should be explainable in terms of the introduction of new categories into the physical or cultural environment. If a category disappears from the environment the word which referred to it should disappear. These points were borne out in the research into semantic shift and borrowing of general terms in Anglo-Saxon and Middle English carried out by the author.

Data from the historical semantics of English presents insurmountable difficulties for a semantic theory, such as that proposed by Jerrold Katz, which represents word meanings in terms of atomic concepts. Each component of meaning (semantic marker) which would be needed to represent the general terms studied underwent constant and gradual shift, while the term as a symbol for a category of the English speaker's experience remained stable. A lexical representation such as Katz's would have to represent these gradual changes as discrete changes of particular semantic markers. It would represent historical facts as linguistic changes. It would have to select in an ad hoc manner from the large set of properties of the extension of a term those which were to be subject to future change.

Referential semantics distinguishes the relationship between a term and its extension and the set of properties true of all members of the extension of the term. The relationship, that is, the categorization of objects, events or states for which the term is a symbol, and the properties are seen as historical facts. A referential theory thus can describe and explain data from historical semantics without appeal to ad hoc intralinguistic representations.

Since the mid-1960's, linguists and educators have devoted much attention to the presence of nonstandard language varieties in American public school classrooms. An outcome of this work has been the general recommendation that schools adopt bidialectal language policies. Bidialectal approaches, however, presuppose a relativistic view of language on the part of teachers -- a requirement which has in fact been fulfilled in recent years since bidialectalism has become a predominant approach to divergent language in school settings.

In order to provide a better picture of the language attitudes of American teachers and their compatibility with the demands of bidialectal programs, the paper offers evidence drawn from the documents of the American teaching profession over the past 50 years. Employing in particular Raven I. McKendrick's historical monograph (1965) and the work of the National Council of Teachers of English, the paper reveals a pattern of absolutist language attitudes among teachers. Though the leadership of the profession maintains a strong relativistic line throughout the period, substantial evidence and the testimony of the leaders themselves suggests that the rank and file American teacher is committed to an absolutist position on language in the classroom. During the 1960's a shift is seen in which concern about nonstandard dialects partially replaces disputes over usage issues, but the underlying and persistent inclination towards an absolute view of language prevails throughout.

The question of teachers' language attitudes has only recently come into the purview of linguistic research. For it was the issue of language in the classroom during the last decade that brought to linguistic discussion the issue of school policy matters. The work of Burling, Labov, Shuy, Stewart, and others had an important and immediate impact on the practice of teachers and upon teacher-training institutions. Now, however, it is becoming apparent that the first wave of involvement was not enough; the early research of linguists has left many questions unanswered and early recommendations have not always turned out to be feasible or appropriate.

Our historical investigation suggests that teachers' language attitudes may pose a serious obstacle to the success of bidialectal language programs. Fishman and Aghayesi (1970) pointed out both the enormous importance and great difficulty of devising language attitude research, but in the area of school language issues linguists have an opportunity to take on this challenge and in so doing, contribute to the development of appropriate and linguistically sound school programs for minority children in America.


Clause Connections and Reason Adverbial

It is often assumed that classes of lexical items with similar meanings may be expected to have similar syntactic properties and functions (for example the marked and unmarked properties of verb classes in R. Lakoff 1968). This paper will investigate the class of causal subordinating conjunctions because, since, as and for, which can all be used with causal meaning, as in (1), but which differ among themselves in ability to undergo rules, as in (2), acceptability of the connective as in (3), and tolerance of direct and indirect speech acts in their complements, as in (4) (cf. Hooper and Thompson 1973). The sentences in (4) and (5) show that because and to a greater extent for connect their complements to the preceding speech act, but not necessarily as a syntactic constituent of it.

1. a. John didn’t stay, because/since/as/for he ran out of money.
   b. Henrietta is here, because/since/as/for her Saab is outside.
2. a. *Because/since/as/for her Saab is outside, Henrietta is here.
   b. Henrietta is here, because/since/as/for out front is a green Saab.
3. It’s because/since/as/for he ran out of money that he left.
4. John will have to go, because/as who needs him?
   b. John will have to leave, for I must say he’s been nasty.
5. a. Are you tired of living? because, consider the alternative.
   b. The fact that this is false is not the main point. For
   suppose we waive that objection for the moment and... The paper will look for meaning differences, in pragmatic assumptions made by the speaker and in type of causal connection, which would be related to the closeness of the syntactic connection.

Since, which presupposes its complement and does not allow speech acts like those in (4), describes an indirect semantic relation, ‘given that p, it follows logically that q’. Because and for have a more general meaning, similar to so: some speech act is warranted and reasonable because of some other speech act. They function as coordinate connectives like so (but p so q is equivalent to q because p) and as syntactic markers of the pragmatic assumption that speech acts in sequence have some logical relation. The syntactic distinction between coordination and subordination is thus not sharp. The properties of all these conjunctions suggest that there are different degrees of clause connection within a sentence, differences related to specific connectives. As the class of adverbials considered here is not semantically uniform, there is some explanation for the syntactic differences.

R. Lakoff. Abstract syntax and Latin complementation.

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Richard A. Dummer, University of Arizona

George M. Horn, Fulbright Exchange Professor, Poland

Stress Assignment and Morphological Structure in Squamish

The most detailed investigations of the relationship between stress assignment (S.A.) and abstract syntactic structure have been carried out on English by Chomsky and Halle (1968), and Bresnan (1971). Many of the theoretical principles, such as the cyclic application of the rules, were developed to account for the general treatment of S.A. in English. The fact that these principles may not be applicable to stress assignment in Squamish, a North American Indian language not related to English, is evidence that these principles are universally available, and must therefore be considered as characteristic of human language.

Normally S.A. is penultimate (ipäqg‘eq ‘snake’, q‘ul‘g‘eq ‘high tide’), but if the word is morphologically complex, the position of stress may differ. This is demonstrated by the variations in the following forms, all of which exhibit reduplication: 1am-1am, p‘a-p‘a, b‘a-b‘a, a-b‘a, s-‘a-x‘a-s-‘a-s-x‘a-yan-x‘a-yan. S.A. in these forms, as well as in all other morphological constructions, is accounted for by a basic stress rule which applies penultimately when possible, and a stress prominence rule. The prominence rule will cause the rightmost of two stresses to dominate if that stressed vowel is a, i, or y (and not e), the other stresses being equal, and at least two segments intervene between the two adjacent stresses. In all other cases, the leftmost of two stresses will dominate. Thus the reduplicated forms end up with two stresses after basic stress has applied: 1am-1am, 1a‘a-[a‘a], k‘a-[k‘a], s‘a-[s‘a]. The above simple principles of S.A. will account for the potentially hundreds of different combinations of prefixes, roots, and affixes.

The more morphological variants a form may take, the more varied the position of stress. The word for ‘6’ consists of the root [taq] and suffix [a‘a]. When referring to 6 things, the combination [taq-[a‘a]] is used. When referring to 6 animals, the root undergoes partial (the first CV sequence) reduplication: taq-taq-a‘a. When referring to 6 people, the root undergoes full (the first CV sequence) reduplication: taq-taq-a‘a. The position of stress in the forms for ‘6’ (as well as in the position in many other recalcitrant appearing cases) will be properly assigned if the rules apply cyclically to morphologically determined brackets: [[[‘a‘a-taq]-[a‘a]] ‘6 (animals)] [[[taq-[taq]-[a‘a]] ‘6 (people)]].

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Berman, M. 1974 The cycle in phonology: stress in Palestinian, Maltese, and Spanish. L1 5.1 (39-60)
Perceiving Grammatical Functions in Paradise Lost

Grammarians have described the ways the syntax of various poets differs from the syntax of modern, formal English, but they have not discussed how those differences challenge the reader's perceptual strategies. Here aspects of Milton's syntax will be examined as they pose problems in perceiving grammatical relations and as they may elicit special strategies.

I. Because of a rule inverting V/O, not only O S V, but S O V are functional orders in main clauses. One cannot depend on the first of two perverbal NPs as a Topicalized O (2 examples).

II.
  a) because Milton allows an S to terminate a right conjunct, S V O + S and S O V + S are possible orders (3 examples);
  b) because the V/O inversion rule can split conjuncts, S O V + O V is a possible order (3 examples);
  c) because V/O inversion can apply within a conjoined VP, S V O + O V and S O V + O V are possible orders (6 examples).

The result is that NP₂ in strings

NP₁ NP₂ V₁
NP₁ V₁ CONJ NP₂ V₂ ...

can be either part of S or O in relation to V₁ or V₂.

Examination of actual cases suggests that two special strategies may be worked out by the reader:

1. "NPs which share many semantic features may be split conjuncts;"
2. "Functionally elements will be in parallel order in coordinate clauses."

Evidence is both positive (where a strategy facilitates perception) and negative (where it accounts for misperception). Discussion centers on such examples as

Such place Eternal Justice had prepar'd
For those rebellious, here their Prison ordain'd
In utter darkness, and thir portion set
As far remov'd from God... (I. 70-3)

By falsities and lies the greatest part
Of Mankind they corrupted to forswake
God thir Creator, and th'imvisible
Glory of him that made them, to transform
Oft to the Image of a Brute, adorn'd
With gay Religion full of Pomp and Gold,
And Devils to adore for Deities. (1.367-73)

The implication is that 'learning how to read' a poet may involve reweighting the perceptual strategies one brings to the poem and working out some new ones. It may be more fruitful to view the 'differrence' or 'creativenes' of poetic language in this light than as a matter of formal deviance.
In an attempt to clarify the conditions on noun + noun compound formation in English, I have considered a corpus of attested novel compounds and have asked subjects to (1) interpret such compounds in the absence of context and (2) estimate semantic values for novel entities. In a series of drawings, the results of my investigation indicate that the underlying relationships appropriate for compounding are not finite in number and that the appropriateness of a given relationship cannot be evaluated absolutely in the absence of contextual considerations. It is proposed that these relationships are applicable in terms of the compound's functional status as a naming (classificatory), rather than a descriptive device, a distinction often overlooked in previous treatments based on consideration of existing compound forms.

Many of the interpretations associated with the attested novel compounds or suggested by my subjects were based on extremely complex underlying relationships, e.g., thalidomide parent, cranberry morpheme/egg-bird—a bird that steals birds' eggs. Often these relationships were not reducible to any more basic semantic specification, such as location, origin, time, etc. Thus any exhaustive listing of "appropriate compounding relationships" would rapidly become infinite.

Even if such a list could be devised, the appropriateness of a given relationship would not be absolutely guaranteed, for it varies from situation to situation, depending on:

1) The semantic class of the head of the compound—Naturally existing entities (plants, animals, and natural objects) are typically classified on the basis of inherent characteristics (appearance, function, composition, etc.), while synthetic objects are categorized instead in terms of the uses to which they may be put.

2) The permanence of the relationship—Temporary or fortuitous relationships are generally considered unsuitable for compounding, while permanent or generic relationships are preferred.

3) The predictability of the relationship—Relationships which are totally predictable or even which represent the unmarked state of affairs, are dispreferred. Thus head-nut, mouth-whistle, book-novel. Predictability of course varies from context to context. As one subject suggested, hog-pork might be "poor from a hog as opposed to a sow or piglet".

These facts derive from the status of the compound as a naming device. Names are created to denote relevant categories of experience, and what is relevant to the categorization of entities of one type (e.g., synthetic objects) may be irrelevant with respect to another (e.g., animals). Categorizations based on permanent or generic characteristics are typically of greater long-range usefulness, for categorizations based on temporary relationships may in time become obscure or irrelevant. And the information carrying potential of a compound is wasted if it is based on a totally predictable relationship (if all Bs are A Bs).

These results indicate that the distribution of compound forms is predictable on the basis of functional considerations not reflected in earlier treatments of the problem.

Richard Montague approached the analysis of English syntax and semantics as a logician or mathematician would: he strove for formal elegance and maximum generality in delimiting "possible syntactic category" and "possible semantic value" and, in contrast to the linguists, did not view the choice of particular categories and rules as an empirical issue at all. But if we are to follow a Partee's suggestions to the contrary, we must consider Montague's theories seriously as a linguistic system. This is possible only if we extend Montague's theories beyond the conceptual grammatical framework of Montague and Ajdukiewicz. Their categories consist of two fundamental categories (Name and Sentence) and a series of functor categories defined recursively: If A and B are any syntactic categories, then A B is a possible syntactic category.

In the "unmarked" syntactic construction, an A B combines with a B to give a constituent of category A. Though linguists are often familiar with categorial grammars, the important semantic motivation behind them is generally overlooked: these categories correspond exactly to Russell's simple theory of types (the basis of most logics and of set theory), and in Montague's system the expressions of a syntactic category must all be semantically interpreted in the corresponding logical type. This means that the method of assigning semantic interpretations to categories must be determined on semantic as well as syntactic grounds.

Though Montague diverged from Ajdukiewicz in allowing more than one linguistic category to correspond to a single logical type, the cases where this move appears necessary are rare. A language "optimally simple" from a semantic point of view would have a one-to-one correspondence between syntactic category and type, and we propose we evaluate the grammar of a language according to (a) the number and (b) the "complexity" (in a sense to be defined) of grammatical categories used and to (c) the degree to which they approach the one-to-one correspondence between grammatical category and logical type.

To treat the category Verb Phrase categorically, Montague made use of the old distinction between an n-place function may always be treated as a function from (n-1)-place functions to l-place functions. Rather than treat a transitive verb as a "two-place predicate," he treated it as a function from noun phrases to one-place predicates (i.e., Verb Phrases). This means that (noun phrases) Verb Phrase is a perfectly respectable semantic category. Categorization of the sense of a transitive verb is the same as the categorization of a transitive phrase in terms of the category Verb Phrase; the semantic problem is thus solved by assigning new semantic categories to familiar syntactic categories and by assigning semantic categories to familiar semantic categories.

Theoretical problems (e.g., by E. Vennekamp recently) to recognize a "functor-oriented" relation among categories and explain universals of word order on the basis of them have been severely hampered by a lack of an explicit definition of functor and argument and a semantic criterion for identifying this relation; both of these are deficiencies Montague's theory remedies. In his theory, word-order principles can be expressed as a tendency for a language to order words in the order of B ("OV language") or in the order of A ("VO language").

This principle predicts that VO languages tend to have prepositions rather than postpositions, prefixes rather than suffixes, complementizers before their clause, etc., while OV languages prefer the opposite order. The principle, however, raises questions about certain other observed word-order universals.

Finally, explicative some categories which appear "unnatural" according to my proposals: adjectives (which appear to play two semantic roles) and the categories Intensive verb and noun (which have the same logical type).
The Source of American Linguistic Prescriptivism

The linguistic thought of Americans has long been marked by a concern for 'correctness' (Markwardt, 1958). Scholars conventionally make two assumptions about this prescriptive attitude: 1) that it derives from 18th century prescriptivist notions, and 2) that the doctrine of correctness has existed through the American experience essentially unchanged and unchallenged (Boorstin, 1959, Lyman, 1921, Dillard, 1973).

A careful examination of linguistic thought of the 19th century reveals that the first assumption is too simple and the second is inaccurate. The doctrine of correctness in the present time has become so strong and accepted that it has led to the misperception that the correctness doctrine has reached across American history from the 18th century to the present.

The prescriptive doctrine met with significant intellectual challenge from 1820 through the 40's. The reaction against prescriptive grammar in the first half of the 19th century grew partly out of a specific revolt against rote learning, partly out of the development of national consciousness, and partly out of the romantic 'boundless' intellectual tenor of the times.

The thought of the period 1850 through the 70's was a significant source of the doctrine's subsequent vigor which was to exhibit a curiously remarkable continuity into and throughout the present century. During the latter half of the century the doctrine of correctness revived with a new vehemence in a new drive for uniformity and conformity. It became a mania for correctness. This mania was facilitated and accomplished in general by the intellectual milieu of the time: national integration and consolidation. The single most important specific factor was the development of the genteel cultural apparatus, as manifested linguistically by an increased interest in language, especially in 'linguistic etiquette' in genteel publications; in the reaction against innovation; in the application of intellect and logic to language; in the high premium placed by the genteel on books and authority; in the anglophile tendency of the genteel; and in the desire for a responsible, stable community.

In conclusion, aspects of 19th century American life are crucial to the understanding of the history and nature of American prescriptivism. The story is not merely one of continuity from 18th century Britain. The basic data for the study are three major education and language journals that span the period. They are examined not only for the texts they provide but also for leads to other sources, such as important figures and books, which in turn become data for the study.

Explaining Some Typological Facts about Raising

The purpose of this paper is to explain a number of typological facts concerning Raising. It has generally been assumed that the relationship between the (a) and (b) sentences in (1)-(3) is characterizable by a rule of the main clause.

(1) a. John believes that Mary is rich.

b. John believes Mary to be rich.

(2) a. It seems that John is rich.

b. John seems to be rich.

(3) a. It is easy to please John.

b. John is easy to please.

What has not been previously investigated is whether there are any implicational dependencies with regard to these sentences. It has been found that, with respect to the occurrence or non-occurrence of these sentence types, languages can be typologized into the following classes:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>SENTENCE (1b)</th>
<th>SENTENCE (2b)</th>
<th>SENTENCE (3b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>B</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
</tr>
<tr>
<td>C</td>
<td>yes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>D</td>
<td>no</td>
<td>no</td>
<td>no</td>
</tr>
</tbody>
</table>

From the chart in (4), it can be determined that if a language has sentences like those in (1), it will necessarily have sentences like those in (2). If a language has sentences like (2), it will necessarily have sentences like (1).

The thesis of this paper is that these facts can be explained only if the following assumptions are made: (1) there is a rule of Raising which raises an NP from subject position in the lower clause into object position in the higher clause; (2) there is a rule of Psych Movement which applies to certain "psychological" predicates; and (3) there is a rule of NP Preposing (passive).

The rule of Raising accounts for the relationship of the sentences in (1). The sentence in (2b) is derived by first applying Raising to the subject of the lower clause and then applying Psych Movement on the higher sentence. Sentence (3b) is derived by applying NP Preposing on the lower clause, raising this preposed object into the higher clause, and then applying NP Preposing to the main clause.

This proposal has the following consequences: (1) the sentence types in (1) and (3) can be accounted for by a single raising rule; (2) the implicational dependencies summarized in (4) follow necessarily; (3) the fact that the raising in sentences like (2) occurs with "psychological" predicates like seem and appear is explained; and (4) the fact that languages with sentences like (3) also have passive sentences with agents is explained.
Linguistic Constraints on Variation in Chicano English

A number of studies have drawn attention to characteristic features of several varieties of Chicano English (Cornejo 1969, Natluck and Mace 1973, Sawyer 1957), but a systematic description of even a partial grammar of any of these varieties has not yet been achieved. The wide range of differences between certain elements of Standard English and their counterparts in the speech of members of a single Chicano speech community suggests that their speech can best be described by a variable rule analysis, in the manner of earlier studies (Gedergren 1973, Labov 1972, Wolfram 1969 & 1973). Our work has been the formulation of a rule which specifies the probability with which word-final (z)-devoicing occurs in different combinations of phonological environments in the speech of English-dominant fourth-grade students from the Martinez barrio of Albuquerque, New Mexico.

We have found three constraints which favor the application of the (z)-devoicing rule: (1) (z) not followed by a voiced segment; (2) (z) following an obstruent; (3) (z) followed by nothing. The rule incorporating these three constraints is (z)→[z] when [obstruent]→[vowel]. There is strong evidence to suggest that other phonological and syntactic constraints are operating on this rule as well. The possibility that situational, topical, or stylistic factors might be influencing the variation was investigated with the result that any differences in (z)-devoicing can be attributed to the linguistic environments typical of each situation. This finding has obvious consequences for sociolinguistic investigations of the relationships between social or situational variables and linguistic variables. One social variable which does appear to influence (z)-devoicing significantly is the sex of the speaker. It is possible that certain social and situational factors should be built into the rule as lower order constraints.

Exploratory research into other phonological elements in samples of the fourth-graders' speech has revealed similar variation which is at least partially phonologically conditioned. We are exploring the relationships among these variables by intercorrelating the percentages of occurrence of their non-standard variants in the speech of each individual. The results of our research emphasize the necessity of exhausting the linguistic constraints on variability prior to investigating social or situational influences on the choice of linguistic variants.

The continuing controversy over the validity of the case grammar model has a value in the classrooms of institutions like MIT and Berkeley as a part of the training of professional linguists. However, there is another use for this model, which has not received sufficient attention, and that is its use in bilingual/multidialectal (or multilingual/multidialectal) education. In classrooms where linguistics is taught to varied combinations of non-native speakers of English, in the ESL or TESOL class, and in "service" courses where linguistics is taught to non-linguists -- for example, to future teachers and teacher candidates -- the case grammar model offers unquestionable pedagogical superiority.

First, this model allows all languages to be represented in terms of a verb-like constituent plus its arguments, allowing the reduction of examples in the classroom to a single parallel structure regardless of the language or languages involved. The professor can thus concentrate upon the shared structure of the languages represented by the students rather than upon their surface differences.

Second, the model provides the professor with a superb tool for identifying, and for demonstrating, areas of cross-cultural communication breakdown. In Navajo, for example, the sequence "i am riding a horse" contains neither agent nor patient, because it is literally "the horse is going about with me" and therefore requires the commitative case. Examples of this kind allow the professor to demonstrate to the non-linguist very clearly why it is dangerous to assume that full communication is taking place just because both speakers are using sequences of English words grammatically. The problems of case mismatch are, in my experience, the greatest single linguistic source of communication problems in the multi-ethnic classroom.

Finally, the case grammar model offers a pedagogical tool that requires the student to subject his/her native language to intensive examination. For the student whose entire exposure to linguistics may be this one course to be required to draw trees and do derivations of elaborate structures is an exercise in futility; the formal problems are too great. However, to require such a student to determine what cases the arguments of a given verb must take, how those cases are marked in surface structure, and how that analysis can be justified, is possible from the very first class meeting. To be required to determine these facts for sequences like "ask a question", or for verbs in the "buy/sell/serve" class, immediately teaches these students that determining what you MEAN by a given surface structure is no simple matter.

The paper will outline the pedagogical advantages of the case grammar model, as briefly stated above, and offer numerous examples to justify those advantages.
A Pragmatic Account of the "Negative Transportation" Phenomenon

The semantic relationship of such sentences as
(1) I don't believe that insects have souls.
and (2) I believe that insects don't have souls.
has been well noted in the literature (Fillmore 1965 and elsewhere). In this paper, it is argued that this relationship is best explained in terms of general principles of semantics and pragmatics, without positing either a syntactic transformation of Negative Transportation or a special interpretive rule. It is argued that the so-called "negative transportation verbs" are just those with the following property: stated roughly, for each such verb V, from a speaker's utterance of a sentence in present tense with V as matrix verb, with S as complements, and with first person subject (if V takes such arguments), it is reasonable to conclude that P(S)\lor V(S), where P is the predicate formed from V by fixing its subject argument as the speaker. The utterance of (1), for example, suggests that the speaker has considered insects have souls as an object of belief, and it is psychologically reasonable to assume that he has reached a conclusion; thus the speaker believes that insects have souls or the speaker believes that insects don't have souls. This disjunction, together with the assertion of (1) that the speaker doesn't believe that insects have souls, yields (2). If the disjunction in (1) is not assumed, one obtains a "non-negative-transportation" reading.

An account of the motivation for using (1) to communicate (2), and thereby
(3) Insects don't have souls.
but with connotations of considerable uncertainty on the part of the speaker, is given in terms of general conversational principles.

A pragmatic explanation of the "negative transportation" phenomenon avoids setting up a special rule and accounts for Bolinger's observations that (1) and (2) aren't synonymous. Such an explanation is furthermore far superior to a transformational description in accounting for certain data. For example, when a subject that isn't first person or when a tense other than present tense is used, a "negative transportation" reading can be obtained only in non-reportive style. (See Kuroda 1973.) Further examples are provided by such sentences as
(4) I don't believe that even insects have souls.
where it is presupposed that insects are relatively unexpected to have souls. (4) can receive a reading such that the speaker commits himself to the falseness of even insects have souls. The source of (4) with this reading cannot, however, be the same as that of (1), as (4) is a statement that insects don't have souls.

(5) I believe that not even insects have souls.
which presupposes that insects are relatively expected to have souls.

Syntactic arguments and counterarguments for a rule of Negative Transportation that have appeared in the literature (R. Lakoff 1969, Lindholm 1969, G. Lakoff 1970, Horn 1971, Jackendoff 1971, Cattell 1973, and elsewhere) are briefly recounted, and several of the counterarguments are amplified. Some new counterarguments are offered.
High vowels have a higher intrinsic pitch of voice than low vowels all other things being equal. These differences in pitch have led to tone change in certain Southern Chinese dialects which reflect the original underlying intrinsic pitch differences of vowels. In order to find the cause for these intrinsic pitch differences, two experiments were performed. The first was a study of the movement of the larynx using a photocell/computer tracking technique. The most common pattern found for larynx position during vowel production was \( \hat{a} \) most superior and relatively anterior, \( a \) intermediate and posterior, and \( u \) always lowest and generally most anterior, relative to \( i \) and \( a \). These results may possibly suggest that changes in vocal fold length contribute to intrinsic pitch differences between vowels. The low larynx position for the vowel \( u \) apparently helps to enlarge the pharyngeal cavity to meet the acoustic requirements for this vowel. Larynx lowering with pharyngeal wall expansion should increase vocal fold tension and elevate pitch slightly. Inferior pharyngeal muscle constriction may account for the posterior position and low intrinsic pitch of the vowel \( \hat{a} \). A second experiment was designed to shed light on this possible mechanism. The effects of Arabic pharyngeal approximates on vowel pitch were investigated, since pharyngeal constriction is a key feature for their production. Arabic pharyngeal approximates were found to cause a significantly lower pitch on following vowels than Arabic bilabial, alveolar and velar stops. This is evidence that pharyngeal constriction and tongue retraction lower pitch. If pharyngeal constriction and tongue retraction vary inversely with vowel height, the same forces may act to automatically lower vowel pitch. Other hypotheses to account for intrinsic pitch differences between vowels will be reviewed in the light of these pitch and larynx movement results and in the light of the Arabic pharyngeal effects observed.
The paper will focus on what occurs when two nonprimary stresses are in adjacent syllables in an English word. This most often occurs in relatively long words stressed secondarily on the second syllable, with a 'strong' first syllable, e.g. *Toonderoga*, *refirmination*, but may also occur internally, as in *electroplasia*. Contrary to the implications in much of what has been written on English stress, not all 'secondary' stresses are equally prominent. Sometimes the first is more pronounced, sometimes the second: 3 2 1 or 2 3 1 *Toonderoga* or *reoenderoga*. This is also true when the 'secondary' stressed are separated by one or more syllables, but the difference in prominence is less pronounced: 3 2 1 or 2 3 1 *geniohyglossus* or *geniohyglossus*. It will be shown that word familiarity or frequency may affect which of the pronunciations is chosen. It will also be shown how this relates to the well-known but little-understood phenomena in such words as *Fifth Street* vs. *Fifth Avenue*.

While not calling the cycle into question, the paper will show that noncyclic English stress assignment involves essentially the SPE main stress rule, Halle (1973)'s Stress Subordination Rule, and a new rule suggested by the above data stressing 'strong clusters', all followed by a Destressing Rule similar to Halle's, but critically affected (as shown in an earlier paper) by word familiarity. There may also be an Initial Syllable Stress Rule before the Destressing Rule, as argued by Halle. Longer nonanalyzed words have also been earlier shown to be treated in effect as a sequence of relatively short pseudomorphemes which receive stress independently rather than by an iterative process.

The net result is a coherent account of English stress, including those syllables whose stress is not and never was primary stress, but which fail to reduce.

The development of tag-questions in English provides the linguist with an opportunity to study change in a well defined syntactic structure over a relatively short period of time. The variable tag based on verb or auxiliary verb form first appears in English about five hundred years ago, and representative examples ranging over this period have been collected. A clear pattern of syntactic change emerges from this data. Early tag-questions, like those from Early Modern English, (1) 'Was a pennyworth, was't not? (2) I think it is good morrow, is it not? are generated by a rule that acts primarily on be as a main verb and selectively on other parts of the then developing English auxiliary system. This rule, Tag Formation, later extends itself over the fully expanded auxiliary system, producing familiar modern forms like (3) John's here, isn't he?

The introduction of Tag Formation in Early Modern English is treated as a case of rule addition, and thus an innovation in the diachronic grammar of English. The changes in the rule from Early Modern to Modern English (and the intervening stages as well) are analyzed as cases of specific types of rule restructuring, in the direction of generalization and parallelizing the growth of the auxiliary system. This development is in fact an overall simplification in the grammar, although the resulting rule is of greater formal complexity and generates more possible surface structures.

By analyzing the changes in a particular structure and rule over a limited period of time I conclude that syntactic rules change in some narrowly defined ways, and that the class of possible syntactic changes is closely related to the class of possible syntactic rules.
On a Canonical Case of Absolute Neutralization

In 1962 Morris Halle made what was probably the first claim of absolute neutralization in generative phonology. Relying on South Russian dialect data, he stated that archaic jakan'e (the surface realization of non-high vowels in first pretonic position after palatalized or palatal consonants) was best explained in terms of an underlying seven-vowel system. This vowel inventory included tense ñ and ŋ, even though these phonemes had no distinctive phonetic manifestation, always merging with that of underlying ŋ and ŋ, respectively.

Schematized Derivations of rebro 'rib'

<table>
<thead>
<tr>
<th>Underlying Representation</th>
<th>nom.–acc. sq.</th>
<th>instr. sq.</th>
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<tbody>
<tr>
<td>r'ebro`ò</td>
<td>r'ebro`öm</td>
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<tr>
<td>r'abo`ò</td>
<td>r'ibròöm</td>
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<td>r'abo`ò</td>
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</tr>
<tr>
<td>[r'abro]</td>
<td>[r'ibröm]</td>
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From the above derivations it is apparent that the realization of first pretonic ŋ as [a] or [i] is determined by the presence of tonic ñ or ŋ, even though the distinction between them is neutralized by the Tenseness Neutralization rule.

Three spatial features defining total (outline) contour are specified. These are [1D], 'long', [2D], 'flat', and [3D] 'bulky/round'. A fourth feature, [GD], specifies generic dimension. [1D] morphemes or stems may substitute for those of numbered dimension. Phrase structure lexical concord requires matching of contourual features in verb and subject or object NP in accordance with the transitivity resolution of the verb theme. Over 200 verb stems combine a [D] feature with a finite set of binarily organized features representing other spatial concepts.

Examples of contour contrast are:

(1) išantjet'i škari. 'the stick is lying (there)'
(2) išantjet'i išakuta. 'the tortilla is lying (there)'
(3) kirantjet'i cakalu. 'the stone is lying (there)'

The verb (4) xarati may replace the first lexical item in any of the sentences with no meaning change. [D] features in the three sentences are (1)[1D], (2)[2D], (3)[3D]. These are features of the (C)V.CV stem. Stem (4), xarati, is (GD).

Syntactic intersection of binarily and trinarily organized features in Tarascan suggests that an assumption of universal binary feature organization, common since Chomsky, 1965, may need reexamination. Linguists may be well-advised to consider the dictum of Lévi-Strauss (1966:161) that apparent manifestations of dualism are "superficial distortions of structures whose real nature is quite different and vastly more complex."

References:

An Event Analysis of Aspectual Complement Structures

The complement structures of Aspectual Verbs may be consistently classified as "events." Similar claims have been made elsewhere, principally to indicate the presence of the head noun "event" in the deep or source form of these structures. What is intended here is a temporal analysis of events (as they appear in surface forms) which adds in significant ways to an understanding of aspectual verbs.

Aspectual verbs have a consistent semantic effect of a temporal nature on their complement structures. They constitute a time-index referring to the onset, initiation, continuation, duration, repetition, cessation, or completion of the activity or event named by their complement. The possibility of referring to separate time-segments of an event suggests the need for a temporal analysis of events themselves in terms of an onset, a nucleus, and a coda. Through the use of aspectual verbs we repeatedly refer to these various temporal intervals.

The onset of an event (a preparatory stage) is referred to in such sentences as:

1. Henry started to sneeze but quickly regained his composure (without actually sneezing).

2. Linda kept worrying about her graduate course.

3. I finally finished writing my dissertation.

In sentences (1) and (3) should be compared to (1') and (3') respectively. In (1') where start has been changed to begin, an onset is no longer indicated; in (3') 'finish is replaced by atop with the loss of any reference to a coda.

1. Henry began to sneeze but quickly regained his composure

   *without actually sneezing.*

2. *After sneezing only once.*


In his article "The Time-Axis Phenomenon" (Language, 49,4,1973), Talmy Givon distinguishes several time periods (the time-axis of the verb) according to which he describes, among others, aspectual verbs. However, he does not go far enough as he fails to develop a similar time-axis for their complement structures. A full account of these verbs requires a description of the various temporal and aspectual properties possible for their complements as the two interact. In fact, it turns out that aspectual verbs have classificatory powers that allow us to distinguish the aspectual character of other verbs according to their co-occurrence possibilities with aspectuals. This is done partly along the lines of David Dowty (following Zeno Vendler) where states, processes, activities, actions, etc. are distinguished.

It will be shown, for example, that aspectual verbs are awkward with complement sentences containing verbs that are considered to be "states" as opposed to "events."

4. Our students began to know the difference between nouns and verbs.

   Similarly, certain aspectuals will be shown to occur only with certain types of events.

Internal reconstruction in Hopi forces the statement of two reconstructed phonological rules in terms of "everywhere but...", entailing a complicating formalization and thus predicting that the rules in question are relatively unnatural. However the exceptional environments of both rules are entirely natural as exceptions to the rules in question. There is however a kind of surface phonetic constraints (SPC) tentatively called an "artificiality constraint" (AC) to distinguish it as being more directly a consequence of the nature of the artificiality mechanism than the SPC proposed in Shibatani (1973) and the targets of conspiracies as in Kisseberth (1969). The proposed ACs allow formalization of the rules in the simplest unrestricted terms by specifying particular sound sequences which no phonological process may produce, obviating such restrictions in any particular phonological rule.

The rules in Hopi concern (1) the lowering of pre-Hopi *u, w* to [o, ë] respectively in all environments except when contiguous to high, back, unround *i, i* and (2) the lowering of */k/* to [k] before pre-Hopi non-high back vowels */a, o/* except when also after pre-Hopi high vowels */i, u/* in broad perceptive, the exceptional environments of these rules are expected since in both cases high segments are prevented from being lowered by contiguous high vowels. The artificiality constraints proposed as part of Hopi phonology are not expected to have been two manifestations of the same constraint in Hopi, though the phonological rules are perhaps less unexpected than common kinds of more generally discussed phonological process such as palatalization. A subsequent fronting of those */k/* before */a, o/* but following */i, u/* to [k] suggests a change in the form of one of the ACs, perhaps to increase the perceptual difference between [k, ñ] or perhaps to even further insulate /k/ from lowering after high vowels.

Non-vowels have suggested complicating phonological theory by the addition of what Shibatani has attempted to formalize as SPCs in order to maintain some form of an evaluation metric which closely associates greater simplicity in phonological rules with greater naturalness. If we establish a continuum ranging from 'more language specific = less universal' to 'more universal, more uniform' structure rules would be nearer the specific end than Shibatani's SPCs. The ACs of the type discovered in Hopi are yet one more step in the direction of 'more universal'. That this is true is apparent when considering the inception of both. Unlike Shibatani's SPCs, ACs do not necessarily depend on single, or even on cooperating groups of phonological processes. They may determine phonological processes or they may have no overt effect until some phonological process shows itself to be constrained by them. Both of the ACs to be discussed are of this latter type.

As our knowledge of the spectrum of SPCs widens and deepens we will doubtless find ways to incorporate more of what linguists know more comfortably into phonological theory. For instance, Schacter (1969) affirmed that non-vowels assimilate to vowels rather than conversely. This is shown by the present data to operate more as a constraint whose form may not be directly accessible from the rules involved but by recognizing the systematicity and naturalness of the exceptions to the conclusion. It is apparent that vowels, besides governing assimilation, prevent other phonological processes which would have the effect of making neighboring consonants unlike them in certain features.


Arguing for the Syntactic Cycle

Virtually all existing arguments for the syntactic cycle are weak because they demonstrate only that the cycle is sufficient, and not that it is necessary. The purpose of this paper is to show that there is a strong argument for the cycle--in particular, the strict cycle (Chomsky 1973)--based on the evaluation metric that the theory weakest in expressive power makes the strongest claims about language and is therefore the most highly valued. The strict cycle is preferable to alternatives such as linear ordering (Kimball 1972) or unordered simultaneous application with free reapplication (Morin 1974) because it excludes derivational possibilities which these alternatives allow, but which do not show up in natural languages.

If extrinsic ordering is assumed, linear grammars allow rules applying to complex-S domains to feed or bleed simplex rules that apply to the sentential subdomains of these complex structures; whereas the strict cycle does not. Should these derivational possibilities allowed by linear grammars be relevant to natural languages, we would expect to find languages which, for example, have both passives and infinitives, but no passive infinitives. Yet such languages, it seems, do not exist. The Koutsoudas-Sanders-Noll hypothesis of universally determined rule application prevents this type of bleeding in linear grammars, but it still allows for the unnecessary feeding possibility. Linear grammars under the KSN hypothesis also differ from strict cyclic grammars in that they exclude derivations in which obligatory rules that apply to complex-S domains are bled by optional simplex-S rules which apply in the sentential subdomains of these complex-S structures. In this respect they are too weak in expressive power since English allows such derivations (e.g. Passive bleeding Equi as in Sam: expects the committee to be chosen by him). The unordered simultaneous application with free reapplication theory is also weak in this way, although it does exclude the same bleeding and feeding possibilities the strict cycle excludes. Furthermore, this theory is less constrained than the strict cycle because given an obligatory simplex-S rule which bleeds a complex-S rule by applying to the sentential subdomain of the complex-S structure, it allows two derivations, bleeding and non-bleeding, while the strict cycle allows only the bleeding derivation.


The Manifestation of Subject and Object in American Sign Language

Oral languages have two means of distinguishing subject and object (and other arguments) in constructions with transitive verbs and (semantically) reversible subject and object: fixed word order groupings or a combination of the two. American Sign Language (ASL) has neither fixed word order nor fixed word groupings. This paper presents a discussion of the formal elements available in ASL for marking the relation of argument to verb. Surface manifestation depends on which of three classes the verb belongs to. These classes are semantically determined and their differences are reflected in the phonological design.

The majority of verbs are multi-directional. Each verb has a core hand configuration and place of articulation (most commonly neutral space); the verb's movement is a trajectory from the location (real or grammatically established) of the source to that of the goal, thus unambiguously indicating agent and patient or beneficiary. Thus in 'I tell you' the extended index finger moves outward toward the addressee brushing past the palm; 'you tell me' is identical except that the hand moves inward from neutral space toward the signer. Multi-directional verbs include CAVE, BITE, TAKE, GO/CONTEXT.

The second class are what may be called anchored to the body in that they cannot move off the body from source to goal. Examples of these semantically transitive verbs are ANGRY, LIKE, NERVE, SCARE(D). Anchored verbs always appear on the surface as one-place predicates--thus for this class of such verbs, ASL has signs which designate c-ly the reaction of the experiencer but which do not lexicalize or 'package' the agent. The identity of the experiencer or agent is most often indicated by signing the previously established body position of the appropriate referent. (One type of 3rd person reference involves moving or orienting the body or head in particular directions to 'take-on' one or more 3rd person 'roles', e.g. taking up for child, down for mother, without other, up for brother of child.) Thus 'Sam loves Hilda' may be rendered as (simplified transcription): SAM MARKER (on right) HILDA MARKER (on left) HEART (markers make contact), (body moves into sam's position--on right, facing left) LOVE.

The third verb class--multi-orientation verbs--combines characteristics of multi-directional and anchored verbs: core hand shape, place, and movement, orientation depends on location of agent/experiencer and patient/beneficiary. Most commonly verbs such as HATE, PITY, BOTHER are made in the agent/experiencer's body position, the hands oriented in the direction of the agent/beneficiary. For example, in 'I hate you' the palm side of the hand in HATE (a flicking of the middle finger from the thumb) is toward the addressee; in 'you hate me' the palm faces the signer, back of hand toward addressee.

ASL avoids ambiguity in (semantically) transitive constructions by subject and object by the use of the signing space to establish locations of referents and to move verbs between (among) them, by the use of the body and body-space to indicate 3rd person referents without overt lexical items for those referents, and by the avoidance of ambiguous transitive constructions by choosing surface one-place verb constructions anchored to the experiencer.
Structural and Generative Approaches to an Analysis of the Macedonian Pretérito

This paper will demonstrate the possibilities of analyzing a linguistic system from both Pragmanian structuralist and generative semantic points of view, focusing on the interaction of pragmatic factors with syntactic forms. Aside from the perfect and pluperfect, Macedonian has two pretérito forms: the simple past (minato oprovedeno vreme "past definite tense") and the sum series, which is formed with the 1-participle (minato ne provedeno vreme "past indefinite tense"). The two pasts are frequently interchangeable, but, in subordinate to verbs directly contradicting the notion of affirmation, only a sum form may be used:

1. Ne veruvam deka toj go naprvavit too 'I don't believe that he did it'
2. *Ne veruvam deka toj go naprvavi too 'I don't believe that he did it'  In (1), the sum form of napravi 'do' is used while in (2) the simplex form is used. Although in other contexts the exchange of one pretérito for another may result in a changed meaning, e.g. a sum form's implying 'reported' or a simplex form's implying 'witnessed', it is only in the above mentioned context that the substitution is completely impossible.

There exists a sort of hierarchy of affirmation, e.g. the choice of person influences the degree of affirmation necessary. Thus, for example, if the subordinated verb is in the first person, it is possible to have a main verb which negates the concept of affirmation:

3. Niešam deka spriñosl što iš prifatív vašta pokraste 'I think that I was mistaken in accepting your invitation'

The form spriñosl 'I accepted' is simplex. It is also true that a sentence like (2) is acceptable if the illocutionary force is one of great surprise rather than disbelief, but then the use of ne veruvam 'I don't believe' is not literal and therefore 'indefinitive' in Searle's (1969) terms.

In the existing work on the Macedonian verb, Lunt (1952) considers the sum form to be marked for a feature which he calls distance aspect, while Kontiki (1967) considers the simplex/sum series opposition to be one of definite/indefinite. Such judgments are belied by examples such as the following:

4. Vo dva matoj revjra jas sum go shril čušto namorno 'At two o'clock yesterday, I broke the bottle on purpose'
5. Kora go vidoš Nišo, toj veši et kupi kartite 'When I saw Nišo, he had already bought the tickets'

In example (4), a sum form is used in a context where it is neither 'distanced' nor 'indefinite'. In (5), the act of buying expressed by the simplex form kupi takes place at some indefinite time in the past. Structurally, the simplex past can be said to be marked for the basic meaning of affirmative, which is a marking of the grammatical category of status in Atkinson's (1966) redefining of Jakobson's (1957) term as the speaker's evaluation of the narrated event. Genetically, one can employ performative theory (Gaydack 1974) to show that in sentences using a simplex past tense form, the abstract performative verb must be different from the performative verb to which a sum series form is subordinated, e.g. the former must be something like APPRIV while the latter should be an unmarked declarative performative. Thus the two different theories can both be shown to present valid explanations of the same problema.
The historical development of the Nordic quantity system shows that the domain of quantity "shifted" from the segment to a syllable-sized unit. Thus, in the "pre-shift" period there were 4 combinations of closed-syllable types: VC, TC, Vc, VC (where diphthongs were only V); while in the "post-shift" period there were only 2 combinations: TC or Vc (where diphthongs as well as monophthongs are V or V).

Benediktsson argues that the quantity shift occurred perhaps as late as 1600. Grundt, however, claims that the change must have occurred earlier. She bases her argument, in part, on Lohiiste's discovery of vowel duration ratios in which negative correlations of durations are found in the production of vowels in English word pairs such as sticky-skitty.

This paper supports the claim for the earlier date of the change in the quantity system. The arguments are based on three sets of facts. (1) Spectrographic data of the mid vowels in Modern Icelandic show that long allophones are diphthongized, whereas short allophones remain monophthongs, e.g., the long [æ:] vs. short [æ:] allophones of /æ/. This relationship between Modern Icelandic vowel quality and quantity suggests re-examination of the historical, scribal evidence. (2) Scribal use of the accent mark in the 13th and 14th centuries shows, e.g., the frequent omission of the accent mark on high vowels, as in sta and bái, written sta and bái. However, the long non-high vowels such as ɛ and æ (which have Modern Icelandic pronunciations [OU], [AU]) were more consistently written with the accent mark than were the high vowels, and (b) the original diphthongs, especially ɛɛ and ɛɛ, were written with the accent mark. Since the non-high vowels developed into diphthongs whereas ɛ and æ did not, the scribal use of the accent on non-high vowels as well as on diphthongs can be interpreted as indicating vowel quality, not quantity. (3) The earliest Icelandic evidence from the First Grammatical Treatise shows that the First Grammarian in attempting to demonstrate the quantity opposition he posited, used 1 (possibly 2) minimal pairs which involve junctural differences, as in the example which illustrates long and short ɛɛ- to 'look thou' vs. ɛɛ- 'nailed' (III pl.). However, quality differences were exemplified by simple one-word pairs. This suggests that the focus of the quantity opposition may already (12th century) have begun to shift from the segmental level to syllable-sized units.

In conclusion, support is found for the claim regarding the earlier dating of the shift. However, it is based on re-examination of the historical data with the additional insight provided by the phonetic structure of Modern Icelandic.
Relative/Correlative Deletion in Gothic

Gothic exhibits the typical relative-antecedent correlative structure of Indo-European languages:

(1) hum vilidjus ei ik taujau paamra pamej jue kwipip piudan Iudaia;
what will ye COMF I do to-him whom ye call king of Jews?
'what do you want me to do to him whom you call "king of the Jews"?

In some cases, either the relative or the correlative may be deleted:

(2) hum vilidjus ei ik taujau pamej jue kwipip piudan Iudaia?

(3) taithundon dam allis hizei ik gastalsa
'tenth part of all which I own'
'a tenth part of everything that I own'

where (3) replaces the expected:

(4) taithundon dam allis bi hszetei ik gastalsa

Careful examination of the corresponding Greek text indicates that certain deletion possibilities were systematically avoided in Gothic and hence it seems reasonable to conclude that certain deletions were grammatical in Gothic.

(2), for example, is the translation of the following Greek sentence:

(5) ti thelete poluho hon legete basileas ton Ioudaion?
what ye-wish I-shall-do him ye-call king of the Jews?

where hoo is the relative pronoun in the accusative case, but Gothic paamra
is in the dative case, the accusative relative paamra having been deleted despite the example of the Greek original.

Standard transformational analyses (relative movement and/or deletion rules), I shall argue, can account for the observed patterns only in a very cumbersome and ad hoc way with clear loss of generalization. The deletion phenomenon in question is governed by the hierarchy below:

(6) 1-Nominate, 2-Accusative, 3-Genitive, 4-Dative

In this hierarchy, the whole range of deletion possibilities can be captured, as in (7):

(7) In the configuration ..., PN₁, ..., PNₙ, ..., where ₁ is a cor-
relative and ₂ is a relative and ₁ and ₂ are indices of dele-
tion. (1) if ₁ ≠ ₂, optionally delete NP₁ whose index of dele-
tion is the lower; (2) if ₁ = ₂, optionally delete NP₂.

Some speculations are offered as to the nature and relevance of such hierarchies in grammatical descriptions and general linguistic theory.

A number of recent studies have attempted to make predic-
tions of intonation, particularly placement of the main sentence stress, on the basis of underlying structure. Bresnan (1971, 1972) and G. Lakoff (1972) have argued along differing lines for the existence of underlying syntactic constraints capable of predict-
ing sentence stress placement on a categorical basis. Others, in-
cluding Schmerling (1971, 1972) have questioned the adequacy of syn-
tactic explanations of intonation, and Bolinger (1972) has strongly
attacked "the error of attributing to syntax what belongs to seman-
tics," arguing that intonation might better be predicted by semantic
factors such as presupposition, semantic novelty, etc. The study
reported here is an attempt, by means of a series of controlled
experiments, to provide evidence for either syntactic or semantic
constraints on intonation.

This study assumed that if the principal constraints were
syntactic, then stress placement would be predicted by the syn-
tactic categories, but if the main stress were seen to move from
one position to another as words were substituted in key sentential
positions, then this would argue for semantic constraints, particu-
larly if the movement correlated in a gradient manner with the
variable of semantic richness. Thus the test cases, all adapted
from examples in the articles listed above, were specifically de-
digned to display gradience, if it existed. For example, in the
simplest test, sentences containing the three-way contrast

I've got some lessons to learn
I've got some passages to learn
I've got some passages to memorize

were elicited from eight native speakers of American English by
means of randomly-ordered cue cards, and months later played for
48 listeners, including the eight speakers, who made forced-choice
judgments relating to stress placement.

Statistical evaluations of several such tests clearly show
significant differences in stress placement correlating with dif-
fferences in word-length and semantic richness, rather than with
syntactic categories. More sophisticated analyses show the rela-
tive importance of the word-length and semantic richness variables.
Variable Rules and Generative Metrics

The Halle-Keyser generative metrics of English iambic pentameter provides a model of the experiences reader's ability to judge sequences of syllables as "metrical" or "unmetrical." The model conceptualizes this ability, which may be called "metrical competence," in terms of a categorical linguistic rule. This rule constrains the placement of stressed syllables in weak (W) positions of a line of metrical verse in one particular linguistic environment. The present paper attempts to demonstrate that this conception of metrical competence in terms of a categorical rule is unnecessarily narrow, and that metrical competence can be conceptualized in terms of a variable rule, using the paradigm of variable rules introduced by Labov and refined by Cedergren and Sankoff.

Large samples of verse by several 17th century English poets were analyzed to determine the frequency of stressed syllables in W positions occurring in different environments. These frequency counts were then examined to see whether W position stress placement is systematically dependent on the presence or absence of certain features in the position's environment. The data suggest that W position stress placement tends to be systematically dependent on adjacent stress, adjacent major syntactic break, and line position; furthermore, this dependence is evident in all environments, not just the one included in the Halle-Keyser categorical rule. This finding argues for a revision of generative metrics. The stress placement rule should be restated in the terms provided by the new paradigm--as a variable rule with the influential strength of various features represented by probabilistic "feature weights"--rather than the old categorical paradigm, which is simply one particular instance of context-sensitive W position stress placement.

Jeanette X. Gundel
Ohio State University

On the Source of "It" in Cleft Sentences

The relatedness of cleft sentences like (3) to pseudo-clefts like (1) and (2) in widely accepted in the literature:
(1) What you heard was the phone.
(2) That thing you heard was the phone.
(3) It was the phone that you heard.

However, the specific derivation of the former from the latter is still controversial. Most authors, for example Akademian (1970) and Wirth (1975), assume that the clause in the cleft sentence is extraposed from its original position in the pseudo-cleft, but analyses differ in their explanation of the origin of the subject "it" in clefts.

The purpose of this paper is to argue that cleft sentences are reduced forms of right dislocated pseudo-clefts, i.e., no special rule of extraposition is involved in the derivation of these structures. The derivation of (3) is proposed to be roughly as follows:

X that you heard was the phone

\begin{itemize}
  \item Empty Head Deletion (EHD)
\end{itemize}

It was the phone, X that you heard

\begin{itemize}
  \item Right Dislocation
\end{itemize}

where EHD applies only if the main predicate of the matrix sentence is an identifying "he" form. The presence of "it" in clefts whose corresponding pseudo-cleft has an animate subject is shown to be a consequence of the little noted fact that subjects of identifying sentences are typically pronominalized by it or that regardless of whether or not they are animate (this phenomenon appears to be typical for European languages in general, and Faltz (1975) has noted its existence in Hebrew as well). This fact accounts for the distinction between sentence (4), which attributes a former property to the subject, and (5), which identifies the subject as the speaker's wife.

(4) She was my wife (*Nancy).
(5) It was my wife (Nancy).

The analysis thus claims that a sentence like (6) is unacceptable for the same reason as a sentence like (7).
(6) * He was Bill, the one who said that.
(7) * He was Bill who said that.

The fact that cleft sentences necessarily have an identifying interpretation, while sentences which have the form of pseudo-clefts are generally ambiguous with respect to an attributive or identifying reading follows from this analysis. The analysis also explains why sentences like (8), which are necessarily attributive, have no corresponding clefts.

(8) What you heard was untrue.
(9) * It was untrue that you heard.
On the Significance of Semantic Models for Stylistic Analysis

Many twentieth century literary artists have been concerned with the problem of meaning in language and their statements on meaning parallel, in significant respects, the various semantic theories advanced by philosophers of language. The first part of this paper is an adumbrated discussion of how the semantic notions of linguists and writers relate to one another. In the second part of the paper I will argue that an author's views on meaning in language (more exactly, the semantic basis of an individual work of literature) have important implications which must be taken into account in a stylistic analysis.

For the sake of convenience and clarity two main theories provide the framework for presenting the semantic views of authors - the analytical and the operational. The analytical or referential definition of meaning has two versions; one identifies meaning with a non-linguistic phenomenon or 'thing' and another identifies meaning with a non-physical process or 'thought'. Various authors and literary theorists have subscribed to either of these approaches. Accordingly the author attempts to manipulate language in order to either 1) present a 'thing' devoid of all traces of a priori human judgment, including that which is deeply embedded in language, or 2) convey an intuited form or mental image of some phenomenon. In such cases meaning depends entirely on the correspondence of the linguistic presentation with a pregiven entity and the semantic basis of a text will differ according to whether that entity is a physical object or a mental construct. The operational or contextual definition of meaning posits meaning as a function of usage or of the dynamics of words in action. Authors whose works are analyzed under this definition of meaning are those who maintain that no specific (meaning-) concept exists prior to the literary text itself and that meaning or the consciousness of some thing emerges only through a basically linguistic conception.

While it is not possible to categorize authors or works of literature according to the semantic theories of linguists (for the obvious reason that their intentions are quite different), the alignment of styles and semantic models suggested here does indicate certain similar tendencies. More importantly, this alignment permits the introduction of semantic arguments which highlight distinctions in language style, the implications of which are of consequence for the application of basic concepts in stylistic analysis. Such concepts as subject-object dichotomy and the related concept of irony cannot be applied uniformly to all styles without modifications necessitated by the semantic basis of a particular literary text.

In the Hua dialect of Yagarua, an Eastern Highlands language of New Guinea, objects of transitive verbs and the possessors of inalienable nouns are represented by one series of pronominal prefixes on the nominal or verbal item in question. With all roots beginning with the sequence /ha-/ /this pronoun is infixed: thus for example the first person singular possessive of áku 'wing' is not /áháku/ but rather /hadáku/ 'my wing'. In fixation of this sort is not found in any of the other Yagarua dialects, and it is optional with certain prefixes in Hua as well. Thus the first person dual pronoun /ra'a/ may be either prefixed or infixed: /ra'aháku/ or /bara'ak/ 'our (2) wings'. We attempt to account for this anomaly by describing the mechanism whereby infixation arose.

The explanation is provided by four facts about Hua, and two mechanisms of reinterpretation. These are the facts:

a) Hua, alone of the Yagarua dialects, does not tolerate /Ch/ phonetic sequences, and avoids them in various ways when they arise;

b) a large number of roots occur with an unstressed prefix /ha-/ of indeterminate meaning, whose status as a prefix is nevertheless assured;

c) when two identical vowels occur together, a productive phonological rule deletes the one that is unstressed;

d) the third person singular pronoun is phonologically null.

Given these facts, the following mechanisms of morphological reinterpretation seem to be at work:

a) the analytic leap, whereby a surface form which happens to be identical with the output of a productive rule may be interpreted as having an underlying form identical with the input to that rule;

b) Watkins' Law, whereby a null 3 sg. form may undergo 'invisible metathesis; with another morpheme, and thus create the basis for visible metathesis of other forms in the paradigm.

If the mechanism of invisible metathesis is operative here, it may perhaps be isolated as the only systematic source of counterexamples to the putative universal definition of the word as that entity within which the order of morphemes is fixed.

A similar case of metathesis and fluid morpheme order from Turkish will be discussed.
Towards a Reconstruction of the IF Accent System

We briefly examine the major rules that govern the accentuation in the nominal declension and in the derivation of words in modern Russian, Lithuanian, classical Greek and Sanskrit. In all four languages these turn out to be a rule that de-accentes vowels and a rule that retracts the accent from one vowel to an adjacent one, but the conditions under which the rules apply as well as the precise manner in which they operate differ from language to language. Our point of departure is the treatment of these phenomena in Halle (1973) and Kiparsky (1973), on which we improve in a number of ways. Extending to Russian, with modifications, Kiparsky's parallel treatment of derivational and inflectional suffixes, we simplify the description of the accentual patterns in derivational morphology, eliminate the use of ad hoc constituent structure that marred Halle's treatment, and explain several previously puzzling cases in the inflectional morphology. (Just to mention one, we explain why the pattern of the Russian participles пишуемый or писаемый occurs only with certain verbs and no others.) We eliminate in all four languages, the Post-Stem (or Oxtonic) rule and assume that suffixes in the case faşileş are inherently accented. Among the advantages of this new solution is that it eliminates some damaging difficulties which Kiparsky (1973) did not notice in his treatment of Lithuanian. The resulting analyses not only shed new light on each of the four languages (especially Russian and Lithuanian) but at the same time show their accentual systems to be more similar than was hitherto apparent. We conclude our paper with a proposed reconstruction of the IF accent system in the light of our new findings.

Intermediate Language

An Explanation for the Sentential Subject Constraint

Since the beginning of the study of general constraints on extraction (Ross 1967), it has been a mystery why (1) in English is ungrammatical, while its exact paraphrase in a language like Turkish (2) is grammatical:

(1) *The girl who that Harvey likes is clear is Alice.
(2) Harvey'in sevgi beli olan kiz Alice-tir.

In other words, why do some languages (e.g. English) have a constraint prohibiting extraction from sentential subjects (the Sentential Subject Constraint) while some languages (e.g. Turkish) do not? Ross (1967), seeing no way to predict which languages would have the SSC and which would not, was forced to suggest that the presence versus absence of this constraint was one of the arbitrary ways in which languages could differ.

In this paper I will argue that the SSC in English is a reflection of a more general constraint on the interaction of extraction with center-embedded structures, and that the reason languages like Turkish do not exhibit such a constraint is that the extraction in Turkish is out of an external clause, rather than from an internal one as in English. [The terms "external" and "internal" must be slightly refined.] With this caveat, the proposed principle may be stated as follows:

Any extraction which results in a structure such that the clause containing the extraction hole is internal causes ungrammaticality (of the island-violation kind).

This is similar to, but distinct from, Kuno's (1973) proposal that the SSC is essentially a constraint prohibiting clause-internal constituents. One prediction made by the principle advanced here, and not by Kuno's principle, is that in SOV languages like Turkish it will be difficult to extract from sentential objects, but not from sentential subjects. I will present evidence that this is indeed the case. Similar evidence from several other languages will also be adduced in favor of the proposed principle.

In conclusion, I will suggest an explanation for the principle itself. I will show that if the perceptual difficulty associated with relating an extracted constituent to its original location (or function) is seen as the same kind of complexity as that associated with center-embedding, this extraction constraint can be accounted for as a reflection of a general constraint on the degree of complexity which can be tolerated in the processing of a sentence. In other words, the Sentential Subject Constraint turns out to be a reflection of the same limitation as is responsible for the unintelligibility of sentences with more than one degree of center-embedding.
Is Georgian Ergative?

Georgian is often represented as a prime example of an ergative language. It is considered to be of more than usual interest in the study of ergativity because its ergative construction is confined to one of the three tense series (Series II), in which all verbs may occur; in the other two series, the language is apparently nominative–accusative. There is debate now over the real significance of the classification of languages as ergative vs. non-ergative. However, we must agree that if the term "ergative" has any significance at all, it identifies those languages in which the subject of an intransitive verb is treated in the same way as the direct object of a transitive verb by at least one of the rules that that language uses to code grammatical relations (case marking, verb agreement, or word order).

Georgian does not make use of word order to code grammatical relations; verb agreement is clearly non-ergative, even in Series II. It is argued here that according to the definition above, Georgian is likewise non-ergative in case marking, even in Series II. First, it is shown that there exist a large number of intransitive verbs which belong to the morphological class usually called "transitive" (or "active"); in Series II tenses, the subject of these verbs is in the "ergative" case, although they never have a direct object. The presence of these intransitive verbs in the class of verbs which take an ergative case subject in Series II does not appear to be a historical accident, since the verbs belong to a few clearly definable semantic classes, for example, body functions, such as "cough", "sneeze", etc.

A second group of verbs, traditionally called "middle", also contains a large number of intransitives (eg. "work", "shine") which put their subjects in the ergative case in Series II.

The group traditionally called "intransitives" (or "passives") contains five or six transitive verbs (eg. "tell", "beg for"), which nevertheless put their subjects into the nominative (or absolutive) case in Series II. There is some evidence that these verbs, unlike those discussed above, may be in transition.

It is suggested here that the three traditional classes of verbs do not correspond to a strict transitive/intransitive dichotomy. While the morphological classification of verbs in Georgian is related to transitivity, no class can be characterized as exclusively transitive or intransitive. Thus, the assignment of cases in Series II must be sensitive to the morphological class of the governing verb, not to whether the verb is transitive or intransitive. Hence, Georgian is not ergative.

Sociolinguistic Differences between Geographic Varieties of Brazilian Portuguese

The present study deals with differences between some of the sociolinguistic rules of several regional varieties of Brazilian Portuguese. It is based on data from a survey of address among some one thousand speakers representing several regions of the country.

Among the localities studied, two types of differences occur in the address systems: (1) the forms employed, and (2) the sociolinguistic rules for usage of the same or corresponding forms. Formal differences serve to distinguish three principal sets of address terms: two binary (senhor, -a; você and senhor, -a; senhora) and one ternary (senhor, -a; você; tu). The sociolinguistic rules for the use of the same forms or of corresponding ones vary extensively from one locality to another: flow charts representing most common usage in the dyads of entire domains (such as family or education) reveal differences from one place to another in the number of relevant selectors, their nature and their relative importance. Hence, sociolinguistic rules permit identification and description of many varieties, with both spacial separation and socio-cultural division; formal differences distinguish only a few of these.

In the data analyzed here, formal differences and differences in sociolinguistic rules do not necessarily accompany one another; in a given dyad the nature of preferred usage may be the same for two localities, although the actual forms employed are different. For example, intimate usage in some varieties requires você, in others tu; elsewhere, however, the distinction between você and tu reflects different degrees of intimacy or deference.

Although dialect geography has traditionally focused almost exclusively on formal features rather than their use in communication, the present study shows that, for the localities surveyed, sociolinguistic rules are more significant than formal features for revealing the differences between geographic varieties in terms of their address systems.
Functional Variability in American Czech

In Czech there exists a marked phonological and morphological variability between its literary (i.e., standard) and colloquial forms. As claimed by Kučera (1961, 1973), the variability is functionally motivated and follows hierarchically independent rules. Results of sociolinguistic research conducted by this author in Czech ethnic communities in the USA confirm Kučera's hypothesis and demonstrate that ongoing linguistic change in the speech of Czech Americans is related to the restructuring of the functional variability of the language, which in turn influences the extent of the English interference.

The diglossic structure of the present-day Czech consists of the codified Literary Czech (LC), used in most written communication, as well as in formal speech, and of the Colloquial Czech (CC), used in informal conversations. The use of either variety is not associated with any socio-economic or educational class of speakers. Rather, the variability is utilized functionally to distinguish varying degrees of social formality of the speech events. Unlike in other standardized languages, deviations from the codified norm which occur in CC, are not restricted to lexical "colloquialisms" or syntactic simplification, but include elements of phonology and inflectional morphology which differ systematically from LC. Kučera (1961) experimentally established a hierarchy of the relative frequencies in the occurrence of CC phonological elements in speech (e.g., CC /ej/ ≠ LC /i/, CC /ɪ/ ≠ LC /ɛ/), etc., and proposed (1973) a formal grammatical description that accounts for the functional variability of the overall Czech system in terms of absolute and partial rule interdependency (e.g., making the use of the CC phonological variant /e/ contingent on the use of the CC inflectional suffix in the same word).

The maintenance of functional variability in American Czech was studied by this author in the speech of 84 Americans of Czech descent, representing four successive immigrant generations. Each informant was given a series of five tests, (1) a structured elicitation instrument which tested competence in LC and consisted in conversion of tape-recorded CC sentences to LC; (2) and (3) story-telling tests examining use of LC and CC elements in two situationally distinct contexts provided by pictorial guides; and (4) and (5) letter-writing tests examining the functional variability in formal and informal written communication.

Statistical analyses of the data show that the range of functional variability is decreasing with the growth of the generational distance and lessening cultivation of LC by the immigrant. Subsequently, it further reflects on the declining responsiveness by the generational categories to the social formality of the speech events. E.g., the mean use of the LC/CC elements in the informal story is 8:19 for generation 1 and 2:19 for generation 4, while in the formal Story the ratios are 14:5 (gen.1) and 4:19 (gen.4). Although absolute frequencies of the use of LC elements decrease in the late-generation speech, the hierarchical order in the use of the variable elements is fully preserved even in the fourth-generation speech whose grammatical complexity is very limited. These results validate Kučera's claim and also comply with this author's earlier findings in the study of register (1976) and language acquisition (1975). I would like to present the hypotheses and summarize the results.


Indirect Speech Acts and Pre-acts

This paper attempts to relate the ethnomethodological concept of the pre-act found in the work of H. Sacks, G. Herodes, W. Jefferson and others to what linguists and philosophers have termed indirect illocutionary acts. A pre-act (PA) is a part of a conversational turn that has no function of preparing the way for the possible performance of an associated speech act soon afterwards in the conversation. Examples are such utterances as "Are you doing anything tonight?" as a pre-announcement, or "Oh-oh," as a pre-corrector to an act of noticing. PA's are generally followed by either an acknowledgment or by an avoidance maneuver from the participant addressed and then, if not successfully avoided, a performance of the act in question.

It is shown to be profitable to consider indirect illocutionary acts (IIA's) to be a special limiting case of PA's for several reasons. First, while some PA's look like the "Oh-oh," mentioned above appear to be particles developed to serve a particular conversational function, others, like those in (1)-(4) (all of which are preparatory to making the PA's in (1)-(4) and the indirect assertions in (5)-(8).

(1) Do you know something?
(2) There's something you don't yet know.
(3) I want to tell you something.
(4) Do you mind if I tell you something?

(5) You don't yet know that my mother is coming to visit.
(6) I want to tell you that your tires need rotating.
(7) Do you mind if I tell you that it's time to leave?

Thus a uniform account of PA's and IIA's is supported. Second, there are sentences like (9) which can either count as IIA's or as PA's depending on whether or not the context makes clear that the other felicity conditions for the act are fulfilled. Such examples provide support for the hypothesis that IIA's are simply cases of PA's which because of context do not require overt performance of the act in question.

Third, such an approach can account for the double answers as well as the pre-acts. The double answers are given, as in (10). It is shown

(10) A: Do you want to help me find my contact?
B: Yes, alright. Or Not really, but OK. Of course.

I'm not sure. (Pause) OK.

That the first part of such double answers corresponds to a second pair-part associated with the PA in question and the second to a second pair-part for the actual act performed.
An Interpretive Approach to Inalienable Possession in French

An interpretive treatment correctly indicates "coreference" (i.e., code designation) relations for alienable and inalienable possessions in French, and explains a stylistic variation by using the notion of markedness.

Inalienable possession is usually indicated in French by use of the definite article, and in many cases, an indirect object pronoun.

1. Elle lève les mains. "She raises her hands."
2. Elle se lave les mains. "She washes her hands."
3. La tête lui tourne. "His head is turning; he is dizzy."

There exists also the possibility of using possessive adjectives, usually for stylistic variation:

4. Elle lève ses mains. "She raises her hands."
5. Elle se lave ses mains. "She washes her hands."

A Transformational account proposes that in 1-3 the possessor be included in a relative clause in the deep structure, and later deleted, while in 4-5 the possessor is transformed into a possessive adjective. This approach is unmotivated because the relative clause derivation violates the recoverability condition on deletion transformations (all possessives cannot have the same source).

A Lexicalist approach proposes that possessive adjectives be generated, as such in the base, and that possessive relations be interpreted by a semantic projection rule. French data is better described by the Lexicalist than by the Transformational approach: both articles and possessive adjectives can be generated with inalienable possessions, the former being the more (unmarked) and the latter being the marked form. The marked inalienable possessions would be interpreted by the same projection rules as other possessive adjectives. The unmarked inalienable possessions are marked coreferent with the surface indirect object pronoun. This pronoun is always the "possessor" regardless of the syntactic position of the body part in the sentence (subject, direct, object, etc.). The only exception is a group of forty verbs (such as avoir, croiser, lever, etc.) which become "pseudo-transitive" when constructed with a body part; they acquire a middle voice interpretation, evidenced in reflexive paraphrases.

6. Il baisa sa front. "He bowed his forehead."
7. Son front se baisa. "His forehead bowed."
8. Il lava ses mains. "He washed his hands"
9. Ses mains se lavèrent. "His hands (were) washed."

In the case of pseudo-transitives, the body part is marked coreferent with the surface subject of the sentence.

Against Equi-NP-Deletion as a Test for Subject-Of in Basque

I wish to consider sentences of Northern Guipuzcoan Basque of the form:

1.a Jon nai du aye ekarri.
1.b Jon(+∅) nai du aye(+∅)
1.c John(*absolutive case) want auxiliary him/her/it(+abs.)

bring

1.d John wants to bring him/her/it.

Stephen Anderson (Anderson, 1975) and Jeffrey Heath (Heath, 1974) analyse sentences such as 1 as a phenomenon of Equi-NP-Deletion. Based on this analysis, Heath and Anderson argue that the notion of subject-of (Chomsky, 1965, pp. 69-71) is the "same" in Basque as it is in English; that is, that subject-of is defined accusatively in Basque. Anderson extends this analysis to a wider range of languages with ergative morphology. He argues that each language is "underlying" or typologically accusative, based on a description of Equi-NP-Deletion as coreferential subject deletion (or raising as subject raising, etc.). Although the Basque data considered by Anderson and Heath is consistent with an Equi analysis, a consideration of further data clearly demonstrates that sentences like 1 cannot arise by means of a productive rule of Equi-NP-Deletion.

Basque is morphologically ergative. In addition, Basque also exhibits accusative morphology (Lafon, 1972). For example: the third person subject (nominal) pronoun root is 'bera'; the third person object (accusative) root is 'aye'; the ergative case marker is '-k'; and the absolutive case is unmarked. However, in sentences with pronouns, informants do not distinguish between embedded absolutive pronouns with subject or object roots. For example, sentence 1 is equally acceptable as 1a.

2.a Jon nai du bera ekarri.
2.b Jon(+∅) nai du aye ekarri
2.c John(*abs.) want aux, him/her/it bring
2.d John wants to bring him/her/it.

I claim that the fact that native speakers of Northern Guipuzcoan Basque use sentences like 2 if free variation with sentences like 1 is inconsistent with a coreferential subject deletion (Equi-NP-Deletion) analysis for these sentences. This claim is further supported by other similar facts.

Neither can sentences such as 1 and 2 be analyzed as Raising phenomenon (Postal, 1974); as the raise form of 1 and 2 is:

3.a Jonek nai du aye ekarzita.
3.b Jon(e)k nai du aye(+∅) ekar(ri)tzea
3.c John+erg. want aux. him/her/it(+abs)bring+dur.+def.
3.d John wants him/her/it, to bring.

Greenberg claims that the use of a generative grammar, based on (Chomsky, 1965), presupposes that all languages have only one sentence type (Greenberg, 1974). Based on morphology, Basque appears to have at least two sentence types: accusative and ergative. The use of a single generative rule, such as Equi or Raising, fails as a test for "underlying" sentence typology in Basque, an apparently mixed ergative-accusative language.
The Evidence for Deleted Quotative Frame-clauses

Recent theories of "performatives" or illocutionary "higher sentences" have hardly gone beyond merely establishing that there is such a thing as a speech-act and that it has its reflection in language. The true evidence for underlying deleted higher clauses ought to show that they have at least some of the properties of actual (non-deleted) sentences. Such evidence is presented here.

1. In a Romance language, Gascon, main affirmative declarative sentences have a preverbal particle ke, interrogative sentences contain q (the so-called "enunciative particles"). Subordinate sentences also have q, with the exception of sentences that are complements of quotative verbs ('say, know'), which also have ke. Etymologically, ke (qué) is a subordinating particle. If quotative verbs govern ke in their complement clauses, ke in main sentences must be governed by a deleted quotative frame-clause. Clauses subordinated to a surface-main clause have q. Thus, the use of q might be interpreted as a sign that the clause containing it is not directly dependent on the highest quotative frame-clause. This suggests that surface-main interrogation has more than one deleted higher clause.

2. In Hungarian (also English) declarative wh-questions (questions soliciting repetition), the yes-no prosody reflects a deleted higher clause of the type "Would you tell me again?" Hungarian main imperative sentences and echo-questions have the prosody of subordinate clauses that have been extraposed from an emphatic slot in the main clause, with a pronoun left behind. This suggests that frame-clauses of the following respective types must have been deleted after prosody assignment: "I want THAT that...", "Are you asking THAT that...?" (where "THAT" stands for the Hungarian emphasized pronoun-copy left behind), cf. French qu'il vienne, spoken Hebrew נט-נאו 'let him come', with an initial subordinating particle in a main imperative clause.

Phonetic studies indicate that the intrinsic perturbations caused by prothetic consonants on the fundamental frequency of the following vowel are of about the same order of magnitude as the intrinsic differences depending on vowel height. However, it is very rare to find these variations leading to changes in the phonological structure of a language. The goal of this paper is to provide preliminary explanations for this asymmetry.

Two points will be emphasized:
1. A voiced (vs. voiceless) consonant causes a rising (vs. falling) fundamental frequency pattern at the onset of the following vowel. On the one hand, the intrinsic fundamental frequency associated with different vowel qualities is manifested by differences in steady-state fundamental frequency levels. Our auditory system is more "efficient" at detecting changes in varying fundamental frequency signals rather than differences (of the same magnitude) between two steady-state fundamental frequency signals.

2. The cause of the fundamental frequency perturbations of vowels caused by prothetic consonants can easily be noticed by listeners since these perturbations disappear when consonants are removed. In the case of variations due to vowel height, the listeners' task is more difficult since a given intrinsic fundamental frequency is always associated with a given vowel quality.

Results from an experiment involving subjects imitating synthesized stimuli (5 vowels /i,e,a,o,u/) with different fundamental frequency levels (100, 125, and 150 Hz) will be presented in order to support our hypotheses.

These data will provide preliminary explanations to the asymmetry observed in development of tones from segments, namely that many more languages developed tones from consonantal influences rather than from vowel height.
On Preventing CAUSE + NOT

A universal conspiracy exists to block negation from overt representation in non-sentencelike embedded clauses. In some instances, an otherwise optional rule of neg-raising cannot apply in tensed indicative that complement of some predicates. Thus the literal English equivalent of a Danish example: "She was not given a doll by her parents." (lit.: 'Then I would never wish that you would get married', i.e., 'I wish that you never...') is impossible; cf. 'I never hope to see a purple cow'. On the other hand, extraction is unexpectedly permissible, or unexpectedly quasi-obligatory, out of certain infinitival clauses. Thus, neg-raising applies rarely over the for- (that-) clause governing verbs for 'think', 'believe', or 'desire', in Malagasy, but freely over the infinitival-governing 'intend' and 'want', Greek phaino 'say' is a neg-raiser which governs the infinitive, while Greek verbs of saying are not and do not. This is seen to partake of a wider phenomenon in which the freedom of negating an embedded clause is directly related to the syntactic and semantic independence of that clause.

This presentation will focus on the difficulty of expressing negation within an extremely dependent, non-clausy structure: that embedded under causatives, particularly after application of verb-raising ('clause-union'). It will be shown that the status of negation is determined by the degree of simplicity (Aissen's term) of the derived structure. Examples range from the contrast between English force not to and make not (the latter less clausy with no overt complementizer and correspondingly harder to embed negation under) through increasing degrees of clause-union, as measured by e.g. clitic placement phenomena—and increasingly increasing difficulty in negative intercalation—in Czech, French, and Italian, to languages like morphological causatives (Turkish, Swahili, the Korean 'lexical'-type causative) in which negation cannot intervene between cause-marker and stem.

Examples will be given of devices used by languages to express embedded negation in other words, ranging from incorporation of the negative into the matrix or embedded verb (prevent X from going or make X stay for make X not) to substitution of the dual form (not let or ne pas laisser for make pas or faire ne pas) to the tolelement of ambiguity in the causative formative (Italian non fare = Fr. ne pas faire/ne pas laisser, depending on context). Turk. 'birme: 'make not'/not make'. Significantly, this ambiguity often is virtually absent (as in Italian and Czech) except under negation where the 'make not' reading is in fact primary.

The existence of languages in which these devices are not available or do not suffice will be touched upon. In some of these, a special negation—often termed 'emphatic'—is utilized in non-finite dependent clauses (Greek ei vs. on, Estonian mitte vs. ei) in others (e.g. Aestec and Maya languages), no non-finite clause negation exists, resulting in large-scale ambiguity.

A functional explanation will be suggested for the existence of the embedded-negation conspiracy, based on the nature of negation as an operator on propositions (or thoughts) and the consequent difficulty of applying negation to a clause or clause-remnant which is not felt (syntactically and/or semantically) to express a complete and independent thought.
Yiddish and Hebrew as Elements in the Ethnic Identity of American Jews

There is little available empirical research which has specifically explored the roles, if any, of Yiddish and Hebrew in the ethnic identity of contemporary American Jews. In the present study, a questionnaire containing 78 language-related items and 53 Jewish identity items was administered to 191 Jewish college students in New York City. Responses to the language items and to the identity items were separately factor analyzed and the initial factors were in each case rotated to varimax orthogonal solutions. Eighteen language factors were extracted, representing Yiddish and Hebrew abilities, attitudes, and patterns of use. Some thirteen identity factors were extracted, representing such independent dimensions of Jewishness as religious orthodoxy, commitment to Israel, Jewish educational background, and organizational involvement. Composite factor scores were then computed for each subject on all 31 language and identity factors and Pearson product-moment correlations were calculated between the language factor scores and the identity factor scores.

Examination of the zero-order correlation matrix suggested a very tenuous relationship between Yiddish- and Hebrew-related responses, on the one hand, and identity responses on the other. The highest single correlation was .49, between Hebrew ability and religious background, and only three other coefficients reached or exceeded .30. However, multiple correlations ranging between .50 and .68 were obtained in four instances when individual language factors were regressed on all identity factors collectively. Finally, canonical correlation, a procedure hitherto neglected in sociolinguistic research, showed the relationship between the language and identity factors to be much greater than anticipated. Three linear combinations of language factors, two predominantly Hebrew and one predominantly Yiddish, yielded highly significant correlations of .86, .67, and .59 with three linear combinations of identity items.

When linguistic and non-linguistic identity are both viewed as complex variables, the relationship between the two may be substantially greater than that revealed by simple, or even multiple, correlations with the individual components of such variables. The value of canonical correlation in elucidating just such a relationship is demonstrated.

The Validity of Clausal Processing Strategies at the Discourse Level

In the last few years, considerable research in psycholinguistics has sought to test the hypothesis that the clause is a relevant segmentation unit in the processing of speech. The current interest in linguistic contexts and discourse analysis has raised the question of the validity of the clausal processing strategy suggested by Bever, Garrett and Hurtig (1973). They demonstrated that the alternative readings of deep structure ambiguous sentences are available during the processing of a clause but that at the clause boundary only one reading remains available. They argued that such evidence supports a view of speech processing as operating clause by clause. That is, the primary processing strategy is one of clausal segmentation of the input string. It has, however, been suggested that the use of ambiguous sentences in linguistic argumentation or in the psycholinguistic investigation of speech processing is unjustified since phenomenally such sentences are never ambiguously perceived in context.

The present study is an attempt to demonstrate that the type of strategy suggested by Bever, et al., is operative in the processing of connected discourse. An experiment was designed using the fragment completion paradigm (Bever, et al., Exp. 2). Subjects were presented context sentences followed by sentence fragments which they had to complete. The experimental variables included: (1) complete and incomplete clause fragments (2) ambiguous and unambiguous fragments (3) neutral and disambiguating contexts. The analysis of the latency to completion data support the hypothesis that the clausal processing strategy demonstrated in research on sentences in isolation is also operative in connected discourse.

Such a finding is consistent with the functional interactionist model of language proposed by Bever (1970) and Fodor, Bever and Garrett (1974). Thus the notion of interactionism can be extended to account for discourse phenomena by characterizing the relationship of sentence grammar, discourse grammar and the psychological processes operative in the encoding of sentences and discourses in the following way: The sentence (clause) is the on-line perceptual unit while the discourse (proposition/idea set/logical event space) is the unit of cognitive (semantic) memory. That is, the discourse is the object of analysis at the cognitive organizational level while the sentence (syntactic structure) is the object of analysis at the production/comprehension level. Such an hypothesis thereby treats the research on sentences and discourse in linguistics as well as psychology as interactive models of the various subcomponents of a total linguistic-cognitive system.


Historical Implications of the Western Basque Tonal Accent

Of five geographically differentiated types of accentual systems in Basque distinguished by Luis Michelena, the most widespread, and the only one whose history has not been understudied, is the tonal accent found in the western part of the area. This occupies the greater part of the Basque-speaking region within Spain, in Vizcaya, Guipúzcoa, and part of Navarra.

I have suggested that the contrasts involved are best regarded as between unmarked words, which bear no accent at all, and marked words, which bear a tonal falling accent on a pre-determined syllable. This distinguishes, for example, in the word for 'man', unmarked ergative singular *gizonak from marked nominative-ergative plural *gizonak or *gizonak (cover symbol *gizonak). All plural forms of nouns are accentually marked, as opposed to the singular and indeterminate forms.

The tonal accent seems to have developed as a result of the shortening of long vowels or diphthongs. Basque marked forms must have contained double vowels, usually arising from the loss of an intervening consonant. The ergative plural *gizonak is from *gizonak < *gizonek < *gizonek. In some dialects the position of the pitch drop has drifted forward in the word. The ending *-ecek is analyzable into -e, mark of definiteness, *-g- 'plural', -e, a "buffer" vowel occurring between consonants, and -k, mark of the ergative case.

Other plural case endings must be reanalyzed so the plural marker -g- (final -k) runs throughout, as seen in this partial paradigm for (h)aran 'valley':

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The accentual marking would have spread analogically to the nominative. The -e which distinguishes the plural of the locative (as manditara 'to the mountains') from the indeterminate (manditara 'to mountain') is seen to originate from the buffer vowel(s) engendered by the presence of -g.

Certain case endings are themselves accentually marked, regardless of number. Again this points to former double vowels in them, as Vizayan sociative -gaz has 'with' < *-geaz < *-geaz < *-galez (cf. -gati(k), Vizayan -gati(k) 'because of').

Accentually marked affixes on verbs include the plural ending -tè, -è, -dè (< -dez). This is from -tè-o-e, based on a former third person singular suffix *-tè. The second person singular feminine suffix *-nè may be from *-ne-ga, a feminine gender marker *-nè preceding the second person singular suffix *-ga.

Accentual marking in derivation and compounding is also considered.

Vedic evidence for the Function of the PIE *-grade *-ayati Formation

The major, though not the only source of Sanskrit verbs with *-ayati is a PIE formation with *-g-ra- in the root and an *-ay-suffix, whose etymology and meaning are both uncertain. The PIE form *-g-ra- eventually found in the western part of the area, this occupies the greater part of the Basque-speaking region within Spain, in Vizcaya, Guipúzcoa, and part of Navarra.

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Accentual marking in derivation and compounding is also considered.
Gk. ἁμφῆ, Lat. ambē and Related Forms

Gk. ἁμφῆ, Lat. ambē and Toch. A ἅμπη, like words for 'both' in other IE languages (e.g., Vedic ubhā; Gk. ubhe; fem., abhē; OCS uba; cf., Old Eng. bē), can be analyzed into an element *-bhōh(y) preceded by a morpheme of uncertain origin. The "prefix" *am- is also found in the preposition and preverb Gk. ἁμφῆ, Lat. ambē, etc. and, in an apophonic form *am-, in Olr. im(m) and Ogh umbī; the relationship of these forms to ἁμφῆ and ambē is especially clear in Greek, where ἁμφῆ still has the synchronic value 'on both sides of'.

The etymology of *am- is revealed by the word for 'both' in Tocharian B, where ẅ pomi (entipi) can only continue a Common Tocharian prototype *stalk(y) (with the substitution of plural for dual inflection). This in turn implies immediate preverbs *stalbhī for ἁμφῆ and ambē, and *stalbyī for ἁμφῆ and ambē; the assimilation of *-stalbhī to *-stabhī in Greek and Latin and sānti in Toch. A ἅμπη. The formation of *stalbhī 'on both sides of' may now clearly be seen to be that of a quasi-instrumental in *-bhī of the IE root noun *bhūtā gen., *bhūts 'side'. It may be noted that according to theSyncopization rule established by H. Rix, MSS 27, 79-110, a reconstruction *-bhī would eliminate the need for assuming an apophonic difference between ambē, etc. and Olr. im(m), Ogh umbī.

We are led, therefore, to reconstruct the source of ἁμφῆ, etc. as *stalbhōh(y). It is unlikely that this form is simply an anomalous nom.-acc. *stā, 'both sides'; it is more easily taken as a dialectal innovation based on the more widely distributed preposition *stalbhī. The value of ambē and ambē in compounds like amphibios 'having a mouth on both sides, having two mouths' (cf. distans) and ambē 'having a head on both sides, having two heads' (cf. Bisected) suggests an analogical proportion with the forms of the numeral 'two'. *stalbhī: *sybōh(y): *sybōh(y): X, Y = *stalbhōh(y). The creation of *stalbhōh(y) via such a process would clearly have been favored by the earlier existence of a form or forms comparable to the words for 'both' in Indo-Iranian, Balto-Slavic and Germanic.

Old Irish Verbal Nouns

A widespread assumption concerning the origins of Old Irish (Oir.) verbal-constructions (vns.) is that they are etymologically related to the forms verbal-constructions (vns.) in other IE languages, and that the latter are termed infinitives (infs.) in other IE languages, and that the nominal character of these forms, as well as the constructions in which they occur, reflect, in Celtic, striking archaisms (Windisch 1973, 5B 2; Vendryes 1951, 16; Lewis and Pedersen 1937, 315). This assumption has never been critically examined in the literature, and this paper will argue that there is considerable evidence—lexical, morphological and syntactic—which suggests that such an assumption is not valid. Some examples follow:

1) Recent research (Jeffers, LG. 51) has shown that a strikingly restricted set of PIE nominal derivational types show an apparently inherited restriction towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.). Oir. vns. show only a tendency towards reanalysis as verbs (i.e., infs.).
In this paper we will present three arguments from English for the linear application of syntactic rules (Kimball 1972; Zwarts 1975), as opposed to the cyclic application of such rules (Chomsky 1965; Kayne 1969).

One argument, the Comp Condition Argument, is that applying Passive and wh-movement linearly allows us to eliminate one of the conditions on transformations proposed in Chomsky (1973); viz., the condition that anything moved from a Comp must be moved into a Comp position. This condition was proposed to block the generation of sentences like *what was asked to be read by John which are automatically blocked by the linear application of Passive and wh-movement.

The second argument, the Subject Condition Argument, is that, if we do not apply wh-movement linearly, then we will have to complicate the statement of another condition on transformations, the Subject Condition (Chomsky 1973), in order to block the generation of such structures as *who were stories about heard by John?

The third argument, the Raising Argument, is that the linear mode of application of wh-movement, but not the cyclic, enables us to generate the correct range of constructions involving Raising with the seem-class of verbs. Thus *who does it seem to be tall? is generated in the cyclic, but not the linear system we are proposing for syntax.

Finally, we show that alternative proposals to the linear cycle in syntax, involving "trace theory" or the introduction of a "post-cycle," fail to handle the data.

References


Zwarts, P., "Some Remarks on the Linear Cycle in Dutch Syntax," manuscript, University of Amsterdam, 1975.

The Linear Cycle in English Syntax

A related inadequacy in traditional generative treatments of Swedish accent is in the function of the stress rules. These are restricted to generating the primary word stress in the correct position. Frequently the stressed syllable is provided with a "portemanteau" feature that signals both the primary stressed syllable and the accent. While this approach appears to relate accent and stress, it does so by fiat, without providing an explanation. But the deeper inadequacy lies in the lack of a description of secondary stresses, which must be considered even in the absence of accentual phenomena.

To correct these inadequacies, I propose an alternate approach in which stress assignment is taken as the primary task. The principal rules invoked are THESE STRESS, which stresses a theme vowel; MAIN STRESS, which stresses the vowel of a stem final syllable; a RETRACTION rule, which retracts stress in certain forms; and the COMPOUND rule, which assigns primary stress to the first element of a compound. The ACCENT II rule operates at the word level on forms in which the stress rules have assigned a pattern consisting of a primary stress, followed by a sequence of any number of stresses weaker than secondary, followed by a secondary stress. Rather than assigning a feature [Accent II] to such words, the rule assigns the phonetic values directly; for stressed and educated Stockholmspeech, this means a mid pitch on the [1 stress] and a high pitch on the [2 stress]. This analysis thus uses independently activated phonetic features. No feature [Accent II] is countenance, which on this analysis is merely a convenient cover term for the phonetic facts just outlined.

One further wrinkle is observed which at first glance appears to offer support for the prosodic analysis: if an accent II word appears as the last element of a compound, the second (high) pitch occurs on the stressed syllable of the last element, not on the first element as predicted by the accent II rule. Thus [[import][gross][handlare]] is accented importgrosshandlare, not importgrosshandlare. No change in the stress rules will be needed if a preycise readjustment rule replaces the syntactically motivated structure by one in which the major boundary appears before the last compounded element. A functional reason for this rule is the preservation of the "Accent II-ness" of such words without this complication the words would appear to be strings of accent I words.
Ergativity in Universal Grammar

Ergativity in natural language has long been a controversial issue in linguistics. With the renewed interest in linguistic universals engendered by transformational theory and, more recently, relational grammar, the general problem of characterizing ergativity in linguistic theory has been receiving increased attention, but no general, widely accepted solution to the problem has yet evolved. Out of this recent work a number of recurrent views can be isolated:

Recent Views on Ergativity

I. Base Reanalysis Hypotheses
A. Oblique Reanalysis: erg. NP = base oblique agent
B. Flip Reanalysis: erg. NP = base direct object

II. Non-reanalysis Hypotheses
A. Passive Analysis: erg. NP = agent of passivized clause
B. Direct Analysis: erg. NP = cyclic subject

The above hypotheses will be examined with respect to the Australian language Dyirbal and it will be shown that only the Direct Analysis Hypothesis (IIb) is consistent with both the facts internal to Dyirbal and various apparently well-justified universals involving primate principles defined on the relational hierarchy: subject-direct object-indirect object-oblique object (Perlmutter & Postal; Keenan & Comrie). Silverstein's markedness hierarchy and cross-linguistically regular correspondences between syntactic relations such as 'subject-of' and 'direct-object-of' and semantic ones such as 'agent-of' and 'patient-of'.

Since Dyirbal is the only well-documented language which appears superficially to be a perfect candidate for the base reanalysis hypotheses (Ia & Ii above), the fact that a deeper investigation reveals that it too is best treated as an active-ergative language (Iib) suggests the general principle that, contrary to what the Oblique and Flip Reanalyses maintain, no ergative language involves a base that is radically different than that of the more familiar languages. Furthermore, a direct analysis of Dyirbal opens the way for a unified characterization of ergativity in universal grammar within the framework of relational grammar and thus indirectly supports the fundamental claims of relational grammar and contributes to the development of an adequate, general theory of language.
Adpositions and Locationals: Typology and Diachronic Development

Fifty diverse languages were studied to determine typological and universal attributes in locational expressions (LE's), with particular attention to adpositions. Lexical and morphological developments affecting LE's and their constituents also form the basis of uniformity of LE's provide a fruitful setting for analysis of the variety of surface structures that can be observed. Principal findings include:

1. With few exceptions, langs. include both simple and complex LE's. Simple LE's are of the form: (prep.) IN(+loc.) (post.)., where either the preposition or the postposition, not both, are used, and "loc" refers to an oblique case, in case langs. Complex LE's incorporate these elements, plus an additional locational noun and an optional genitive (possessive) marker. Word order correlates with primary constituent structure: Eng. In the city vs. On top of the box; Jap. Mati ni vs. Hako no ue ni.

2. With few exceptions, a lang. that has adpositions has locational adpos. At least some of these either are used independently as nouns (Eng. 'in bird') or, more frequently, are derived from morphs which previously functioned as nouns (Korean Aphe, 'in front of,' from *aph with Turk. and Mong. cognates meaning 'noble'.) Names of body parts are a prime source of adpos. (Margi *mrnva 'at the edge of *mrnva, mouth.') Adpos. are also derived from adjectives, verbs and adverbs in almost all langs. which have adpos. Some are polyvalent, adpos. are productive sources of adpos. (Eng. by + low below.) Non-nominal adpos. often preserve obsolete desences. (Hung. Alatt, 'beneath') + fa, -tt; the Locative ending -tt is no longer productive in Hung., but remains in Vogul and Ostyak.

3. In pre-transformational theory, LE's were classified as adjectival and adverbial. An additional function of LE's as "scen-setters" or sentential modifiers has subsequently been recognized. Of these three functions, only the adjectival is distinctively identifiable in all langs. studied. The sentence-modifying function of LE's is invaluablely represented in the surface structure of several of the langs.--For instance, in Japanese, where it can be marked by the particle wa, following the LE. Existence of a distinct adverbial function is more doubtful: most apparent examples either involve motion, or can be analyzed convolincly as sentence modifiers. Some LE's which appear to modify NP's can also be analyzed as sentential modifiers to which a scrambling rule has been applied. For example, the sentence in the city people are starving has variants in which the LE follows the subject and the NP, respectively (corresponding to these alternate word orders is an alternation of the conventionally-assigned phrase structures, assigning each of the three functions to the LE. It seems highly doubtful that any possible semantic distinctions among these sentences ould be sufficient to motivate such dramatic divergences of derivation or analysis.

This paper will deal with two issues in phonologcal change: what factors can lead to the realangung of a morpheme as a non-meaningful unit: and what sort of evidence in the synchronic phrase list can be brought to bear in favor of such a reanalysis. A case at hand involves the past tense of a reflex of Latin (AG) and Modern Greek (MG). The synchronic evidence is interesting in its own right, containing a morphophonemic rule which depends crucially on information from a past speech.

In AG, past tenses were formed by prefixing *e to the root. The imperfect paradigm of *pher-0 carry for example was:

*e-pher-on
*e-pher-am
*e-pher-es
*e-pher-ate
*e-pher-e
*e-pher-on

The accent shifts between the stem (1,2,3) and the prefix. This is a manifestation of the 'recessive accent' of AG verse.

stress retracts 3 morae from the end but no farther. Since all past endings have short vowels, regular antepenultimate stress shows up in past tenses (but not in other tenses.)

The MG paradigm is remarkably similar on the surface. The only significant change is in the 1,2,3 pl. No prefix occurs on these forms any longer. This is easily traceable to a sound change which deleted unstressed initial vowels. The interesting question is, does MG retain the AG system where e is underlyingly present in past tenses, recapitulating the sound changes? Or was the prominent stress on past tenses underlyingly prefixless, as I will argue, with the root. I have adopted a phonetic prefixless, to bear the stress where there are less than 3 syllables? Epenthesis may seem more plausible when one considers that in all polysyllabic roots, no past tense e will ever appear. Furthermore, loss of phonemic length plus contraction of vowels have combined to make more-based recessive accent completely opaque. Antepenultimate accent has thereby become a property solely of past tenses, regular and salient.

To find whether e is really there underlyingly, we must see how it behaves in more cases. It's known must be.

There are two fast speech processes which treat root-initial e as a real segment but ignore prefixed e - this indicates that the latter must have been epenthized after these rules apply. These allegro rules are vowel contraction, which deletes a less-salient vowel adjacent to a more salient one over single #, and glide formation, which blends contractions by turning high vowels before other vowels into glides. These rules are inhibited in all but fast speech by the presence of double e, yet operate much more freely at ## to apparently delete prefix e. This is easily explained if we realize that there is no e there. The fast speech rules merely delete a word-final syllable-counting epenthesis rule then finds a syllabified word and fails to apply. Accent for the verb lands on the preceding vowel, independent word. Thus, a vowel-initial verb like echo 'have' no longer undergo contraction with a full word: atte#choe; but (e)pher-on does: *at(e)pher-on.

Dilar contrast will be shown in the behavior of glide forming.

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Spanish Contact Phenomena in Nahuatl

Early in the 16th century, Nahuatl began a period of intense contact with Spanish. On the basis of extensive written material spanning 300 years and linguistic studies of the modern language, we are prepared to present a concise diachronic description of Spanish contact phenomena. During the first period, Nahuatl attempted to deal with contact entirely by extension of native vocabulary and constructions. During the second period, semantic extension of native verbs continued, but Spanish nouns were extensively borrowed with little apparent morphological change in the recipient language. Borrowed verbs were treated as nouns, and the surface phonetics of Spanish were strongly assimilated to Nahuatl phonology. At the beginning of the third period, which extended from the second half of the 17th century to the present, a strategy for borrowing Spanish verbs developed, and the Spanish infinitive, the basis of the loan, brought /r/ into Nahuatl, and native sound substitutions for this segment subsided. Equivalence relations between certain Spanish and Nahuatl verbs were established, so that all the idiomatic uses of the former could be translated by the latter.

Spanish/Nahuatl contact phenomena are quite similar to those observed in other pairs of languages, although there is remarkable clarity in this particular case. We introduce data from other contact situations to examine notions about order and layering of contact phenomena. We argue that the degree of typological difference has been assigned too much importance for two reasons. First, given two languages, the degree of typological similarity will not be consistent over all areas of grammar. And secondly, specific typological differences may retard, but will not prevent borrowing. Finally, we relate Nahuatl's (examples from IE/non-IE pairs), and Spanish Nahuatl sentential structure (J. Richard Andrews, An Introduction to Classical Nahuatl, UT Press, Austin, Texas, 1975).
Unbounded Movement Rules: Evidence from Navajo

Chomsky, Ross, Bresnan et al. have claimed that SOV, COMP-final languages will not involve unbounded movement rules. Based on data from Navajo, clearly an SOV, COMP-final language, I argue that this theoretical claim about possible transformations is incorrect. Navajo WH question words embedded in direct discourse sentences provide examples of unbounded leftward movement, as in the following example:

1. haagoolá Jaaan shizhí'e adooahbas niisín ní where.to.Q John 1.father 3.P.drive 1.want 3.say Where did John say he wants his father to drive to?

The underlying structure of (1) must be (2) since /haagoolá:/ where can only be the complement of /adoohbas/ drive.

2. s0[Jaaan s1[sih' s2[shizhí'e haagoolá adooahbas]s2 niisín]s1 ni]s0

I hypothesize that the movement exists in Navajo for semantic reasons, caused by the restrictions of direct discourse. A direct discourse S is defined as an S interpreted from the point of view of the immediately dominating S, as contrasted to an indirect discourse S where the point of view is the speaker's. Thus in (1) above, the first person verbal /niisín/ refers to John rather than the speaker and the first person possessive pronoun /wi/ in /shizhí'e/ also refers to John.

I also suggest that the WH movement transformation in Navajo direct discourse sentences should be considered an instance of the universal WH movement rule postulated for languages like English. This however, raises questions about how such a rule should be written, both because the Navajo WH question word may remain in any intermediate S and because the meaning of the sentence varies according to where the WH word is placed, as demonstrated by the following translations:

3. háadilá Jaaan shizhí'e Mary dnínish yááni ní where.at.Q John 1.father Mary 2.P.work 3.3.say 3.say Where did John say his father told Mary to work?

4. Jaaan háadilá shizhí'e Mary dnínish yááni ní John where.at.Q 1.father Mary 2.P.work 3.3.say 3.say John asked where his father told Mary to work.

5. Jaaan shizhí'e Mary háadilá dnínish yááni ní John 1.father Mary where.at.Q 2.P.work 3.3.say 3.say John said his father asked Mary where she will work.

The evidence from Navajo clearly demonstrates that we must modify currently accepted universals, and suggests that any constraints on the existence of movement rules must at some level consider semantic factors, (such as point of view) as well as syntactic factors.

Sound Symbolism in Korean

Alteration of vowels and consonants in imitative expressions including onomatopoeic and sound symbolic words is a very common means of changing the meanings of the words in Korean. For example, (1) /piŋk+iŋki1i/, (2) /peŋk+iŋki1i/, and (3) /piŋk+iŋk+iŋki1i/ are descriptions of a circular movement of an object. However, the difference in vowel between (1) and (2) and the difference in consonant between (1) and (3) bring about the difference in the connotative meanings of these words. The movement described by (1) involves a large circle and a slow speed while that described by (2) involves a relatively small circle and a fast speed. Again, (3) describes the repetitive movement of the object more emphatically than (1). Korean is unusually rich in such imitative expressions and the majority of such words undergo a systematic semantic shift by the same means as described above.

In an article by Johanna Nichols (1971), it was shown that in many of western North American languages, increased hardness of articulation (e.g., a lenis consonant becomes a corresponding fortis one) and higher pitch (e.g., 1 becomes 3) are highly regular means of diminutive shifting. In the present paper, it will be shown that contrary to the cases discussed by Nichols increased hardness and higher pitch are used as means of augmentative shifting in Korean.

Most native Korean linguists have related the meaning shift involving vowel alteration with the three groups of vowels which are relevant to vowel harmony in Korean. That is, if an imitative word contains a so-called 'bright' vowel (i.e., e, a, and o), the state or action described by the word has a quality of 'light,' 'bright,' 'small,' 'quick,' 'thin,' etc. depending on the nature of the state or action. On the other hand, a word containing a 'dark' vowel (i.e., e, a, and u) has a connotation of the opposite to the above qualities.

It will be shown that the relevant factor in the systematic correlation between the meaning of a word and the vowel in it is the height of the vowel and the traditional description of the phenomena is inadequate to explain a number of related phenomena. Since the use of the same means of sound alteration is extended frequently to words of non-onomatopoeic origin, this means plays a very important role in Korean phonology. Some aspects of the significance of this means will be discussed.
Nasal Inflection in Latin: De-morphologization

This paper introduces the notion of de-morphologization into the current re-evaluation in phonology and morphology. Cases of morphologization are by now well represented in the literature, but Latin nasal inflection requires an extension of this concept.

In certain 3rd conjugation verbs, Classical Latin exhibits a nasal infix in (A) the present (imperfective) (ruggō, ῥῆπα, rupum 'break'), (B) the present and perfect active (pingō, pīnīxī, pictum 'paint'), and (C) the present, perfect active, and perfect passive (innōō, innīxī, iunctum 'join'), yielding the rule φ → N / (as an infix in the present of certain 3rd conjugation verbs). This rule never constituted a phonological process, being morphologically conditioned from its inception. Hence, no morphologization could have taken place. However, as evidenced by examples (B) and (C), the nasal infix spreads beyond the present into the perfect active and passive.

In addition, Classical Latin possesses 3rd conjugation verbs with etymological nasal consonants (cingō, cīnīxī, cinctum 'surround'). These facts render nasal inflection opaque and suggest that, synchronically, the alternation in (A) should be accounted for by the deletion N → φ / (in the perfect active and passive), and the one in (B) by N → φ / (in the perfect passive). These rule inversions make the right prediction—they lose results in nasal consonants throughout the paradigm, a development shown by (C) and by the Romance reflexes (cf. Italian pingo, pinsi, pinto).

If morphologization may be defined as the "functionalization" of an alternation, its opposite, de-morphologization, renders the alternation functionless: the nasal infix in (B) and (C) no longer has morphemic value. It has to be stressed that this abandonment was prepared by the anomalous nature of the morpheme, as (a) no other verbs have an 'imperfective' marker, and (b) it is the only infix, all other tense and person morphemes being suffixes.

The paper concludes, therefore, that, unlike morphologization, de-morphologization occurs infrequently, since the conditions making the loss of a morphemic value possible are probably rarely met.

It is proposed that adult second language learners develop and utilize two possibly independent linguistic systems, one acquired in ways similar to child language acquisition, and one consciously learned. It is hypothesized that only the acquired system is involved in the initial phases of speech production, while the learned system, when conditions permit, acts as a monitor, inspecting and often altering the output of the acquired system.

The model explains certain otherwise puzzling experimental results. In several studies, all using oral tests, it has been found that adult ESL learners make errors that are similar in difficulty order to errors made by children learning ESL (Bailey, Hadden, and Krashen, 1974; Larsen Freeman, 1975). Less consistent difficulty orderings are found, however, when other sorts of tests are used (Larsen-Freeman, 1975). Such tests, it is suggested, allow more processing time and thus permit the intrusion of the idiosyncratically learned system (the monitor). Adult monitor-free second language production occurring in certain oral tests reflects the acquired system only.

It has often been observed that some second language learners display a firm grasp of the structure of the target language, scoring high on "grammar" tests, yet seem to be unable to communicate. Others perform poorly on such tests yet function very well in the language. According to the model presented here, the first group lacks a well-developed acquired system, having probably been dependent on only the artificial linguistic environment of the classroom for the primary linguistic data necessary for acquisition. The second group has developed little or no monitoring to supplement their relatively advanced acquisition.

The monitor may be essential to adult second language improvement after a certain point. It is hypothesized that while adults, like child L1 and L2 acquirers, can acquire through the environment, adults are limited in the extent to which this process can develop. Monitoring, the involvement of the conscious grammar, may be necessary for adults to outperform their acquired competence. An example of conscious linguistic knowledge used as such a supplement is the linguistic performance of an advanced ESL learner: It was discovered that she was able to self-correct and provide the appropriate generalization for 95% of the errors she made in casual (un-monitored) speech. Her (monitored) writing is virtually error-free.

Evidence is also presented to support the hypothesis that language aptitude is directly related to monitor competence, while affective factors correlate primarily with the level of acquisition attained.

Finally, it is hypothesized that adult limitations in acquisition are related to psychological changes occurring at puberty. Such changes are thought to be a consequence of Formal Operations (Piaget). On the other hand, the ability to theorize, brought about by the onset of Formal Operations, allows or compels the learner to create an abstract grammar of the target language, bringing the monitor into existence.
The Athapaskan languages are characterized by a set of prefixes known as classifiers, which directly precede the stem in verbal constructions. Reflexes of four forms, namely 'psa', 'd'aa', 'g', and 'ps', occur in a large majority of the world's languages in this family. The various classifiers are syntactically linked with a number of grammatical attributes including activity-passivity, causativity, transitivity-intransitivity and the like, though the co-occurrence of classifiers with verb stems does not vary in the same manner among the classifier stems. This has been relatively well documented in the literature, including extensive discussions by Sapir (1915), Hoijer (1946), Li (1946) and Krauss (1965, 1969). A semantic link between stem and classifier has not, however, been presented. If there are, nevertheless, relatively broad semantic classes which obtain within each classifier base, then there is some justification in categorizing verb stems according to other than grammatical criteria.

Data from Central Outer Koyukon, an Alaskan dialect, were examined with this in mind. A "base form" of the verbal was designated: neuter forms for attributive stems and active stems for active stems. If the latter showed classifier alternation within the active form, the intransitive was considered to be the base. Base forms could be subdivided into six categories: 1) stems in which the verbal action involved a liquid subject or object ('kaats 'it boils'), 2) where the verbal action related to friction (d'aa'n 'pain, sharp, deaf'), 3) non-color term attributives ('ssaon 'am good, healthy'), 4) stems related to physical posture (d'aa's 'sit, stay'), 5) where the stem involved the displacement of a passive object ('kaansay 'I steal something') and 6) the stems -laam, be, exist, think and -nee 'say, think'. Base forms showed two categories: 1) cultural processes, generally relating to the irreversible manipulation of a physical state (gheat 'I train') and 2) sensory actions or perceptions ('komtaa 'he hears it, listens'). Base forms divided into 1) color term attributives (lak 'a white, it is white') and 2) stems involving continuous or repetitive action (dak 'he is arguing, talks continuously'). Base forms, rather restricted in number, included a high proportion of stems which appeared to be derived from stems in other classifier bases (compare noq'sbaak 'I roll, turn' with q'sbaya 'I swim' [ps classifier]). The alternation patterns of stems in the various classifier bases show some regularity, as well. The analysis of the verb classification system along functional, rather than the traditional formal grounds, and the designation of a semantic base for classifier-stem co-occurrence, provides a high degree of grammatical predictability, eliminating much of the special case treatment in classifier assignment. Further work with regard to specific verb stems, at least for Koyukon, and hopefully will be found to be cognate with human languages, as well.

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The Limbic System in Human Communication

Linguistics has chosen as its niche the language component of human communication and, naturally enough, the linguist's growing interest in the neural basis of speech has been concentrated in language systems of the cerebral hemispheres. However, decoding a speaker's total message requires attention to gestures, facial expressions, voice quality, and other nonverbal communication channels over and above the sentences uttered. The language user has the freedom to variously spread the components of a message among many nodes of human communication. Speech is normally embedded within a matrix of other behavior patterns based on neuronal communication systems that develop early in ontogeny and that evolved in phylogeny before language. To fully understand language and its neural substrates, the scope of the linguist's concern must be broadened to include the total range of human communication; in particular the behavior produced by the limbic system, a forebrain complex shared by all mammals. In the first year of postnatal life the human infant develops two permanent levels of limbic communication systems: an involuntary sign system and an intentional and representational signaling system. In adults, limbic communication patterns and limically regulated emotions interact in complex ways with symbolic, propositionally based linguistic behavior. This paper presents a summary of the anatomical structure of the limbic system and a review of past proposals for the functional organization of limbic information processing systems. Citing both experimental work on limbic involvement in primate vocalizations and the clinical evidence on limbic manifestations in various types of language disorders, a framework will be presented within which the relationship of limbic and linguistic communication may be considered. Tentative conclusions will be drawn regarding inhibitory functions of the left (dominant) cerebral hemisphere on limbic activity and a special relationship of the limbic system to the right hemisphere.

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Yuman languages have a set of two contrasting "switch-reference" suffixes linking a dependent clause to the main clause to indicate whether the two clauses have the same subject (-k or -c, depending on the language) or different subjects (-x). We investigate the decisions speakers make when problems arise in the identification of subjects as either same or different. Our findings are presented in the context of recent discussions of "subject" and "topic" and their grammatical and semantic characterization.

Non-problematic uses of "switch-reference" morphemes are shown in Mojave (H) "invec pap *=okco-r-k *salyi-k (I put a potato 1-peel-same 1-rye-ten)
After I peeled the potatoes, I cried them"
M *invec pap *=okco-r-r Judy-c salyi-k (I potato 1-peel-diff Judy-subj fry-ten)
"After I peeled the potatoes, Judy cried them"

Diegueno (D) nya-nokosic-c tu-pa (when-return-same crack=acorns) 'When they got back, they cracked acorns'.
When one of the clauses has a singular subject included in the plural subject of the other clause, speakers' choice of suffix varies:
D nya onyocawap-r-c Riverside-m *aske-i-1 m-hap-a (when-2-live-pl-same Riv-to school 2-enter-d) 'When you all lived there, did you go to school in Riv?'
M *erya-k&m John mat *kurav-m (1-arrive-same/diff John reflex. 1-talk-ten) 'When I arrived, John and I talked'.
The choice of 'same' is justified on grammatical (same person), formal (same shape of person prefix), and semantic (inclusion) grounds, the subjects are not strictly identical—which explains some speakers' use of 'diff'.
A special case involves the comitative construction used to express conjunction in all Yuman languages:
M siniga-k*c *tigura m havik-r-yyu-pc (woman-subj) man child-with two-diff see-ten) 'A woman saw a man and a child'
M *tigura c human-m havik-k *tinaa-k *yyu-v-k (man-subj child-with two-diff same woman see-pl-ten) 'A man and a child saw a woman'.
The verb 'two' is marked for different subjects when the comitative NP 'a man and [lit. with] a child' is not the subject of the following verb. If the comitative NP is the subject of the next verb, 'two' is marked for same subject. But the subject of 'two' is grammatically singular (simply 'man'), while the following verb is plural. Consider further:
M *invec Allen-r-m havik-r-k town *tayan-k Allen-c m a takamahav-r tu-raw-m (I Allen-with 1-two-same town 1-grow-pl-same Allen-subj shirt buy-ten) 'Allen and I went to town and Allen bought a shirt'.
Here is a string of three clauses (verbs 'two', 'go', 'buy') all apparently 'same subject' whose grammatical subjects are 'I', 'I and Allen', and 'Allen'.
When both clauses contain verbs having no identifiable subject (cf. Eng. rain) there is much fluctuation but interesting trends emerge. Verbal time expressions (e.g. M nyumaatam-k 'in the morning', D nyi-cur-m 'in winter') take -x 'diff', but other predicates describing weather conditions surprisingly tend to accept 'same' marking if two compatible conditions are involved, particularly if they are two aspects of the same condition:
M nya-kuvaw-k&m hacur-m (when-rain-same/diff cold-ten) 'When it rains, it's cold'.
D kutya-a wi nya-a1ap-c aap-c apesi-w (north-at when-snow-same snow-same very) 'When it snows up north, it really snows'.

In conclusion, it can be seen that given the proper conditions, the notion 'subject' can be extended beyond its traditional grammatical characterization to include such concepts as "participant in the situation" or "non-conflicting aspect of the situation".
The Role of Linguistic Structure in Sociolinguistic Analysis: Spanish si-clauses

Research carried out on variation during the last decade has uncovered two kinds of linguistic factors governing it: a) purely linguistic ones and b) social or extra-linguistic ones. Examination of recent sociolinguistic literature also shows that emphasis has been placed mainly on the discovery and interpretation of the social conditioning.

We will argue that a more thorough examination than what has been customary of the purely linguistic factors will yield a deeper understanding of how and why linguistic variation takes place.

Our argument will rest on a study of tense variation in si-clauses in Buenos Aires Spanish. Previous reports have discussed its sociolinguistic conditioning (1972, 1974). We will here concentrate on the purely linguistic factors. The variation basically consists of the substitution of the conditional for the imperfect subjunctive, as in:

Si tendría tiempo 'If I had time', instead of Si tuviera tiempo (same gloss).

The corpus analyzed consists of 1519 non-past si-clauses, drawn from 105 face-to-face interviews, which form a judgment sample of the Buenos Aires speech community. The data were examined within contexts three sentences long on the average, and treated quantitatively.

At the first stage of this analysis (reported on in 1972) non-past si-clauses were classified into two groups along the dimension of probability of the condition named by the si-clause.

[Contrary], e.g., Si pudiera volver al tiempo atrás, me preocuparía más en eso 'If I could turn time back, I would worry more about that', and

[Contrary], e.g., Si mañana hiciera lindo día, iríamos al club 'If it be a nice day tomorrow, we might go to the club.' The highest frequency of imperfect subjunctive shows up in [Contrary] examples, while the conditional substitutes much more often in [Contrary] ones.

When the conditional replaces the imperfect subjunctive in [Contrary] examples, the variation relates to other linguistic facts. Two of these will be examined:

a) the si-clause is negated, e.g., Si yo no creía en Dios, qué hago 'I didn't believe in God, what can I do,' b) the verb is the second of two conjoined verbs, e.g., Si tuviera dinero y podría comprar una casa, sería muy feliz 'If I had money and could buy a house, I would be very happy.'

Quantitative data will be supplied.

The analysis shows that the use of the imperfect subjunctive in negated si-clauses involves a decodification process which conflicts with the routines for negation in Spanish, and that the second position for a verb in a si-clause is an environment where the difference between protasis and apodosis (and therefore between condition and consequence) is sometimes neutralized. That is, both factors a) and b) are shown to constitute linguistic environments for which the conditional is better suited than the imperfect subjunctive to express what the speaker means, and to guarantee a more accurate reception by the hearer.

The position that the minimal unit of the lexicon of a generative grammar is the word (rather than, say, the morpheme) has become quite well established, and recently Vennemann (1974) has argued for this position, proposing in addition that lexical representations be expressed in their surface phonetic isolation forms. The present paper elaborates on Vennemann's suggestion, adding further arguments for a complete lexicon based on psycholinguistic evidence, language change, and purely synchronic considerations as well.

In the system proposed, phonological rules serve a different function from the one they serve in traditional generative grammars. They permit lexical pronunciations to be "undone" in various ways that relate segments to other segments. To the extent that the phonological component is descriptively adequate, it permits morphological rules (which apply after each "undoing" of a phonological rule) to correctly parse lexical representations, thus explaining how speakers can know that, for example, barón and baronal are related without having to be given this information explicitly. This is a significant advance over some previous totally concrete theories, which in many cases proposed a vocabulary for describing intuitions that speakers were found to possess without being able to articulate what in the structure of the language provided the source of these intuitions.

It is argued that upside-down phonology automatically captures the essence of Kayarsky's (1973) proposed restriction whereby certain types of rule apply only to derived forms. In addition, by eliminating the application of rules to forms that exhibit no alternations (such as the application of Vowel Shift to homomorphic words like pool), this system automatically captures certain alternations (e.g., the vowel alternation in the second syllable of caprice/capricious) that required exception features in the SPE system and ad hoc correspondence rules (e.g., iy ↔ ĭ) in other concrete systems. Finally, even while profiting from the existence of derivations with representations more abstract than the surface, upside-down phonology is able to explain why so much linguistic innovation takes place at the bottom of the grammar and why (e.g., in MacKay 1974) the most successful measure of psychological complexity of morphological relationships involves comparison of surface forms.

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Single-word Utterances Before and After the Acquisition of Syntax

Despite the fact that the semantic notions underlying children's two-word utterances have been related to co-occurring events which often contain single-word utterances (Brown, 1973), investigators have been quick to point out that, because of the lack of structural properties which enable the expression of relations between words, single-word utterances reflect more elementary underlying notions than those reflected by multi-word utterances (Bloom, 1973). Yet spontaneous single-word utterances are nevertheless used by children well after the emergence of syntax. This paper examines some possible reasons why.

Seven children were studied longitudinally from the single-word stage to the period when mean utterance length approximated 2.50 morphemes. The data were in the form of videotaped language samples obtained during home visits. The videotaped data allowed for careful analysis of the contexts in which utterances were produced. Single- and multi-word utterances were analyzed according to the semantic categories of Bloom, Lightbown, and Hood (1975). Single-word utterances were categorized by examining the relationship between the spoken word and the object or event to which it was referring.

When the order of emergence of underlying semantic notions was computed separately for single-word and multi-word utterances, the order was nearly identical. Notions such as Existence, Action, and Locative notion emerged before notions like Locative State, Attribution, and Possession. Notions such as Instrumental were last to emerge. Usually a notion was reflected in a child's single-word utterances before in his multi-word utterances, although other multi-word utterances reflecting earlier notions have been produced at this time. However, some notions were first reflected in single- and multi-word utterances produced during the same language sample. Finally, when multi-word utterances reflecting a particular semantic notion were produced, a single-word utterance could usually be observed in the same sample which appeared to reflect the same notion.

The position is taken that the absence of syntactic information in single-word utterances has led too quickly to the assumption that they reflect more elementary notions than the underlying multi-word utterances. The initial acquisition of syntax may represent the development of a process which more precisely codes existing meanings for communication purposes, rather than representing a process forced to emerge simply to keep pace with a developing system of syntax. This position is not the opposite of sentencehood to multi-word but not single-word utterances must rely on more purely syntactic justifications than on assumptions about the differences in the notions underlying these two types of utterances.

CHARLES N. LI, University of California, Santa Barbara
SANDRA A. THOMPSON, University of California, Los Angeles

Tone Perception and Production: Evidence from Tone Acquisition

In spite of the extensive literature now available on children's acquisition of phonology, there exists very little data on the acquisition of lexical tone. The studies that do exist, as well as the literature on the acquisition of sentence intonation, suggest that tone may be mastered relatively early (Pike 1949, Chao 1951, Fry 1966, Weir 1966, Lenneberg 1967, Kaplan 1970, Kirk 1973). However, until now, no systematic answers have been given for any language to questions such as the following: (1) What is the nature of the child's intonations during the acquisition process? (2) What is the order of acquisition of tones? (3) How does the acquisition of tones compare chronologically with the acquisition of segmental units? (4) How do the results from tone acquisition compare with results from tone production and perception experiments among adults?

The data which we have collected during 8 months of child elicitation with a dozen 3- to 5-year-old children of Mandarin-speaking families in Taipei allow us to provide some answers now to these questions. The Mandarin tone system (oversimplified) is as follows: there are four tones on stressed syllables in isolation: ŋ/ ŋ/ ŋ/ ŋ/ ŋ/. Unstressed syllables have a neutral tone whose pitch is determined by that of the preceding syllable. In context, the dipping is sandhi under certain conditions. The conclusions which our data lead to are these: (1) There is a short period at the very onset of the one-word stage during which the child can produce only level and falling tones (Stage 1); (2) within a few months, the adult 4-way contrast appears (Stage 2); (3) but at this point, syllables with rising tone are sometimes assigned a dipping tone and vice versa; (4) mastery of the tones occurs well in advance of mastery of the segmental system; (5) stress is assigned to the tones; (6) the tone sandhi phenomena associated with the dipping tone are acquired with very little error as soon as propositional utterances begin to be created by the child (Stage 3). The explanation for facts (1) and (2) is that the child is able to discern the rising and falling tones, a well-known fact for which there is a substantial amount of independent evidence (Ohala 1973, Ohala & Ewan 1973, Sundberg 1973, Lombard 1974, Tse 1975, Kirlhoff 1969). Our data add empirical support to the claim (Klatt 1973) that language-users pay attention to the end component of tones rather than to the beginning, once what the rising and dipping tones share is a rising and falling tone. The explanation for the relative speed with which tones are acquired (facts (2) and (4)) can be given in terms of two factors: (a) the simplicity of the perceptual and motor operations involved in producing and comprehending pitch; (b) the relative ease with which sufficient control can be gained over the larynx to master the small number of tonal oppositions as opposed to the difficulty of learning to control and co-ordinate tongue, jaw, velar, laryngeal, and lip movements with sufficient skill to master a much larger number of vowel and consonant distinctions. Fact (5) follows from the relative salience of tone in Mandarin, as opposed to a stress language such as English; the child fails at first to realize that some syllables have no tone.

Our study indicates, then, that tone acquisition is accomplished within a relatively short period of time, that tones are mastered before the segmental system is mastered, and that the stages of tone acquisition are uniform across a number of children of different ages. Significantly, we find that generalizations from the acquisition of tone converge with generalizations from experimental studies of tone. The study of tone acquisition thus contributes not only to our understanding of how languages are acquired, but also to our understanding of the nature of tone.
I shall assume the trace theory of movement rules, first outlined in Chomsky, 'Conditions on transformations', and developed in the theses of Kayo, Vergnau, Fieno et al., and in ch.3 of Chomsky, Reflections on Language (1965). Two views of trace theory have emerged: the 'pluralist' view says that traces (a) play a crucial role in the syntax and (b) turn out to yield exactly the right information at surface structure to support semantic interpretation and surface filters; the 'exclusively semantic' view says that the early syntactic evidence for trace theory is not crucial and that the theory is motivated only by a requirement that all semantic interpretation be done off surface structures. Tied in with these two views of trace theory is this question: does a moved NP always leave a trace or is a trace left only on the first movement, i.e. left only in the original, deep structure position? The usual assumption is that a trace is left only on the first movement. Clearly if one adopts the exclusively semantic view of trace theory, there would be no reason to have an NP leave a trace at intermediate stages of a derivation, because presumably such positions never play a role in semantic interpretation. Here I shall argue that a trace must be left for every movement of a given NP, hence that an NP may bind more than one trace (by transitivity). This will be support for the pluralist view of trace theory.

The argument will be based on the contraction of want to - wanna, used to - usta etc., first discussed by G. Lakoff as evidence for global rules, and then by Bresnan as evidence for her 'Ordering Hypothesis'. (The basic observation is that Teddy is the man I want to succeed is ambiguous, whereas in Teddy is the man I wanna succeed, Teddy can be interpreted only as the object of succeed and not as the subject.) I shall show that this trace theory affords a superior account of the facts. Crucial data is (i) a Nikon was used to take the picture, where contraction is impossible ((ii) *a Nikon was usta take the picture). Under the ordering hypothesis a statement will be needed that to Adjunction must precede Passive, in order to block (ii). This yields an ordering paradox, since I shall show that to Adjunction must follow Passive in other cases. Under trace theory, a trace is left between used to and blocks Adjunction. Precisely parallel facts obtain for twice-moved NPs, as in who do you want to be certain to succeed, which has two possible surface structures, corresponding to the two possible readings. Only (b) allows Adjunction, where who is interpreted as the object of succeed.

(a) [who do you want [t to be certain [t to succeed]]]
(b) [who do you want [PRO to be certain [PRO to succeed t]]]

This argument has two further consequences: (a) a slight revision of the Specified Subject Condition in such a way as to yield another plausibility argument for some version of the autonomy thesis, (b) a counterargument to Chomsky's proposal that wh elements are preposed 'successive cyclically'.

The purpose of this paper is to report on a particular case of dual-lingualism. This example challenges the specific application (Capell 1962:173) of the theory of pidginization proposed by Ray (1926:595-8) to account for diversity of Austronesian languages in Melanesia.

Dual-lingualism is the form of language contact in which a speaker of language A, living in close social contact with a speaker of language B, understands language B, but does not speak B; furthermore, the speaker of B understands A but does not speak A.

The particular case of this extreme asymmetry of speaking and hearing involves a woman who speaks Banoni, an Austronesian language of the SVO type, and her husband who speaks Siawai, a non-Austronesian language of the SOV type. This couple lives in the wife's village where all children learn Banoni, nearly all women speak exclusively Banoni, and the adult Banoni men generally speak at least Banoni, Siawai, and Tok Pisin fluently.

The Siawai man understands Banoni spoken to him but chooses to reply in Siawai, reportedly, even in private conversation with his wife.

There are two ways that people in this village deal with the problem that some neighbors, friends, and kinsmen speak a different language. The Banoni men, from the smaller more exogamous group, learn to speak the neighboring languages. Siawai men, from a larger more endogamous group, learn to understand Banoni but do not speak it. Thus, they avoid a pidgin form of Banoni.

Ray (1926:595-8) proposed a theory of pidginization to account for the diversity of Austronesian languages in Melanesia. Capell (1962:173) mentions an application of this theory to account for the differences between Banoni and Piva, the latter being "Papuanized Banoni." The pattern of Banoni-Siawai contact suggests this is impossible.

Unpublished reports from Savo Island and Malaita Island indicated that dual-lingualism with bilingualism may be characteristic of all Melanesia. This would be a serious challenge to Ray's theory.


Reflexive Inchoatives in Spanish

Roldán (1971), following Lakoff (1965), has proposed that inchoative verbs in Spanish (e.g., *espesar*, *enfermar*, etc.) derive transformationally from a complex deep structure as in (1):

(1) 
\[
\begin{array}{c}
\text{NP} \quad \text{VP} \\
\text{it} \quad +V \\
\text{the sauce} \quad \text{v} \\
\end{array}
\]

(2) La salsa se espesó.
'Ve get thick.'

(3) Roberto se enfermó.
'Roberto got sick.'

Napoli (1974) argues against this analysis (cf. Fodor 1970) and proposes instead a simplex S source for such verbs in Italian, as shown in (a), and the derivation shown in (b) and (c):

(4) 
\[
\begin{array}{c}
\text{NP} \quad \text{VP} \\
\text{ammalare} \quad \text{enfermar} \quad \text{get sick} \\
\end{array}
\]

(5) Roberto si ammalò. (It.)
'Roberto got sick.'

A different view is presented here of reflexive inchoatives in Spanish. Briefly, it is claimed that they are not transformationally derived. Such inchoative verbs are lexically reflexive verbs. There are three main arguments against an analysis à la Napoli. First, many inchoatives (e.g., *caerse, morirse, arrepentirse, autentase*, etc.) do not have a transitive counterpart, hence no possible source. Second, if inchoatives are derived by the rule REFLEXIVE, why are they ungrammatical with the emphatic phrase *si mismo*, while true reflexives are not?

(6) Se vio a si mismo. 'He saw himself.'
(7) *Se enfermó a si mismo. 'He got sick himself.'

Third, there are many transitive verbs which do not have inchoative counterparts (e.g., *impilar, impedir, pintar*, etc.):

(8) *Roberto se impiló. 'Roberto got piled.'
*Roberto se impidió. 'Roberto got impeded.'

*La puerta se pintó. 'The door got painted.'

Verbs denoting change of state (trans. or intr.) may have a reflexive transitive counterpart with an additional inceptive sense (e.g., *caerse, enfermar/enfermarse*). The reflexive clitic of these verbs must accord with whatever subject is constructed with these verbs.

If the facts about inchoatives are viewed as basically lexical facts, then their unsystematic distribution in relation to other lexical items can be properly understood within the idiosyncrasy of the lexicon.
Relativization in SOV languages such as Japanese which do not have any relative pronouns have been usually assumed to be simple deletion of the NP in the relative clause under the identity with the head NP. In sharp contrast with this theory is Kuno’s (The Structure of the Japanese Language, 1973). In it it is claimed that what is relativised is not just an ordinary NP but the NP Wa, the theme of the relative clause. According to that hypothesis, then, relativization in Japanese is essentially similar to that in Malagasy, Polynesian languages such as Tagalog (Schachter and Otanes 1972) and Malagasy (Keenan 1972), and the Dyirbal language of Australia (Dixon 1972) which only allow relativisation of theme (topic). Consider (1), (2), and (3). (2) and (3) represent deep structures for (1) according to Kuno and the usual analysis, respectively. (ga = nominative marker, while o = accusative marker.)

1. (John ga kita) hon wrote book
2. (John ga hon) o kita
3. (john ga hon) o kita

Recently Kuno ("Subject, theme, and the speaker's empathy—a re-examination of relativisation phenomena," to appear,) has conjectured that "I suspect that the above hierarchy (N.B. Keenan-Comrie NP Accessibility Hierarchy) is in fact a hierarchy for accessibility to thematic interpretation of NPs. Namely, the subject is the easiest to relativise because it is easiest to interpret the NP in the subject position as the theme of the S."

In this paper I examine Kuno’s hypothesis and arguments for it. Based upon data from Japanese, other typical SOV languages such as Tagalog (Masica 1972), Basque (de Rijk 1972) and Korean (Tagashira 1972) as well as data on the historical evolution of relative clauses in English (Gao 1975), I conclude that the relationship between relativisation and relativisation in Japanese is different from what Kuno holds it to be. Especially, I show that the parallelism pointed out by Kuno (1973) and elsewhere of relativisation is best accounted for in terms of the unique recoverability of the missing case markers from the rest of the S (and the given context) and that it has no direct relevance to “a hierarchy for accessibility to thematic interpretation of NPs” as such. This was actually once suggested by James McCawley to Kuno (CSJL 2:247). A particularly damaging piece of evidence is that certain direct objects do not relativise, while they do relativise as in (4).

4. Thematisation: "Kokkosizkmo hi Wa John ga natiwabite ita.
Wedding day awaited eagerly
(cf. Kokkosizkmo hi o John ga natiwabite ita.)
"John eagerly awaited the wedding day."

Relativisation: (John ga natiwabite ita) gekkosizki no hi
"the wedding day (John eagerly awaited)"

References:
The acquisition of sign language and artificial languages by apes has been exciting, but a great deal of specifically linguistic analysis has yet to be carried out. Towards that goal, this paper analyzes the use of the American Sign Language for the Deaf by two male chimpanzees, Ali, a three year old, and Booee, a six year old. Both chimpanzees have approximately three years of sign language experience.

Each chimpanzee was observed using sign language during relaxed free play sessions with a human trainer. Twenty fifteen minute-play sessions were observed (ten with each chimpanzee) and all observations were videotaped and later transcribed.

During the sessions both chimpanzees asked and answered questions, made and carried out requests, commented on events, used conceptually appropriate signs for novel objects, and combined signs with their natural communication system.

From a vocabulary of 90 signs Ali used 37 during the sessions, and from a vocabulary of 35 signs, Booee used 25. Ali's Mean Length of Utterance was 1.662, and Booee's was 1.787. Their sign utterance lengths ranged from 1 to 6 signs. While single signs were most frequent, multi-sign combinations represented the majority of sign utterance types. Semantic and syntactic analysis showed rules following behavior in sign combination construction.

This suggests a greater complexity of linguistic output than has widely been supposed, and also suggests the possibility of a chimpanzee linguistic capacity in the wild. Greater exploration of the parameters of language ability in apes may shed light on both the nature and evolution of human language.
Comitative Conjunction: A Syntactic Reinterpretation in Yuman

Comitative constructions are used in a number of languages to express conjunction, but usually they are associated with asymmetrical rather than symmetrical coordination. In Yuman languages, however, symmetrical conjunction is generally expressed with a complex comitative construction, illustrated in these Mojave sentences:

(1) tís-pa-n-yí-ga-Na-hk-ny-m havík-k Parker tayem-m (man-subj woman-dem-with two same P go=pl-tns) 'The man and the woman went to Parker.'

(2) tís-yeč tís-pa-nyí-ga-Na-hk-ny-m havík-k t=iyú-x (I man-woman-dem-with two-different I-see-tns) 'I saw the man and the woman.'

The first of the two coordinate nouns is marked for its case role in the main clause, while the second has the comitative/instrumental suffix -k: following the second noun is the number 'two' with a suffixed -k or -m. Numbers are verbs in Yuman, taking person prefixes and other verbal affixes. -k and -m are 'switch-reference' subordinators widely used throughout Yuman: -k indicates that the verb it follows has the same subject as a following or higher verb; -m shows that the subjects of the m-marked verb and the higher one are different. Thus, -k follows havík in (1) because the comitative phrase 'the man and [literally with] the woman' is the subject of the next verb; -m is used in (2) because the comitative is a non-subject in that sentence. Comitative phrases thus include subordinate clauses and should be literally paraphrasable as the man, being two with the woman'.

The m-marked noun in this construction, though formally comitative, may also have direct object and subject traits, as this Mojave sentence shows:

(3) tís-pa-nyí-tís yíngem-ny-m-havík-k Parker t=iyú-e (man-subj with I-boy-two same P go=pl-tns) 'The man and I went to Parker.'

The NP 'me' is marked as comitative and must also be the direct object of havík (note the object prefix), which is being reinterpreted as a transitive verb--as shown by some speakers' tendency to omit the -m on comitative nouns. (In the Yuma and Paipai languages, in fact, the comitative -m preceding 'two' has been incorporated onto that verb as a prefix; the resulting verb is literally a transitive 'be two with'). 'Me' in (3) must, in addition, be a semantic co-subject of the following verb tayem, as indicated by that verb's plurality and first-person subject prefix.

Despite the confusion introduced by the m-marked noun's syntactic comitative and direct object characteristics, its primary semantic role in the sentence is the same as that of the noun it follows (i.e., main-clause subject in (1) and (3), object in (2)). Comparative evidence supports the claim that this comitative construction is the main way of expressing conjunction in Yuman, a situation which must have evolved because of the lack of any true conjunction in Proto-Yuman (no other coordination pattern is reconstructable).

The semantic change from comitative to coordinate left, of course, a semantic gap, filled in Mojave by a construction using the verb 'follow':

(4) tís-pa-nyí-tís yíngem-ny-m-havík-k Parker tayem-m (man-subj with I-boy-follow same P go=tens) 'The man went to Parker with me'; literally, 'The man followed me to Parker'.

(Note that the second verb ('go') is singular and marked for a third-person subject; the accompanier noun is not a co-subject, and there need be no literal 'following'.) The adoption of this construction to express an asymmetrical comitative confirms the idea that the syntactic comitative described above has changed in function; the comitative construction with 'two' now expresses a semantic coordination.

We present and analyze results for all variables. The morphological variable, for example, shows the following typical probabilities of agreement (for a single speaker):

<table>
<thead>
<tr>
<th>Class</th>
<th>Singular/plural opposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>fala/falam 'speaks/speak'; stem stress, nasalization of the final vowel (=diphthongization).</td>
</tr>
<tr>
<td>V</td>
<td>faz/fazer 'does/do'; stem stress, presence or absence of the final nasal vowel.</td>
</tr>
<tr>
<td>L</td>
<td>dā/dão 'gives/give'; monosyllables, nasalization of the final vowel (=diphthongization).</td>
</tr>
<tr>
<td>E</td>
<td>falou/falar 'spoke/spoke'; ending stress, completely distinct desinences.</td>
</tr>
<tr>
<td>F</td>
<td>fez/fizeram 'made/made'; ending stress, desinences as in class E, but with some irregularity.</td>
</tr>
<tr>
<td>W</td>
<td>ê/são 'is/are'; monosyllable, completely distinct forms.</td>
</tr>
</tbody>
</table>

The results are exactly in accord with the scale of phonic salience, the biggest break occurring when the desinence becomes distinctly stressed.

In traditional historical linguistics it is a recognized principle that the more irregular a morphological form is the more likely it is to survive over a long period of time. Thus, while a given morphological opposition may be lost in more regular forms in the course of time, it is not uncommon for the same distinction to survive in the more irregular forms. The synchronic scale noted above is exactly in accord with this expected diachronic scale. We argue that these facts strengthen the relationship between synchrony and diachrony.
Arguments for Acoustically-oriented Features for Vowels

As indicated by experimental evidence from the literature, certain features traditionally used in the description of the "color" or "quality" of vowels are more regularly related to acoustic aspects of speech events than they are to the articulatory parameters they nominally represent. Radiographic and cineradiographic evidence indicates profound and evidently unsystematic variability in the articulatory configurations of phonetically equivalent vowels of different subjects. By contrast, comparison of the first and second formant frequencies of different speakers indicates a more removably (i.e., systematic) variability.

The problem of the removal of inter-subject variability from acoustic data has long been a subject of phonetic interest. Though it is a reasonably good first approximation, the "constant ratio hypothesis" (which holds that the formant frequencies of equivalent vowels of two speakers may be related by a single multiplicative scale factor) is here shown to exhibit statistically significant systematic error. However, statistical techniques suggest the general shape of a (hypothetically universal) non-linear transform, which when applied to raw formant frequency measurements better reduces inter-subject variability upon the subtraction of a single speaker-dependent value. Individual data from the classic Peterson and Barney study of American English as well as averaged data from several languages are used in the analyses.

The acceptance of a feature set for vowels F1-F2 measurements is of important phonological implications in the characterization of certain types of vowel harmony systems. The F1-F2 analysis of vowels is in fact more closely related to the so-called "German vowel triangle" (widely used in 19th century Europe) than it is to modern IPA-style articulatory descriptions. In particular, the acoustic figure implied by an F1-F2 analysis agrees with the German triangle in that it combines, in effect, the modern "backness" and "rounding" features in a single multi-valued dimension: "high to low F2" in acoustic terms, "clear to dark" in impressionistic auditory terms. It is argued that vowel harmony systems of languages such as Finnish and Mongolian are better understood in terms of three F2 classes than in standard articulatory analyses. For Finnish, these are: 1) high F2 (/l, e/), 2) medium F2 (/y, a, a/) and 3) low F2 (/u, o, a/). The primary harmony constraint may then be stated succinctly as follows: medium F2 vowels do not co-occur with low F2 vowels within words. It is thus argued that the vowel feature set which appears to be more directly related to physical parameters may also lead to less ad hoc characterization of certain phonological patterns.

This paper is concerned with the phenomenon of hyperlexia and its implications for linguistic theory. A small number of very young children, even before the age of three, develop a spontaneously generated or at least remarkably accelerated ability, referred to as hyperlexia, to recognize written words, sometimes with and sometimes without comprehension of their meaning. This ability, which has been attributed by psychologist (Silberberg and Silberberg, 1967) and by neurologists (Mehegan and Dreifuss, 1972) to specific neurological causes, occurs both in normal children and in those with developmental disorders. Huttenlocher and Huttenlocher (1973) have proposed that children develop the "super-normal" ability to pronounce words as compensation for their deficiencies in other cognitive/ motor areas. This explanation is unacceptable for two reasons: 1) it is applicable only to developmentally abnormal children; 2) it presupposes the ability to speak. That this ability is in fact unnecessary is shown by a patient we have seen, who, although completely mute, developed a large reading vocabulary (at least 650 words) with comprehension before the age of 5½. This reading ability was first noted before the child was 2 and was not the result of teaching by the parents or others. We will present the case history in more detail with a discussion of its theoretical implications. We suggest that the fact that children, even those without speech, develop reading ability spontaneously and without explicit instruction indicates that written language is as deeply rooted in human cognitive capacities as spoken language, and that contrary to the opinion of most modern linguists, it may be fundamentally independent of spoken language and not merely a visual representation of it.
Vocalic Variations in Spanish Verbs

The roots of Spanish verbs exhibit systematic vocalic alternations of the following types:

1. e → ye (peñear) 'to think'; (pensar) 'they think!'
2. o → we (volver) 'to return'; (volvió) 'they return!

3. a → i - ye (sentir) 'to feel'; (sentimos) 'we might feel!
   (senten) 'they feel!'
4. u → we (dormir) 'to sleep'; (durmió) 'we might sleep!
   (durmieron) 'they slept!'

5. e → i (pedir) 'to ask'; (piden) 'they ask!'

In the traditional accounts of these alternations, found both in the standard reference grammars and in the generative analyses of Poley (1965), Harris (1969, 1970), Brame and Borellos (1970, 1974), and others, the mid vowels e and i are assumed to be basic in all cases, with the corresponding diphthongs (ye and we) and high vowel alternants (u and y) being derived from them by general rules that are sensitive to the location of primary stress and to various other phonological and non-phonological characteristics of Spanish verbs. The derivational processes that must be posited, however, have a number of unnatural characteristics and must be supplemented by a variety of subsidiary assumptions, including the postulation for every Spanish verb stem of an arbitrary diacritic lexical marker specifying whether the mid vowels in that stem do or do not undergo the assumed processes of diphthongisation and raising.

The present paper will provide a general critique of this traditional pattern of analysis, and will suggest an alternative analysis that seems more natural than the traditional accounts and more appropriate to the actual range of facts at issue. The proposed analysis is based on the assumption that it is in the diphthongal alternates of (1) that are basic rather than the monophthongs, and that it is the latter rather than the former that are derived by general rule. Thus, in contrast to the traditional analysis, Spanish is assumed to have phonological processes of vocalic reduction or merger rather than epenthetic expansion, and a process of vocalic lowering rather than raising. It will be argued that these assumptions are quite natural and well-motivated for Spanish, and that their adoption obviates any need for the diacritic marking of verb stems which is required in all versions of the traditional analysis. Thus, for example, where traditional analyses must distinguish the alternating o of contar 'to count' (cf. cuentan) (contaron) 'they count') from the non-alternating o of montar 'to mount' (cf. montan) 'they mount') by means of diacritic marking of these two stems, the distinction follows under the present proposed analysis simply from the assumption that the stems are basically represented as /kontar/ and /mentar/, with the phonetic o of contar resulting from the general process of merger which applies to all we and ye which do not receive stress.

The relative adequacy of the proposed analysis will be subjected to further test with respect to certain additional critical facts about the synchronic and diachronic phonology of Spanish. On the basis of this and the consideration of some problems and possible counter-evidence to the proposed analysis, an evaluation will be made of this alternative relative to the traditional analysis of Harris and others.

I will argue that these sentences are not ambiguous; rather, the alternate interpretations reflect idiosyncrasies of reference, and should properly be accounted for as a part of pragmatics. We observe the same range of interpretations when entities are identified ostensively, as when one points at a tiger and says, 1. That does not breed in captivity.

Inasmuch as demonstratives have no descriptive content, it is hard to see how we could call (1) ambiguous, nor does the physical demonstrum vary according to the interpretation. Extentionalist arguments that reference in such cases is restricted to the denotata of (linguistically) fixed labels cannot be made to fit the facts of language use; ostensive identification is in fact favored where no linguistic label is available. The reference can be of more than one kind; note that (1), in Goodman's analysis, should be equivalent on the generic interpretation to a sentence with theo. But singular and plural can have different entailments in context, which cannot be accounted for in an ontology that does not distinguish abstract entities (Quine's 'fusions') from sets.

The possible referents of that in (1) are constrained, but only pragmatically; one can ostensibly identify any abstract entity whose criterial properties are prominent in the demonstrum. So one can say He is called the clean-up man of a battery in the first inning, but not in the ninth, or when he is in the field. This allows us to rule out the possibility of reference to unnatural predicates like Goodman's 'grue', without having to resort to an argument from 'natural kinds'.

The distinction between referent and demonstrum that we see in the generic reading of (1), it is argued, underlies problematic cases of deletion and anaphora discussed by Chomsky, Postal, and others. Co-reference' must be understood as involving the identity of the abstract individual described; identity of concrete instantiations of the individual is not required. There is no need to introduce theoretical entities corresponding to "senses of a word", or in many instances, conditions like "sloppy identity".
A Reanalysis of Present Perfect Tense in Montague Grammar

According to Montague's analysis of present perfect tense, negation, and quantification proposed in the paper "The Proper Treatment of Quantification in Ordinary English," Sentence 1 has the semantic readings given below:

1. Many guests have not arrived.
   a. \( \exists u \) guest\( u \) \& T \& arrival\( u \)
   b. T H \& \( \exists u \) guest\( u \) \& arrival\( u \)

The first interpretation (VP-Negation) is not problematic. The second interpretation does not seem to constitute a Quantifier-Negation as Montague intended it to be but rather Tense-Negation due to the implicit quantifier involved in the interpretation of H. Thus 1b says that there was not a time at which many guests arrived. It seems to allow only a group reading. In a situation where many guests have arrived but all separately, interpretation 1b would not represent the meaning of Sentence 1.

In the paper, three possible solutions are discussed and examined:

1. Analyze H as a tense operator operating on the result reading of verbs rather than the action reading.
2. Analyze H as an operator operating only on an atomic verb.
3. Analyze H as an operator operating only on what we will call atomic proposition.

Arguments will be presented to demonstrate the plausibility of the third approach together with the difficulties of the first two approaches.

Evidence exists which shows that native speakers of a language exhibit an awareness of the "phonotactics" or the "morpheme structure conditions" of their language. At least three mechanisms have been hypothesized with some explicitness to account for this knowledge:

Hypothesis 1: the Greenberg and Jenkins' (1964) phoneme substitution procedure, where the degree of closeness of a given word to the native pattern would be inversely proportional to the number of one-, two-, and up to \( n \)-phoneme substitutions for the original phonemes in the word which resulted in existing words in the language.

Hypothesis 2: the early generative proposal (cf. Halle 1962), that adherence to vs. violation of one or more morpheme structure rules (or conditions) would determine the phonological regularity of words.

Hypothesis 3: the recent generative proposal (Chomsky and Halle 1968:416ff) where the degree of closeness to the native pattern for a given form would be inversely proportional to the complexity of the rule (measured by counting features) needed to transform the nonexistent word into an existing word in the language.

We will report our attempts to test these hypotheses by eliciting subjects' scalings of made-up English words, a la Greenberg and Jenkins. Attention is focussed on pairs of such "words," e.g., [klrb] and [klrb], the relative scalings of which ought to be different according to the various hypotheses. For example, hypothesis 1 would predict [klrb] to be judged closer to English since more existing words, for example, crab, slub, grab, can be made of it by phoneme substitutions than in the case with [klrb]. Hypothesis 2, however, according to a reasonable interpretation of it, would predict both words to be judged equal in their distance from English.

Preliminary results based on 3 scalings of each "word" by each of 10 subjects show that there is no statistically significant difference in the ratings for morphemes such as [klrb] and [klrb], thus favoring hypothesis 1 at the expense of hypothesis 1. The results of further, more extensive, tests will be reported. Such experimentation is useful in two ways: first, with appropriate refinements, it offers the potential for helping us to decide between two or more hypotheses regarding the mental processes underlying speakers' mastery of the phonology of their language, and second, it forces us to make our hypotheses explicit enough to be testable.

References:
Vowel Metathesis in Old English: An Artifact

In a recent paper (Metathesis and Old English phonology, University of Massachusetts Occasional Papers in Linguistics 1:125-163 [1975]), S. J. Keyser has proposed including among the rules of Old English phonology a rule of (Vowel) Metathesis in order to account for the seeming peculiarities of Old English Vowel Deletion: where in some cases it is a stem vowel (the a of [lufa] in [lufa + i + an]) that is deleted; in others (the e of [enah] in [sō̃ + enah]) a vowel of the inflection. Metathesis is then presented as a way of getting all the underlying vowels into the right order so that Vowel Deletion can proceed in a perfectly regular way.

Keyser's solution is, however, very unsatisfactory—it would be unfortunate to include among the rules of a phonology a rule of no historical validity—and in fact, incorrect. There is, happily, a better solution, one dependent on a more satisfactory understanding than Keyser's of underlying representations in Old English, of surface representations, and of the rules of Old English phonology—a full discussion of which runs far beyond the modest limits of this paper. Yet it is a simple matter to do away with Metathesis: for example, [lufa + i + an] seems a correct enough underlying representation for lufian. But what is the phonetic surface represented by this Old English spelling? Surely (given early Old English spellings lufyan, lufgean, etc.) it is [lufjian] not—as I assume Keyser believes—[lufjan]. Surface [lufjian] can, however, be derived without recourse to Vowel Deletion (thus, a fortiori, without Metathesis) by independently motivated rules as follows:

\[
\begin{align*}
    & lufa + i + an \\
    & luf + i + an \quad \text{(by} \ 1\text{-Mutation)} \\
    & lufi + i + an \quad \text{(by} \ C\text{-lide Formation)} \\
    & lufi + j + an \quad \text{(by} \ e\text{-Raising } / -i/) \\
\end{align*}
\]

Similarly does all of Keyser's seeming support for Metathesis evaporate.

Historians of linguistics who have written about the Latin grammars of the Middle Ages have focused their attention on the speculative grammars of the 13th and 14th centuries. These works are, however, unsatisfactory and are of medieval grammarians in that they devote no space to orthography and relegate a consideration of speech sounds to the province of the natural philosopher.

The purpose of this paper is to point out the extent to which notions about the acoustic and articulatory aspects of speech sounds are discussed by medieval grammarians. For primary sources I rely chiefly on Latin grammars written in Italy in the fourteenth century. These works are relatively independent of the modistic tradition which flourished north of the Alps. Some of the material I cite has appeared in print in anthologies of medieval grammatical theory, but most of it is from unpublished manuscripts which I have consulted in Italian libraries in recent years.

The main conclusions arrived at are the following: 1. Acoustic notions are found relatively seldom and exclusively in connection with vowels. 2. Notions about the classification and points of articulation of sounds are in most cases fairly precise. 3. Further research on the possible influence of the Aristotelian corpus (especially the Historia Animalium) on medieval grammarians is called for.
The purpose of this paper is to bring to light the anticipation, in a little-known 19th-century school grammar, of certain premises and explanatory devices of modern transformational theory.

Published a century before Chomsky's Syntactic Structures, Greenes English Grammar, along with the usual Latin-based parsing and admonitions against "false syntax," contains a section titled "Transformation of Elements --- Equivalent Elements." Greene introduces this section by explaining that

A sentence is transformed when it undergoes a change in the form of any of its elements, without any material change in the meaning; the new forms of the elements, which express the same or nearly the same meaning, are called equivalents (Greene 1857:196).

Greene's statements and examples of equivalencies correspond to the processes that today would be called passivization, nominal compounding, infinitive nominalization, relative-be deletion (wh-is deletion), gapping, extraposition (and it-insertion), and there-insertion. (There is also mention of several other processes, including the non-discreted question transformation, cf. Chomsky 1957:63.) The latter two are discussed with reference to SVO ordering, which is for Greene the "natural or grammatical" arrangement of sentence elements (Greene 1857:198).

Greene's interest in underlying meaning is evident not only in those cases in which he evaluates his equivalencies on the basis of semantic similarity, but also in his Preface:

In the following classification of the principles of Grammar, great prominence has been given to thought and ideas in their relation to forms...The thought determines the sentence (Greene 1857:5).

A second purpose of this paper is to demonstrate, by comparison with other 19th-century grammarians, that Greene is unusual in his concern for meaning and in his use of process in linguistic description.

References Cited


The purpose of the present paper is to report a preliminary quantitative study of syntactic constraints on code-switching within discourses in which no change in participants' setting or topic is evident. Previous studies of such intra-discourse switching have focused on the social function of switching as a marker of ethnic in-group solidarity. Published examples have illustrated switches at a number of syntactic points including isolated Spanish loan words, exclamations and sentence connectors in otherwise English sentences and switches into Spanish in such syntactic environments as noun qualifiers, verb complements, parts of noun phrases and predicates of equational sentences (Gumperz and Hernandez 1972). In addition, informal studies of acceptability judgments of strings of real examples of code-switching and semantically equivalent strings of Spanish and English in which the switch point has been moved suggest that native speakers have internalized rules of grammar which permit switching only in certain grammatical environments.

The immediate goals of the present study are simply to provide a more precise syntactic description of the points at which switches from Spanish to English and English to Spanish are possible and to assess the extent to which actual behavior conforms to the stereotypes represented by acceptability judgements. Use of the quantificational technique of accountable reporting of relative frequencies, however, permits investigation of a wide range of questions, including (1) Do implicational relations exist among syntactic environments such that it can be predicted that a speaker for whom a switch is environment A is possible may also switch in environment B, but not vice versa? and (2) Are the constraints on code-switching uniform throughout all populations and in all social situations or are there differences in frequencies and/or implicational hierarchies?

The data in the present study consist of taped conversations of adults and adolescents collected by bilingual participant-observers in the San Joaquin Valley of California and in South-central Texas.

Preliminary findings indicate that differences between speakers are variable rather than categorical but that implicational relationships do exist and that these are related to social phenomena. For example, ability to switch before an uninflected verb, either between auxiliary and main verb as in (1) and (2) or between copula and infinitive as in (3) and (4) implies ability to switch after sentence introducing conjunctions or phrases as in (5) and (6):

1) pos pondés estaba making up con la morra de Yoli
2) aquí (este) un compañero que su hija hace trato allá en San Jose
3) la onda is to fight y jambar
4) all you see him is hablar poro inglés
5) bueno, like we see those guys
6) si, pero we didn't get together yesterday

Utterances (1-5) are frequent in the street conversation of the "nato lico" while conversations of the middle-class adult female are characterized more by utterances such as (6) and by alternations of whole sentences in English and Spanish.

How Syntax Can Confirm Semantics: The Case of French Time Adverbials

In a recent investigation as part of a French-English syntax project, an analysis of nearly 300 French time adverbials in 85 different syntactic frames was made, and their distribution was studied. It was found that a fine semantic classification is not only feasible but also that it is of much use in automatic text parsing such as is done at the automatic translation centre to which our project is connected. The three major classes of punctual, durative, and frequency adverbs were subdivided into sub-groups which were found to have nearly perfect semantic and syntactic correlations on all tests, and perfect correlations on crucial tests. It was thus possible to organize the crucial tests in a critical path network which made later analyses of various texts easier and reliable. Moreover, these test forms not only were able to define syntactically the members of individual semantic classes, but also to delimit what might be the temporal import of a marginally temporal adverb. For instance, the pseudo-passive construction can sort out subject-oriented manner adverbs from true time adverbs, whether in initial, intra-clausal, or final position:

*Spontanément, la porte s’est fermée. / Brusquement, la porte s’est fermée.
*La porte s’est spontanément fermée. / La porte s’est brusquement fermée.
*La porte s’est fermée spontanément. / La porte s’est fermée brusquement.

The analysis of co-occurrences of adverbs with verbs of certain semantic types were helpful in sorting out certain homonyms. For example, aujourd’hui with an eventive verb (Vendler:1965 calls it an "Achievement" verb) is a genuine punctual adverb, having a behaviour similar to and particular only to punctual adverbs (i.e. being the domain of relationship prepositions: e.g. dès, jusqu'à, depuis, etc.; not being a range between yesterday and today, fitting with NPs of the... MÊME frames), and means "today, this very day on the calendar", while with an "accomplishment" verb, it has a contrary behaviour in these test frames and means "yesterday"; cf.

Jean arrive aujourd’hui même.
*Cet édifice est aujourd’hui achevé.
*Jean est aujourd’hui mêmes arrivé.

Aujourd’hui, as well as all adverbs denoting a point during the period contingent to the speech act, were found to have exclusively a future reading with eventive verbs in the present tense, the following two examples being very closely synonymous:

Jean arrive aujourd’hui, ce soir, cette semaine, lundi, ce mois-ci, etc.
Jean arrivera aujourd’hui, ce soir, cette semaine, lundi, ce mois-ci, etc.

Co-occurrences with such verbs also brought forth the ambivalence of some seemingly perfect durative adverbs, e.g. d’ici à demain, durant la semaine, which have a punctual reading with eventive verbs and a durative reading with stative.

We shall endeavour to show convincingly the importance of assuming that there are systematic semantic explanations for various syntactic properties which, upon preliminary examination, seem idiosyncratic as several cases of syntactic properties of sub-groups of adverbs, including their distribution, will be shown to depend crucially and in regular ways on their meanings.

Based on their analyses of acoustic data, Lehiste and Ivic (1963) found that the chief factor differentiating Serbo-Croatian rising and falling tones was the ratio between the fundamental frequency in the accented vowel and in the first post-accentual vowel. Falling word tone was characterized by a fundamental frequency in the second vowel much lower than the level of the fundamental frequency in the first vowel, while a rising word tone was marked by a fundamental frequency in the second vowel which was as high as or even higher than the level of the fundamental frequency in the first vowel. Reider (1968) reach a similar conclusion, namely, that a step up or a step down in the fundamental frequency occurring in the second half of the accented vowel or within the first post-accentual vowel would cue a rising or a falling word tone respectively. Purcell (1973) noted six sizeable and regular variations in the acoustic parameters studied which might serve as cues for the differentiation of Serbo-Croatian word tone. One of these six variations involved the relative location of the peak of the fundamental frequency within the accented vowel. Falling word tones were marked by an earlier occurrence of peak fundamental frequency, while rising word tones were marked by a later occurrence. Such a patterning had not been noted in previous investigations.

This paper presents the results of a perceptual experiment involving synthetic stimuli designed to test the ability of native speakers of Serbo-Croatian to hear differences in the location of peak fundamental frequency within the accented vowel. Nineteen natives from Belgrade and Sarajevo participated in the experiment in Yugoslavia in September, 1973. The results prove that listeners can attend to differences in the location of peak fundamental frequency, and that in the absence of any other variation in the stimuli the natives interpret these differences in peak location as rising or falling word tone. A peak located in the final 24% of the accented vowel tends to be judged rising, while an earlier occurrence of the peak tends to be judged falling. The data of the present study demonstrate the relevance of the location of peak fundamental frequency in the differentiation of Serbo-Croatian word tone. A comparison of these data with those of Lehiste and Ivic (1972) on the perception of differences in the ratio of the first and final fundamental frequency values within the accented vowel indicates that peak fundamental frequency location is an important cue for the determination of Serbo-Croatian word tone.
A Critique of 'Acoustic Assimilation'

It has recently been argued (e.g., Hyman 1973, Ohala 1974, Thurgood & Jakvin 1974) that phonology needs to recognize natural rules of "acoustic assimilation" (ACA). In this paper I show that:

1. ACA is implausible on general theoretical grounds;
2. the cases cited in support of ACA can be explained in terms of different principles which are independently justified, and which have been given explicit recognition in the theory of NATURAL SYSTEM-PHILOLOGY (NSP).

The rules under discussion are:

(a) u → i / {⟨e⟩} / {a} (both /eɪ/ = /ɪ/ - Hyman '73)
(b) a → o / (both /ə/ = /ɔ/ - Hyman '73)
(c) *at to -e, *ap to -o, *ak to -e (Lisu, Thurgood & Jakvin '74)
(d) (s1) s₁ → s₁₁ (s₁1) (Norwegian - Ohala '74, Haugen '42)

Ad (1): ACA is evaluated against the background of a formal typology of natural phonological rules, as incorporated into NSP. Three major rule classes are recognized: 1. ARTICULATORY SIMPLIFICATION RULES (lenition, assimilation, sloppy timing); 2. PERCEPTUAL DIFFERENTIATION RULES (syntactic dissolution, epenthesis, paradigmatic; from zero ("perceptual strengthening"), from other segments); 3. PERCEPTUAL REANALYSIS (PRA) RULES.

The first class is plausible since based on the "laziness principle." The second class ensures distinct signals, thereby increasing "perceptual ease." It is diacritically opposed to ACA, which is based on the implausible assumption that perceptual ease is enhanced by making segments more similar (rather than distinct) to their context. Admitting ACA into phonology would weaken the predictive power of the theory, since "acoustic differentiation" and "acoustic assimilation" would cancel each other. The third class, PRA-RULES, codes changes involving minimal "perceptual jumps."

Ad (2): It is argued that (a)-(d) involve interaction between ARTICULATORY ASSIMILATION and PERCEPTUAL REANALYSIS (PRA). Examples supporting the validity of PRA are drawn from French, German, Itzaj, Maya, and Cocker.

1. A system of DERIVED MOTOR FEATURES is used to describe the articulatory aspects of the processes. The resulting rules are shown to fit the structural definition of (articulatory) assimilation rules.

2. The natural class of PRA-RULES is defined in terms of a system of PERCEPTUAL FEATURES. PRA-RULES have the form: X → X', where X and X' are bundles of perceptual features, and the NO-CROSSING CONSTRAINT is met.

3. The theory is applied to the processes in (a)-(d), and it is shown that the processes can be broken down into plausible steps, each of which conforms either to the definition of articulatory assimilation rules, or to that of PRA-RULES.

A New Look at SOT

It has been established by R. Lakoff and Costa that a sequence of tense rules (SOT) are semantically and pragmatically conditioned in many cases. However, their analyses fail short in several respects. Both allow some arbitrariness or optionality in SOT, and the proposed generalizations are often too specifically geared to particular examples. The purpose of this paper is to demonstrate that all instances of SOT are semantically/pragmatically conditioned, and that the conditioning factors are factors of more general nature than previously assumed. I will claim that no optionality is involved, and that no two sentences differing only in tense in the complement will be absolutely synonymous. For example, consider sentences 1 and 2:

1. a) John leaves today.
2. b) John is leaving today.

Costa claims that it is an accidental fact of English that the will-less future in (1) cannot undergo SOT while the will-less future in (1b) can. But 1 and 2 show that the former can in fact undergo SOT in some cases:

1. John leaves next Thursday.
2. But I thought he left tomorrow.

The problem with *left in 2 is that it causes an ambiguity between a past and a future time reference. I will argue that rather than being an accidental gap, the failure of SOT to apply here is the result of a transderivational constraint prohibiting such tense ambiguity.

Another problem concerns what Lakoff and Costa isolate as the significant generalizations governing SOT. For example, Lakoff proposes that 5 is the neutral case, while 6 would be used just in case the speaker receives "new information" as to the identity of the object she has stepped on after stepping on it.

5. What I just stepped on was a kitten.
6. What I just stepped on is a kitten.

...
Transformational generative linguists assert that linguistic competence involves the ability to intuitively recognize conformity to and deviation from grammatical rules even though these rules cannot themselves be stated or recognized by human language users. Their intuitions are exemplar. Certain interpretations emphasize that the data on which they rely in evaluating grammars and theories of language consist almost exclusively of reports of such linguistic intuitions. However, such reports are not considered to be incorrigible. Linguists frequently question the validity of linguistic intuitions reported by investigators who hold different theoretical views. (e.g., Chomsky 1972) Furthermore, certain contemporary theoretical conflicts can be resolved only if the reliability and validity of such reports of disputed intuitions can be seriously assessed. (Botha 1973) A fully satisfactory methodology for carrying out this assessment has not yet been articulated.

The purpose of this paper is to consider what constitutes a defensible account of what reports of linguistic intuitions are and what they are reports of. These considerations suggest some basic guidelines within which to begin constructing a methodology for assessing the reliability and validity of reports of linguistic intuitions.

In current literature, reports of linguistic intuitions have been described as reports of introspective observations. They have also been compared with the reports of subjective judgments employed as data by investigators in psychophysics. The first part of the paper is a demonstration that there are crucial differences between reports of introspective observation (as understood in classical introspective psychology) and reports of subjective judgments in psychophysics. A concise statement of the methodologically significant differences is provided.

In the second part of the paper, evidence is adduced that in current linguistic practice there is a strong tendency to treat reports of linguistic intuitions as reports of introspective observations. It is shown that this conception of reports of linguistic intuitions, when combined with current insistence that transformational generative linguistics is an empirical science, involves the same methodological/conceptual inconsistency which undermined classical introspective psychology. Specifically, it involves an attempt to base an objective empirical science on data whose reliability and validity are subject to the same kind of doubt. In addition, it is shown that the use of subjective judgments in psychophysics is not subject to the difficulties faced by attempts to engage in (and report on) introspective observations. There are significant dissimilarities between reports of linguistic intuitions and reports of subjective judgments in psychophysics. Finally, some methodological consequences of the preceding discussion are sketched. It is indicated that certain kinds of appeals to idiosyncratic intuitions (e.g., Ross 1967) are inappropriate in scientific linguistics. In addition, I identify some methodologies (e.g., Garfinkel 1967, Greenbaum 1970, Labov 1972) which are not subject to the difficulties which beset introspective observation and which reflect a sensitivity to differences between subjective reports in psychophysics and reports of an intuitive recognition of conformity to and deviation from various sorts of rules. Several specific questions about the relative usefulness and appropriateness of the methodologies are raised.

The point of the paper, then, is not to challenge the legitimacy of appeals to linguistic intuitions, but rather to clarify the conditions under which reports of linguistic intuitions can serve as data in a science of linguistics and hence to illuminate the conditions under which certain significant theoretical issues in contemporary linguistics could possibly be settled.

The difficulty that English speakers have in processing sentences like:

(1) The vase that the maid [that the agency hired] dropped broke on the floor,

which contains two levels of self-embedding (SE) served to motivate the distinction between competence and performance. Current notions about a theory of performance hold that it includes at least two types of constraints: (1) perceptual constraints or strategies; (2) constraints set by the limits on human processing. The limit on the capacity to process multiple SEs is assumed to account for the unacceptability of sentence (1). Recent work in performance theory has concentrated on perceptual strategies. This paper illustrates how these strategies of constraint can be further explored.

Studies of the limits of human processing have only utilized English to provide test structures. However, there is strong evidence from Korean relative clauses and predicate complements that up to two and possibly three levels of SE can be processed by native speakers with little comprehension problem. (2) is an example of SE relative clauses.

(2) ui kkoutekki yaini [kyonchaei cakileke chaco one jatilike cun] takti nekasteur dog that woman police for her found son gave cake ate 'her dog ate the cake that the woman gave to her son who the police found for her.'

Thus while the number of SEs that can be processed is limited, it is not as limited as has been suggested by English SE structures.

The difficulty with sentences like (1) can be explained by assuming that additional factors beyond SE are at play. This hypothesis can be supported by examining a number of variations on sentence (1). For example, sentence (3):

(3) The vase [that came from the agency] that the maid dropped broke on the floor.

shows that two levels of SE are also processable in English. The difference between (3) and (1) is that in (3) the subject of the most embedded clause is relativized, but in (1) the object of the most embedded clause is relativized. All previous studies of SE have only considered sentences in which the object is relativized in both relative clauses. Sentences like (3) combined with the Korean SE are support for the claim that the processing difficulty associated with (1) is not primarily due to SE. The crucial problem seems to be that (1) requires the repeated assignment of the referent of a deleted NP, once the referent has been passed.

This raises the question of whether SE is relevant to the difficulty associated with (1). The difficulty might be entirely due to the two backward reference operations. That this is not the case however is shown by sentences like (4):

(4) John fixed the vase [that the maid that the agency hired dropped] which is much easier to process than (1). Here we have one SE and two backward operations. (3) contains two SEs and one backward reference operation. Thus the difficulty of (1) is due to the specific combination of two SEs and two backward reference operations.

We suggest that cross language studies provide a laboratory for the investigation of complex performance constraints and that such studies can precisely specify the kinds of operations that push the limits of human processing ability.
On Delimiting Phonological Variation

This paper will be concerned with the proper characterization of linguistic variation within certain dialects of Spanish (Cuban, Puerto-Rican and Andalusian). The nature of this variation concerns consonantal alternations typically characterized as Aspiration of s (s → h) and the concomitant assimilatory processes affecting h and a following consonant. Alternative solutions within a Standard Theory Framework (as developed by Chomsky and Halle, 1968) will be considered and it will be shown that the Standard Theory does not allow for the correct characterization of the phenomena. The Standard Theory provides no explanation for the facts of language variation considered here, since it forces us to consider Aspiration (s → h) and assimilation as separate phenomena, thus allowing for the possibility of a dialect differing from another in having Aspiration but not assimilation. However, the facts are such that the exact nature of the assimilation may vary from dialect to dialect, but there is no dialect that aspires s but lacks the concomitant assimilation process. Since the Standard Theory allows for this logically possible but empirically indefensible characterization of dialectal differences, we must conclude that the theory is too powerful and needs to be constrained. A proposal will be made which attempts to provide an explanation for the concomitant nature of the aspiration and assimilation processes. The proposal will be formulated in terms of weakening processes and phonological hierarchies with the intent to delimit the class of possible phonological dialect variations.

Communicative Competence in the Severely Retarded: Some Evidence from the Conversational Interaction of Down’s Syndrome (Mongoloid) Adults

In recent years the work of sociolinguists (e.g. Gusners, Hymes), conversation analysts (e.g. Sacks, Scheglof), developmental sociolinguists (e.g. Bates, Corsaro, Garvey, Keenan), and others has generated a great deal of information on how constitutive competence and communicative strategies in adults and children. We are now in a position to apply this knowledge to the study of conversational interaction of retardates. What is emerging from one such study is a picture of communicative competence that differs from the image of the retardate as linguistic incompetent fostered by research which looks only at the language and speech of individuals.

In this study we audio- and video-taped both naturally occurring and elicited conversational interaction of 9 severely retarded (IQ 7-26) institutionalized Down’s Syndrome adults. Transcripts of these interactions were studied for evidence of communicative competence, including various aspects of conversational structure and strategies, such as sequencing, repair, recipient design, and reference. Attention was also paid to the retardate’s awareness of differential conversational rights (e.g. retardate vs. caretaker) and the linguistic and “intellectual” abilities of his hearer. In this paper, the conversation of one individual is examined in detail, and illustrations are given from the conversations of others in the group as well. The man we studied exhibited in varying degree many of the abilities essential to the accomplishment of meaningful verbal interaction. One of the most basic of these is the ability to shape one’s responses to satisfy one’s obligations as a conversational partner (Keenan, 1975). This includes the ability to recognize questions, for example, as opposed to declaratives, as forms which require a particular type of response (i.e. response vs. simple acknowledgment) and the ability to identify the question as asking for a particular type of information (e.g. who, what, where, yes-no) or conveying a request. The ability to initiate and respond to “repair work” (Scheglof, 1975) is of particular importance in the conversation of these men. The “repair system” allows the recipient of an utterance to signal and locate for the speaker a (possible) misunderstanding. Such devices as “uhh?”, “what?” or repetition (of possible hearing) plus question intonation solicit from the speaker a repetition of all or part of his previous utterance. Because the speech of these men is severely impaired, nonretardates interacting with them must frequently attempt to repair their understanding of what the retardate is saying. The men not only respond appropriately to repair initiation by nonretardates, they also initiate repair with other retardates.

Speakers must also give enough information to allow their hearers to identify referents in conversations. The retardates were able to supply new information (e.g. “He’s a marshal”) or paraphrase when their original utterances received no response. “Duke, John Wayne/He’s a marshal.” or paraphrase when their original utterances received no response.

Researchers in the field of language and mental retardation, concerned with the relation between language disorders and cognitive impairment, have focused primarily on the language and speech of individuals. This approach has fostered an image of the retardate as linguistic incompetent. However, verbally mediated social interaction is often managed by the retardate despite severe language and speech disorders. An interactional approach gives us a much broader picture of their actual linguistic and communicative competence, and, at the same time, gives us information about the communication problems encountered by the retardate in normal, everyday interaction.
Grassmann's Law: Unsafe at Any Speed

Sag (1974) has offered objections to recent generative accounts of Sanskrit alternations between aspirate and non-aspirate consonants (of the type: *bodháti ~ bhotayati; *dudháti ~ dhokáti). The crucial issue in the viability of Grassmann's Law as a synchronic rule of Classical Sanskrit and the assumption of underlying aspirate roots (*e.g. *buddh-, *dugh-) is a rule of Regressive Aspiration Assimilation (throwing back the aspiration) to account for forms of the bhotayati, dhokáti type.

More recently, however, Sag's analysis has been attacked by Hoard (1975) and by Phelps (1975), both of whom in addition propose new analyses with underlying aspirate roots and a rule of Grassmann's Law. I will argue that their objections to Sag's analysis are without substance, and that these new attempts to salvage Grassmann's Law as a synchronic rule of Sanskrit are untenable.

Both Hoard and Phelps assume a rule of Medial Cluster Reduction to be operating in the derivation of desidative forms such as dhínapati, ripati, dhíta, etc., a rule of the type *dhínapati ~ dhínapati, *dhíta ~ dhíta, (cf. dhídhvan, *dhídhvan; *dhídhva, *dhídhvaa), although any other well-motivated internal word boundary is sufficient to block this assimilation (cf. *dvítsa, *dvítsa ~ <dvítsa>).

Both Phelps and Hoard assume a rule of Medial Cluster Reduction to be operating in the derivation of desidative forms such as dhínapati, ripati, dhíta, etc. In fact, of Phelps' claim that Sag's analysis is incapable of deriving such forms as dhítsa (<dhí-dhíta-t/ in Phelps system), Medial Cluster Reduction cannot possibly be a rule, but, as the clusters it seeks to eliminate thrive in Classical Sanskrit (cf. kṣepa-, vārtta, karkavya, etc.), Sag's claim that such desidatives arise by morphological suppletion is further substantiated by the fact that such clusters are incapable of deriving such forms as *bhínta (<bhínta in his framework), instead of the form bhínta cited by Sag, bhínta, however, is the correct attested form.

For all the above reasons and several others, the analysis offered by Sag (in Pāṇini) is far superior.
Sapir's Athabaskan Correspondences: Variable Data and Phonetic Law

One of the most famous, as well as perhaps the most argued, claims in the history of linguistics has been that sound change takes place without exception. This was the cornerstone of much of the achievement of 20th century comparative linguistics, and has been a productive hypothesis in work with many language families in this century. In an early and influential article, Sapir (1931) showed how the comparative method could be applied to the Athabaskan languages, and reconstructed some of the basic sound correspondences in this family.

Recent research in 19th and early 20th century archival data on Athabaskan languages shows that the picture is not as neat as Sapir and some subsequent linguists have indicated it as being. Importantly, much of the data analyzed and reported by modern linguists have shown the forms of individual languages as invariant, whereas in a number of instances the archival records, reflecting the usage of several informants, or different bands of the same tribe, show significant variation. For example, the forms for 'star' may be compared with Sapir's correspondences:

<table>
<thead>
<tr>
<th>Proto Ath</th>
<th>Hupa</th>
<th>Chipewyan</th>
<th>Navajo</th>
<th>Sarci</th>
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<td>*s</td>
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<tr>
<td>*ts</td>
<td>ts</td>
<td>t̕o</td>
<td>ts</td>
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</tr>
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</table>

'star' examples: tsin (t)θum son son

In other examples, 'star' is (t)θum or sun in Beaver and (t)θum/θum/son in Kutchin, while 'tongue' is ts'ad/had/had in Coyoteo Apache. 'Head' is (t)θi/ts'i si in Sekani, and 'star' is son or ts'on, with a 1:2 ratio in reported usage. Kutchin, a northwestern language, shows [9] more than 60 per cent of the time.

These and other examples illustrate that variability is found throughout the branches of the Athabaskan family, and point to the need for a careful re-examination of both archival and modern data—unhomonized by phonemicization—to arrive at a better understanding of the internal history of Athabaskan, the phonological changes within the family, and the relation of variability to the process of phonetic change.

**Syntax**

Judgments as Syntactic Evidence

Since the publication of Rosenbaum's Grammar of English Predicate Complement Constructions, syntacticians have assumed an important distinction between "expect-type" and "persuade-type" for Equi verbs. Among the several differences between these two classes of verbs is the well-known difference in synonym judgments between sentence pairs like (1) and (2):

1a. I expected the doctor to examine John.
   1b. I expected John to be examined by the doctor.

2a. I persuaded the doctor to examine John.
   2b. I persuaded John to be examined by the doctor.

The purpose of this paper is to argue against the widely held assumption that the difference between (1) and (2) shows that such synonym judgments provide a useful test for the correct analysis of predicates taking infinitival complements. Aside from its obvious methodological implications, this conclusion has important implications for questions concerning different aspects of meaning and their relationship to syntactic structure.

The argument is based primarily on examination of the verb allow. By the mentioned test, allow must be analyzed as an Equi verb on the basis of the judgment indicated in (3):

3a. I allowed the doctor to examine John.
   3b. I allowed John to be examined by the doctor.

By equally standard assumptions, however, sentences like (4) and (5), where allow is followed by an NP of limited distribution, provide positive evidence for a raising analysis of allow:

4. The new regulations allow there to be intolerable situations like this all the time.
5. The administration allowed unfair advantage to be taken of the Arab boycott by the big oil companies.

Standard assumptions thus force us to posit two verbs allow, a conclusion which appears to be supported by the observation that allow has a 'give permission' sense in (3) but is better paraphrased as 'do nothing to prevent' in (4) and (5).

This traditional type of analysis is unsatisfactory in at least the following respects: 1) it provides no explanation for why the "Equi allow" appears only in surface structure which could be derived by raising; 2) it fails in itself to provide an account of why informants initially judge the pair in (3) to be non-synonymous rather than ambiguous, with a shared reading; and 3) it begs the question of whether the positing of two (polysemous) verbs allow in equis and independently. It is shown that a wider look at the use of allow and other predicates strongly suggests that we are dealing with only one (raising) verb allow and that its different interpretations are explainable on pragmatic grounds. I conclude that the informant judgment indicated in (3) is to be explained on the basis of special strategies used in dealing with example sentences and that it is thus not directly relevant to linguistic analysis.
Another Look at Generative Spelling: Quantitative Results

This is a report of the quantitative results of a study of the efficacy of teaching the pronunciation of English polysyllables to non-native speakers by means of ordered rules which use the standard orthographic representations as underlying forms, to derive a correct phonetic form.

Out of some fifty sets of words ending some seventy suffixes, which were studied, fifteen word classes, representing nineteen suffixes were selected for detailed quantitative study involving between five and twelve non-native speakers (predominantly Francophones) as experimental subjects, and five French speakers as control subjects.

Experimental subjects read lists of words ending in the nineteen suffixes. They then applied ordered rules to between ten and forty selected words ending in the suffixes to which each set of rules applied. After performing these rules on this small number of words, they reread the original word lists. Control subjects did the same except that they performed a repetition exercise instead of employing the sets of ordered rules.

The experimental subjects made 15,289 errors on the first reading, as compared with 2,562 on the second reading, for an improvement of over 80%. The control subjects made 12,112 errors on the first reading, as compared with 7,990 on the second reading, for an improvement of less than 31%. The difference between the experimental and control groups; percentage improvements for each of the fifteen classes were at the .004 level or better as determined by a Mann-Whitney U-test.

At the presentation, an analysis of why the differences between experimental and control subjects were greater for some sets of words than for others will be given. Also, it will be shown how a selected sample of these ordered rules work.

Implications for the study of the structure of the lexicon and the psychological reality of underlying and orthographic representations will be considered.
On the Gradation of Grammatical Relations

A theory of Relational Grammar (RG) wherein grammatical relations (GR) play a direct and central role has been proposed by Johnson (1974), Postal and Perlmutter (in preparation), et al. RG is superior to the "standard" structurally-oriented Transformational Grammar in that it "backwards" the need for the inherently language-particular structural configurations for all rules in which GR's play a crucial role, and imposes structure on S's at a point in the derivation after all such rules have applied.

An adequate theory of RG, however, must provide some operational principles (ideally, universal) for distinguishing whether a \( N \) is the "subject" (s), "direct object" (d.o.), or "indirect object" (i.o.) of a given S. A question relevant to the researching of such principles is whether the above GR's are to be considered absolutes or relations, or whether there is a finer sub-classification of the known GR's, possibly varying from language to language, motivated by the diversity of the syntactic behavior they trigger. Keenan (1974) entertains this type of approach in an attempt to provide a universal characterization of the notion "subject of," and comes up with the hypothesis that the "subjective" and "objective" properties that characterize S's which are "pretheoretically felt to be s's." A relationally-oriented study of some syntactic processes in Persian reveals that the notion d.o. is not an absolute GR, and must be further "graded" into four sub-relations, depending on whether or not the d.o. is definite, and whether or not it is basic. Thus, for Persian, the Keenan-Comrie (1972) hierarchy of GR's would be altered to (1) to accommodate this finer sub-classification of d.o.'s:

1. \( s \Rightarrow \text{indefinite d.o.} \Rightarrow \text{basic definite d.o.} \Rightarrow \text{derived d.o.} \Rightarrow \text{i.o.} \Rightarrow \ldots \)
   the "strongest" d.o. being [\(-\text{definite}\)], while the "weakest" being [\(+\text{derived}\)].
   The "strength" of a d.o. being signalled by the definite d.o. being [\(+\text{definite}\)], it
   follows that a "weak" derived d.o. may not be [\(+\text{definite}\)]. Thus all super-
   ficially derived d.o.'s in Persian, irrespective of their source, are [\(+\text{definite}\]),
   carrying the definite accusative case marker -\( \text{r} \).

2. a) man bæ̀ (dative-Moved)
   [\(+\text{def. acc. m. apple} \]
   I gave the child apples.

   b) man bæ̀ (dative-Moved)
   divāªe ḥesāª mikonam (Subject-Raised)
   I consider the child to be crazy.

Indefinite d.o.'s, like S's, do not carry a case marking, while all lower "grades" of d.o.'s on the hierarchy, like i.o.'s, have a case marking. In Persian only S's with indefinite d.o.'s may undergo Dative-Movement, such that a definite d.o. is too "weak" a d.o. to be "demoted" to the châyemur ("unemployed") status by the rule:

3. parvis bæ̀ (dative-Moved)
   Parvis girl-def. acc. m. apple (\( +\text{my} \)
   Parvis gave the child [\(+\text{my} \]
   apple.)

With respect to relative clause formation strategies (RCS's) the dichotomy is between basic and derived d.o.'s, such that with the former it is optional to leave behind in the relative clause a pronoun copy of the \( N \) relativized upon, while with the latter, as with i.o.'s, it is obligatory. It is interesting to note that Verb-Raising, being a semi-productive process in Persian, results in a d.o. that behaves equivalently, sharing with derived d.o.'s the restrictions that a relative behaves like, yet behaves like S's are concerned.

The features that unite every d.o. under a single "supra-GR" are its position relative to other GR's in an S, and its unitary subjection to Passivization.

Though such a sub-classification of d.o.'s may turn out to be idiosyncratic to Persian, it should be clear that GR's do not seem to be clear-cut absolute relations, making imperative further intensive research on this issue.
The Status of Irish Preverbal Particles

Irish manifests striking parallels between the copula and certain preverbal particles. The copula radically changes form under questioning and negation:

1. a. Is dochtúir é. (cop doctor he) He is a doctor.
   b. An dochtúir é? (Q-cop doctor he) Is he a doctor?
   c. Ní dochtúir é. (Neg-cop doctor he) He isn’t a doctor.

The forms of the copula in (1b) and (1c) are identical to particles which precede other verbs as markers of negation or questioning:

2. a. Tuigeann sé. (understand he) He understands.
   b. An dtuigeann sé? (Q understand he) Does he understand?
   c. Ní thuigeann sé (Neg understand he) He doesn’t understand.

I will claim, contrary to what traditional terminology suggests, that the particles of (2) and the copula forms of (1) are best analyzed as having the same origin.

The changes in the initial consonant of the verb in (2b) and (2c) typically occur on verbs in embedded environments and contexts which might plausibly be analyzed as embedded at a more abstract level (such as in the past tense). I will argue that questioned and negated verbs are so embedded. It remains to determine whether an and ní are forms of the copula in which the verbs of (2) are embedded, or more abstract predicates in which the copula is embedded like other verbs, with subsequent deletion. I will argue for the latter, on the basis of the following facts: (i) If (2b-c) are embedded in a copula, there is no explanation for the fact that the declarative is not also embedded and that none of the copula forms of (1) are embedded. Under the alternate analysis, embedding is associated specifically with questioning and negation, for both the copula and other verbs. (ii) Phonological evidence suggests an intervening element between an and ní and the following NP in (1), which will block the relevant mutation of the initial consonant of the NP. (NPs are commonly affected by other clitics, including the past form of the copula, so the fact that the NPs of (1) remain unaffected cannot be explained in terms of the NP.) (iii) In the past tense a form appears which seems to be a contraction of both the particle and the copula, suggesting that both exist, even where the surface form shows a single particle. Similar evidence occurs in complement clauses. (iv) The copula has a specialized semantic function incompatible with an analysis which embeds all questions and negatives to it.

Conditions on Conditionals in Japanese

The term 'conditional' is used to refer to a wide variety of verbal constructions in Japanese. For example, the verbal suffixes *-ara, -e*ba, and *-ara* are all termed conditionals in most pedagogical grammars. Kuno (1973) offers the only recent linguistic discussion of these constructions, although he does not consider *-e*ba. This paper offers syntactic and semantic motivations for separating these suffixes.

The most general distinction is an aspect distinction: both *-e*ba and *-ara* are used to indicate nonperfective, or incomplete, situations, while *-ara* and *nara* are used to indicate perfective, or completed, situations. In terms of syntactic differences, when the main clause contains a past form (*-ra*), then subordinate clauses containing these suffixes are in fact not conditional. *-ara* and *-ara* form adversative clauses; *nara* forms a topicalized clause; and *-e*ba forms a subjunctive clause. When the main clause is nonpast (*-ra*), then subordinate clauses containing these suffixes are all conditional: *-e*ba is the most neutral, or unmarked; *nara* is a topicalized conditional; *-ara* indicates that the result is expected; and *-ara* indicates that the result is unexpected.

This discussion brings into focus the fact that terms such as conditional, provisional, temporal, etc., all of which have been used to describe these constructions, may not extend across language boundaries. By applying the label conditional to these constructions, peculiar properties specific to Japanese have been missed.

Reference

Simplicity and symmetry provide a major motivation for abstractness in phonology. Such arguments reflect a natural prejudice in favor of regularity in grammatical analysis. Though I do not wish to dispute the soundness of this prejudice, I urge this paper that there are circumstances in which, the cost of achieving greater regularity can be too great. This point has been made, of course, in the standard arguments (especially Kiparsky's) against absolute neutralization in phonological description. My argument differs from these in considering different sorts of cases, in desiring a more general substantive conclusion, and in proposing a more radical methodological conclusion, that we should try to achieve less, in certain cases, with grammatical rules. In particular, I think that we often stand to lose by demanding too much regularity in grammatical analyses of phenomena that are currently undergoing change.

Local irregularities appear both when a set of changes is in the process of destroying an old pattern and when changes are in the process of building up a new pattern. At some stages in both types of development, variable rules of the type proposed by Weinreich, Labov, and Herzog in 1968, or some other form of device for describing variation, will in fact be able to show regular patterns of variation, so by irregularity here I am referring only to forms that are not predictable by general rules of the more common invariant types -- phonological, morphological, and syntactic.

The main argument of the paper goes like this: if, as innumerable well-known cases of phonological and morphological change attest, surface irregularities are to be expected at change stages where a grammar is changing, then describing these places formally as unstable points in the grammatical system will enable us to look ahead to the pattern to come. Where the present grammar shows a non-rule-governed choice of two forms, for instance, a future grammar will show only one of the forms, and the grammatical change involved will be easy to describe. If, however, the present grammar glosses a surface irregularity that reflects an ongoing change, in an effort to provide a more elegant analysis, then no overt clue will warn of a change in progress; the future grammar will not necessarily be foreshadowed in the present description; and the grammatical change will then be harder to describe and motivated. From present grammar to future grammar, the analysis is sometimes more accurate, and the thesis that a messy analysis is sometimes more accurate than an elegant one is illustrated by examples drawn from changing parts of two Slavic declensional systems, Standard Serbo-Croatian and Literary Czech. Both sets of changes have been under way for at least one or two hundred years, so there is no chance that a simple parent-to-child restructuring could eliminate the need for some means of handling the long-standing synchronic variation. Nor can the variation be explained as either regionally or socially determined, for both sets of changes were set in motion by unrelated phonological changes, and there are no obvious complications in the form of patterned regional or social variation.

Notes on Analogical Change

The purpose of this paper is to discuss some examples of analogical change and their impact on generative linguistic theory. In Old Icelandic (OI) we find paradigms like

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<td>Sg. fjótur+r</td>
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<td>fjótur+s (fetter)</td>
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<td>hellí+r</td>
<td>hellí+φ</td>
<td>hellí+i</td>
<td>hellí+s (cave)</td>
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<td>Pl. fjótrar</td>
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<tr>
<td>hellíar</td>
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<td>hellíum</td>
<td>hellí+a</td>
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The stem alternations fjótur ~ fjótr- and hellí ~ hell- are governed by a general syncope rule: V → Ø/VC // ((1,n,r))v.

In (relatively) Modern Icelandic (MI) we get

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<td>hellír+i</td>
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<td>Pl. hellírar</td>
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Since an added r-shortening rule: r → Ø/r- → gives MI fjótr+φ

In OI fjótur+r, the paradigms of fjótur and hellír look exactly alike. The restructuring of the stem /hellír- / to /helli- / has, therefore, been called analogical change. In generative terms one might think of rule simplification as the primary force; the parenthesess in the SD of the syncope rule are not needed any more. But unfortunately the first of the intermediate stages of this development looks like this (15th century Icelandic):

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<td>hellí+i</td>
<td>hellír+s</td>
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The Pl. is the same as in OI. The restructuring to /helli- / has thus only taken place in Sg.N.A,G, the result being suppletive stems. That does not look like a simplification. Concepts recently introduced into generative theory like "paradigmatic coherence" (Kiparsky '71) or "Humboldt's Universal" (Vennemann '72) do not help here, but it might be possible to argue that rule opacity plays a role (cf. Schindler '74); the r-shortening rule is perhaps less opaque if N hellír is derived from /helli+r+ / as fjótr from /fjótr+r+ / . This reduction of opacity is different from classical examples like Lat. honos → honor where the derived segment is generalized.
The History of Subject-to-object Raising in Finnish

Finnish uses two constructions to express sentential objects of verbs of perception and cognition. One is a two-clause structure in which the embedded clause is introduced by the complementizer sitten 'that':

1. (Sinä) sitten tulevat
   'You know that they are coming'

The other is superficially a one-clause structure in which the lower subject is in the genitive and the embedded verb is a participle:

2. (Sinä) sitten niiden tulevan
   'You know them to be coming'

Historically, the construction in (2) is derived from an Old Finnish construction in which the lower subject was in the accusative rather than the genitive:

3. Sine sitten tulevainen
   'You know them to be coming'

In this paper I examine the historical relationship between the constructions in (2) and (3) as an example of syntactic change. First, I will show that the Modern Finnish construction in (2) arose through a reanalysis of the Old Finnish construction in (3). This reanalysis was possible because of a morphological ambiguity in the surface data; the implementation of this reanalysis can be seen in the gradual and systematic replacement of (3) by (2).

Second, I will show that the change from (3) to (2) is more than simply a change in case. The lower subjects in (3) and (2) differ from each other in their interaction with a number of syntactic rules: case assignment (three rules), agreement (three rules), and reflexivization. These differences establish that in Old Finnish (3) the lower subject was the syntactic object of the matrix verb, but that in Modern Finnish (2) it is the (nonfinite) subject of the participle. Finnish therefore reanalyzed a construction with subject-to-object raising as a gerundive construction which does not involve subject-to-object raising.

Finally, I argue that the contrast between Old Finnish and Modern Finnish can be accounted for only if the original Old Finnish construction involved raising; it is not possible to describe the changes which occurred in a coherent fashion if subject-to-object raising is not a rule (cf. Chomsky, "Conditions"). The Finnish constructions therefore provide historical evidence for the existence of subject-to-object raising.

Case Ordering Hypothesis

The purpose of this paper is to show that the Case Ordering Hypothesis (COH) which assumes that the order of constituents is assigned by rules of case ordering on the basis of their functions is to be chosen over the Case Marking Hypothesis (CMH) which assumes that the functions (cases) are assigned to constituents on the basis of their order as is assumed by Kuno.

There are a class of verbs in Japanese that appear in the surface structure preceded by two NPs marked by the subject marker ga. Kuno analyzes them as transitive verbs whose objects are marked by ga. However, one of the subclasses of these verbs are, in fact, intranisitive verbs which take an optional dative NP. This can be seen from the following examples:

1. Watasi \( a, ni \) ano eiga ga osorokuta, \( mi \) ni-Dative
   \( b, ga \) wasa-Subject
   \( c, wa \) that movie interesting Fast
   'I found that movie interesting.'

(1c) is the most natural of the three. (1b) has an emphasis on "I". (1a) translates literally as "To me that movie was interesting" but it is barely acceptable as an independent sentence. However, it is acceptable as an embedded sentence. (cf. Dousite watasi \( a, ni \) ano eiga ga osorokuta to omou no de na ka? "Why do you think that movie interesting?"") The most straightforward way to account for the cognitive asymmetry of (1a-c) is to derive (1b-c) from (1a). The derivation of (1c) can be accounted for by topicalization. The rule of Subjectivization applicable to "sentence-initial noun phrases with \( ni \) or \( no \)" can derive (1b) from (1a). Crucial to this solution is that the dative NP is sentence-initial and is marked by \( ni \) in the deep structure so that Subject Marking does not apply to it, just as locative NPs must be so marked for the same reason. Thus Kuno's case marking rules can make only a partial prediction about case markers.

If we adopt COH, however, we can predict the order from the functions by a set of case ordering rules capturing the generalization that the basic word order of Japanese is [SV\( \ldots \)] when the verbal is intransitive and stative and [S\( \ldots \) V] otherwise, since datives and locatives are sentence-initial in intransitive stative sentences. Since COH makes a stronger claim, i.e., it predicts that NPs other than the two types above will also precede the subject if they occur in intransitive stative sentences, it is this hypothesis that is to be chosen over COH.

REFERENCE: Kuno (1973) The Structure of the Japanese Language The MIT Press
The Fourteenth Century Alliterative Line: A Metrical Description

The purpose of this paper is to present a metrical description of the Fourteenth Century alliterative line in English. The theory to be proposed here represents a modification and extension of the theory of Old English prosody advanced by Samuel J. Keyser (College English, 1969). Keyser's theory, although it adequately describes the short alliterative line of Beowulf, cannot be applied directly to the verse of Langland and the Gawain poet. Furthermore, Keyser's own suggestion that the Abstract Metrical Pattern rule for the Gawain line is

\[ \text{Verse} \rightarrow (X)S\_S\_S\_S/(X)S\_S\_S\_ \]

This formulation has two advantages. First, it indicates the characteristically longer first half line of the verse. Second, it graphically symbolizes the metrical importance of the caesural break, which in Old English verse, imposes stricter requirements on the syntax of the line. A set of Realization Rules governing alliteration and the maximum and minimum line lengths forms the second part of the theory. In providing a metrical description of the alliterative long line, this proposal complements both Keyser's theory of OE verse and the Hale-Keyser description of Chaucer's prosody (College English, 1966).
Two Marathi Reflexives and their Implication for Causative Structure

This paper argues that the simplex structure approach advocated for English kill by Fodor ('70) and for Japanese lexical causatives by Shibatani ('73) is inadequate to explain the reflexive complexity of Marathi causatives. The paper claims that the complexity is best explained as a case of analogical (i.e. transderivational) constraint.

The argument is based on the unique syntactic distribution of the two Marathi reflexives swataash and aapan. These are mutually substitutable in most contexts, except when the dative/accusative NP is within the same clause as its antecedent NP at a point in the derivation when the reflexive rule operates. In this context aapan is forbidden, as in (1).

(1) For aapan to occur the antecedent NP must be in a higher clause in the underlying structure as exemplified by (2) & (3). The presence of aapan thus signals a complex underlying structure. It then follows that Marathi causatives that allow aapan as in (4) must have a complex origin though they lack the usual surface evidence for it.

There are, however, apparent counter-examples to the above stated complex structure. These come from causatives derived from active/stative intransitives of the kill type. These causatives, which henceforth shall be called C1, reject aapan as in (5), just like the transitives in (1).

The usual alternatives which throw these causatives into a simplex structure mold of the Fodor-Shibatani type or resort to some output condition incur loss of syntactic generalization.

This paper claims that the rejection of aapan in C1 is based on their structural resemblance with the basic transitives at the surface level (compare 1&5). This rejection is thus a case of analogical constraint. The constraint unifies C1 with other causatives at the deeper level, at the same time binding them to the basic transitive. A plain simplex or complex structure approach confined to a single derivation could never accomplish this.

(1) Minina swataashaa/*aaplyaala badavle. (Mini beat herself)
(2) Minila vaatte ki aapan cuklo. (Mini thinks that self was mistaken.)
(3) Mini aaplyaala musvitar sanjte. (Mini considers herself to be a movie-star.)
(4) Mininh Vinukadun aaplyaala kocavara basavle. (Mini got Vinu to cause self, to sit on the couch.)
(5) Mininh swataashaa/*aaplyaala jadile. (Mini burned herself.)

Shibatani (1973) "Semantics of Japanese Causativization" Foundations of Language 9:1

Reconstruction of a Lost Rule

Swiss German dialects are characterized by their lack of the Middle High German (modern Standard German) final obstruent devoicing (and tensing) rule (1):

(1) [+obstr] ---+ [+voice, +tense] / - #

Nevertheless, the modern dialects possess a variety of sandhi processes yielding frequent surface neutralizations of the opposition between tense and lax obstruents in word final and initial position. The investigation of the connection existing between the allegedly lost devoicing rule (1) and the modern neutralization of the phonetic contrast in word final and initial positions will show that (1) cannot be a rule lost from an earlier stage of the Swiss German dialects.

The phonetic basis of the neutralized oppositions in Swiss German is the tense/lax contrast in obstruents, paralleled by a concomitant long/short opposition in fricatives (thus: /ß-b/, /ß-d/, /ß-n/; /ß-v/, /ß-s-z/, /ß-ß-z/; /ß-x-g/). All obstruents are always voiceless. In final position these contrasts are neutralized according to sandhi system A or B:

A: strict final regulation (e.g. Uri, Wallis)
(2) [+obstr] ---+ [+tense] / - # C or //
(3) [+obstr] ---+ [-tense] / - # /
B: loose final regulation (e.g. Basel, Zürich)
(4) [+obstr] ---+ [+tense] / - # [+obstr]

(where the tense/lax contrast is preserved before pause)

Similarly, in initial position two types of neutralization can be described, C and D; they control mainly the lexical level:
C: strict initial regulation (e.g. Basel)
(5) [+obstr] ---+ [-tense] / - # [eliminating all /p/, t, k/ in this position]
D: loose initial regulation (e.g. Uri, Wallis, Zürich)
(6) [+obstr, +cont] ---+ [-tense] / - #

The three resulting dialect types (A,C), (B,C), (B,D) exhaustively describe Swiss German. They all share a further neutralization procedure affecting all superficial obstruent clusters: (7)


The reconstruction of a common ancestral form of sandhi regulation for all these dialects offers these conclusions:
(a) The common ancestral situation consisted of a sandhi regulation of initial/final obstruents. The German devoicing rule (1) does not qualify in this case because it does not refer to any phonetic traits in its environment, or to rules (2), (4).
(b) The postulation of the loss of rule (1) does not explain the existence of the extensive modern neutralizations of a type similar to the one described by the lost rule.
(c) There is no indirect evidence either for an earlier operation of rule (1) since the dialects do not contain crucially restructured lexical items which could only be explained in terms of a loss of rule (1).
(d) The common reconstructed rule was phonetically motivated as a voicing assimilation and tenseness adjustment process; it was reinterpreted in different ways in the context of the Swiss German dialects lacking the voicing contrast in obstruents.

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35 children who have been diagnosed as autistic or schizophrenic, and whose language behavior has been characterized by consulting clinicians as bizarre, have been tested for syntactic and semantic skills. Comparison of their scores and types of errors on a standard vocabulary test (Peabody picture vocabulary test) and sentence repetition task (Mehrabian, Developmental Psychology, 1970), as well as a comparison of a detailed grammatical analysis of their spontaneous speech with scores and errors for normal children matched for MLI (mean length of utterance) suggests however that the disturbed children’s speech is not bizarre, but delayed-normal. The autistic and schizophrenic children’s speech is not significantly different from that of 1½ to 4 year old normal children.

T tests and F tests of scores and errors show no significant difference in Brown Stage II level of grammatical morpheme use, no difference in quantity or type of telegraphic repetition, no difference in verb changes and verb use, and no difference in vocabulary level. In fact, normal children showed significantly greater unusual uses of grammatical morphemes, suggesting greater experimentation or error on the part of the young normals. (Negative age performance error correlations in the disturbed sample support the decrease in error and experiment on the part of autistic children.)

Analysis of the meanings of spontaneously told stories, and intrusion into repetition tasks does however show a significantly greater number of uninterpretable concepts on the part of the disturbed sample, suggesting that the clinicians’ pictures of autistic and schizophrenic children’s language are based on problematic content, and not syntax, as they report.

Finding identical syntactical skills in normal children aged 1½ to 4 and disturbed children aged 6 to 15 years old is counter to views that environmental factors influence disturbed communication patterns, as it is extremely unlikely, if not impossible for the environment to exert such unilaterally even change-limits for behavior over time. Such findings also support the notion of an internalized grammar; most of the disturbed sample has had such minimal social interaction that even a sound two-to-four year old level of grammatical functioning appears remarkable. Whether the hypothesized internal language mechanism could carry the autistic and schizophrenic children further than the stage they are at now (Brown Stage II level use of about half his set of grammatical morphemes) is part of an ongoing longitudinal investigation of a set of 6, 8 and 10 year old samples of disturbed children.

Issues in the Acquisition of Phonology

Loan words, new words, speech errors, and child language acquisition are often used as evidence for the existence of certain theoretical constructs (psychological reality). A case can be made for giving more weight to child language because it, unlike the others, has a regular relationship to the adult form of the language, since the adult form is the target of the child's development. At the same time, the process by which child progress to the adult form, particularly in phonology, is not well understood.

Smith (1973) presents the results of an extensive investigation of the acquisition of phonology by his son, A, from 2 years to 4 years. Smith proposes 29 stages for 25 p-rules. From his observations, Smith argues that the child has the adult surface phonemic form as his underlying representation (UR). His arguments are based on 1) perceptual evidence (the child comprehends distinctions he cannot produce, eg. mouth/mouse), 2) all the distinctive features needed for English are needed to write the P-rules which map the child's UR onto his surface forms, 3) changes appear to occur across-the-board, 4) restructuring (although all the words subject to a rule appear to change with the rule, occasionally a word or words will behave as if the child has assigned it a different UR, and 5) direct production (the child's choice of irregular plurals). In addition, Smith argues that child phonology supports various theoretical constructs (rule ordering, alpha notation) and does not support others (traces, markedness).

It will be argued that there are alternative possibilities for the child's UR which are consistent with the data. A model presented in Ingram (1974), in which certain segments in the child's UR are not fully specified (archiphonemes in child phonology), is applicable and preferable here. It does not require a completely developed perceptual system, as Smith's does, and does not present the puzzle of why, if the child can figure out the proper UR, he can't get the P-rules right. Smith's own arguments are internally inconsistent, since restructuring can also be taken as evidence that the child is constructing his own UR. Smith's data supports the notion of UR, but it does not necessarily require the child's UR to be the adult surface phonemic form (whatever that it).

Smith's arguments with respect to the theoretical constructs will also be challenged. He argues, for example, that an apparently unmotivated change in a P-rule can be seen as a natural consequence of the fact that the change allows the rule to be collapsed with an adjacent rule by alpha notation. However, it can also be observed that in later stages of the child's development, rules which are collapsed by alpha notation are treated as though the parts were unrelated, as one part may change or disappear while the other remains unaffected. Further examples will be given.

Passages such as:

O woman, woman! if thou had'st but the least consumption of what pleasures we scullers have when we can cunster the crabbed buck off hand, and spill the ethnhich words without lucking at the primer...

which occur frequently in the letters of Tabitha Bramble and her maidservant, Win, in Smollett's Humphry Clinker, have long been a source of both amusement and frustration to scholars and to ordinary readers. Many of the latter skim such passages or skip them entirely, while scholars have often tried to explain some of the more difficult forms as new coloquies.

It is our contention, however, that Smollett invents none of this language, nor is it the result of haphazard and arbitrary changes. Rather, as this paper will demonstrate, he has observed the variation current in different areas of 18th century England, and Tabitha's and Win's language is the result of his systematic exploitation of normal language processes, together with some eye dialect. The processes that will be discussed and illustrated include consonant cluster simplification, assimilation, metathesis, intrusive /r/ insertion, merger of unstressed vowels, faulty analysis of foreign words, faulty aspiration, faulty word division, stop and fricative devoicing, clipping, hypercorrection, excescent /d/ and /t/ insertion after nasals, and epenthetic schwa insertion. When these processes are perceived, the letters are quite straightforward, and the reader can appreciate how Smollett has used this variation to caricature Tabitha and Win, satirizing their rusticity, imperfect education, silliness, and preoccupations (money, social-climbing, and man-catching), frequently by the use of puns (many of which have sexual or scatological implications) resulting from the non-standard forms.
Recent research in sociolinguistics has demonstrated the need for looking at language in a dynamic framework (Bailey 1973), that is, for not imposing the traditional synchronic-diachronic dichotomy on linguistic studies. Support for the dynamic framework has been given from various oral languages. This paper attempts to test variation theory with historically related visual languages, French Sign Language (FSL) and American Sign Language (ASL), by examining an historical change occurring in both languages, the change of two-handed signs on the face to one-handed signs.

Data was collected in the summers of 1974 and 1975 from 135 deaf informants, 75 ASL signers and 60 FSL signers. Informants were selected on the basis of geographic location (France and the United States), age (above or below the age of fifty), ethnic origin (Black and White in the U.S.) and sex. Signs were recorded from French signers in Paris, Albi, Toulouse and Marseille. In the U.S. signs were elicited from residents of Atlanta and New Orleans.

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 change from two-handed to one-handed signs patterned implicationally (in similar orders) for French and American signers. However, FSL is undergoing the change significantly more slowly than ASL. Older signers in both languages retain more of the older two-handed forms than younger signers. Within the U.S., Black Southern signers preserve more of the two-handed signs as compared with other U.S. signers.


Model for Fundamental Frequency Based on Communicative Function

By examining the communicative speech act performed with an utterance, a comprehensive model for the generation of fundamental frequency contours can be derived. Each utterance is considered to have propositional, interpersonal, and textual function, and the model shows how each of these determine a relation between the underlying syntax and semantics, and the surface fundamental frequency. 

The underlying performative and proposition control the basic contour shape, which is then perturbed by markers of the speaker's attitude toward the proposition and choice of focus-shifting transformations. The interpersonal function is supplied by verbal modal operators which indicate the speaker's attachment to the truth-value of the proposition, and we show explicitly how modals and their scope are realized in the fundamental frequency contour. The use of focus-shifting transformations to enhance discourse effects is also strongly marked by pitch movements, and these are characterized for a wide range of transformations. All of these effects are shown to be essential for a comprehensive model of pitch contours.
Negation: Grammatical, Semantical and Pragmatical

It is generally agreed upon that presuppositions are not affected by negation. This is not so for a vast class of speaker presuppositions—those about the information at the disposition of the hearer. Example: with respect to the sentence "It was not John who killed Mary" a presupposition of the above kind ("John killed Mary") is normally affected by uttering this sentence.

I propose to distinguish between three kinds of negation:
(a) grammatical (GN): "not";
(b) semantical (SN): if "missed" is described with respect to a basic semantic unity "hit", then "missed" is NEG (hit);
(c) pragmatical (PW): "no": rejecting a piece of information which the hearer is assumed to be aware of. This yields eight sentence types ("A" stands for "Assertion"):

(1) SN, GN, PW: "It wasn't John who killed Mary";
(2) SN, GN, PA: ? Seems not to exist;
(3) SN, GA, PW: "He missed the target" ('missed' being contrasted stressed);
(4) SN, GA, PA: "He missed the target";
(5) SA, GN, PW: "He didn't miss the target";
(6) SA, GN, PA: ? Seems not to exist;
(7) SA, GA, PW: "It was John (rather than Mary) who killed Bill";
(8) SA, GA, PA: "He hit the target".

The subtle difference between semantically equivalent sentences (b) can be ascribed to the opposition PW vs PA. The above framework is a useful tool to account for negation in discourse.

Natural Language Analysis in a Function Oriented System

This paper is concerned with English comprehension and deduction in an interactive system. An augmented transition network is utilized to produce a binary tree reflecting the syntax in the input sentence. Then a method of collapsing the tree is introduced which performs semantic analysis. The syntactic and semantic analysis produces a representation of each sentence in the form of a LISP program. These LISP programs are used for two different applications, in separate program modules. One module executes the program as a function to be performed on the system database. The other module uses the LISP program as a set of clauses (or WFF's) which it logically verifies also using the system database.

This system grew out of a system called SIGON which was designed primarily for GRAPH THEORY and built at State University of New York at Albany. The present system FORMAP is a general purpose function oriented natural language processor.

A function oriented system has a domain of discourse consisting of 1) elements in the domain and 2) functions on those elements. For example when FORMAP's domain of discourse is Graph Theory, the elements include points, lines, graphs, integers, and (boolean values) true and false. An example of a function that operates on a graph (and returns an integer) is COMPONENTS which counts components on a graph. This paper concentrates on the programming methods of natural language analysis utilized by FORMAP.

In the first phase of the processing, syntactic analysis, is performed by an augmented transition network modeled after Woods (1970)2. This particular machine model was chosen since it allows for the desired left-to-right scan of the input sentence and for building operations on state transitions. The modularity of the transition network also enables minor changes in the allowable input sentence structure to be accomplished relatively easily. Certain restrictions are made on English which are described. The restriction of a word to a single part of speech allows an augmented transition network to be designed with no ambiguity for the parsing of a legal sentence.

The next phase of the processing, the semantic processing, has several unique aspects. The binary tree representation of the "deep structure" in the input sentence is passed to the semantic analysis module. This module collapses the tree from the bottom up until either the input sentence is found to be semantically in error or it is transformed into a WFF. The collapsing process works with the right most parent node which has two terminal sons. These three nodes are collapsed into a single (terminal) node and the process continues. This collapsing of triples uses the syntax information present in the binary tree, a dictionary and an argument table. The semantic analysis performed in this phase includes agreement of subject and verb, type agreement of argument and functions. The analysis process of any triple is controlled by triple types. Some triples cause arguments to be checked semantically and then stacked for later reference. Other types cause pieces of the WFF to be assembled, possibly using the stacked data. Examples of this semantic processing are given. The output of the semantic processing are WFF's. Examples showing how this is executed are given. Also shown are applications.
Kaplan is optimistic that Woods-type "augmented transition network" grammars can capture the psychological reality of human language processing by modeling linguistic performance and competence. Cognitive mappings from surface strings are also of interest to Schank, whose "conceptual dependencies" infer deep-case relations from parsable features. Both approaches promise to lead us from language to patterns of thought.

This paper presents recent developments in CLAIM STRUCTURE GRAMMAR, a stratified system representing real world text as sets of conceptual "claims" or assertions which bind entities, relations, and their properties. CSG postulates thematic deep structures by conceptually interpreting events at nodes and on transition arcs in surface networks. Discourse parsed for "claims" may be a well-formed text, sentence, or clause -- or simply a fragment whose terms nonetheless entail ontological commitments.

The form of CSG is a transition net; its function is to differentiate among the users of a language, and among the separate states through which an individual speaker or writer transitions in process of communicating world knowledge. Originally developed in the context of rhetoric and stylistics, CLAIM STRUCTURE GRAMMAR gains in power and significance when viewed from the computational perspectives of Woods, Schank, and others currently infusing natural language models with mathematical efficiency and elegance.

The EXCHECK system is a proof checker designed to check and discuss student proofs given in a style approaching that of standard university mathematics. EXCHECK is currently being used to teach axiomatic set theory at Stanford.

Informal mathematical proofs suppress an enormous amount of detail that simply gets in the way of understanding the proof. The suppression of this detail involves the use of natural language, incorporating many of the known problems such as elliptic and contextual references, operator scope and precedence, and the use of semantic information. In order to check such proofs, it is necessary to understand the relationship between rigorous mathematical proofs and their informal presentation in a mathematics curriculum.

We will present, through the use of film and slides, the current version of the EXCHECK proof checker, with emphasis on the natural language aspects of the current system. Furthermore, we will discuss our efforts to represent the structure of a student's developing proof.

We anticipate to be able to discuss the research that is currently in progress on the EXCHECK system. We hope to have the opportunity of giving an on-line demonstration of EXCHECK, which runs on the IMS/33 PDP10/TEHEX timesharing system at Stanford.
A System for Computing Presuppositions and Entailments

Presupposition and entailment are a subclass of inferences tied to the structure of a language. Presuppositions may arise from syntactic structure and from the meaning of individual words; entailments arise from the meaning of particular words.

Since they are tied to the structure of language, they may be computed by tree transformations, independent of context not inherent in the structure of a sentence. This is a particularly simple computation, in sharp contrast to other computational mechanisms suggested for the general class of inferences. Other aspects of the uniqueness of presupposition and entailment as a class of inferences will be considered.

A program which accepts as input individual sentences and gives as output the presuppositions and entailments of each sentence will be described.
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