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Deseret Language and Linguistic Society
in cooperation with
the College of Humanities
PREFACE

The papers contained in this volume were for the most part presented in the annual symposium of the Deseret Language and Linguistic Society held April 5-6, 1979 on the campus of Brigham Young University. The range and depth of the papers reflect the interests of members of the Society. We particularly want to point out "On the Sound Shape of Language" (pp. 198-214) a paper presented by keynote speaker Linda Waugh who with Roman Jakobson recently published the book The Sound Shape of Language. Several papers presented at the symposium are not included in these proceedings. The paper presented by Larry Richman entitled "The Semantic Value of the -a' and the -i' Noun Plurals in Cakchiquel" will also be printed in the January 1980 issue of Notes on Linguistics published by the Summer Institute of Linguistics. The paper presented by Larry Foley entitled "Sociolinguistic Variation in Western Cherokee" will be printed in a forthcoming issue of the International Journal of the Sociology of Language. The paper presented by Maurice Friedberg entitled "Russian Translations of Contemporary American Literary Works" will also be published later by the author. Papers presented by David L. Frischknecht, Robert W. Blair, Mike McOmber, and Adam Makkai are not included as they were not available at time of publication.

In addition, one paper presented at the 1978 symposium of the Deseret Language and Linguistic Society is included in this volume, a paper entitled "Communication Games in the Language Class" presented by John Harvey.

The bibliographic information and notes have been left in the form the various authors of the papers provided. This was done with the view that accuracy was more important than form and that the readers of the proceedings would be of diverse enough backgrounds that they could decipher the variety of forms used.

It is hoped that these proceedings will serve to stimulate further work in the areas discussed.

Cheryl Brown, Editor
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A STRUCTURAL AND GENERATIVE STUDY
OF THE PHONEME /t/ IN SPANISH

S. Addison Everett

Ostensibly, the distribution of the phoneme /t/ should cause no
problem to the linguist; however, among experts there is a marked
difference of opinion concerning the systemic function of /t/.

The rule given by John Dalbor on the use of /t/ is:

\[
/t/ \rightarrow \begin{cases} 
[t] & /C_v/ \\
[d] & \text{elsewhere}
\end{cases}
\]

ritmo [\text{[ri-\text{mo}]]} or
tomar [\text{[to-m\text{\'a}n]}]

/C_v/ represents any voiced consonant.

This rule simply means that /t/ is realized as [t] or [d] when
followed by a voiced consonant and as [t] in all other environments.

That /t/ is realized as either [t] or [d] when followed by any
voiced consonant presents some interesting questions. By examining a
chart of Spanish sounds it can be determined that /t/ combines with only
five other phonemes to form the consonant combination /tC_v/. These five
phonemes are /m/ (atmósfera, ritmo, aritmética), /n/ (ético, etnología),
/l/ (atleta, atlas, atlántico), /b/ (fútbol), and /r/ (otro, electrónico,
encontrada, instrumento). According to Dalbor's rule, the preced-
ing words could be pronounced [atmósfera], [ri-mo], [ar-imètrica],
[ético], [et-nòlo-gia], [at-le-ta], [a-tlas], [a-tlántico], [fu-bol], [o-tró],
[e-lec-trónico], [en-con-trada], and [in-strumen-to]. However, in examination
of native speakers of Spanish, not one example of /t/ → [d]/_\_ /C_v/ was
found. In every single case the native speaker used [t] in all environ-
ments. Since most authors declare that /t/ → [d]/_\_ /C_v/ occurs, the
phenomenon appears to be regional, to occur in rapid speech, to be
affected by education, or a combination of the three.

Something to consider at this point is the concept that /r/ and /l/
can be separately classified as liquids, but are included by Dalbor to be
consonants, suggesting that they should fit into his rule.

If one divides those words containing the consonant combination /tC_v/
into syllables, it would be discovered that with /tm/, /tn/, and /tb/, the
/t/ and the following /C_v/ are always in separate syllables forming what
is called a consonant sequence.

\begin{align*}
\text{at-mós-fe-ra} & \quad \text{et-ni-co} \\
\text{a-rit-mé-ti-ca} & \quad \text{et-no-lo-gí-a} \\
\text{rit-mo} & \quad \text{fút-bol}
\end{align*}
As for the combination /tl/ there exists some controversy as to how it syllabifies. James W. Harris states that atleta can be syllabified a-tle-ta. However, Dalbor shows an example of /tl/ being divided into separate syllables (ad-lan-ti-co). Navarro Tomás and Joseph Matluck, two leading phonologists, also give examples of the combination /tl/ being divided into separate syllables. This indicates that /t/ is voiced in the examples used by Navarro Tomás and Matluck.

ad-las

ad-lan-ti-co

al-le-ta The first [l] being a voiced allophone of /t/. The problem in Dalbor's rule that must be justified is the consonant combination /tr/. Unlike the other combinations examined the combination /tr/ cannot be divided into separate syllables and is always syllable initial, forming, therefore, what is termed a consonant cluster.

Concerning the cluster /tr/ in Mexican Spanish, Joseph Matluck stated that the /r/ sometimes becomes a voiceless fricative, but that the /t/ does not lose its articulation.

It should have been considered that /tr/ is never divided and is always syllable initial. The fact that the /t/ of the cluster /tr/ does not have a voiced allophone, and therefore, does not fit into the rule given by Dalbor must also be considered. A rewrite of Dalbor's rule must contain a boundary element which would allow the rule to apply across syllable boundaries but not within the same syllable. A rewrite of Dalbor's rule could be:

\[ /t/ \rightarrow \begin{cases} [\{t\}] & if \$ /CV/ \$ \\ [t] & elsewhere \end{cases} \]

/\$/ represents any voiced consonant.
\$ means across syllable boundaries.

A study of the phoneme /t/ made by James W. Harris must now be considered. Harris introduces his study by assigning the following features to the phoneme /t/.

\[
\begin{array}{c|c|c}
[t] & [t^d] \\
\hline
continuant & - & - \\
tense & + & + \\
voice & - & + \\
\end{array}
\]

[t] represents the unvoiced allophone of /t/.
[t^d] represents the voiced allophone of /t/.

Harris then refines the features, citing a study made by Liskee and Abramson to declare that the onset of voicing substantially coincides.
with the stop release. This, they declare, places the Spanish /t/ in the same category as the English /d/ which is prevoiced.

Based on a study of the phoneme /t/ in Korean by a Mr. Kim, the feature [+ voice] is assigned to the "voiceless" [t]. Harris states:

I shall not summarize here the intricate argument that Chomsky and Halle give to support these specifications. The point most germane to the present discussion is the assignment of the feature [+ voice] to "voiceless" t₁. This feature is correlated with the nonspreading position of the vocal cords appropriate for voicing; but t₁ is not "voiced" because of the tenseness of the supraglottal musculature ([+ tense]) and glottal constriction. Onset of voicing of a following vowel is simultaneous with release of the glottal constriction, however, since the vocal cords are already in voicing position. In t₂, on the other hand, there is a moderate lag in the onset of vocal vibrations since the vocal cords are not in voicing position when the stop closure is released.6

The feature [+ voice] is the one Harris assigns to /t/. The following set of features used by Harris is included in order to help explain his rules:

<table>
<thead>
<tr>
<th>[t]</th>
<th>[td]</th>
</tr>
</thead>
<tbody>
<tr>
<td>continuant</td>
<td>-</td>
</tr>
<tr>
<td>tense</td>
<td>+</td>
</tr>
<tr>
<td>voice</td>
<td>+</td>
</tr>
<tr>
<td>heightened subglottal pressure</td>
<td>+</td>
</tr>
<tr>
<td>glottal constriction</td>
<td>+</td>
</tr>
</tbody>
</table>

Harris gives the following rules:

- cont - voice
+ tense + h. s. press — (#) - obstr
          + glott con - nasal

#refers to word boundary.
(#) gives the option of applying across word boundaries or within a word.

Harris explains the rule saying:

[This rule] assigns the features [+ voice, + heightened subglottal pressure, + glottal constriction] to [p, t, k] before vowels, glides and liquids, but not before obstruents or nasal sonorants. That is, [this rule] applied to just those instances of [p, t, k] that do not become [p̂, t̂, k̂] by assimilation to a following voiced segment.7
Harris explains that the following rule has the purpose of voicing [t]:

$$\begin{align*}
\{ + \text{obstr} \ \& \ - \ \text{h.s. press} \} & \rightarrow [\ \alpha \ \text{voice} \ \& \ \# \ \& \ + \ \text{cons} \} \\
\end{align*}$$

The most important factor to consider in analyzing Harris' rule is that of syllabification. Harris, for example, syllabifies atleta as (a-tle-ta) and not (at-le-ta). As was indicated earlier in this paper Joseph Matluck in his study of Mexican Spanish divided atleta as (al-le-ta), the first [t] being a voiced allophone of /t/. As was also mentioned earlier Navarro Tomas also separated the combination /tl/ into separate syllables. The fact that /tl/ are divided has a bearing on the validity of Harris' rule.

In a survey of educated native Spanish speakers at Brigham Young University, some of whom are from Mexico, in almost every case the /t/ and /l/ of the combination /tl/ were divided into separate syllables.

Harris' first rule is given here again:

$$\begin{align*}
\{ - \ \text{cont} \ & \rightarrow [ + \ \text{voice} \ & \ + \ \text{h.s. press} \ & \ + \ \text{glott con} \} \\
\end{align*}$$

In order to exclude /l/ from this rule the feature [ - lateral] should be added after the boundary element. A rewrite would be:

$$\begin{align*}
\{ - \ \text{cont} \ & \rightarrow [ + \ \text{voice} \ & \ + \ \text{h.s. press} \ & \ + \ \text{glott con} \} \\
\end{align*}$$

This rule says that the phoneme /t/ will be realized as the unvoiced allophone when followed by vowels, glides, and /r/, in which case the /t/ and the following phoneme will be in the same syllable.

Harris' rule for the voicing of /t/ is also given again:

$$\begin{align*}
\{ + \ \text{obstr} \ \& \ - \ \text{h.s. press} \} & \rightarrow [\ \alpha \ \text{voice} \ \& \ \# \ \& \ + \ \text{cons} \} \\
\end{align*}$$

Since /l/ was excluded from the rewrite of Harris' first rule, and since evidence shows that the combination /tl/ is divided into separate syllables in which case the /t/ may be voiced, the phoneme /l/ must be provided for in a rewrite of Harris' second rule. A rewrite would be:

$$\begin{align*}
\{ + \ \text{obstr} \ \& \ - \ \text{h.s. press} \} & \rightarrow [\ \alpha \ \text{voice} \ \& \ \# \ \& \ + \ \text{cons} \} \\
\end{align*}$$

This rule, then, provides for the voicing of /t/ when followed by /m, n, b, l/. In such cases, the [td] and the following phoneme will occur in separate syllables.
FOOTNOTES


5 Matluck, p. 117.

6 Harris, p. 42.

7 Harris, p. 44.

BIBLIOGRAPHY


Few sociolinguistic or dialect geography studies have been done in the Intermountain West yet. This is unfortunate because this area has some unique and interesting characteristics. Two studies that I am aware of are Stanley Cook's University of Utah dissertation on the emergence of an urban dialect in Utah (Cook 1969), and Vel Helquist's M.A. thesis from the same university (Helquist 1970). These are valuable contributions. The data and analysis contained in them have provided us with much of the meager information we do have of the sociolinguistic processes operant in this area.

Both of the above studies are concerned with an urban/rural dichotomy and they have shown that the dynamics of change are toward an urban model represented by the speech of Salt Lake City and other urban centers. One of the unique features of Utah and the Intermountain West, however, is the social and linguistic character of the rural areas themselves. What we find here are relatively separate and isolated rural communities settled at a fairly recent time, and tied together by common cultural and religious concerns, similar agricultural and economic patterns, and a widely-shared religion which profoundly shapes social and communication patterns.

Sociolinguistics and dialect geography have not really examined situations of this kind anywhere. The major studies of recent years have been concerned with heterogeneous urban areas or with specific ethnic or linguistic communities.

One exception to this is my own dialect geography work in Iran in 1970 to 1972 (Krahnke 1976). The situation in Central Iran is remarkably similar to that of our area, the one difference being that settlement has been continuous and relatively undisturbed for probably several thousand years. Otherwise, the arid land, the agricultural base, the ethnic uniformity, and a common religion are all similarities. The linguistic picture that emerged there was of fine-grained linguistic differentiation maintained over many centuries and constrained by local inwardlookingness. The direction of change was toward an urban, educated standard, of course, but the contrary tendencies were strong.

This is, I believe, a finding we can keep in mind as we consider the sociolinguistic processes of our area. The inwardlookingness of the rural communities of this area has, it seems, been overlooked. The social-geographic pattern that many assume for this area is a core or center, a city or extended urban center, surrounded by a variety of small satellites. Communication, it is assumed, occurs both along the city-satellite axis and also along the satellite-satellite axis. The overall picture is that of a relatively uniform rural area looking outward (or upward) to a differentiated city center.
To some degree, of course, such a conception is probably valid. But the factor that is often overemphasized is that of the degree of positive orientation of one rural area to another. The pattern I discovered in Iran was of a strong village-city axis and a very weak or non-existent village-village axis. Put simply, the villages do not talk to each other very much.

The situation is not that extreme in the Intermountain West, but what is probably true, and what remains to be studied, is that the separated communities of this area have an interest in maintaining a social-cultural identity, separate from that of their neighbors. This interest may interfere in interesting ways with the fine-grained rural-urban continuum that Cook and Helquist have begun to establish. There is a parallel here with Labov's Martha's Vineyard study (Labov 1963), but instead of an on-island/off-island dichotomy, we have an in-town/out-of-town distinction.

There are, then, at least two patterns of social differentiation in the Intermountain West: one, a rural-urban difference, and two, a rural-rural differentiation. The first has been studied to some degree, the second remains to be studied and holds, I believe, rich promise.

A third social variable which must be recognized in this area is that of sex-differentiation. In the western United States, and among members of the LDS church, sexually defined roles have their own peculiarities and these peculiarities must contribute in a significant way to linguistic differences.

A fourth social variable is that of social stratification and social class. This phenomena has not been examined in the existing studies at all. As Cook puts it (1969: p. 137), "In the communities in Utah there is no significant social stratification, and this condition is mainly the result of the Mormon church." This has to be a serious oversimplification of what must be a very complex pattern of stratification, involving economics, occupation, education, church position, family size and marital status among other factors. Just because the church is a powerful unifying force, and it is, and just because the church includes egalitarianism in its values, does not mean that these processes and ideals have been carried to completion. There is certainly stratification in Utah. It is finer than that of, say, the lower east side of New York City—which is why a study of it would be so interesting—but it is definitely there. It must also be kept in mind that there are a significant number of non-Mormons in most of the communities of Utah and they play an important role in the overall stratification picture.

A fifth social variable that should provide us with rich results if studied in our area is what I would like to refer to here as social models. What I mean by this is a person or an idealization of a complex of personal characteristics that serves as a goal of accommodation (Giles & Powesland 1975: 157ff.) or imitation. This variable is really a complex of setting, status, topic, participants, etc., but I think it is a useful notion in explaining style shifting in a rather broad manner. Just as Martha's Vineyearders have different /aw/ values depending on the positiveness of their orientation toward living on the island, so is much style shifting determined by an individual's or a group's orientation toward a social type.
I hypothesize that the models for a typical rural Utah speaker are complex, reflecting social processes orientated toward the community, a profession, the local church organization, the church at higher levels of organization, and, at time, non-LDS, non-Utah models. The identification of these orientations and the conditions under which they come into play promise to teach us much about the mechanisms of language variation and change in this area.

In summary, rural-urban differences, rural-rural differences, sex differentiation, social stratification, and a variety of social models are all factors which seem especially significant in our geographic and cultural area. They must be added to the usual variables of age and education, and to the surprisingly poorly studied matter of geographic variation.

Let us now turn to the linguistic variables. Variables exist, of course, on the lexical, syntactic, and phonological levels and all have their diagnostic value. But to study the fine-grained patterns of differentiation we seem to have in this part of the Intermountain West, the scalar nature of vowel differentiation and the frequency of occurrence of vocalic phenomena offer by far the best means of studying the relationship of social to linguistic differences.

Unfortunately, since so very little dialect geography has been done in this area, determining the nature of the vowel systems and where variation is to be found in them means, in most cases, starting out afresh. What I would like to do in the remainder of this paper is to lay the groundwork for such study by summarizing what we have so far learned about the vowel pronunciations in northern Utah which show the greatest degree of variation.

The basis for this summary is a lot of casual observation, a few interviews, and the work of several others, including Cook (1969), Helquist (1970), and the article by DeSantis in a recent issue of this Society's Bulletin (DeSantis 1978). 1

1. The variable (or variables) that has reached the level of stigmatization among many speakers is the variable behavior of the /o/ and /a/ phonemes before /r/. The stereotype has it that these have switched, resulting in pronunciations something like [form] and [farm]. While the stereotype is well-known, the facts are not at all as clear. What seems to be true in northern Utah is what Cook and Helquist found in other

1. None of this work was done in northern Utah, and my own observations are limited to that area. This does not seem to be a serious problem as the variables that are being examined appear to be quite geographically widespread. The geographic boundaries of the speech community so defined remain to be worked out, but it is clear that they include much of Utah and parts of Idaho, Wyoming, and Nevada, at least.
areas, that is that there is neither a switch nor a merger of these two vowels.

Of the two, the /o/ phoneme exhibits the wider range of realizations, ranging from [ɔ] through [æ] to [a]. In the published work, and in my observation, it is the phoneme that is least subject to "correction" or "normalization". The vernacular norm seems to be somewhere around [ɔ] for most speakers, not [0].

The /a/ phoneme, on the other hand, is much less subject to variation in realization. Its range is smaller and it is more subject to normalization. The vernacular norm seems to be a backed [a] ([ɔ]).

There is a suggestion that occurrences of backed and raised /a/ are hypercorrections, resulting from an incomplete merger of /o/ and /a/ and applying "correction" to both. More work is needed before this can be determined. What is clear at this point is that there is a strong tendency for /or/ to be realized with a lowered, unrounded, and centralized vowel with a weaker tendency for the vowel in /ar/ to be backed and somewhat rounded.

The social factors associated with lowered /or/ are age and a rural orientation. Occupation and education must also figure in.

2. Also relatively well-known, but not usually raised to the level of linguistic consciousness (and therefore stigmatization), the laxing of the high tense vowels before /l/, in words such as feel, sale, fool, and, possibly pole. The phenomenon seems as prevalent in northern Utah as it is in the central part of the area. It is of a smaller phonological range than the /or/-/ar/ variables. The phenomenon seems to be strengthening and the degree of laxing seems to correlate with youth and urbanism, although the facts are far from clear. DeSantis' work has been valuable in understanding this variable (DeSantis 1978).

3. The lax vowels /i/, /æ/, /u/, and, to some degree, /æ/ and /o/ variably show a central off-glide, especially when under stress. Examples of this are: pit [pi*t], pet [pe*t], pat [pa*e*t], put [pu*t], and, occasionally words like pour or four [po*e*r]. The phenomenon is almost universal among speakers in our area but is subject to phonological and lexical conditioning factors as yet unstudied.

The offglide probably contributes to what is perceived locally as the "Utah drawl".

The social factors involved in the variable offgliding of the lax vowel seem to be sex, with women demonstrating more offgliding than men, and positive orientation toward the cultural area. There seems to be a tendency to minimize the offgliding when the speaker does not wish to "sound like a Utahn".

4. As in much of the rest of the United States, lax /e/ is variably merging with lax /i/ before nasals, especially /n/. Examples: pen [pɛ*ŋ], sent [sɛnt]. It is nowhere near being a merger at this time. The phenomenon is variable and is an innovation. It is most advanced, therefore, among younger, more educated speakers.
5. Tense /iy/ and /ey/ are variably glides, beginning from a central position somewhat above [ə] and gliding upward and forward to [i] and [e]. Examples are beat [bɔɪt] and bait [bɔət]. The phenomenon is most apparent under stress. The social factors involved are unknown to me but I strongly suspect this to be an innovation.

6. Tense /uw/ and, possibly, lax /u/, are variably centralized, sometimes with a front to back glide also involved. Examples are: food [fuəd], or [fɔd], good [ɡud], or [ɡɛd]. Both the linguistic and social conditions associated with this variation are still unclear, but the phenomenon is very common and widespread and seems to be more frequent among younger speakers of all classes. As with the merging of /i/ and /e/ before /n/, this is a southern phenomenon which may be spreading into this area.

7. /a/ is generally realized further back than in many other dialects, even when not before /r/. This is especially true when /a/ occurs before /p, k, l, n/. The realization often reaches close to [ɔ], a vowel that is supposed to be non-existent in this area. The phenomenon is especially notable when /a/ appears before /n/, giving examples such as: conference [konfrɑns], or bonfire [bɔn fɑr]. Other notable lexical forms are: top, talk, all, and on.

The social correlation of this variable is largely with age, older speakers tending to have realizations further back.

8. In common with much of the rest of the northern part of the United States /æ/ is showing signs of raising, even among older speakers. The raising is most advanced among younger speakers, however.

9. The diphthongs /aw/ and /ay/ have some variability in common—the fronting of the nucleus almost to [æ]. Cook (1969) has studied /aw/ and what he found is also true of /ay/, but less categorically and under more complex conditions. Examples such as cow [kæv] and now [næv] should be familiar, high [hæi] may not.

Fronting is correlated with youth and urbanism. /ay/ has two other realizations. One, a monophthongized [aː] as in time [taːm] or my [maː], the other a raised, backed, and rounded [o] as in nice [nɔs]. All three realizations of /ay/ have been observed to occur in the speech of single speakers, but the linguistic and social constraints are as yet unknown.

10. A final variable on which I have very little information as yet is the tensing of lax /i/ and /e/ before /r/. Examples of this are year [jɪr] and burial [berɪəl]. This also seems to be correlated with age and lower socioeconomic class, and with ruralism.

In summary, there are a fascinating variety of sociolinguistic phenomena, ripe for study, in this part of the United States. Because of the idiosyncratic social structure of Utah, some of the linguistic variables are more immediately understandable than the social ones. Much of the change in our area seems to be in the direction of an urban, educated standard, as Cook has shown (Cook 1969). But there are strong contradictory tendencies which beg to be studied. What I have attempted here is a charting of the basic components of such study.
REFERENCES


SOME OBSERVATIONS ON THE LANGUAGE OF HYMNS

Samuel C. Monson

The volume entitled Hymns: The Church of Jesus Christ of Latter-Day Saints, first published in 1948, is a varied collection not only of religious and patriotic verse but of linguistic history and change. Most users of the book are unaware of what it reveals about the English language.

Few standard poets are represented--only Joseph Addison, William Cowper, Oliver Wendell Holmes, Rudyard Kipling, Henry Wadsworth Longfellow, Thomas Moore, and Alfred, Lord Tennyson--perhaps because the language of hymns is more direct and immediate in expression than the metaphorical indirection of most poetry and perhaps because the necessity of exact repetition of rhythmic patterns from stanza to stanza to fit the musical strait jacket does not allow the substitution of poetic feet which occurs in more sophisticated poetry. "Jesus, though dead"--successive trochaic and iambic feet--is possible in poetry, while the "Jesus, though dead" (263) we sing is awkward. The anapestic feet of "Is counted but dross and refuse" (143) force mispronunciation of refuse because only a sixteenth note in the music is assigned to the normally stressed syllable.

The collection has a generous sampling of several great Protestant eighteenth-century hymn writers, particularly Isaac Watts and Charles Wesley, and of nineteenth-century Americans belonging to the less staid, more enthusiastic sects. There are some obvious translations (Martin Luther, Francis of Assisi, and Bernard of Clairvaux did not write in English), but no acknowledgment of who the translators might have been. Some alterations of standard texts are similarly unacknowledged, as when Isacc Watts' "Joy to the World" (88) appears with "the Lord will come" in place of "the Lord is come" and "And saints and angels sing" is substituted for "And heav'n and angels sing." Nearly half of the hymns are by Mormon writers, many more from the nineteenth century than the twentieth. Three of the most generously represented were members before the Church came to Utah in 1847: W. W. Phelps, Parley P. Pratt, and Eliza R. Snow, who together account for 34 texts.

A number of linguistic problems are a direct result of the fact that so many texts were produced by occasional rather than skilled poets. Syntactic patterns are violated for the sake of rhythm or of rhyme, as in:

School thy feelings; condemnation
Never pass on friend or foe,
Though the tide of accusation
Like a flood of truth may flow. (340)

instead of "...never pass condemnation on friend or foe, though the tide of accusation may flow like the flood of truth." In fact, inversions of fixed sentence patterns occur in about half of the hymns, almost always
because of the requirements of verse rather than as manifestations of earlier freedom in sentence order. Words appear as unexpected parts of speech because of the exigencies of verse:

When I leave this frail existence,
When I lay this mortal by . . . (138)

--rather than "mortal body." Count and non-count nouns are sometimes confused:

Is every man a wheat or tare? (102)

Despite such drawbacks in making a linguistic analysis, there are many other peculiarities of language which can be attributed to the time of composition, to conservatism in the language of religion, or to the dialect of the poet.

Personal pronouns have changed greatly as English has developed. Since the time of Shakespeare the second person pronouns in particular have altered greatly. Ye, the earlier plural subject form, has become archaic or dialectal, while you, formerly the plural object form, has been extended in use as plural subject and as singular subject and object. Many hymns preserve the old case distinctions (11, 12, 13, 23, 27, 29, 37, 48, 52, 62, 63, 100, 128, 129, 137, 145, 154, 183, 207, 211, 214, 218, 223, 229, 233, 247, 255, 278, 289, 290, 294, 335, 344), but a number seem to confuse ye and you. "Judge not, that ye be not judged" alongside "you must receive" (188) suggests that the first is to be considered as a quotation. However, "If you could hie to Kolob . . . / D'ye think that you could ever" (257) is a clear-cut case of variation in form of the subjects of clauses. All other examples seem to make a distinction between you, as a subject form, and ye, as the form appropriate with nouns of address, which are frequent in the exhortations common to hymns. These examples combine both forms in those contrasting uses:

Waft, waft, ye winds, his story.
And you, ye waters roll. (40)

Now, 0 ye Saints, rejoice today
That you can saviors be. (45)

Come, all ye scattered sheep, and listen to your Shepherd,
While you the blessings reap . . . (302)

Second person singular pronouns-- thou, thy, thine, thee--have disappeared from English except in dialectal and religious use. Mormon church leaders still encourage use of these singular pronouns in prayers addressing God. Many hymns use these forms, mainly in reference to Deity, although some hymns use them in reference to people, as in "School thy feelings, 0 my brother" (340). A number waver between familiar, habitual plural forms and the singular forms considered "proper" in religious contexts. In "All Creatures of Our God and King" (4) "thou burning sun," "thou silver moon," "thou rising morn," "ye clouds," all exhibit conventional concord, while ye light of evening" does not and "Thou flowing water, pure and clear,/Make music for your Lord to hear"
shifts from singular to plural in reference to water, which is singular. "How firm a foundation, ye Saints of the Lord" shifts to "As thy days may demand, so thy succor shall be" and "Fear not, I am with thee" (66). One hymn makes such shifts in every stanza:

I'll answer, dear Lord, with my hand in thine:
I'll go where you want me to go.

O Savior, if thou wilt be my guide, . . .
I'll say what you want me to say.

So trusting my all to thy tender care,
And knowing thou lovest me,
I'll do thy will with a heart sincere;
I'll be what you want me to be. (75)

Other examples are:

Israel, Israel, God is calling,
Calling thee from lands of woe . . .
Israel, Israel, God is speaking;
Hear your great Deliverer's voice! . . .
Come to Zion, come to Zion,
For your coming Lord is nigh . . .
Israel! Israel! canst thou linger . . .? (81)

Then work and watch and fight and pray
With all thy might and zeal;
Push every worthy work along;
Put your shoulder to the wheel. (206)

and

Praise ye the Lord! . . .
Thy God, O Zion, ever reigns . . . (277)

(This grammatical chaos is emulated in Mormon public prayers, which are notable also for the strange verb forms devised to accompany second person singular subjects.)

For some time after the distinction developed between the possessive pronouns mine and thine and the newer possessive adjectives of my and thy, mine and thine could be used as adjectives if followed by a vowel sound. That distinction between thy and thine occurs in a number of hymns, which may preserve the second person distinction just because all the second person singular forms are similarly archaic. Thus:

"thy grace" but "thine approval" (8),
"thy throne" but "thine arm" (123),
"thy feet" but "thine own appointed way" (142),
"thy will" but "thine ends" (155),
"thy cheerful ray" but "thine ancient people" (240),
"thine every flaw"/"thine alabaster cities" (126),
"thine own" (180),
"thine eye" (188),
"thine ancient fulness" (189),
"thine angels" (192),
"thine eyes" (370).

"Thine heart" (280) suggests that the h is to be dropped in pronunciation. Most corresponding first person singular forms have been reduced to my. Only three example of mine as a possessive adjective occur:

"mine ends" (155),
"mine eyes" (197),
and
"mine enemy" (294).

Distinctive verb endings for second and third person singular have disappeared in Modern English, but they appear on many verbs in hymns. Examples of the second person singular present indicative include ten examples of art (104, 109, 146, 148, 149, 188, 203, 212, 274, 346); two of gavest (230, 258); and one each of anointest (104), carest (106), say'st (121), needest (150), didst (153), knowest (192), wilt (230), biddest (258), seest (258), and comest (258). Wast, the second person singular past indicative occurs once (381). Second person singular auxiliary forms are frequent: wilt in nine hymns (75, 97, 109, 148, 240, 176, 260, 265, 381), shalt in seven (108, 212, 260, 273, 346, 381, 386), hast in four (241, 150, 153, 381), canst (81, 106, 121) and wouldst (240, 280, 292) in three each, dost in two (107, 181), and wert (145) and mayst (244) in one each.

Archaic forms are used extensively and carefully in one hymn that includes a second person singular form along with six third person singulars:

he reigneth,
he sustaineth,
all thou needest hath been granted,
he ordaineth,
the Lord, who doth prosper,
all that hath breath. (150)

Third person singular forms are, however, fairly rare: ruleth (9), draweth (11), goeth (27), saith (46), assaileth (157), shinet (165), hath (284), giveth (293), cometh (370) appear once each and the auxiliaries hath and doth in seven each (61, 120, 150, 155, 283, 286, 339; 29, 178, 219, 245, 274, 297, 339), in addition to the example just quoted.

There are a number of other incongruities with these forms within hymns. The auxiliaries doth and hath sometimes appear alongside other verbs with the modern -s ending rather than archaic -th:

"For God remembers still" with
"In Deseret doth truth/ Rear up its royal head" (62);

"Time flies on wings of lightning" with
"As winter time doth follow" (73);
"Satan's host doth flee" with
"Like a mighty army/ Moves the Church of God" and
"Christ, the royal Master/ Leads against the foe" (128);

"The Lord from heaven hath spoken" with
"Rejoice, for your salvation begins anew" (289).

Likewise, principal verb forms in -s and -th may be intermingled:

He leadeth my soul where the still waters flow,
Restores me when wandering, redeems when oppressed . . .
With blessings unnumbered my cup runneth over. (104)

Sing praise to him who reigns above . . . .
With healing balm he fills
And every faithless murmur stills . . . .
What his almighty power hath made,
His gracious mercy keepeth.
By morning glow or evening shade
His watchful eye ne'er sleepeth . . . .
He leads his own, his chosen band . . . .
. . . the grateful song
My voice unwearied raises. (158)

Faith is a rock, steadfast, secure.
Who builds thereon he buildeth well. (233)

Verb and pronoun forms from the Early Modern and Modern periods are
sometimes unexpectedly intermingled:

O God, th' Eternal Father,
Who dwells amid the sky,
In Jesus name we ask thee . . . . (125)

Thy Spirit, Lord, has stirred our souls. (204)

Count your many blessings;
See what God hath done. (202)

During the Modern period a new method of expressing a negative state-
ment command, or question by using the auxiliary do has developed. The
earlier forms persist in:

It matters not. (294)
The blood of those that slaughtered lie
Pleads not in vain. (229)
Think not when you gather to Zion. (21)
Shrink not from your duty. (184)
Fear not. (195, 222)

and

Carest thou not that we perish? (106)
"Know you not" (22) mixes the archaic verb form with the new subject form of the pronoun. Two hymns use both archaic and present-day verb forms:

O let not vain ambition nor worldly glory stain
Your minds.

and

O do not be discouraged. (345)

Don't let them pass you by . . . .

Time flies . . . .

and

As winter time doth follow. (73)

We now express the first person plural imperative with let us. The earlier form occurs in some hymns, as in "Now thank we all our God." (120)

In Early Modern English some perfect tenses were formed with to be rather than to have, as in:

He is risen . . . .
Death is conquered. (61)

The hopes and fears of all the years
Are met in thee tonight . . . .

and

For Christ is born of Mary. (165)

One recurrent feature of spelling in hymns was particularly characteristic of the nineteenth century, when past tense and past participle forms ending with the sound of t were frequently spelled with that letter. Apparently such spellings were adopted when pronunciations were changing in order to indicate the loss of a syllable, with an unaccented vowel disappearing and the inflectional ending coalescing with the stem. The spellings are much less common today. Script (153), deprest (294), and tempest-tost (301) each occurs once. The most familiar such form is blest, which appears spelled with t in twenty-one hymns (87, 91, 103, 106, 111, 112, 131, 133, 147, 156, 186, 225, 244, 248, 274, 280, 284, 292, 337, 345, 389). Familiarity with the Beatitudes made the two-syllable bless-ed a possibility even for modern writers, and it occurs in seven hymns (103, 106, 114, 147, 156, 193, 233); bless-ed-ness in one (132). Two hymns use both forms: "bless-ed Redeemer" and "blest harbor" in one (106); "bless-ed to open the last dispensation" and "honored and blest be his ever great name" (147) in the other. Another two use the -ed spelling pronounced as one syllable (13,120).

Bereft (381) for bereaved is a somewhat related shortening of a past participle, with shortening of the stem vowel as well as loss of a syllable.

An apostrophe may be used to indicate an omitted letter, as in contractions of two words into one. English handbooks still deplore contractions in formal writing, but 136 examples occur in these hymns, most of which must have seemed formal to their authors. Some contractions fit the patterns of speech, although they are unlikely to appear in print: enemy's (175) for enemy is, heaven's (106), th'angelic (60), th'encircling (112), th'event (171), th'Eternal (125, 229, 253, 274), th'unbroken (219), th'invisible (228), th'oppressed (277). A number of contractions appear
which are common today in print. We'll, in 24 hymns, is the most frequent (13, 15, 42, 86, 87, 130, 132, 144, 161, 179, 186, 194, 196, 205, 213, 218, 234, 243, 267, 288, 291, 296, 297, 344), with most of the others occurring in only one or two hymns. It's and 'tis first appeared in print during the seventeenth century, but it's has almost completely supplanted 'tis in present usage. Hymn language is in a world apart: it's appears but once (302), while 'tis, with 25 occurrences (2, 13, 16, 32, 46, 58, 90, 115, 131, 143, 163, 167, 172, 181, 186, 187, 188, 210, 234, 267, 275, 283, 299, 303, 381), is the most common contraction in the volume. Other archaic or obsolete contractions are: 'twas (136, 187, 233, 275, 295, 299), 'twere (292), 'twill (186)--all of which elide the i of it, a practice common two centuries ago and rare today--and did you (257), which employs an obsolete case form of you.

Some proper names from the Bible are syncopated more frequently than not—that is, shortened by a syllable in pronunciation. Caℓ-vary (275) and Caℓ-vary's (226) appear once each, as does Caℓ-va-ry (271) with the full value. Eph-raim appears twice, Ephraim's once, but Ephraim not at all. Je-ru-sa1em (303) occurs once in three syllables instead of four. Im-man-ue1 occurs once, Im-man-uel's twice, but Em-man-u-el's only once. Is-rael and Is-rael's appear eleven times each (21, 64, 81, 89, 182, 197, 224, 252, 264, 303, 344; 15, 53, 55, 223, 236, 249, 254, 263, 269, 277, 389), while Is-ra-el, in three syllables, appears but twice (39, 282).

Before the year 1500, evidences of v disappearing between vowels occurred in spelling. This feature is common in hymns but rare in Standard English today, except for the persistence of has instead of earlier hav-es:

\[
\begin{align*}
e'\text{er} & \quad (72, 133, 337) \\
\text{where'\text{er}} & \quad (18, 86, 94, 335, 344) \\
\text{where'n'\text{er}} & \quad (335) \\
\text{ne'\text{er}} & \quad (3, 37, 72, 87, 156, 158, 167, 169, 171, 176, 185, 193, 254, 277, 293) \\
\text{e'en} & \quad (66, 85, 124, 167, 275, 280) \\
o'\text{er} & \quad (3, 6, 10, 11, 16, 40, 43, 47, 55, 61, 72, 82, 87, 98, 106, 108, 110, 112, 127, 131, 132, 136, 151, 156, 170, 181, 186, 196, 197, 210, 211, 213, 223, 247, 264, 269, 273, 278, 288, 292, 296, 302, 340, 349, 359) \\
o'er\text{flow} & \quad (66) \\
o'er\text{throw} & \quad (81) \\
o'er\text{throwing} & \quad (239) \\
o'\text{ershadowed} & \quad (106) \\
o'\text{ercome} & \quad (114, 177) \\
o'\text{errule} & \quad (155, 282) \\
o'\text{erspread} & \quad (241) \\
o'er\text{head} & \quad (241)
\end{align*}
\]

occur a total of 85 times, all with v omitted in the spelling. A number of other words preserve v in the spelling but probably did not in their pronunciations, although congregations now try to put it in:

\[
\begin{align*}
\text{heav'n} & \quad \text{pronounced as one syllable} \quad (1, 4, 5, 19, 33, 35, 41, 44, 53, 78, 82, 83, 85, 90, 103, 129, 151, 171, 187, 211, 220, 223, 248, 249, 281, 296)
\end{align*}
\]
heav'ns (10, 82, 176, 264, 351)
heaven-ly (12, 24, 25, 41, 63, 67, 82, 95, 103, 161, 190, 200, 209, 214, 218, 223, 228, 239, 244)
heaven-born (60)
heaven-lit (181)
given (90, 151, 211, 296)
seven (107)
for-given (281)
driv'n (19)

Sometimes the full form, with a syllable more than the above, occurs in the same hymn as the shortened form of the same word (18, 24, 37, 82, 106, 110). Some of the shortened forms, without v, still occur in the Northern dialect in England. Otherwise, these forms are archaic or poetic.

The greatest store of information about earlier pronunciation of words in hymns is to be found in rhymes, many of which appear to be faulty. While it is true that some imperfect rhymes appear, it seems safe to assume that most rhymes were considered perfect rhymes by their authors. One reason is the distorted syntax, which so often sacrifices ready understanding for the sake of placing words in rhyme position. Another is that amateur poets usually recognize rhyme and rhythm as the only essential ingredients of poetry. The most compelling, however, is the many correspondences between most of the off-rhyme words and observations made by linguists about historical changes and dialectal differences in pronunciation. A thorough study would relate pronunciations to each poet's origins, birth and death dates, and likely mode of speech. Let us now merely skim the surface lightly, picking some of the more outrageous rhymes and suggesting how to reconcile apparent differences.

Pronouncing -in for a final unaccented -ing is something we hear, and perhaps do, every day, and that process accounts for the rhymes of Zion/lying (205) and flow in/bestowing (225).

Earlier we noted some persistence of ye instead of you. At least one rhyme suggests a pronunciation ye where the spelling has you: carry/hear you (247). Perhaps the same explanation would hold for Missouri/before you (37), although the final syllables might end in schwa: Missouri/before you.

An unaccented final -ure might be pronounced in two ways, as we can see in standard creature and dialectal critter. The latter pronunciation helps explain the rhyming of Creator with nature (40).

The spellings of -oi and -oy have acquired spelling pronunciations during the past two hundred years which they did not formerly have, as we note in the rhymes join/mine (229), join/divine (277), joy/cry (164), and destroy/nigh, where they once rhymed with something not exactly like today's long i sound.

We now shorten the vowels of some verbs when forming the past tense or past particle, as noted above with bereft and bereaved. That this was not always so we see from such rhymes as reared/heard (62), formerly heared; appeared/heard (250); made/said (41), formerly sayed; afraid/said (295); and flown/gone (17), formerly with a long o.
In spite of the o spelling, the vowel of come has always been pronounced with one of the sounds we associate with u. For that reason, the rhymes of come/home (20, 29, 35, 56, 92, 123, 234, 258), comes/homes (30), and overcome/home (283, o'er-114) might be eye-rhymes, that is, apparent but not real rhymes. The combination of come and home with millennium (132) suggests another possibility, the pronunciation of hum, which I have heard dialectally and which is also suggested by the rhyme Jerusalem/home (223).

At the beginning of the Early Modern period occurred the most far-reaching pronunciation changes in the history of English; and the Great Vowel Shift is an apparent influence in many rhymes. Every long vowel was raised in its pronunciation; and English spelling, which did not change, now suggests different sounds from those suggested by the spelling of European languages. The changes occurred over a long period of time and at different rates in different areas. Some vowels went through successive sound changes, others only one. Some long vowels were later shortened. Some sounds fell together and later diverged.

The names of two poets suggest some of the complexities. The surname of John Keats, born in London in 1795, contains the vowel sound of the spelling ea reached in the final stage of the Great Vowel Shift. The surname of William Butler Yeats, born seventy years later near Dublin, Ireland, preserves an earlier stage of development of the same vowel still characteristic of the Irish dialect. This discussion will concentrate on examples showing the effects of the Great Vowel Shift without explaining all of the ramifications, although perhaps one detailed example will indicate the reason for omission of other details.

God has a short vowel and did in Old English. There was formerly a variant with long o because of lengthening of the vowel in an open syllable in inflected forms. Milton rhymed God with abode and Pope rhymed it with road. The first of these rhymes is found in three Mormon hymns (133, 247, 277), the second in four (28, 44, 193, 290). Middle English long close o raised to [u:] and was then sometimes shortened to [U] and even unrounded to [A]. Apparently God(e) changed with other words containing that vowel. Hymns include the rhyme God/blood four times (218, 227, 242, 244), God/flood twice (229, 253), and stood/blood/God once (264).

Other examples of former rhymes affected by the Great Vowel Shift are:

mood/good (116)
understood/blood (125)
good/blood (288)
improve/love (17, 90)
remove/above (18)
other combinations with move and prove (45, 66, 74, 85, 244, 274, 298, 340, 346; proved/loved (126); beloved/moved (284)
seed/dead (224)
beneath/death (290)
faith/death (187, 225, 252, 345)
stayed/head--sometimes pronounced haid today, dialectally (84)
made/stead (274)
The long vowel sound formerly heard in head was similar to what we hear in it today and consider short. That similarity seems to have been utilized in rhyming:

- Deseret/great (62)
- blessing/ceasing (70)
- consent/restraint (45)
- Bethlehem/proclaim (60)
- hell/fail (151)
- bed/laid (209)
- Jerusalem/name (266)

The rhyming of prepared with afraid (13) appears completely false. However, afraid sometimes is manifest as afeard dialectally. In its earlier stage it would have been [əfɛːrd], and a plausible rhyme.

There are dozens of other rhymes which can be explained by methods similar to those I have employed, but time does not permit it. Perhaps two manifestations of what is usually considered substandard and dialectal might serve to round this paper out: In tomorrow/Gomorrah (183) one realizes that the final vowel of the first word must be reduced to match that of the second. The other example requires the omission of r before s: trust/accursed (46). Now only the lowly cuss rather than curse, but we preserve evidence that not all early Mormons made that social distinction.

Hymns are a great treasure house of linguistic history.
In his book Style in Hamlet, Maurice Charney (1969) describes the style of Hamlet's language as "self-conscious", "swaggering, expressive, self-indulgent, fulsome and rhetorical, inflated, theatrical, flamboyant"; adjectives that may warm the heart of the literary critic, but cause the linguist to grimace.

Linguists smile and literary critics cool, no doubt, at a reading of Rolf Sandell's (1977) discussions of operationalizations of style, quantifications in stylistics, stylistic variables and interrelations among stylistic variables.

While the advocates of the two approaches have agreed to a truce, and even to a peaceable cooperation under the skillful arbitration of King (1941), Enkvist (1964), and others, there remains the struggle to find a model of style based upon linguistic principles, but also accounting for the elusive quality that establishes the literary merit of a piece.

What is needed is a taxonomy for stylistics that names the "objects" of our study as adequately as the taxonomies used by the biologist and botanist name the objects of their studies.

I agree with King's view that traditional rhetorical terms interpreted by modern linguistic principles can prove extremely helpful in the analysis of style; I believe those terms form the beginning of our taxonomy. As Lanham (1968) points out, in the field of rhetoric there are many "differences of opinion about what basic terms mean." We considered the rhetorical terms available to use, then selected 29 terms which we felt could be used descriptively in the analysis of the language of Shakespeare and of the King James Bible (see Lanham 1968, Joseph 1947).

Since that time, I have been writing self-instructional lessons which our students complete at the beginning of the semester; in order to teach these terms, it has been necessary for us to modify the definition of a term in a way that makes it consistent, understandable, and useful for the non-expert. After about two weeks of study, the students have been able to use this limited taxonomy effectively as they read Shakespeare (or the Bible), and their abilities to both understand the plain sense of a passage, and to analyze its style have improved significantly.

It has become apparent that if readers do not have a clear idea of the language patterns that may exist, they may not notice what does exist.

Even a limited rhetorical analysis of Shakespeare's Macbeth 5.5.17-28 (See handout A) yields about a page and a half of information identifying phonemic, morphemic, lexical, syntactic and semantic patterns. This is simply a matter of identification at this stage; the linguist or the
literary critic would still need to evaluate the significance of the use of these devices. Significance might be determined for example by comparison with a norm, such as comparing this speech with the style of other speeches by Macbeth, or with the rhetorical norm of the play as a whole.

MAC 5.05.17-28

Macb. She should have died hereafter;
There would have been a time for such a word.
To-morrow, and to-morrow, and to-morrow,
Creeps in this petty pace from day to day,
To the last recorded of recorded time;
And all our yesterdays have lighted fools
The way to dusty death. Out, out, brief candle!
Life's but a walking shadow, a poor player,
That struts and frets his hour upon the stage.
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury,
Signifying nothing.

ANSWERS

Line 17, alliteration: she, should; homoeoteleuton: should, died.

Lines 17-27 consonance /r/: To-morrow, tomorrow, to-morrow, creeps;
poor, player, struts, frets, hour, heard, more.

Lines 17-28 consonance/alliteration/homoeoteleuton: should, died, would,
word, and, and, day, day, recorded, yesterdays, lighted, dusty, death,
candle, shadow, and, and, told, idiot, sound and; /d/t/alteration:
should, died, hereafter, would, time, such, word, To-morrow, and
to-morrow, and tomorrow, petty, day to day, To last, recorded time;
And yesterdays, lighted, dusty death, Out, out, candle, but, shadow,
That struts and frets, stage, And, It, late told, idiot, sound and.

Lines 17-18 internal rime: should, would; assonance: died, time.

Line 18 parenthetical + assonance: would, word (Sh; some modern dialects):
assonance: would, such, word (Sh; some modern dialects).

Line 19 triad, polysyndeton, epanalepsis.

Lines 19-20 anacoluthon (sg. verb form with a pl. subject).

Line 20 consonance/alliteration: creeps, petty pace; sense-play
(elicited by to-morrow 19): from day to day/from day to-day; assonance:
pace, day, day.

Lines 21-2 consonance /t/ + assonance /ai/: time, lighted; consonance
/t/s/: last, syllable, all, yesterdays, lighted, fools.

Lines 22-3 consonance /st/: yesterdays, dusty.
Line 23 transferred modifier: dusty (those who die become dust); epizeuxis: out.

Lines 23-4 consonance: brief, life's; candle, Life's player; assonance + consonance: candle, shadow.

Line 24 paromoeon: poor, player.

Lines 24-6 assonance: player, stage, tale (accentuated by final position in line).

Lines 23-7 assonantal echoes: Out, out, hour, sound.

Line 25 homoeoteleuton, consonance: struts, frets, stage.

Lines 25-6 assonance: frets, then, heard (Sh).

Line 26 assonance: no more.

Lines 26-7 polyptoton, /t/t/: tale, Told; consonance: tale, Told, full.

Line 27 alliteration + assonance /u/u/: full, fury; hendiadys: sound and fury = furious sound.

Lines 27-8 alliteration: sound, signifying; consonance: sound an signifying nothing.

Line 28 homoeoteleuton: signifying, nothing.

It is likely that studies of different individual authors and possibly further studies of different works by one author would extend the taxonomy we are now using.

Carpenter (1969) suggests that traditional rhetoric be used to help identify uncommon word orders, in texts under study. He then reduces rhetorical theory to twenty-one discrete conformations... the essential schemes of syntax... identified and classified by their five basic and discernible characteristics of repetition, omission, suspension, inversion, or antithesis.

While it may be convenient to reduce the number of rhetorical terms used, such large groupings may not adequately model or preserve the subtle but significant variations that exist within each classification.

Carpenter claims to have classified on the basis of syntax; however, he has relied a good deal on semantic information. We have found that some rhetorical devices occur only when specific syntactic and semantic requirements are met. For example, being able to distinguish between hendiadys and a pleonastic pair or a transferred modifier and some instances of hyperbaton requires having specific semantic information.

Carpenter claims to be classifying solely on the basis of syntax; however, the meanings of his classifications derive from non-syntactic
information. Unless the definition of syntax is extended considerably, as Carpenter seems to do to include such things as phonemic, morphemic and supra sentence patterns as well as semantic features, many rhetorical patterns ranging from below word level to above sentence level will not be recognized, and the stylistic analysis will be the poorer for the omissions.

We have made the point that 1) traditional rhetoric interpreted by modern linguistic principles provides a taxonomy for stylistics, and we will direct our attention next to establishing its corollary, that is, that 2) this taxonomy can be useful for describing the style of contemporary as well as ancient or Renaissance texts.

It is my view that analysts of modern poetry would find it particularly helpful to employ traditional rhetoric; for while many poets have discarded traditional metrical and rime schemes, they have retained, unknowingly perhaps, other traditional devices. By recognizing the existence of those devices the reader may better appreciate how modern poetry "holds together" without regularity of meter or rime.

Here (on handout B) is the first stanza of Dylan Thomas's "And Death Shall Have No Dominion".

And death shall have no dominion.
Dead men naked they shall be one
With the man in the wind and the west moon;
When their bones are picked clean and the clean bones gone.
They shall have stars at elbow and foot
Though they go mad they shall be sane,
Though they sink through the sea they shall rise again;
Though lovers be lost love shall not;
And death shall have no dominion.

Rhetorical devices used in these lines include: Sound Patterns: Title, 1-2. /d/alliteration, couplet; 1./æ/assonance; 2. /s/, /ei/; 2-3. /w/alliteration; 3. /i/assonance, man, moon paromoeon; 2-4. /n/homoeoteleuton;
6. /ei/assonance, Though, go; internal rime; 7. /s/alliteration; 8. /a/assonance, /t/ homoeoteleuton; 9. /d/ alliteration, /æ/assonance.

Other rhetorical devices: 1-2. isocolon; 1, 9. refrain; 2. hyperbaton (naked); 2-3 men, man polyptoton; 4. bones, clean antimetabole; 2, 5, 6, 7. they shall epanalepsis; 6-8. Though anaphora; antithesis in each line; 8. lovers love polyptoton; 8-9. isocolon.

Continuity in this poem is achieved through the use of repetition of sounds: consonance, assonance, alliteration, homoeoteleuton and paromoeon; through the repetition of words; refrain, epanalepsis, and anaphora; and through repetition of length of line; isocolon. This repetition is counterpointed by variation of word form: polyptoton; by variation of syntax: hyperbaton, and antimetabole; and by semantic contrast coupled with syntactic similarity: antithesis.

This is not to say that the effectiveness of the language inheres in the forms themselves; rather the poet uses these devices to develop the semantic content, meter, and tone of the poem.
Prose is also open to rhetorical analysis; here is an excerpt from The Bee and the Stork:

Thus ryghtwyse men dat lufes God are never in ydylnes; for owthyre dat ere in travayle, prayand, or thynkande or redande or othere gude doande or withtakand ydill mene and schewand thaym worthy to be put fra the ryste of heven, for dat will noghte travayle. Here dat take erthe, dat es, dat halde jamselfe vile and ertyly, that thay be noghte blawen with e wynde of vanyte and of pryde.

Since the relationship of spelling and pronunciation during this period is still in dispute, I have not proposed a sound analysis. Rhetorical Figures include: morphemic homoeoteleuton: prayand, thynkande, redande, doande, withtakand, schewand; polysyndeton: or; polyptoton: travayle, ydyllnes, ydill and erthe, ertyly; hendiadys: vile and ertyly = vile because earthly; pleonastic pair: of vanyte and of pryde.

Carpenter (1969, p. 166) notes that John F. Kennedy's most quoted words:

Ask not what your country can do for you—Ask what you can do for your country.

is antimetabole (your country, you) within antithesis.

We have found the stylistic taxonomy we adopted with 17th century texts in mind very helpful; it will take further research to establish one inclusive, systematic taxonomy for all periods and genres. I think it can be done; it has begun, and I think that it's worth doing.
BIBLIOGRAPHY


A LINGUISTIC VIEW OF SOME PROBLEMS OF TEACHING SHAKESPEARE

Arthur H. King

1. Two principles:

(a) The dialect in which Shakespeare writes is an entity: it cannot be reconstructed by juxtaposing pieces of modern usage with pieces of imputed 16th Century usage taken from a dictionary or grammar. It must all be seen as potentially different.

(b) It is impossible to accept traditional rhetoric as it stands, because it constantly violates linguistic principles, particularly those of phonetics. It is also impossible to extract Shakespeare by applying principles of modern rhetoric. The right approach for us is to endeavor to interpret traditional rhetoric in our linguistic terms.

2. Sounds, Much work has been done on the pronunciation of Shakespearian English (Kokeritz, Dobson). But it is pre-phonemic, and in the post-phonemic period of linguistics it is difficult to see how to systematize it.

It is dangerous to draw conclusions by assuming that puns must be strictly homonymic, for they may not be phonetically identical:

1H4 2.04.239 if reasons were as plentiful as blackberries.

reasons: re:znz

It is dangerous to draw conclusions from rhyme, because it may be eye-rhyme, approximate rhyme, or traditional rime:

HAM 4.04.65-6 from this time forth
My thoughts be bloody, or be nothing worth.

PER 3. Cho. 47-8 the grisled north
Disgorges such a tempest forth.

We remain uncertain whether "meet" and "meat" have the same sound for Shakespeare or not.

The need to clear up stylistic definition in this area:

'Apt alliteration's artful aid.'
### ASSONANCE

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<th>Alliteration</th>
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### CONSONANCE

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Is there superassonance?

### 3. Rhythm.

Traditional metrical systems are phonetically naive, but we have to start from them. I use a four-point scale (// / \ -/). 

Syncopating the normal spoken rhythm against the imputed pattern. Maintenance of the imputed pattern as mental event.

HAM 1.01.6 You come most carefully upon your hour.

Stress and pitch: an emphatic system overriding the imputed system.

HAM 1.01.10 Have you had quiet guard? - Not a mouse stirring.

HAM 1.01.78 Doth make the night joint-laborer with the day.

### 4. Lexis.

(i) The ascription of senses to a word is like sticking plays on a map: the senses are not categories, e.g. LLL 4.03.338:

- is not Love a Hercules, Still climbing trees in the Hesperides?

Not 'yet' as in mod E, but not simply 'continuously' (as enjoined in many Elizabethan contexts); but partaking of both, e.g. mod E 'for ever'. The important thing is to provide the student, not with a synonym, but with contexts.

(ii) In supplying such contexts, the relevant group of words needs to be borne in our mind. The group may be etymological, e.g. fancy, fantasy, fantastic/fantastical; or social, e.g. noble, gentle, honour, brave, breeding, high; villain, rogue, slave, peasant, bastard, base; or colour, e.g. red, gold; blue, gray; or complementary, e.g. fair, sweet.

(iii) The alternation of Germanic/Romance-Latin has often been observed, but what are its functions? E.g. in phrases like 'coagulate gore' in the Player's speech (HAM 2.02.462), or 'this my hand will rather / The multitudinous seas incarnadine, Making the green one red' (MAC 2.02.58-60). Note this type of alternation in the translations of Seneca, and in the development of Senecan rhetoric (Tamburlaine, The Tragedy of Dido, JC, HAM, OTH, MAC, ANT, COR, WT).

(iv) The different social background: thou/you (e.g. between Hamlet and his mother in HAM 3.04); modes of address above and below, e.g. the ambivalence of 'sir' and the clarity of 'sirrah'. We need to plot the
social position of each character and can do so above all by these modes of address. In HAM 1.01, what is the social order of Francisco, Barnardo, Marcellus, Horatio?

(v) Associational chains (independent of syntax); especially erotic, e.g. MM 1.01., particularly 25-43; 76-84:

Ang. Always obedient to your Grace's will, 25 I come to know your pleasure.

Duke. Angelo: There is a kind of character in thy life, That to th' observer doth thy history Fully unfold. Thyself and thy belongings Are not thine own so proper as to waste 30 Thyself upon thy virtues, they on thee. Heaven doth with us as we with torches do, Not light them for themselves; for if our virtues Did not go forth of us, 'twere all alike 34 As if we had them not. Spirits are not finely touch'd But to fine issues; nor Nature never lends The smallest scruple of her excellence, But like a thrifty goddess, she determines Herself the glory of a creditor, Both thanks and use. But I do bend my speech 40 To one that can my part in him advertise. Hold therefore, Angelo: In our remove be thou at full ourself.

76-84

Escal. I shall desire you, sir, to give me leave To have free speech with you; and it concerns me To look into the bottom of my place. A pow'r I have, but of what strength and nature I am not yet instructed. 80

Ang. 'Tis so with me. Let us withdraw together, And we may soon our satisfaction have Touching that point.

Escal. I'll wait upon your honor.

This is a comedy about sex.

(vi) Abstract for person. This is a preferable way of approaching personification, e.g. SON 129, where 'lust' vacillates between meaning a lustful person, a personified quality, a state of mind.
(vii) The problem of tone (affectation, irony, social). Is tone any more difficult to establish and any more subjective than so-called plain sense?

(viii) The function of archaisms and neologisms.

5. Syntax. The outstanding phenomenon, that of 'abnormal' word order. The demands of metre and rhyme. Hyperbaton may serve these and yet serve other functions: the effect of phrasal juxtaposition:

HAM 1.01.208 And I with them the third night kept the watch.

The sense of contortion and its dramatic function:

HAM 1.02.1-14 King. Though yet of Hamlet our dear brother's death
The memory be green, and that it us befitted
To bear our hearts in grief, and our whole kingdom
To be contracted in one brow of woe,
Yet so far hath discretion fought with nature
That we with wisest sorrow think on him
Together with remembrance of ourselves.
Therefore our sometime sister, now our queen,
Th' imperial jointress to this warlike state,
Have we, as 'twere with a defeated joy,
With an auspicious, and a dropping eye,
With mirth in funeral, and with dirge in marriage,
In equal scale weighing delight and dole,
Taken to wife;

Change of syntactical order in order to follow the order of events:

HAM 1.02.196-9 Two nights together had these gentlemen,
Marcellus and Barnardo, on their watch,
In the dead waste and middle of the night,
Been thus encount'red.

209-11 Where, as they had delivered, both in time,
Form of the thing, each word made true and good,
The apparition comes.

6. Style. (a) The existence or not of a pattern. Some are clear enough:

Fair is foul and foul is fair (antimetabole)
surcease, success (paromoeon)

But when is there, and is there not e.g. assonance, consonance? There is the frequency of sounds: /z/s/r/, /d/, /t/ are more frequent than /g/k/, /p/, /b/. But it does not follow that two examples of e.g. /s/, /r/ are not significant:

HAM 4.04.60 Since yet thy cicatrice looks raw and red.
The vocal murmur /ə/ is too frequent usually to have significance. But what about unstressed /I/? It has the same quality as stressed /I/:

OTH 2.03.281 invisible spirit; 387 soliciting his wife.

(b) The ascription of meaning to stylistic features.

(i) The musical meaning. The problem of programme music.

Beethoven's Pastoral Symphony.

(ii) Onomatopoeia. Meaning does not inhere in sounds: the tendency is for the sense to reinforce itself with the sounds rather than for the sounds to impose a sense on the context. Sibilants for a storm, tears, and sleep:

TMP 1.02.3-5 The sky it seems would pour down stinking pitch, But that the sea, mounting to the welkin's cheek, Dashes the fire out.

ANT 3.02.43-4 The April's in her eyes, it is love's spring, And these the showers to bring it on.

MAC 2.02.34-7 Sleep... great nature's second course, Chief nourisher in life's feast.

(iii) It may be a tone that is reinforced, e.g. irony, sarcasm, affectation:

HAM 2.02.195-204

Ham. Slanders, sir; for the satirical rogue says here that old men have grey beards, that their faces are wrinkled, their eyes purging thick amber and plum-tree gum, and that they have a plentiful lack of wit, together with most weak hams; all which, sir, though I most powerfully and potently believe, yet I hold it not honesty to have it thus set down, for yourself, sir, shall grow old as I am, if like a crab you could go backward.

But what are we to say about e.g. /k/ in LR 3.02.1-9:

Lear. Blow, winds, and crack your cheeks! rage, blow! You cataracts and hurricanoes, spout Till you have drench'd our steeples, drown'd the cocks! You sulph'rous and thought-executing fires, Vaunt-couriers of oak-cleaving thunderbolts, Singe my white head! And thou, all-shaking thunder, Strike flat the thick rotundity o' th' world! Crack nature's moulds, all germains spill at once That makes ingrateful man!
crack your cheeks, cataracts, hurricanoes, cocks, thought-executing, Vaunt-couriers, oak-cleaving, all-shaking, Strike, thick, Crack, makes. There is the superficial onomatopoeia of crack, cataracts, but what about the rest?

Is it storm-painting or Lear-painting? Who is exercising the power? Is he enjoying it? Gusto. Is the /k/ part of the gusto pattern?

7. Conclusion. I have left the rhetorical devices to the treatment of my colleague, Camille Stilson Williams. But I would say generally that the application of readily comprehensible linguistic principles to the field of traditional rhetoric can provide generalizations which will help students in mastering the skill of reading Shakespeare, and, by implication, of anything else.

GLOSSARY AND COMMENTARY

ALLITERATION (2.2): The repetition of the initial sounds of words in a line or a sentence. As in HAM 3.04.31:

Thou wretched rash, intruding fool, farewell!

--or Genesis 36:1:

Now these are the generations of Esau, who is Edom.

This is a specialized case of consonance or assonance. It would be more satisfactory to consider alliteration the repetition of the initial sounds of stressed syllables, since the division of sounds into words is useful for the written language, but somewhat arbitrary when applied to speech. The purpose of this book is to introduce basic skills while requiring the student to have only rudimentary knowledge of phonetics.

Deciding whether a significant sound pattern exists in a matter of judgment; sometimes the presence of other rhetorical devices establishes the significance of a sound pattern, as in 1 Kings 4:30:

And Solomon's wisdom excelled the wisdom of all the children of the east country, and all the wisdom of Egypt.

If east and Egypt weren't in corresponding positions in phrases which are of the approximately same length (isocolon) and similar syntactic structures (parison) it is unlikely that the assonantal alliteration would appear significant. See notes at assonance and consonance.

ANACOLUTHON (4.1): Ending a sentence with a structure different from that with which it was begun. As in TMP 2.01.280.287.

And melt ere they molest! Here lies your brother
No better than the earth he lies upon,
If he were that which now he's like--that's dead
Whom I with this obedient steel, three inches of it,
Can lay to bed for ever; whiles you, doing thus,
To the perpetual wink for aye might put
This ancient morsel, this Sir Prudence, who
Should not upbraid our course.

Anacoluthon is a general term which would include some instances of
allelotheta (substitution of one case gender, number, tense, a mood for
another), hypallage (change of agreement or application of words),
sylepsis (one verb lacking congruence with at least one subject it
governs), and instances in which the sentence is begun with one subject
but ends by a shift to another subject, changing the subject from the
singular to the plural, the occurrence of a dependent clause which anti-
cipates an independent clause that never comes, etc.

ANAPHORA (1.1): The repetition of a word or words at the beginning of
successive sentences, clauses, or phrases. For example, HAM 3.03,67-69:

O wretched state! O bosom black as death!
O limed soul, that struggling to be free
Art more engag'd! Help, angels! Make assay . . .

The important point about anaphora is that it is a pattern of repetition.
While we have treated only what we call serial anaphora, we do recognize
that what we call interrupted anaphora exists, for example MAC 1.01.1-4:

1. Witch. When shall we three meet again?
In thunder, lightning, or in rain?
2. Witch. When the hurly-burly's done,
When the battle's lost and won.

While lines 3 and 4 are clearly a case of anaphora, the question arises
"is there anaphora in lines 1, 3 and 4?" Once a pattern, such as anaphora,
has been established, it is inevitable that variation will result. Cer-
tainly the variation can be as interesting and as effective as the pattern.

ANTIMETABOLE (1.3): The repetition of the same words or phrases in re-
verse order, often emphasizing the opposition or contrast between the ideas
expressed by those words and phrases. An example of antimetabole is
MAC 1.01.11-12:

All. Fair is foul, and foul is fair.
Hover through the fog and filthy air.

Antimetabole may be distinguished from chiasmus in that antimetabole will
be a repetition of the same words or phrases, while chiasmus will be a
repetition of the same ideas, not necessarily using the same words.

ANTITHESIS (1.3): A syntactic framework of conjoined similar structures
each containing a word, pair of words or a phrase whose contrast with the
other word, pair of words, or phrase is established by the syntactic
similarity and is not necessarily semantically inherent. An example of
antithesis is Romans 9:13:

As it is written, Jacob have I loved, but Esau have I hated.
It is the framework that is necessary to the antithesis: it must be sufficient to invite the recognition of the antithesis. For this purpose sequent adjective plus noun phrases (e.g. "despised substance of divin- est show") or a coordinate conjunction (e.g. "So foul and fair a day") are insufficient.

ASSONANCE (2.1): The irregular repetition of a vowel sound, as in MAC 2.04.27-8:

Rosse. 'Gainst nature still!
Thriftless ambition, that will ravin up

The /i/ sound occurs five (or six) times in the two lines in the above example. Unstressed vowels (particularly as the initial sounds of words) are frequently reduced to /ə/ for open vowels or /I/ for closed vowels; whether a vowel is reduced depends upon the speaker's delivery of the utterance: his dialect, level of language, juncture, and stress. Can unstressed reduced vowels comprise a significant sound pattern, or will stressed vowels always predominate in an utterance?

In recognizing assonance (and also consonance, alliteration, homoeoteleuton) it must be determined whether a significant sound pattern exists: the same sounds must be repeated fairly close together, and there must be a significant number of them. Keep in mind that sound patterns may run across lines or sentences, even across speeches by different characters. While two repetitions of the same sound in one pentameter may not in itself appear significant, if the next line contains four of that same sound, obviously the sound is drawing attention. The effect achieved may be varied: two instances of the same sound in one pentameter can be significant if the two words are adjacent, five or six instances of a sound may exert a very subtle influence if those instances are spread over, say, three lines. See notes at alliteration and consonance.

ASYNDETON (3.1): The omission of conjunctions between a series of three or more words, phrases, or clauses. In writing, the omitted conjunctions are replaced by commas. Example: Romans 1:29:

Being filled with all unrighteousness, fornication, wickedness, covetousness, maliciousness; full of envy, murder, debate, deceit, malignity; whisperers.

We have specified a series of three or more words, phrases, or clauses, because in the English language it is fairly common, both in speech and writing, to use a triad in the form of word, plus word, plus conjunction plus word.

Some rhetoricians use brachylogia as the omission of conjunctions between words, and asyndeton as the omission of conjunctions between clauses, but we here use asyndeton as a general term, realizing that there may be subsets.

CONSONANCE (2.1): The irregular repetition of a consonant sound. Example: In MAC 2.04.7 there is the phrase "strangles the travelling lamp." There is consonance with tr, ng, and l.
Do not confuse consonant clusters with spelling conventions. If the consonants in a cluster, such as st, can be separately articulated, they may function in separate consonantal chains, e.g., s consonance in "sleepy, silent last sigh." Spelling has conventionally represented some sounds (phonemes) by consonant clusters: sh for (ʃ) in ship (some American systems use /ʃ/); ch for (tʃ) in church (some American systems use /tʃ/); these sounds and ʃ/ for the s in pleasure (some American systems use /z/) are produced by combining the point of articulation of one sound and manner of articulation of another sound; rather than by grouping separable phonemes. See notes at alliteration and assonance.

EPANALEPSIS (1.2): The repetition of a word or phrase after a break, parenthesis, or at irregular intervals. For example, there is epanalepsis in HAM 2.02.421-22:

You are welcome, masters, welcome all. I am glad to see thee well. Welcome, good friends, 0, old friend!

Epanalepsis is used in this book as a general term which would include what some rhetoricians call duplicatio (repetition of a word or words in succeeding clauses), diacope (repetition of a word with one or a few words in between, and ploce (repetition of a word with a new signification or after the intervention of another word or words).

EPISTROPHE (1.1): The repetition of a word or words at the end of successive phrases, clauses, or sentences. An example of epistrophe is found in Numbers 29:16:

And one kid of the goats for a sin offering; beside the continual burnt offering, his meat offering, and his drink offering.

This book treats only serial epistrophe, but it is clear that interrupted epistrophe exists (see commentary on anaphora above).

EPIZEUXIS (1.2): The immediate repetition of the same word or phrase.

1H4 2.04.482-483:

Bard. O my lord, my lord, the sheriff with a most monstrous watch is at the door.

It contains an example of epizeuxis: epizeuxis sometimes occurs as anadiplosis (repetition of the last word of one line or clause to begin the next).

HENDIADYS (3.2): The use of the following pattern: substantive (noun) plus conjunction plus substantive instead of adjective plus substantive; or adjective plus adjective instead of adverb plus adjective. An example of hendiadys is found in MAC 3.01.5: "But that myself should be the root and the father," where "root and father" appears to be equivalent to paternal root.
HOMOEOTELEUTON (2.2): The repetition of final sounds of words in a line or sentence. Note the homoeoteleuton in this line from Micah 1:8: "Therefore I will wail and howl."

HYPERBATON (4.2): Separating words that ordinarily belong together; departing from normal word order. An example of hyperbaton is found in TMP 1.02.201-203:

Then meet and join. Jove's lightning, the precursors
0' th' dreadful thunder-claps, more momentary
and sight-outrunning were not; the fire and cracks

(See Sister Miriam Joseph, Shakespeare's Use of the Arts of Language, p. 54).

While some rhetoricians classify sentences with inverted word order (the verb or the object preceding the subject) and sentences containing parenthetical statements, or a series of parenthetical statements, as hyperbaton, such constructions are commonplace in Shakespeare and so have not been classified as such.

ISOCOLON (3.3): Adjacent sentences, clauses, or phrases with about the same number of syllables (9-11, 18-22). Hannah's Song of Rejoicing contains isocolon, 1 Sam. 2:4:

The bows of the mighty men are broken, and they that stumbled are girded with strength.

Sequent blank verses (iambic pentameter) are, by definition, isocolon; and therefore do not stand out as such. Isocolon in prose, or isocolon which divides or extends the line of a verse passage (for example, two clauses or five syllables each in a blank verse line, two or more clauses or sentences of fifteen syllables each in sequent blank verse lines) ought to be noted as significant.

Frequently isocolon will occur as clause plus conjunction plus clause. Sometimes the conjunction need not be "counted" in order for the clauses to be the same length, and other times the conjunction (usually counted with the second clause) must be counted.

INTERNAL RIME (2.2): Rime within a line or sentence. MAC 1.01.1 "When shall we three meet again?" has internal rime with we and three.

It is necessary to judge whether riming words are close enough to be "heard."

OXYMORON (1.3): The juxtaposition of two words whose literal meanings are incongruous, if not contradictory. Note the contradiction of two juxtaposed words in MND 5.01.59.

That is hot ice and wondrous strange snow.

Hot ice is oxymoron; strange snow is not. Oxymoron is differentiated from antithesis in that we are dealing on a word rather than a syntactic level.
PARALLELISM (3.4): Repeating similar ideas in different, though semantically parallel, phrasing; sentence constructions are not necessarily parallel (see parison below), but semantic contents are. Isaiah 55:12 contains parallelism:

For ye shall go out with joy, and be led forth with peace: the mountains and the hills shall break forth before you into singing, and all the trees of the field shall clap their hands.

Composition teachers often refer to "parallel sentence structure;" as stated above, the parallelism we are talking about is not dependent upon sentence structure, except generally, but rather on semantic content.

PARISON (3.3): Adjacent sentences, clauses, or phrases, with the same syntactic structure: for example, TN 1.05.156-158:

Mal. Not yet old enough for a man, nor young enough for a boy; as a squash is before 'tis a peascod, or a codling when 'tis almost an apple.

Parison is what many contemporary composition teachers would call parallel sentence structure.

PAROMOEON (2.2): Two or more words whose initial and final sounds are the same; a combination of alliteration and homooteleuton. Surcease and success are an instance of paromoeon in MAC 1.07.4: "With his surcease, success: that but this blow . . . ."

PERIPHRASIS (3.4): Circumlocution. The following is periphrastic:

TMP 1.02.121-132

Pros. Now the condition.
This King of Naples, being an enemy
To me inveterate, hearkens my brother's suit,
Which was, that he in lieu o' th' premises,
Of homage, and I know not how much tribute,
Should presently extirpate me and mine
Out of the dukedom, and confer fair Milan
With all the honors on my brother; whereon,
A treacherous army levied, one midnight
Fated to th' purpose, did Antonio open
The gates of Milan, and i' th' dead of darkness
The ministers for th' purpose hurried thence
Me and thy crying self.

PLEONASM (3.4): Redundancy in a sentence. Note the pleonasm in MAC 5.03.23: "Is fall'n into the sear, the yellow leaf."

PLEONASTIC PAIRS (3.2): Pleonasm occurring in the following pattern: adjective plus conjunction plus adjective, or substantive (noun) plus conjunction plus substantive. There are two pleonastic pairs in Micha 1:8:

Therefore I will wail and howl, I will go stripped and naked: I will make a wailing like the dragons, and mourning as the owls.
POLYPTOTON (2.3): Using several words having the same root but with different suffixes, prefixes, or a variation of the root itself. An example of polyptoton is found in MAC 1.02.36-38:

If I say sooth, I must report they were
As cannons overcharg'd with double cracks, so they
Doubly redoubled strokes upon the foe.

POLYSYNDETON (3.1): Three or more words, phrases, or clauses joined by conjunctions. We have specified three as a number since in English it is very common to have a triad in the form of word, plus word, plus conjunction plus word. Note the use of conjunctions in Isaiah 8:15.

And many among them shall stumble, and fall, and be broken,
and be snared, and be taken.

SENSE-PLAY (2.3): "Playing" on different meanings of one word. Note the play on the word lie in SON 138:11-14:

O, love's best habit is in seeming trust,
And age in love loves not t' have years told
Therefore I lie with her, and she with me,
And in our faults by lies we flattered be.

Sense-play is part of what is commonly called punning; rhetoricians have identified various forms of this playing on words, including paronomasia (playing on the sounds and meanings of words), asteismus (facetious answer that plays on a word), cacemphaton (double-entendre), and distinctio. In this book we use only two forms, sense-play and word-play: we feel that these are useful distinctions, and those students who wish to be more specific can refer to Lanham and Joseph for further help. (See Word-play below).

TRANSFERRED MODIFIERS (4.3): A modifier 'attached' to one word it could modify, but seeming more appropriately the modifier of another word in the sentence or of one understood in the context. Transferred modifiers are a subset of hyperbaton, and frequently occur in the form adjective plus noun, the adjective apparently a shortened adjectival or adverbial phrase. Note, for example, warlike shield in the following text, MAC 5.08.32-33:

Yet I will try the last. Before my body
I throw my warlike shield. Lay on, Macduff.

It seems likely that warlike refers to Macbeth himself, rather than to his shield.

TRIADS (3.2): Coordinate (not subordinates or appositives) words (and sometimes phrases or clauses) in groups of three. See, for example, MAC 4.01.79:

2 App. Be bloody, bold and resolute: laugh to scorn.

WORD-PLAY (2.3): "Playing" on similar-sounding or associated words. The following example uses associated words, hot and cold, 2H4 1.01.49-51.
North, Ha? Again.
Said he young Harry Percy's spur was cold?
Of Hotspur, Coldspur? that rebellion
Had met ill luck?

An instance of word-play in which similar sounding words are played upon is found in MAC 5.09.14: "Had I as many sons as I have hairs," in which hairs and heirs are brought to mind with the use of sons and hairs.

While word-play exists in scripture, the King James Version of the Bible is a translation, so the word-play is not readily discernible.
PIRSIG AND DERRIDA: THE PRIORITY OF RHETORIC

Marden J. Clark

Plato and Aristotle are villains. Husserl is a villain. Chomsky may already be a villain and Eldon Lytle well on the way to becoming one. At least they all could be if Robert Pirsig and Jacques Derrida have their way. Pirsig and Derrida, in the books I here examine, would seem to have little in common. But both Pirsig's Zen and the Art of Motorcycle Maintenance and Derrida's Speech and Phenomena and Other Essays on Husserl's Phenomenology have a kind of faddish popularity, Pirsig's among general readers, Derrida's among the French avant garde. Both books are deeply involved in language problems. Both books directly challenge the dominant philosophical positions of the Western world, and both books directly challenge the most basic assumptions on which transformational and junction grammars are based. My concern in this paper is to examine these basic challenges. But because the books contrast so strangely, I will have to work somewhat indirectly, examining first the approach of each, then the demonstration, then the significance.

The contrast in approach is especially sharp. Pirsig's book is somewhere between autobiography and fiction. The narrative frame is a motorcycle journey the narrator takes with his eleven-year-old son from Minneapolis through Montana to San Francisco, the main narrative interest centering around the strained relations between father and son, both of whom are struggling with intense emotional problems that bring both close to insanity. The narrative develops its own intensity but also frames the continuing "Chautauqua" which develops the quasi-philosophical content, itself a quest both for the narrator's earlier self, whom he calls Phaedrus and who was eliminated by electrical shock treatments, and for some kind of philosophical absolute on which to ground both an abstract and a very practical philosophy. Since the narrator (lacking other identification, I call him Pirsig) has only the vaguest of memories plus some writings to go on, his quest for Phaedrus' ideas parallels Phaedrus' own. Except that Pirsig has the advantage of a triple perspective, at once reconstructor, critic, and what's left of Phaedrus.

In sharp contrast, Derrida's book is aggressively philosophical. The book begins and largely develops as a sharply critical analysis of Husserl's phenomenology, primarily his account of language. But one knows fairly early that the analysis of Husserl will finally be subordinate to, and used as an approach to, Derrida's own ideas. His approach is both very specific and very broad. He works through a detailed analysis of Husserl's language, but he is primarily concerned with the large assumptions that underlie Husserl's theory. The analysis is rigorous, intense—and increasingly exasperating in its sly word-play and highly metaphoric language.

As we would expect from their contrasting approaches, the two books contrast almost as sharply in the demonstrations that develop the philosophical challenges.
Pirsig's demonstration begins with a contrast between himself and their traveling companions, the Sutherlands. Pirsig is at home with technology; the Sutherlands distrust it. Their hatred of the ugliness produced by technology Pirsig sees as part of the romantic revolt against technology. He sees as classical his own concern with keeping his old motorcycle running efficiently by knowing and working with its underlying form.

But to see the motorcycle or the world or anything else as underlying form is to see it as a logical system, which had been the passion of Phaedrus through most of his intellectual life. Hence Pirsig's concern to analyze analysis itself, that is, the tools of logic. As he breaks the motorcycle down into smaller and smaller components, Pirsig says, he is also building a structure that represents the complete motorcycle at the top of the box pyramid. So the motorcycle itself is "primarily a metal phenomenon" (p.94), conceived in the mind before it could ever be built.

All this acts as concrete support for his earlier argument that the law of gravity is essentially an invention of man, that modern man has his own ghosts, pre-eminent among them the so-called natural laws, all of which assume a totally logical structure of the universe before man discovers the laws. But such laws, Pirsig argues, pass "every test of non-existence there is" (p. 33)--until someone creates them. No motorcycle exists in nature. Neither does steel, the steel that becomes the motorcycle. And so Phaedrus had been pursuing a ghost: "rationality itself, that dull, complex, classical ghost of underlying form" (p.99).

But Phaedrus had begun examining hypotheses as entities. He had discovered that thinking up hypotheses is the easiest part of the scientific method; in fact, the number of hypotheses that can explain any given phenomenon actually increases with experimentation and knowledge--perhaps can even be infinite, which if true would be a "catastrophic logical disproof of the general validity of the scientific method" (p. 108). True or not, increasing knowledge shortens the time span in which any given hypothesis is considered valid, with the result that "it is science itself that is leading mankind from single absolute truths to multiple, indeterminate, relative ones"(109). The scientific method, therefore, though it has been remarkably successful in solving the practical problems of mankind, has actually created our "current social crisis" because of a "genetic defect within the nature of reason itself... the whole structure of reason is... emotionally hollow, esthetically meaningless and spiritually empty" (p. 110).

Having found the genetic defect in reason, Phaedrus had spent years in sometimes diffuse, sometimes concentrated quest for solutions beyond reason to his own and society's dilemmas. That quest had taken him through formal philosophy at least to Kant, whom Phaedrus had found fascinating, but finally ugly in his applying reason to esthetics. After Kant, reason remains ugly in almost any context, until it has "all but shut out everything else and now dominates man himself" (pp. 121-22). The ugliness had led Phaedrus finally to India and the formal study of Oriental philosophy, especially Zen. Which he abandons in turn when the professor argues that everything, even the bomb over Hiroshima, is illusory.
Phaedrus' answer to reason finally develops--"crystalizes"--in long waves set off by a seemingly inane remark from a lady colleague at Montana State: "I hope you are teaching Quality to your students" (p. 175). Before the waves finally end in his madness, Phaedrus has identified Quality as something we all recognize but can't define and has come to see Quality as the generator of both subject and object--hence as the ultimate reality, an undefinable Absolute which Phaedrus equates with the Tao. Quality as event; Quality as generator and hence reconciler of both romantic and classic, and of subject and object; Quality as "the continuing stimulus which our environment puts upon us to create the world in which we live. All of it. Every last bit of it" (p. 245). Phaedrus had been aware of incipient madness in these exclamations but could find no reason to withdraw them.

Pirsig has reservations about the heights Phaedrus had reached. And he reads philosophy to find out, finally coming to Poincaré, who also had discovered the multiplicity of hypotheses to explain facts and then had decided that the selection among hypotheses is made "on the basis of 'mathematical beauty,' of the harmony of numbers and forms" (p. 261). Pirsig sees that Poincaré and Phaedrus had traveled different roads to the same theoretical heights, that each had left his system incomplete, but that each completed the other "in a kind of harmony that both Phaedrus and Poincaré had talked about, to produce a complete structure of thought capable of uniting the separate languages of Science and Art into one" (p. 263).

Pirsig makes good melodrama of Phaedrus' skirmish with the professors at the University of Chicago, where Phaedrus had gone--the very stronghold of Aristotelian logic--to try to publish his findings as a doctoral dissertation. Phaedrus had been angered there to discover Plato's and Aristotle's elevation of dialectic and logic over rhetoric and had finally found the Sophists, with their emphasis on virtue, on arete (excellence) and on rhetoric. He had defeated the Chairman in serious academic skirmish, but had ended in madness, then in the electrical shocks that had transformed Phaedrus into the present narrator. But long before, he had rejected logic in favor of rhetoric as the base for language.

To move from Pirsig's narrative to Derrida's rigorous philosophical analysis does not mean we have to follow in detail Derrida's critique of Husserl. To do so would involve us almost as much in Husserl as in Derrida, and would require extended explication. What we can do is to trace something of the broad movement of his argument and catch something of its flavor.

Derrida sets up the basic problem explicitly enough in his introductory chapter. Derrida argues that Husserl's phenomenology, which prides itself on being free of metaphysical presuppositions, is actually itself crucially based on its own presuppositions, so that much of Derrida's purpose is to show that Husserl's analysis is itself metaphysics. As the crucial example, Derrida focuses on Husserl's concept of the sign: "How can we justify the decision which subordinates a reflection on the sign to a logic?" and "What gives a theory of knowledge the authority to determine the essence and origin of language?" (p. 7). Derrida italicizes decision to suggest that it was not a decision at all, simply an explicit
assumption, which Husserl never really examined, but the consequences of which are "limitless." Most importantly for my purposes, "... being interested in language only within the compass of rationality, determining the logos from logic, Husserl had, in a most traditional manner, determined the essence of language by taking the logical as its telos or norm" (p. 8).

The force of this should suggest how completely Derrida rejects the idea of a transcendental logic that somehow precedes and becomes the cause, the base, and the norm of language. What he opposes to it is life, discourse (language in action), ultimately freedom itself. That is, life, experience, human needs and human choices--not some a priori logic--create language. Derrida devotes much of his metaphysical analysis to refuting what he sees as the real telos of the logical: "being as presence." The essence of that long, complex argument seems to me best caught in another sentence from the Introduction: "... language is properly the medium for this play of presence and absence" or in the question that follows: "Is there not within language--is it not language itself that might seem to unify life and ideality?" (p. 10).

To arrive at such a vision of language Derrida rejects two of Husserl's most basic concepts: his sharp distinction between indication and expression (analogous to Saussure's now famous distinction between signifier and signified), and his concept of "pure" expression without communication (which can take place only in the "solitary mental life"). For Derrida, Husserl's admission that meaning is "interwoven" with signs does not go far enough: "the discursive sign, and consequently the meaning, is always involved, always caught up in an indicative system" (p. 20), or, more sweepingly, "the totality of speech is caught up in an indicative web" (p. 31). That is, signs are more than abstract indicators waiting to be infused with life and meaning. They exist and have meaning in themselves through the play of differences, as Derrida will argue, that makes possible our recognition of phonemes, which in turn makes possible a written language.

The concepts of pure expression and solitary mental life are just as suspect for Derrida--and perhaps even more basic for Husserl. They depend largely on a concept of time which Husserl himself later rejects, the concept of "now" as a discrete moment, isolated from past and future, in which pure expression--a man talking to himself--can take place. In soliloquy, Husserl argues, communication takes place in the "blink of an eye," and hence signs only seem to be necessary. They are merely fictitious: the mind already knows what it is telling itself. But for Derrida, signs owe their very existence to primordial repetition and hence are time-bound: "The sign is originally wrought by fiction" (p. 56, Derrida's italics). It follows that "there is no sure criterion by which to distinguish an outward language from an inward language or, in the hypothesis of an inward language, an effective language from a fictitious language" (p. 56).

Derrida does have positive answers to these rejections, answers that he pulls together in his teasing and paradoxical concept of differance, a word Derrida coins by substituting a for e, which leaves the French pronunciation unchanged.
The word in French puns on two meanings of difference, based on the verb *differ*, one spatial (to differ, to be apart, unlike, distinctively different), the other temporal (to defer, to delay). If our perception of now depends on our sense of past and future, then even though we experience no punctually isolated instant our sense of time still depends on our ability to defer in both directions in time and also to differentiate the now from past and future. In the same way, our experience of the phoneme in discourse is an experience not of continuity but of differentiation. The phoneme becomes sign by viture of primordial repetition, but we experience it as sign because we can differentiate it from other phonemes--both in time and in aural configuration, or physical configuration in printing. It is in this "play of differance," born not of a priori logic but of life, of experience, that Derrida finds both the source and meaning of language and, one would guess from his teasing lyricism, of life itself. Having established it, he can announce, somewhat grandiosely, the closure of the history of metaphysics, that is, the end of a traditional metaphysical system which has taken as its most basic assumption that the universe is logical and that language grew out of that logic. "It remains, then," he concludes, "for us to speak, to make our voices resonate throughout the corridors in order to make up for [suppleer] the breakup of presence" (p. 104).

If Pirsig and Derrida contrast sharply in approach and demonstration, however, their implications are much the same, extending even to the large claims each makes for what he has found. Widespread acceptance of their ideas could revolutionize Western-world thinking about logic and language and perhaps about metaphysics itself. Without taking time for detailed analysis, let me just suggest some of the implications for philosophy before looking in some detail at implications for language. Widespread triumph of their ideas probably would mean something of the closure of metaphysics that Derrida announces. That is, it would mean the end of a 2500-year era dominated by the assumption of a logic beyond the physical and independent of it. Such a closure could hardly fail to make the two books part of one of the great watershed movements in the history of human thought: the end of an era dominated by reason and the beginning of one presumably dominated by rhetoric or by Quality; the end of an era dominated by Plato and Aristotle and the beginning of one dominated by the Sophists--or by Derrida.

Such acceptance would also mean the end of both rationalism and empiricism, because these, so directly opposed to each other in many ways, share the assumption of a rational universe, hence of a logic that exists independent of experience--just waiting to be discovered, the empiricist would say. Acceptance could also mean the end of structuralism. Even though structuralist methods may approach knowledge through fragmentation, the underlying assumptions are almost totally holistic: beneath all the apparent formlessness the universe is completely coherent, completely structured, with language as the paradigm of that structure.

The implications for literature, composition and linguistics are just as pervasive as for philosophy. Given Derrida's commitment to rhetoric, to making our voices resonate through the corridors, we can be almost certain that he would share Pirsig's concern for the quality of that rhetoric. The over-riding implication, of course, is that rhetorical
considerations would no longer be subordinate to logic. The general result of this would undoubtedly be to elevate language study at the expense of logic, possibly at the expense of broader philosophical studies. In literature, it would strongly reinforce what most literary people have always felt to be true: that literary excellence has little to do with logic or fact, that language as medium becomes more important than any system of ideas "out there" it may be trying to catch, that the effectiveness of a literary work does not depend primarily on how well it catches objective reality. Given Pirsig's emphasis on Quality, the study of significant literature would surely become more important--maybe even as important as we teachers of literature have thought it should have been all along.

Our sense of literature as superior to the claims of logic and factuality would, with Pirsig and Derrida, extend to other forms of discourse. Pirsig envisions the end--and heaven help it to come--of the long era of teaching composition in which two errors in agreement or three misplaced modifiers or one sentence fragment or comma splice constitute mortal sins. Even the currently popular emphasis on rhetorical patterns, primarily a logical emphasis would in Pirsig's vision be subordinated to the student's coming to a conviction that Quality, even though undefined, is real, recognizable by him and accessible to him. Such a recognition would be the beginning of the student's own quest for excellence, and all the problems of rhetoric and correctness would fall into meaningful perspective as tools toward Quality. No longer would the quest be to avoid errors, but to have quality ideas and control of the tools to give quality expression to them. Happy vision!

For linguistics, our real concern here, the implications might be just as revolutionary. Nearly all the currently popular attempts to explain or describe language, except those associated with Derrida, assume both a logical structure in language itself and a logical system in the universe that somehow language tries to mirror. The denial of that a priori logic is, as we have seen, one of the central points of Derrida's challenge of Husserl. Derrida also explicitly challenges the basic linguistic distinctions of Saussure, especially that between signifier and signified. In doing so, he challenges the major continental schools of structuralist linguistics, which look to Saussure for their linguistic base. Transformational and generative approaches now dominate American linguistics, and these, in all their expressions that I am familiar with, depend heavily on the Chomskian distinction between surface structure and deep structure, the deep structure being a kind of idealized abstraction of all language--and languages--which all races and individuals share, built into their primordial consciousness. The deep structure is conceived of as a totally logical system and as such would at least implicitly mirror a totally logical universe, again the very point that Pirsig and Derrida challenge. Whence, of course, the villainy that I began with--the villainy of Plato and Aristotle and Chomsky and Lytle, all of whom develop logical or linguistic systems based upon assumptions of a priori logic.

But more profound, perhaps, than any of these is an implication that Pirsig hardly touches but that Derrida glories in: If there is no ideal logical world that language mirrors, if meaning can never be ideal in the
sense of catching exactly that ideal world, if language is always context-bound and develops only by a long history of developing differences, then total meaning can never be wholly present, can never catch totally in language any idea or fact or experience. And we could never communicate it fully even if we could somehow catch it: Any possible reader or auditor would necessarily have a different context from which to receive and interpret any system of sounds or discourse. What follows is the strong recent emphasis on the indeterminacy of language. We are, so the analysis goes, profoundly prisoners of language. We experience language only from inside it and have no way of getting outside to test our perceptions and responses.

The implications of this picture of the human condition push out in every direction. I mention just two. If we can never communicate exactly, never come to an absolute and final reading of a text, never give full expression to what we conceive and communicate, at least we now know something of the dimensions of the problem, can marvel at how well we have been able to communicate and can try even harder for more effective, more precise communication. A second implication would surely be that those of us involved in the study of language, whether literarily, linguistically, or philosophically, find ourselves at the center of one of the most fascinating and ultimately important of human endeavors. We may never be able to find our way out of the prison of language, but we should be able to create an ever richer world for ourselves within it.

All through the making of this analysis I have been aware of my own ambivalence to both books. I am wary of the sweeping claims of both. I am uncomfortable with Pirsig's popularizing and his social and personal nostrums, even more wary of his introducing all the issues of the campus rebellions of his time and resolving them on the side of the rebels. Many of the answers are just too easy for the problems they purport to solve. I dislike the recurring system of escape hatches for ideas that may not work: he can always blame them on Phaedrus, who went crazy. I am perhaps even more uncomfortable with my inability to pin Derrida down. I think I have caught here his basic attitudes and arguments. But try as I will I cannot find any solid footing that will make me comfortable in that world of differances he glories in.

Even so, I have found the books, especially in conjunction, remarkably challenging. I don't really expect such a triumph as I have posited in exploring implications. Metaphysicians and metaphysical dualists are hardly going to run for cover--nor are Chomsky and Lytle--under the attacks of Pirsig and Derrida. But their ideas need and deserve a hearing. We hardly have to accept them whole and without reservation. If the theoretical base of transformational and junction grammar--the foundation of our ambitious computer-assisted translation project--should turn out to be sandy or spongy, we need to know, if only to let us lay stronger foundations. And who knows? Perhaps we will find ourselves one day in a world where, without having lost our reason, the quest for Quality will guide all decisions and where all voices will resonate in harmony rather than cacaphony down the corridors, resonate toward some definition of being, perhaps other than presence--but some definition that even the notoriously slippery system of signs we call language will help us give voice to and that will give us a little higher understanding of ourselves and of our humanness.
NOTES


2 Tr. David B. Allison (Evanston, IL: Northwestern University Press, 1973). As with Pirsig, I used in-text documentation. I am indebted through much of my analysis of Derrida to Allison’s “Introduction” and Newton Garver’s “Preface.”
LINGUISTICS AS A CULTURAL ACTIVITY

John L. Sorenson

Historians and sociologists of science have intimated for years that the supposedly objective activity and data of science are shaped to a significant degree by the setting in which the scientists lived. It remained for Thomas Kuhn\(^2\) some 15 years ago to state the viewpoint in such terms that large numbers of scientists realized the significance of the point: science is a sociocultural phenomenon, not merely an abstract, idealistic search for truth.

My own field, anthropology, came under scrutiny in this self-awareness inducing manner some time ago. In a 1964 paper analyzing the power structure of the American Anthropological Association, I noted the aptness of the name anthropology--the anthropological study of anthropology itself as a sociocultural system.\(^4\) Most recently Roy Wagner has caused tremors in conventional anthropology with a discussion of "the invention of anthropology."\(^5\)

Wagner argues that "an anthropologist calls the situation he is studying 'culture' first of all so that he can understand it in familiar terms, so he knows how to deal with and control his experience... Whether he knows it or not, and whether he intends it or not, his 'safe' act of making the strange familiar always makes the familiar a little bit strange. And the more familiar the strange becomes, the more and more strange the familiar will appear. It is a kind of game, if you will, a game of pretending that the ideas and conventions of other peoples are the same (in one broadly conceived way or another) as our own so that we can see what happens when we 'play' our own concepts through the lives and actions of others... He invents 'a culture' for people, and they invent 'culture' for him." (\(^5\), p. 11) By this view anthropology is mainly a creative or expressive activity similar to the creative representation which an artist puts on canvas; it is definitely not more documentary photography.

Clearly enough, when we ask ourselves the introspective question, what is my profession really up to, the answers can be as disturbing as when one becomes genuinely introspective about oneself. Yet a profession needs to consider these issues lest its participants fail to realize and transcend the implicit constrictors on their perception and thought which bind us all.

The question may then be phrased, why do linguists carry on the activity they term linguistics? What are they up to? Can it be fruitfully interpreted and clarified as a cultural activity?

At one level of consideration these questions could be answered, in part of course, with reference to the social structure in which linguists live and carry on their activity. They are organized in power and status relationships according to a distinct code of values and operational rules,
The fact that the dominant body of linguists are academicians, who operate in an ecological setting in which their quarry is texts has to be significant. (Perhaps the image is more apt that they live like foragers, constantly searching the landscape for a choice, deeply-hidden tuber or a rare fruit to enjoy in a circle around the fire.) Their motor activities are speaking and writing, not doing. Their messages are intended for peers or subordinates concerned only with operating in the structure of roles quite familiar to all of them. Individuals are judged worthy of esteem to the extent that they show that they are rational, logical, critical, orderly, and so on. Success goes not to the strong, the esthetically sensitive, the patient, nor even the verbose, but to the clever, in which cleverness means the ability to play verbal games skillfully with analytical markers moving on a board composed of texts. Rewards, power, followers, supporters, mustering for "war," and the like can be used by analogy to construct a picture giving some insight into what linguists do.

My concern here, however, will be more in terms of a cultural rather than a social structural discussion. What can the world view of linguists, particularly as manifested in their language, tell us about the tendencies and constraints within which they work? Benjamin Lee Whorf and Edward Sapir are the names which come directly to mind when such an effort is essayed. I suppose, with Sapir, that "We see and hear and otherwise experience very largely as we do because the language habits of our community predispose certain choices of interpretation." (1, p. 134) A common vulgarization of this position blames Sapir and Whorf with claiming that language determines patterns of thought. That is not what either said. They said "predisposes," and the position seems sound to me. Then let us look at how some language features among linguists indeed seem to predispose certain choices in their interpretations.

Whorf considered that the European languages mainly share a conceptual framework and express an implicit picture of the world which is sufficiently uniform that they can be treated in common. He terms the composite Standard Average European (SAE). His characterization of SAE notes the fundamental nature of the spatial metaphor. Durations, intensities, and tendencies are communicated in terms of spatial extension, that is, size, number, position, shape and motion. Thus long, short, large, light, high, grow, turn, go, come, fall, stop and so on through an almost inexhaustible list of metaphors that we hardly recognize as such, since they are virtually the only linguistic media available." (1, p. 145)

In particular we emphasize the metaphor of time laid out in a row. We see in our imagination points or "pieces" of time as it were standing in a row or laid out along a path. This image is associated, it would appear, with our civilization's heavy reliance on calendars, records, bookkeeping, clocks, and so on. In turn we place heavy reliance on time as a commodity, rent, interest, depreciation, schedules, and budgets, and perhaps in related manner with birthdays, diaries, and biography.

Another characteristic of SAE noted by Whorf is a form-plus-substance dichotomy. He said, "The SAE microcosm has analyzed reality largely in terms of what it calls 'things' (bodies and quasibodies) plus modes of extensional but formless existence that it calls 'substances' or 'matter'....
Nonspatial existents are imaginatively spatialized and charged with similar implications of form and continuum." (1, p. 147) Thus for example we speak of a glass of water, a stick of wood, or a flake of snow. The poetic concept of "time in a bottle" is less absurd in SAE, although in some other cultures it would be beyond meaning. Whorf goes on to claim that the form-plus-substance dichotomy has supported traditional aspects of the western European world view—materialism, the mind-matter dichotomy, Newtonian physics, a dualistic view of the universe in general, and perhaps even our concept of discrete social classes. Explanation in SAE demands our dividing indivisible phenomena by a process of abstraction into distinct units or "things"—a moment of time, a pattern of culture, and an utterance of speech. Then we string these units into a "causal" sequence on the assumption that time is "like a ribbon or scroll" on which causes necessarily precede effects. In contrast our limited ability to handle simultaneity is suggested by the vagueness of the terms "correlation," "factor" and "parameter." Caught up in this pattern of sequential thinking, we then manufacture justificatory myths about how difficult it is to understand Einsteinian relativity, and we struggle with the concept of eternity or the possibility that God might simultaneously know "all things".

The naive response from within the framework of our own tradition says, "but that is the way time, space and substance really are." However, the anthropologists long since reported hundreds of alternative world views which do not look at time, space and substance in this way, although the adherents to those competing views are equally confident that their systems are the correct frameworks for expressing "how things really are."

I must reiterate for clarity's sake that I do not believe some "thing" called "language" is determinately forcing another "thing", "culture", along a single path from which there is no escape. The phenomena we term language and culture overlap of course. And while either category exerts predisposing influence on humans and on "each other", rigid determinism is obviously an overstatement.

Is the state of affairs different in other human contexts where language and culture are unlike our own European tradition? Whorf took the example of Hopi as an alternative language and system of categorization. He demonstrated that some of the emphases of SAE which I mentioned above are absent in Hopi, which has its own emphases. Hopi underlines a concern with "preparing." This is connected with the idea of "eventing," in which events are "considered the expression of invisible intensity factors, on which depend their stability and persistence, or their fugitiveness and proclivities." Existents are not thought to "become later and later" in a similar time-moving way; each existent has within it its own mode of duration, whether growth, decline, stability, cyclicity or creativeness. What something is or will be results from preparing with emphasis on that situation rather than on the time relations involved. "An emphasis and importance rests on this preparing or being prepared aspect of the world that may to the Hopi correspond" to the significance which "matter" or "stuff" has for SAE speakers. This mode of thinking leads to concern for "the cumulative value of innumerable small momenta." Thus "to the Hopi, for whom time is not a motion but a 'getting later' of everything that has ever been done, unvarying repetition is not wasted but accumulated." (1, p. 151)
Whether Whorf's discussion of Hopi is precisely accurate is not nearly so important as the fact that both world view and the language in which it is expressed can and do differ from people to people. Major differences seem to exist in the facility in which SAE speakers on the one hand or Hopi speakers on the other are able to consider and express perceptions of a thought concerning various phenomena. Thought worlds or metaphorical sets do differ drastically, and the language media available for considering phenomena in terms of those worlds are not congruent with each other, even though they overlap.

Let us look now at linguistics as an activity and at linguists as in some degree a people sharing a similar view of the world.

One common paradigm of the concerns of linguists says that their overall intent is to provide an explanatory link between speech and meaning—an understanding of the process of moving from the one to the other. Among the more common concepts which are supposed to be involved in this process are the chain composed of phonology, syntax, and semantics. These tend to be seen as a sequence in time, as though humans were digital computers in which process necessarily means sequence. The linguistic view is, further, that almost momentary segments of this sequence can be "frozen," taken out for leisurely dissection in a rational manner, and assigned an ordered place in the sequence. Thus a single text (in the older linguistics, from an external informant; in the newer, from oneself as informant) may be handled logically, rationally, "objectively," and "scientifically," though often with a touch of devoted tenderness or connoisseurship as though one were handling a jewel.

Naturally this sketch of linguistics is oversimplified, as must be the case when one describes any complex activity. Yet Whorf might have noted some interesting predispositions involved here stemming in part from language, had he considered the possibility that his discipline could become the subject of his analysis.

The idea that phonology, syntax and semantics constitute a sequence or row or chain clearly agrees with SAE's tendency to build such a model. That language in practice actually operates by such sequential segments is not demonstrated, probably is not demonstrable, and is intuitively unlikely. (It is just as unlikely as the model of "scientific method" which holds that scientists proceed down the path recognizing a single problem, posing a hypothesis, designing its test, gathering data, applying the test, etc. Anybody who has seriously engaged in science knows that the idealized sequence has about as much relation to what scientists actually do as the story of the stork delivering babies has to do with birth.)

The spatial metaphor is so obvious in the case of "surface structure" and "deep structure" that perhaps no comment is necessary. Surely the difficulty which Chomsky and other transformationalists have had in translating his stimulating, loose metaphor into operational form probably relates to the fact that while we intuitively feel good about the deep-surface metaphor as SAE speakers expectably would, we do not have the linguistic and conceptual tools to explicate it.
Karl Pribram's summary of the new picture of how the brain works offers a way to see the kind of thing we have been missing by sticking too closely to the "natural" SAE orientations. In a recent interview in Psychology Today, Pribram notes the futility of previous efforts to understand how the brain integrates images. All the explanations essentially supposed the brain to be a processor of enchain(ed) stimuli/response sequences or at least some type of units. Pribram notes that "Scientists are always trying to be objective, to work with objects and particles and things. But in quantum physics, particles don't act only like objects, they also behave as if they were wave forms." Now development of lasers and the holographic images they permit allows our thinking along new, virtually counter-intuitive lines. (What is more contrary to the basic SAE spatial expectation than a "picture" which allows one to "go around behind it" and still be a "picture"): To think of the brain functioning in some ways like the technology producing these images strains our persisting terminology and routines of thought, demanding "swimming up the stream," as it were.

If we look at the relation of the older, descriptive linguistics to transformational linguistics, we see an incomplete revolution. Descriptive linguistics straightforwardly took an atomistic, partitive, analytic view of its subject, supposing that language could be successfully chopped into pieces as a way to "understand" it. Once we had the phonemes, then came the morphemes, and tomorrow the whole language. The thinking was parallel to that which calls for dissecting a frog in order to understand it. It is all very agreeable to what Whorf considers the predispositions of SAE speakers.

Chomsky felt the need for a drastic revision in the scheme because the former paradigm lacked sufficient power to do what he wanted. Yet to a substantial degree his newer paradigm fell still into the bramble patch of SAE. Thus his "deep" and "surface", the metaphor remaining blatantly spatial.

I have tried to think what would a linguistics be which was cast in thought and language other than SAE. What, for example, would a Hopi linguistics be? I do not control the language so I cannot know, but based on Whorf's treatment of it, we might suppose that utterances would not necessarily be viewed as strings of sound which must be cut into pieces to be analyzed separately. I suspect that if someone were to look in Chinese writings on the nature of language, out of that long tradition of scholarship with a different world view, the rudiments of another linguistics might appear. Perhaps the Arabic tradition too has a basis for a distinct view of language.

I have been talking about culture, essentially, the culture of linguists. Since the entire tradition of modern linguistics has developed among SAE speakers (or else those from other cultures who have been heavily westernized in relation to scholarship), I have necessarily dealt with the European civilization tradition.

I do not wish to press Whorf's ideas as doing more than giving some insights. Certainly the limitations of language can be transcended, but I suspect only at significant cost. Linguists may do well to be alert to
the possibility that they are engaged in a task which is inherently limited by factors which they had not considered. Does the fish know the water?

REFERENCES


INTRODUCTION

In the Mayan language Cakchiquel, there are two ways to form the noun plural: with the suffix -a' or -i'. Students of Cakchiquel have used different approaches to explain the use of these plural suffixes, but they are incongruent and never reveal the basic semantic meaning.

The first approach has been to say that the distribution is arbitrary and that there is no real reason why one noun will take the -a' suffix and another the -i'. Carlos Rosales, for example, in his 1748 grammar of Cakchiquel says "There is no general rule for knowing which nouns have plurals and which do not, nor has one been found to date..., and what should be said is that general rules cannot be given, just some specific ones, and they are very few,...and to avoid this inconvenience and the confusion that there is in this matter, I will list here all the nouns that I have found...." He then lists all the nominal plurals known to him without giving any explanation for the distribution of the -a' and the -i' suffixes.

A second type of approach has been to say that the distribution is linguistically or phonologically conditioned. Various 18th century grammarians give explanations based on linguistic context, saying that nouns ending in this or that consonant or vowel form the plural with this or that vowel. Such an explanation holds true in some cases. For example, all singular derived nouns that end with the suffix -el without exception add the -a' suffix when pluralized: 3

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>q'ib'anela'</td>
<td>writers</td>
</tr>
<tr>
<td>tixonela'</td>
<td>teachers</td>
</tr>
<tr>
<td>tixošela'</td>
<td>learners</td>
</tr>
<tr>
<td>k'ayinela'</td>
<td>venders</td>
</tr>
<tr>
<td>samaxela'</td>
<td>workers</td>
</tr>
<tr>
<td>eč'anela'</td>
<td>players</td>
</tr>
<tr>
<td>nišalasela'</td>
<td>older brothers</td>
</tr>
<tr>
<td>Ćaq'lašela'</td>
<td>younger brothers</td>
</tr>
<tr>
<td>q'ëxelonela'</td>
<td>visitors</td>
</tr>
<tr>
<td>taqonela'</td>
<td>messengers</td>
</tr>
<tr>
<td>karynela'</td>
<td>fishermen</td>
</tr>
<tr>
<td>awačpočela'</td>
<td>neighbors</td>
</tr>
<tr>
<td>karmela'</td>
<td>sheep</td>
</tr>
<tr>
<td>q'ab'arela'</td>
<td>drunkards</td>
</tr>
<tr>
<td>ţamisanela'</td>
<td>killers</td>
</tr>
<tr>
<td>sib'inela'</td>
<td>ghosts</td>
</tr>
<tr>
<td>lab'axinela'</td>
<td>diviners</td>
</tr>
</tbody>
</table>
On the surface, it appears that there is some phonological or linguistic conditioning, but there are many contrary examples: ax-xaqol (harvester) takes the -a' suffix (ax-xaqola'), while apostol (apostle) takes the -i' (apostoli'). Likewise, ax-q'ix (soothsayer) takes the -a' (ax-q'ixa'), while t'ox (deaf) takes the -i' (t'oxi'). A more in-depth look at the situation will show that it is semantically conditioned.

Robert Blair recognized the problem in his Cakchiquel Basic Course and also gives a list of noun plurals, but offers no formal explanation. He says "Many nouns that refer to persons take a plural suffix which, depending on the noun, may be either a' or i'." (Cakchiquel Basic Course, Robert W. Blair, Volume II, 1969, p. 28) He groups the nouns categorically. He groups all the 1-final words, for example, and shows that they take the -a' suffix. He also groups the consonant-final singulars, although he offers no explanation why ax-q'ix takes the -a' suffix when pluralized and q'oxoq takes the -i', given the fact that they both end with the consonant x. He also groups all the borrowed words together and shows that they take the -i' suffix, but again, offers no reasons why.

Not only is an explanation based on word classes superficial and unrevealing, but it is simply not adequate to cover all occurrences of noun plurals. Furthermore, such an approach totally disregards the semantic content of the lexical items themselves.

A comprehensive explanation can be given to describe the distribution of these two plural suffixes. In this paper, I will present the linguistic data I have collected, showing the reason the given suffix was used in each case. The data will be analyzed and explained using the theory of markedness, which permits a deeper explanation of the distribution of these two plural suffixes.

The notion of markedness implies that a hierarchical relationship exists between the two poles of the opposition -a' vs. -i': -a' is the unmarked, or general plural marker, and its oppositional counterpart, -i', is the more specific form. The marked suffix -i' carries with it an additional unit of specific information in contrast to the unmarked suffix -a' which remains neutral, uncommitted, and indeterminant. Linda Waugh, in her book Roman Jakobson's Science of Language, (Peter de Ridder Press: Lisse, 1976, p. 95), gives an example of an opposition with the words "at" and "in" and shows how "at" is the unmarked term:

If the speaker uses "at" and not "in" for the sentence "they are at the house", "at" potentially can include situations where the persons involved are inside or outside the house (or both). But it can also be the case that the speaker simply doesn't know whether "they" are inside or outside; or the speaker may be deliberately non-committal; or the speaker may not care; or their position "vis-à-vis" the inside of the house may be irrelevant; or etc. All of these are possible....

The more specific sentence "they are in the house" gives us additional information about the positions of the persons involved. In this sentence, "in" is more marked than "at". Note that both "at" and "in" occur in this
sentence, and when they do, the semantic content is altered.

We observe from a phonological point of view that the vowel a is less complex than the vowel i. (Roman Jakobson, "Why 'Mama' and 'Papa'?", Selected Writings II, Mouton: The Hague, Paris, 1971, pp. 538-545.) We should not be surprised, therefore, to see an iconic relationship between semantic and phonological complexity: -a' is both semantically and phonologically simpler, whereas -i' is both semantically and phonologically more complex. (Roman Jakobson, "Quest for the Essence of Language," Selected Writings II, Mouton: The Hague, Paris, 1971, pp. 345-359.)

In this opposition, both the -a' and the -i' share the notion of plurality, but the -i' also suggests something non-normal. The -i' is more specific and often signals something that is outside the accepted norm. It is used in more specialized cases and has a more restricted usage than the -a'. The -a', being the unmarked, simply makes no comment as to the semantic makeup of the noun.4

Consider the following nouns that usually take the -a' plural suffix:

<table>
<thead>
<tr>
<th>-a'</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ači'a'</td>
<td>men</td>
</tr>
<tr>
<td>k'axola'</td>
<td>young men</td>
</tr>
<tr>
<td>alab'oma'</td>
<td>young men</td>
</tr>
<tr>
<td>meč'a'</td>
<td>lovers</td>
</tr>
<tr>
<td>ak'uala'</td>
<td>children</td>
</tr>
<tr>
<td>b'eyoma'</td>
<td>rich people</td>
</tr>
<tr>
<td>ċumila'</td>
<td>stars</td>
</tr>
<tr>
<td>ab'axa'</td>
<td>rocks</td>
</tr>
<tr>
<td>axawa'</td>
<td>owners</td>
</tr>
<tr>
<td>ax-yyuq'a'</td>
<td>shepherds</td>
</tr>
<tr>
<td>ax-č'iba'</td>
<td>writers</td>
</tr>
<tr>
<td>ax-tixa'</td>
<td>teachers</td>
</tr>
<tr>
<td>ax-bişa'</td>
<td>singers</td>
</tr>
<tr>
<td>ax-sula'</td>
<td>flutists</td>
</tr>
<tr>
<td>ax-q'oxoma'</td>
<td>musicians</td>
</tr>
<tr>
<td>ax-xač'ola'</td>
<td>harvesters</td>
</tr>
<tr>
<td>ax-q'ixa'</td>
<td>soothsayers</td>
</tr>
<tr>
<td>ċ'ikina'</td>
<td>birds</td>
</tr>
<tr>
<td>ċ'oka'</td>
<td>crows</td>
</tr>
<tr>
<td>sīka'</td>
<td>hawks</td>
</tr>
</tbody>
</table>

There is also a rather large group of nouns which take the -i' plural suffix. The -i' also indicates plurality as does the -a', but also gives additional semantic information about the noun. Being the more marked of the two suffixes, the -i' often signals some deviation from the norm, something that is abnormal, undesirable, or vague. Consider the following nouns which usually take the -i' suffix:5

<table>
<thead>
<tr>
<th>-i'</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>moyi'</td>
<td>blind</td>
</tr>
<tr>
<td>t'oxi'</td>
<td>deaf</td>
</tr>
<tr>
<td>mosi'</td>
<td>crazy</td>
</tr>
<tr>
<td>yawa'i'</td>
<td>sick</td>
</tr>
</tbody>
</table>
kaminaqi'
uli'

Socially abnormal

malkanî'
meb'a'î'
ax-maki'
mosi'
ax-ayî'
ula'î'

winaqi'
şoqi'
stanî'
q'opoxi'

Linguistically abnormal

espanolî'
santo'î'
kwačî'
anima'î'
moso'î'
diosî'
angeli'
obispo'î'
profeta'î'
apostoli'
Tumi'
Teleguario'î'

Animals
čikopi'
kumâqi'
soğ'î'
kari'
b'ayî'
č'oyî'
umuli'
mama'î'
omî'
b'alma'î'
coxi'
pari'
sak'î'
amolo'î'

dead
landsides
widows
orphans
sinners
white people
devils
guests who require special preparation
unknown people as to name, sex
women
girls
maidens
Spaniards
saints
twins
souls
workers
gods
angels
bishops
prophets
apostles
the Tums (family name)
the Teleguarios (family name)
animals
snakes
bats
fish
gophers
mice
rabbits
roosters
spiders
tigers
lions
skunks
crickets, grasshoppers
flies

The first category above describes people and things which are physically abnormal. A blind person certainly falls outside the norm in the Cakchiquel society. Because being blind is different and more marked, the word for blind is forced to take the -i' plural suffix, as is the word for deaf, crazy, sick and dead. Uli' (landslides), being an abnormal and unexpected feature of the landscape, also takes on the -i' plural suffix.
In the second category, widows, orphans, sinners, white people, devils, and guests who require special preparation are all by their nature socially abnormal in the Cakchiquel society and are forced to take the -i' plural suffix. Winaqi' (people) is also marked.6

From a linguistic point of view, females are more marked in Cakchiquel, as in the case in English and Spanish. The masculine is used when referring generally to a group of people. When the feminine word is used it has a more specialized or marked meaning. For example, we speak of "mankind", not "womankind". We would also say "Every person ate his dinner", not "Every person ate her dinner", unless we were speaking specifically about a group of women. In Spanish, "los padres", even though masculine, refers to both parents, the father and the mother. "Las madres", on the other hand, can only refer to mothers, and usually cannot be generalized to mean fathers as well. The masculine term is the more general. It may refer to both men and women, while the feminine term can only refer to women. Because the masculine is the more general or unmarked, we would expect it to take the -a', and we would also expect the feminine-related words to take the more marked -i' suffix. Such is the case in Cakchiquel.

The category of linguistically abnormal words are all borrowed words, and as such, they assume the -i' suffix because by their very nature they are odd or foreign to the Cakchiquel language system. Sensing this oddity, the Cakchiquel speaker will assign the -i' suffix to these words. The plural of Spanish surnames is also formed with the -i' suffix. The surnames Tum and Teleguario, for example, are Tumi' (the Tums) and Teleguario'i' (the Teleguarios).

Animals other than birds tend to take the -i' plural suffix, while birds take the unmarked -a' suffix. Further research is necessary to determine the semantic implications this has.

It is not always the case, however, that a noun must take either the -a' or the -i'. These suffixes are productive; some words can take either suffix, depending on the context.

Consider the minimal pair Patzuma' and Patzumi'. A native from the town of Patzum will tell you that he is one of the Patzuma' (natives of Patzum), however, someone from another town will refer to the inhabitants of Patzum as Patzumi', and those from their own town will be the only -a' to them. Someone from Coban', for example would refer to the inhabitants of his town as Cobana', and the inhabitants of Patzum as Patzumi'. The difference between Patzuma' and Patzumi', then, is one of point of view, the Patzuma' being the familiar choice and the Patzumi' showing a foreign, more marked semantic value.

SUMMARY

The distribution of the Cakchiquel plural suffixes -a' and -i' can be adequately explained using the theory of markedness. The -a' is the unmarked suffix. It is usually the simplest form, and generally makes no comment about the semantic nature of the noun. The -i' is the marked
suffix. It is usually more complex and more specific, being used in more specialized cases than the -a' and carrying more semantic information. It often signals something unexpected, unwanted, abnormal, or vague.

Beyond this, the -a' and the -i' are productive suffixes. They often can both be used on a given noun, depending on the semantic information the speaker wishes to communicate.

The usefulness of an explanation of this type extends beyond a rule for why the plural of man is ači'i' instead of ači'i'. Besides being able to better explain the language, it may reveal many useful language universals. A deeper search into the semantic nature of language forms provides for a better understanding of both language and languages.

FOOTNOTES

1 This discussion may be generalized to other Quichean languages, but this paper is restricted to examples from Cakchiquel.

2 Rosales says "Para saber cuáles son los nombres que tienen plural o cuáles carecen de él, no hay regla general ni hasta hoy se halla... y lo que debe decirse es, no poder darse reglas generales, sino algunas particulares que hay, que son bien pocas,...y para evitar ese inconveniente y la confusión que hay en esa materia, pondré aquí todos los nombres que he podido alcanzar..." (Gramatica del idioma cachiuel, R. P. Fr. Carlos J. Rosales?, 1748, Guatemala, C.A., pp. 13-15.)

3 Although the precise semantic value of the -el suffix has not been determined, I hypothesize that its semantic content precludes the use of the -i' and requires the -a'. This reasoning is similar to that used by Roman Jakobson in explaining why the Greek verb éramai takes the genitive case while the verb phileó takes the accusative case. (Roman Jakobson, Morfologeceskie nabljudenija nad slavjanskim skoneniem, Selected Writings II, Mouton: The Hague, Paris, 1971, pp. 127-158. My reference was Rodney Sangster's English translation of this article.)

4 This opposition between the unmarked a and the marked i shows up in other nominal and adjectival forms as well, which is the subject of a future paper and will not be discussed here.

5 There are two occurrences of noun plurals that I would predict should take the -i' suffix, but do not: eleq'oma' (thieves) and utiwa' (wolves). This requires further research.

6 Winaqil (people) is very vague. It gives no information about the people. Either the speaker doesn't know anything about the people, or since he is speaking of a heterogeneous group he can't be any more specific than just to say "people". He can't comment on so much as their names, sex, race, or origin. If he knew them, he could be more specific and use ači'a' (men), išoqi' (women), mosi' (white people), etc. But since he doesn't know anything about them or because of the nature of the group, he can't be any more specific, he is confined to say winaqil. This
This distinguishes the group as being odd or different from the norm, thus making it more marked. Any extreme from the norm whether towards the specific or the vague, is marked with the suffix -i'.

<table>
<thead>
<tr>
<th>MARKED</th>
<th>UNMARKED</th>
<th>MARKED</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>---------------</td>
<td>i</td>
</tr>
<tr>
<td>išoqi'</td>
<td>ači'a'</td>
<td>winaqi'</td>
</tr>
</tbody>
</table>
| SPECIFIC | GENERAL        | VAGUE    

Although the town of Coban is not located in Cakchiquel country, I use it in this example because it is attested. I elicited this data while working with a Cakchiquel speaker in the Coban area.
CHANGES IN THE KEKCHI PRONOMINAL SYSTEM

John Bringhurst

As one of our basic thought processes and one of the most often shared, language undergoes a constant process of change and evolution which when observed carefully can be seen to follow certain patterns which allow us a great deal of insight as to how the mind of the speakers functions as the language evolves. Probably the greatest factor limiting our study of this process is the fact that linguistic changes occur so slowly that the entire course of a change cannot be observed in a single lifetime; consequently, we must rely upon historical documents to provide much of our data regarding language change.

Access to the William E. Gates collection of early Mayan manuscripts at the Harold B. Lee Library of Brigham Young University has allowed the unique opportunity to observe the structure of the Mayan languages as they have evolved from the early Spanish colonial period to the present. Based upon my research in the Gates Collection, in the following paper I propose to show: first, a change which took place in the Kekchi pronominal system, and second, the far-reaching effect that this change has had upon the structure of transitive verb conjugations and consequently upon the Kekchi language as a whole.

Before continuing, it is necessary to establish the concept of Praguian markedness which will serve as the theoretical base of the explanations to be given here. Briefly (and simplistically), it involves a system of relative degrees of "markedness" that exist within a language structure, which allow us a considerable understanding as to how linguistic changes take place and how specific changes tend to affect the language as a whole. The many factors which demonstrate markedness will not be discussed to any length here, but they include such things as complexity or simplicity of ideas, limited versus general meaning, and low as opposed to high frequency of usage. In the systems of pronouns which are described here, the third person will always be considered "unmarked" as against first and second person, and the second person unmarked as against the first. The plural is more marked than singular, and in Mayan language systems the ergative (ERG) pronouns occupy a more marked position than the absolutive (ABS). Linguistic changes are observed to occur in relatively unmarked areas of the language and move from there to the more highly marked forms.

The Kekchi Pronominal System in Transitive Conjugations

In Kekchi as in other Mayan languages there are two pronoun systems: the ergative, and the absolutive, each serving distinct functions which vary according to the linguistic context in which they are used. Since transitive verb conjugations involve both a subject and an object of the verb, both sets of pronouns are used in the transitive conjugations, the ergative pronoun indicating the subject and the absolutive pronoun playing
the role of direct object. The system of markedness in these conjugations is best illustrated with a series of boxes developed by Dr. John Robertson as follow (third person):

<table>
<thead>
<tr>
<th>ABS 3rd person singular</th>
<th>ABS 3rd person singular</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ERG 3rd person singular</td>
<td>ERG 3rd person plural</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ABS 3rd person plural</th>
<th>ABS 3rd person plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>ERG 3rd person singular</td>
<td>ERG 3rd person plural</td>
</tr>
</tbody>
</table>

Here we see all possible combinations of singular and plural with the third person as both object and subject, arranged so that the upper left box is unmarked, and the lower right most marked. The same box in simple English terms is expressed thus:

<table>
<thead>
<tr>
<th>He does it to him</th>
<th>They do it to him</th>
</tr>
</thead>
<tbody>
<tr>
<td>He does it to them</td>
<td>They do it to them</td>
</tr>
</tbody>
</table>

Or, as it will be shown with the Kekchi pronouns:

<table>
<thead>
<tr>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>him</td>
</tr>
<tr>
<td>he</td>
</tr>
<tr>
<td>them</td>
</tr>
<tr>
<td>he</td>
</tr>
</tbody>
</table>

We will begin our study of the Kekchi pronoun systems with this unmarked (3rd person) combination, since that is where the initial change we are to consider took place. In modern Kekchi, this combination looks like this:

<table>
<thead>
<tr>
<th>(him) (him)</th>
</tr>
</thead>
<tbody>
<tr>
<td>he</td>
</tr>
<tr>
<td>he...them</td>
</tr>
</tbody>
</table>

In order to determine what adaptations have led to this modern system, it is first necessary to present a model of the proto-Kekchi pronouns, which were probably very similar to the system which exists presently in Cakchiquel. Let us consider the modern Kekchi and Cakchiquel systems side by side:

<table>
<thead>
<tr>
<th>KEKCHI</th>
<th>CAKCHIQUEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø-š</td>
<td>ø-u</td>
</tr>
<tr>
<td>ø-e'š</td>
<td>ø-ki</td>
</tr>
<tr>
<td>š...e ß</td>
<td>ru = š</td>
</tr>
<tr>
<td>e ß...e ß</td>
<td>e-u</td>
</tr>
<tr>
<td>e-ki</td>
<td>e= e ß</td>
</tr>
</tbody>
</table>
Note that the basic difference between the two pronoun systems is the use of "e'ς" in Kekchi to perform the role of the Cakchiquel "ki". Since Kekchi and Cakchiquel are descended from one common language, we should be able to determine which is the original form by looking for signs of innovation from other forms within the same language. It is easy to explain the origin of "e'ς" in Kekchi as a combination of the absolutive "eb" and the ergative "s", but, the "ki" of Cakchiquel has no source within the language from which it might have evolved, so we can conclude that "ki" was in fact the original form and that Kekchi has undergone innovation. In this light we can reconstruct the proto-Kekchi pronoun system as follows:

\[
\begin{array}{|c|c|}
\hline
*∅-ς & *∅-ki \\
\hline
*eb-ς & *eb-ki \\
\hline
\end{array}
\]

In all cases the absolutive pronoun preceded the ergative as it presently does in Cakchiquel:

**KEKCHI** | **CAKCHIQUEL**
---|---
*∅-ς* he does it to him | Φ-u
*∅-ki* they do it to him | Φ-ki
*eb-ς* he does it to them | e-u
*eb-ki* they do it to them | e-ki

The Initial Change--Replacement of "ki"

The initial change which came about in the pronoun system is described by Dr. John Robertson in his paper, "The Origin and Development of the Pronominal Systems of the Mayan Languages"^4_, and basically involved a replacement of the ergative pronoun "ki" by the combined absolutive and ergative pronouns "ebs". This change is easy to justify in terms of the markedness pattern of ergative and absolutive pronouns, and a slightly different application of Dr. Robertson's boxes showing the relationship between the unmarked absolutive and the more marked ergative pronouns will be of utility in illustrating the change. Here is the relationship with its English interpretation:

<table>
<thead>
<tr>
<th>ABS</th>
<th>ERG</th>
<th>OBJECT</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>singular</td>
<td>singular</td>
<td>him</td>
<td>he</td>
</tr>
<tr>
<td>plural</td>
<td>plural</td>
<td>them</td>
<td>they</td>
</tr>
</tbody>
</table>

In this context the origin of the Kekchi change is readily recognizable, as shown here:
The ERG singular (§) and the ABS plural (eb) simply combined to form a new ERG plural "eb§". The use of this element in transitive conjugations was already preceded by its use as a combination of ergative and absolutive pronouns meaning "he does it to them". Now it simply took a new position as "they do it to him", replacing the old pronoun "ki", which was lost. This innovation is most common among the lowland Maya groups, several of which bordered on Kekchi territory and might have influenced such a change.

The replacement of "ki" by "ebs" forced a crisis of ambiguity since a single element (ebs) might be allowed to take three different meanings: "they do it to him", "he does it to them", and "they do it to them". This is actually the condition which exists in modern Itza, whose 3rd person pronoun system looks like this:

\[
\begin{array}{|c|c|}
\hline
\text{ITZA} & \\
\hline
\text{u} & \text{u...ob} \quad \text{u} = \text{§} \\
\hline
\text{u...ob} & \text{u...ob} \quad \text{ob} = \text{eb} \\
\hline
\end{array}
\]

It is, however, far more likely that Kekchi adjusted itself after the initial change to a system analogous to that of Tzotzil today:

\[
\begin{array}{|c|c|}
\hline
\text{*KEKCHI} & \text{TZOTZIL} \\
\hline
\text{§} & \text{s} \quad \text{s...ic} \quad \text{s} = \text{§} \\
\hline
\text{eb§} & \text{ic} = \text{eb} \\
\hline
\end{array}
\]

This reconstruction has considerable merit when we consider the characteristics of the unmarked 3rd person singular ABS pronoun in Kekchi. Often an unmarked element has a neutral quality which allows it a broad and inclusive range of meaning, which to be made more specific must include a more marked form. In this case the ABS 3rd person singular pronoun has this neutral unmarked quality which allows it to be used in either singular or plural context, and the plural ABS 3rd person pronoun (eb) is only used when it is necessary to specify plural. In the case of the transitive verb conjugations, however, it could not be employed without creating the ambiguity already mentioned, therefore the singular pronoun took both functions.

The most compelling evidence that this was in fact the case comes from a modern aspectless verb form in Kekchi which follows this pattern exactly. In the aspectless past perfect, "r-ilom" has this same neutral
unmarked function, meaning either "he has seen it", or "he has seen them", and in like manner, "r-ilom-eb" can mean either "they have seen him", or "they have seen them":

PAST PERFECT

<table>
<thead>
<tr>
<th></th>
<th>r-ilom</th>
<th>r-ilom-eb'</th>
</tr>
</thead>
<tbody>
<tr>
<td>r-ilom</td>
<td>r-ilom-eb'</td>
<td></td>
</tr>
</tbody>
</table>

The very conditions described above exist here, and only by the context of usage can a plural object be distinguished from a singular.

The Adjustment of the Absolutive 3rd Per. Plural Pronoun

With the transitive verb conjugations, the final step in this process probably involved the resolution of this ambiguity to the form that exists today:

*EARLY (I) MODERN (II)

<table>
<thead>
<tr>
<th></th>
<th>*η</th>
<th>*ebη</th>
<th></th>
<th>η</th>
<th>ebη</th>
</tr>
</thead>
<tbody>
<tr>
<td>*η</td>
<td>*ebη</td>
<td></td>
<td>η</td>
<td>ebη</td>
<td></td>
</tr>
</tbody>
</table>

In order to understand how the system was disambiguated in this fashion it is necessary to examine yet another function of the absolutive pronoun "eb" in Kekchi. In connection with an unpossessed noun it can be used in two ways: First, when suffixed directly to the noun it verbalizes the noun and gives the meaning "they are". Example:

kwi:nq = man / kwi:nq-eb' = they are men

Secondly, when it appears disconnected, preceding the noun but separated from it by the particle "li" ("the"), it simply pluralizes the noun. Example:

li kwi:nq = the man / eb li kwi:nq = the men

It was a combination of those two usages which led to the final adaptation of the transitive verbal pronoun system to the form that exists today.

Let us now consider a common usage of this pronoun system in a transitive verb: sik' = to look for, ki = aspect marker indicating past completed. We get:

ki-η-sik' li kwi:nq = he looked for the man
ki-η-sik' eb li kwi:nq = he looked for the men

Here the distinction between singular and plural objects is re-established simply by stating a plural object, and the ambiguity resulting
from the initial change is eliminated. Since "eb" so often appears as a suffix, both in the absolutive sense described above (kwi:nqeb = they are men) and its adaptive function as part of the 3rd person plural ergative possessive pronoun (ŋ-punit-eb = their hats), eventually, it established itself as a suffix of the transitive verb:

ki-š-sik'-eb li kwi:nq = he looked for the men

When this occurred the object no longer had to be stated to indicate the plural, rather one could simply say:

ki-š-sik'-eb = he looked for them

Thus the change was complete, the system had evolved to what essentially exists today, with the absolutive plural pronoun suffixed to the verb.

In summary, we have examined three probable stages of development of the Kekchi transitive verb pronominal system, the first being the "proto" system which utilized the pronoun "ki" as it still is preserved in Cakchiquel; the second being a result of the replacement of "ki" with the adapted pronoun "ebs", and the third being the suffixing of the absolutive pronoun "eb" to make the distinction between singular and plural objects in transitive conjugation. These are the three stages:

<table>
<thead>
<tr>
<th>STAGE I</th>
<th>STAGE II</th>
<th>STAGE III</th>
</tr>
</thead>
<tbody>
<tr>
<td>*š</td>
<td>*ki</td>
<td>*š</td>
</tr>
<tr>
<td>*ebš</td>
<td>*ebki</td>
<td>*š</td>
</tr>
</tbody>
</table>

(ENGLISH EQUIVALENT)

He does it to him They do it to him

He does it to them They do it to them

Movement to Marked Positions

We can now broaden our perspective beyond the third person and observe the effect that this change had upon the more marked positions, namely those involving first and second person. In the proto-Kekchi system "ki" played the same function in conjugation with the first and second person absolutive pronouns as it did with the first:

1st PERSON ABS

<table>
<thead>
<tr>
<th>1st PERSON ABS</th>
</tr>
</thead>
</table>
| *in-š | *in-ki = me  
| *o-š  | *o-ki = me  
|       |               
|       |               
|       |               


For this reason, when "ki" was replaced by "eb" with the unmarked 3rd person ABS pronouns, the change took place predictably in the more marked positions as well. Thus, "ki" was replaced by "eb", resulting in the system as it exists today:

A similar process has taken place with the final change, the appearance of the ABS "eb" in a suffixed position rather than preceding the ergative pronoun as it appeared in proto-Kekchi:
With the replacement of the "eb" in the suffixed position with a 3rd person subject, by analogy such a replacement also became feasible with 2nd and 1st person objects, and in fact replacement has been complete in conjugation with second person ergative pronouns:

### 2nd PERSON ERG

<table>
<thead>
<tr>
<th>ø-a:</th>
<th>ø-e:</th>
<th>him</th>
<th>him</th>
</tr>
</thead>
<tbody>
<tr>
<td>a:...eb'</td>
<td>e:...eb'</td>
<td>you(s)</td>
<td>you(p)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>him</th>
<th>him</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>them</td>
<td>them</td>
</tr>
<tr>
<td></td>
<td>you(s)</td>
<td>you(p)</td>
</tr>
</tbody>
</table>

In the most marked position, however, that with the first person ergative pronoun, the substitution has not yet become complete; rather the "eb" can either precede the ergative pronoun or occupy the suffixed position:

### 1st PERSON ERG

<table>
<thead>
<tr>
<th>ø-in</th>
<th>ø-ka</th>
</tr>
</thead>
<tbody>
<tr>
<td>eb-in</td>
<td>eb-ka</td>
</tr>
<tr>
<td>in...eb'</td>
<td>ka...eb'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>him</th>
<th>him</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>them</td>
<td>them</td>
</tr>
<tr>
<td></td>
<td>we</td>
<td>we</td>
</tr>
</tbody>
</table>

We can certainly question why the second change did not take over completely while the first one did, and the answer might be purely in terms of the respective time periods involved, but more likely it lies in the nature of the change itself. The first change involved actual elimination of an element (ki) from the language, and since that element played the same role in all positions of markedness in the verb conjugation system, the change became universal. The second change, however, involved the resolution of an ambiguity which existed only in the unmarked 3rd person position. Since movement of this change has been only by analogy, it has taken place much more slowly, and the old system has been retained in the most marked position. Nevertheless, since the prefixed "eb" has disappeared completely from the unmarked (3rd person) position, we would expect that eventually it will die out in the first person as it has done in the second.

### A Further Adjustment--The Solidifying of "Ebs"

Our discussion of the Kekchi transitive verb conjugation system would not be complete without mention of the directional indicators--particles which are included with the pronouns in the conjugation prefix to indicate the direction of the verb's action. It is most interesting to observe how the changes discussed above have affected the placement of the directional indicators in the transitive verb structure, particularly since these changes have taken place recently enough so as to be documented. To illustrate this I will use as an example the particle "hul" which when inserted in the conjugation prefix of a transitive or intransitive verb indicates that the action of the verb is towards the speaker. The original position of "hul" in the transitive verb conjugation was between the
absolutive and ergative pronouns, and there are abundant examples of this in early manuscripts such as the following:6

ch-at-hul-kw-ilaq = I will come and see you(s)
k-es-hul-ka-taqla = We came and commanded you(p)

A problem, however, arose with the change in function of the particle "ebs". Originally it had been a combination of absolutive and ergative pronoun, and as such the direction indicator took its place between the two elements thus: -e~hul-š-. When "ebs" changed position to take the place of "ki", the directional indicators continued to lie between the eb and the s, despite the fact that they now played the role of a single ergative pronoun (ki) rather than a separate absolutive and ergative.

This situation required resolution in order to allow "ebs" to become a single indivisible ergative entity. As before, the resolution came from within the framework of the language itself--"hul" universally took its position between the absolutive and ergative pronouns, but there are cases (3rd person singular) when the absolutive pronoun is simply nothing, and in these cases "hul" was abbreviated to "ul" and attached directly to the aspect marker. Example:

c-ul-š-ba:nu = he came and did it

In order to allow "ebs" to remain together, the "hul" began to appear attached to the aspect marker as it does with a 3rd person singular object:

STAGE I:  k-eb-hul-š-sik' = they came and looked for him
STAGE II: k-ul-e~b-š-sik' = they came and looked for him

Thus, the ergative 3rd person plural pronoun "ebs" became a single unit, so much so that in recent years the "b" has been modified to a simple glottal stop "eš", and the pronoun has become inseparable.

This modification in the unmarked position affected the entire conjugation system, since all the more marked positions followed suit and began to place the directional indicator next to the aspect marker rather than between the pronouns, to the point that now all the pronoun combinations are virtually inseparable in transitive verb conjugations. Example:

x-ul-in-a:kw-a:tina = you came to talk to me
x-ul-eš-ka-sik' = we came and looked for you(pl)

In summary, we have discussed a single change that was introduced in the Kekchi pronominal system and the profound effect that it has had upon the entire language. Two different kinds of changes were considered here, the first involving the replacement of an element (ki) by another and the loss of that element from the language, the second involving adjustments of the language to resolve resultant centers of instability and ambiguity. It is worthy of note that in all cases considered the changes came from somewhere within the framework of the language itself, and was followed by movement of the change from the unmarked to marked areas in a clearly definable pattern.
FOOTNOTES

1 The distinction in markedness between first and second person is much less pronounced than with third person. One indication that the 1st person is the most marked is that when first and second person singulars are combined, the resulting plural is first person rather than second. This is analogous to the 3rd-2nd and 3rd-1st relationship: 1s + 2s = 1p; 2s + 3s = 2p, etc.

2 This system is particularly effective since it illustrates how the highly marked forms actually involve combinations of the elements of other less marked forms, a basic principle of markedness. In this case the element of increased markedness is the plural: ss sp ps sp+ps=pp, ps pp etc.

3 There is evidence to show that the third person singular ergative pronoun was probably not "š", but the evolution of this pronoun is a very different matter which need not be discussed here. For the purposes of this paper, therefore, the contemporary pronoun "š" will suffice.

4 In this paper Dr. Robertson examines many such innovations in various Mayan languages in terms of Praguian Markedness.

5 The form in which the "eb" is prefixed is more marked, and it is in fact observed that an innovation will take over the unmarked position and the conservative form if it survives retains a highly marked meaning.

6 These examples are taken from an early grammar entitled "Arte de la Lengua Kekchi", Gates Collection.
THE ETYMOLOGY OF QUICHEAN kumáč snake AND
THE LINGUISTIC AFFILIATION OF THE OLMEC

James A. Fox

The Mayan and Mixe-Zoquean words for snake are usually reflexes of PM *kaːn snake and PMZ *káhin snake, respectively, as shown in Table 1.2 The Quiche and Pocomchi reflexes of PM *kaːn, however, are used only in archaic senses.3 Proto-Quichean (Quiche-Kekchi in Table 1) *kaːn has been replaced in Quiche, Sacapultec, Cakchiquel, Tzutujil, and Uspantec by kumáč, for which no etymology has been proposed; indeed, no Mayan derivation seems plausible.

A frequent use of kumáč in early post-Conquest Quiche documents is in the compound Gucumatz (usually analyzed as q'úq' feather, quetzal bird + kumáč snake), the name of the Quiche god corresponding to Aztec Quetzalcoatl feathered serpent and Yucatec kukulcan (k'uk'-ul feathered + kaːn snake). The feathered serpent, god of Venus and culture hero, figures prominently in legends and archaeological motifs throughout Mesoamerica.

The Mixe-Zoquean terms for Venus, the morning and evening star, are compounds of the words for night or big, and star, as shown in Table 2. Assuming that Zoque kuː maː/kuk maːa morning star should be analyzed as kuː night + -ki at4 + maːa star, and that Zoque kuː, Mixe kuː, and Sayula Popoluca ku?: reflect pre-Proto-Mixe-Zoquean **kuː night,5 it is likely that an early version of this compound for Venus might have been **kuːʔ-ki maːxá or **kuː maːxá (depending on presence or absence of the temporal suffix). The resemblance of these reconstructed compounds to Quichean kumáč is obvious. I believe that the Quicheans borrowed the compound as a name for the feathered serpent, or god of Venus. Eventually, they added q'úq' feather to the borrowed kumáč; by that time, kumáč may already have come to mean snake (displacing the Quichean reflex of PM *kaːn).6 Although one cannot be sure when the semantic change took place, the borrowing itself must have occurred very early, since it preceded the Mixe-Zoquean sound shift **k>*ɣ.

Since Mayan and Mixe-Zoquean constitute a linguistic family, it is possible that Quichean kumáč was inherited from Proto-Maya-Mixe-Zoquean through Proto-Mayan, rather than borrowed. However, several lines of evidence suggest that borrowing is the correct explanation: (1) none of the reconstructed Proto-Mixe-Zoquean forms have known cognates in Mayan (that is, kumáč makes sense in pre-Proto-Mixe-Zoquean, but not in Proto-Mayan); (2) kumáč is found only in those Mayan languages which might have had significant contact with Mixe-Zoquean; and (3) worship of the feathered serpent seems to have originated among the Olmec, with subsequent introduction to the Maya by way of the Pacific piedmont of Guatemala, which lies adjacent to the homelands of Quichean and Tapachultec (now probably extinct), the southernmost member of Mixe-Zoquean.7

Primarily because of the close distributional match between Mixe-Zoquean languages and Olmec or Olmec-influenced archaeological sites, and
<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiché</td>
<td>kumāח</td>
<td>snake</td>
</tr>
<tr>
<td></td>
<td>ka:n</td>
<td>5th day-name; lineage-name</td>
</tr>
<tr>
<td>Sacapultec</td>
<td>kumāח</td>
<td>snake</td>
</tr>
<tr>
<td>Cakchiquel</td>
<td>kumāח</td>
<td>snake</td>
</tr>
<tr>
<td>Tzutujil</td>
<td>kumāח</td>
<td>snake</td>
</tr>
<tr>
<td>Uspantec</td>
<td>kumāח</td>
<td>snake</td>
</tr>
<tr>
<td>Pocomchí</td>
<td>a:q'</td>
<td>snake</td>
</tr>
<tr>
<td></td>
<td>ka:n</td>
<td>5th day-name</td>
</tr>
<tr>
<td>Kekchí</td>
<td>k'antí?</td>
<td>snake</td>
</tr>
<tr>
<td>Tecó</td>
<td>ka:n</td>
<td>snake</td>
</tr>
<tr>
<td>Mam</td>
<td>ka:n</td>
<td>snake; 14th day-name</td>
</tr>
<tr>
<td>Kanjobal</td>
<td>kan</td>
<td>snake</td>
</tr>
<tr>
<td>Jacalteca</td>
<td>lab'a</td>
<td>snake</td>
</tr>
<tr>
<td>Mam</td>
<td>ka:n</td>
<td>snake</td>
</tr>
<tr>
<td>Kanjobal</td>
<td>kan</td>
<td>snake</td>
</tr>
<tr>
<td>Jacalteca</td>
<td>lab'a</td>
<td>snake</td>
</tr>
</tbody>
</table>

**Mayan:**

<table>
<thead>
<tr>
<th>Language</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chuj</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Tojolabal</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Huastec (Potosí)</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Chicomuceltec</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Tzeltal</td>
<td>čan</td>
<td>snake, insect</td>
</tr>
<tr>
<td>Tzotzil</td>
<td>čon</td>
<td>animal, snake, cat</td>
</tr>
<tr>
<td>Chontal</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Chol</td>
<td>lukum</td>
<td>snake</td>
</tr>
<tr>
<td></td>
<td>čan-il</td>
<td>germs, animals, insects</td>
</tr>
<tr>
<td>Choltí</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Chortí</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Yucatec</td>
<td>kan</td>
<td>snake</td>
</tr>
<tr>
<td>Lacandón</td>
<td>kan</td>
<td>snake</td>
</tr>
<tr>
<td>Itzá</td>
<td>kan/kan</td>
<td>snake</td>
</tr>
<tr>
<td>Mopán</td>
<td>kan</td>
<td>snake</td>
</tr>
<tr>
<td>Mixe</td>
<td>qa:ʔn</td>
<td>snake, intestines</td>
</tr>
<tr>
<td>Sayula Popoluca</td>
<td>čanay</td>
<td>snake</td>
</tr>
<tr>
<td>Zoque (Tecpatán)</td>
<td>čan</td>
<td>snake</td>
</tr>
<tr>
<td>Zoque (Western)</td>
<td>čahín</td>
<td>snake</td>
</tr>
<tr>
<td>Sierra Popoluca</td>
<td>ča:ʔn</td>
<td>snake</td>
</tr>
</tbody>
</table>

Partly because of supposed Mixe-Zoquean loanwords in Mayan and other indigenous languages of Middle America, Kaufman suggested that the Olmec spoke Proto-Zoquean (as opposed to Proto-Mixon). To date, no detailed etymologies have been adduced in support of this hypothesis. The etymology of kumāח supports the identification of the Olmec with the Mixe-Zoquean languages, because (1) kumāח was borrowed from Mixe-Zoquean, in which it originally meant Venus; and (2) it is likely that the worship of the feathered serpent, god of Venus, was borrowed by the Maya from the Olmecs, or the Olmec-influenced peoples, near sites which are located precisely where Mayan had contact with Mixe-Zoquean.
Mixe-Zoquean was probably not as differentiated in Olmec times as Kaufman implied, however, since the k of kumā¢ indicates that the phrase was borrowed before a sound shift (**k>*t) which was common to all of Mixe-Zoquean (although it is possible that there were independent shifts). The etymology of kumā¢ also suggests, of course, that the association of the feathered serpent with Venus may have preceded, or at least been more important than, other associations (e.g., with the wind) of the feathered serpent god of immediate pre-Conquest times.

NOTES


2. The Proto-Mayan *k/Proto-Mixe-Zoquean *¢-correspondence occurs commonly in prima facie cognates. Except for kumā¢, the Mayan words for snake which are not reflexes of PM *ka:n can be accounted for in terms of Mayan. Pocomchi a:q' is from PM *a:k' tongue, vine. Kekchi k'anti? is from PM *k'an yellow + *tʰ'iː? mouth; the Kekchi form was probably borrowed from Cholti k'an ti? fer-de-lance (Kekchi has many loans from Cholti), since one would have expected Kekchi *q'an ci?. Jacaltec láb'a is problematic, but certainly related to the Jacaltec day-name áb'ax soot (?), correspond- to Quiche ka:n. Chol lukum is related to identical forms meaning worm in neighboring languages.
3. The various Mayan day-name lists are generally cognate, though the days may be numbered from different points in the cycle. The Mam 14th day-name corresponds to the Quiché and Pocomché 5th day-names, which also correspond to the Aztec 5th day-name, coatl snake. Although Quiché, Pocomché, and Mam preserve reflexes of PM *ka:n in this day-name (Quiché also has it in lineage-names), speakers of these languages are generally no longer aware of the former association of this day-name with snakes.

4. I assume that the -ki/-k of the Zoque colonial source represents Wonderly's (William L. Wonderly, "Zoque V: Other Stem and Word Classes," IJAL 18 (1952): 35-48) suffix 712, -?k, a temporal suffix which "may follow certain attributive stems," meaning essentially at, or when it is. I know of no cognate suffix in other Mixe-Zoquean languages, so reconstruction for PMZ is uncertain.

5. That is, by the change Proto-Maya-Mixe-Zoquean **k>Proto-Mixe-Zoquean *k, as in snake. Since this change must have taken place after the separation of Mayan from Mixe-Zoquean (or be the very change which defines the separation), yet before the differentiation of Mixe-Zoquean (unless the change occurred several times, independently), 'pre-PMZ' seems the most conservative label.

6. It is possible that the presence of q'uq is due to folk etymology of the original compound, especially if the temporal attributive suffix was present. However, I believe that the k of kuma¢ was derived from the **k of **ku:?, rather than from the suffix; the latter possibility would require a more complex argument for the quality of the following vowel in Quichean.


CASE SHIFT AND VERB CONCORD IN GEORGIAN

Kim Braithwaite

Ever since the first grammatical studies of the Georgian verb system, with its features of ergativity and polypersonalism, linguists have been puzzled by what I term "case shift" in Georgian transitive verb structures. Within the full conjugation of a single transitive verb, the subject and object pronouns "shift cases" depending on the paradigmatic subset or "tense series." In the six paradigms of Series I, which includes the present, the subject is nominative and the object is dative. In Series II, with its two paradigms including the aorist, subject shifts to ergative and object shifts to nominative. In Series III, whose paradigms include the perfect, the shift is to dative subject and nominative object—seemingly the reverse of Series I. If there is an indirect (oblique) object, it is dative in both Series I and II but goes into a postpositional construct in Series III.

Chart A gives two transitive samples for each series—one with subject and object only, the other with an added indirect object. In Series I, the subject is nominative იქი while the direct and indirect objects are both dative მას. In Series II, subject has shifted to ergative მან and the object to nominative იქი, while the indirect object is again dative მას. In the "inverted" Series III, subject is now dative მას and the object is nominative იქი, while the indirect object is postpositional მისტიჯ.

For instructive contrast and for their crucial role in my analysis, Chart A also shows two types of nontransitive verbs, one with and one without an object. The subject is nominative იქი throughout the nontransitive conjugation, and the (oblique) object is dative მას. (Several other subtypes not directly germane to this paper are not illustrated).

Domestic and outside linguists alike have seized on the ergativity of Series II, also the inversion of Series III, to argue that the Georgian verb is "different in kind" from, say, Indo-European. Some have said that subject and object are invalid as applied to Georgian grammar, and so on. I do not propose here to decide whether notions like subject and object are universal or language-specific, nor am I immediately concerned about the nature of ergativity, whether it reflects something special in the psyche of those who use it, or whatever. My focus here is on case shift, and for reasons of time and space I'll confine it to Series I and II.
<table>
<thead>
<tr>
<th>Series</th>
<th>Tense</th>
<th>Subject Case</th>
<th>Transitive</th>
<th>Transitive+</th>
<th>Intransitive</th>
<th>Intransitive+</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>(Present)</td>
<td>Subj</td>
<td>IObj</td>
<td>Obj Samples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans</td>
<td>Nom</td>
<td>Dat</td>
<td>igi (Nom) hxaṭavs mas (Dat)</td>
<td>'he paints it'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans+</td>
<td>Nom</td>
<td>Dat</td>
<td>igi (Nom) mihcems mas (Dat) mas (Dat)</td>
<td>'he will give it to him'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontrans</td>
<td>Nom</td>
<td>igi (Nom)</td>
<td>kreba</td>
<td>'it disappears'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontrans+</td>
<td>Nom</td>
<td>Dat</td>
<td>igi (Nom) hçvdeba mas (Dat)</td>
<td>'he reaches for it'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>(Aorist)</td>
<td>Subj</td>
<td>IObj</td>
<td>Obj Samples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans</td>
<td>Erg</td>
<td>Nom</td>
<td>man (Erg) daxαṭa igi (Nom)</td>
<td>'he painted it'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans+</td>
<td>Erg</td>
<td>Dat</td>
<td>nom (Erg) mihca mas (Dat) igi (Nom)</td>
<td>'he gave it to him'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontrans</td>
<td>Nom</td>
<td>igi (Nom)</td>
<td>gakra</td>
<td>'it disappeared'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontrans+</td>
<td>Nom</td>
<td>Dat</td>
<td>igi (Nom) çahçvda mas (Dat)</td>
<td>'he reached for it'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>(Perfect)</td>
<td>Subj</td>
<td>IObj</td>
<td>Obj Samples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans</td>
<td>Dat</td>
<td>Nom</td>
<td>mas (Dat) dahuxαṭavs igi (Nom)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans+</td>
<td>Dat (Pos)</td>
<td>Nom</td>
<td>mas (Dat) mihucia mistvis (Pos) igi (Nom)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontrans</td>
<td>Nom</td>
<td>igi (Nom)</td>
<td>gamkrala</td>
<td>'it has disappeared'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nontrans+</td>
<td>Nom</td>
<td>Dat</td>
<td>igi (Nom) çahçvdomia mas (Dat)</td>
<td>'he has reached for it'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Specifically, if Georgian is "an ergative language," what is it doing with the nominative-dative line-up in Series I—a line-up which somewhat resembles the nominative-accusative line-up of the familiar languages? How does this ergative line-up relate to the nominative-dative? Why this "case shift?" These are the puzzles that have vexed Georgian scholars.

My explanation is that Series I and Series II constructions have distinct auxiliary formations of a quite ordinary sort specified in their respective underlying abstract structures ("deep structure" or whatever). These come to be reflected at the overt level in the disparate verb elements and subject-object cases.

Chart B shows the personal pronouns in the relevant cases. The fact that the 1st and 2nd person pronouns do not undergo any overt change has implications elsewhere in the grammar.

**CHART B. PERSONAL PRONOUNS**

<table>
<thead>
<tr>
<th>3rd Person</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nom</strong></td>
<td><strong>igi</strong></td>
</tr>
<tr>
<td><strong>Erg</strong></td>
<td><strong>man</strong></td>
</tr>
<tr>
<td><strong>Dat</strong></td>
<td><strong>mas</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1st/2nd Persons</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singular</strong></td>
<td><strong>Plural</strong></td>
</tr>
<tr>
<td>1  <strong>me</strong></td>
<td><strong>čven</strong></td>
</tr>
<tr>
<td>2  <strong>šen</strong></td>
<td><strong>tkven</strong></td>
</tr>
</tbody>
</table>

Next, the internal morphology of the finite verb form. It may include subject and object concord markers, various formants, tense and mood elements—up to a total of 11 including the root. Some segmented examples are shown in Chart C.

We will be concerned only with the personal concord markers and one other crucial element, the stem format which I'm relating to the auxiliary distinctions mentioned. Chart D shows the verb-internal subjective and objective concord markers, the latter including a variety I call extra-vertive.

It is important to emphasize that the labels on these items are strictly that: names of convenience to refer to invariant overt elements, regardless of what underlying function they may reflect. The terms subject and object, on the other hand, refer to the conventional notions—call them "real," "logical," or whatever—regardless of how they show up in the overt structure. Failure to keep this distinction in mind has led many
CHART C. SAMPLES OF VERB-INTERNAL MORPHOLOGY

a-gvi-šen-eb-en 'they will build it for us'
  a = preverb
  gvi = objective (extravertive) person marker, 1st plural
  šen = root 'build'
  eb = stem formant (discussion to follow)
  en = subjective person marker, 3rd plural

v-ar 'I am'
  v = subjective person marker, 1st person
  ar = root 'be'

da-v-h-a-kvir-d-eb-o-d-e-t '[that] we be observing him'
  da = preverb
  v = subjective person marker, 1st person
  h = objective person marker, 3rd person
  a = benefactive (version) marker
  kvir = root 'observe'
  d = inchoative (inceptive) element
  eb = stem formant
  o = copular element
  d = nonpresent
  e = subjunctive
  t = subjective plural

CHART D. SUBJECTIVE AND OBJECTIVE/EXTRAVERTEIV CONCORD MARKERS

<table>
<thead>
<tr>
<th>Subjective</th>
<th>Objective</th>
<th>Extravertive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sg Pe</td>
<td>Sg P</td>
<td>Sg P</td>
</tr>
<tr>
<td>1 v-</td>
<td>m-</td>
<td>m-</td>
</tr>
<tr>
<td>2 h-</td>
<td>g-</td>
<td>g-</td>
</tr>
<tr>
<td>3 {-s} { -en}</td>
<td>h-</td>
<td>h-</td>
</tr>
</tbody>
</table>

linguists down blind alleys when faced with, for example, the inversion of Series III, where the extravertive (objective) marker hu- marks the real subject, and so on.

At this point I must announce a serious caveat on the element h-, the marker of 2nd person subjective and 3rd person objective, seen in the samples and in Chart D. In actual speech or writing, this h- of mine would appear in variant forms or not show at all, depending on
phonological and other factors. Since my arguments depend crucially on its presence or absence in a given structure, I have placed it artificially in all relevant contexts, partly on the basis of older language stages."

Subject and object pronouns can be deleted, and the verb itself can "stand for" the whole sentence. This has led most analysts to claim that the verb "contains" all the pronominal information. I argue that the verb form, with or without external pronouns, simply relates via concord rules to a fully-specified structure, and whatever elements it does contain owe their overt existence to this underlying structure and to the rules that apply before the pronouns are deleted. This is no revolutionary claim on my part, of course, but most Georgian specialists haven't seen it that way.

If we go by the Chomskyan vision or something like it, whatever rules attach these elements and markers have to operate uniformly and mechanically on successive underlying structures. This, regardless of the original (deep structure) configuration and regardless of the effects of early rules that distort or restructure the original (cf. it-Raising, Equi-NP Deletion, Passive, and so on in English). It is here, then, that we look for clues to the puzzles of Case Shift.

CONCORD IN SERIES I AND II

In both Series, ALL subjective markers reflect "real subject" whether the structure is transitive or not, and regardless of pronoun cases, as seen in samples 1-4:

SAMPLES:

**Series I**

(1)  igi h-xaṭav-s mas  
    Nom 0 S Dat  
    'he paints it'

(2)  igi kreb-a  
    Nom  S  
    'it disappears'

**Series II**

(3)  man da-xaṭ-a igi  
    Erg  S Nom  
    'he painted it'

(4)  igi ga-kr-a  
    Nom  S  
    'it disappeared'
When it comes to objective concord, however, a crucial discrepancy emerges. The following transitive samples show that in Series I, objective h- marks the object or the indirect object, both dative, while in Series II h- marks only an indirect object, also dative, but the direct object--nominative--is not marked at all:

SAMPLES:

<table>
<thead>
<tr>
<th>Series</th>
<th>English Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>'he slaughters it'</td>
</tr>
<tr>
<td>II</td>
<td>'he slaughtered it'</td>
</tr>
<tr>
<td>I</td>
<td>'he steals it from him'</td>
</tr>
<tr>
<td>II</td>
<td>'he stole it from him'</td>
</tr>
</tbody>
</table>

In other words, 3rd person objective h- marks only a dative object, never a nominative.

THE STEM FORMANT. PROPOSED EXPLANATION

To illustrate the behavior of the stem formant, Chart E matches two different past tenses--imperfect from Series I (the series-mate of the present), and aorist from Series II (the values of these are quite parallel to those of Spanish imperfect and preterite, respectively):

CHART E. PAST TENSES DISTINGUISHED BY STEM FORMANT

<table>
<thead>
<tr>
<th>StFo</th>
<th>Series I (Imperfect)</th>
<th>English Gloss</th>
<th>Series II (Aorist)</th>
</tr>
</thead>
<tbody>
<tr>
<td>av</td>
<td>h-xaṭ-av-d-a</td>
<td>'he painted it'</td>
<td>da-xaṭ-a</td>
</tr>
<tr>
<td>am</td>
<td>h-dg-am-d-a</td>
<td>'he stood it'</td>
<td>da-dg-a</td>
</tr>
<tr>
<td>eb</td>
<td>h-kid-eb-d-a</td>
<td>'he hung it'</td>
<td>da-kid-a</td>
</tr>
<tr>
<td>em</td>
<td>[mi]-h-c-em-d-a</td>
<td>'he gave it to him'</td>
<td>mi-h-c-a [with IO]</td>
</tr>
<tr>
<td>i</td>
<td>h-čr-i-d-a</td>
<td>'he cut it'</td>
<td>da-čr-a</td>
</tr>
<tr>
<td>ob</td>
<td>h-gm-ob-d-a</td>
<td>'he denounced him'</td>
<td>da-gm-o [o→a]</td>
</tr>
<tr>
<td>op</td>
<td>h-q-op-d-a</td>
<td>'he divided it'</td>
<td>ga-q-o [o→a]</td>
</tr>
<tr>
<td>Ø</td>
<td>h-cer-Ø-d-a</td>
<td>'he wrote it'</td>
<td>da-cer-a</td>
</tr>
</tbody>
</table>

REMARKS: The formant Ø is easily motivated. Only av, eb, and ob serve to coin new verbs in the modern language.
Ignoring the full range of distinct functions, if we gloss the imperfect as "was -ing" rather than as a simple past, if reflects my belief that the machinery of Series I, with the stem formant, is analogous to the progressive formation in the Chomskyan AUX framework or something like it. This, basically, is my proposal. Now to elaborate, starting with a brief recap of salient points:

One, subjective marks the real subject regardless of case shift, and regardless of transitivity. Two, h- marks only a dative object. Three, the "vanishing h-" coincides exactly with the "shift" from nominative to ergative. Finally, all this ties in with the presence of a stem formant in Series I and the lack of it in Series II. These are the big clues pointing to a reasonable explanation.

Now we ask ourselves, aside from the indirect objects of transitive verbs, where else in Georgian do we find a 3rd person object expressed invariably by the dative pronoun outside the verb and marked by h- inside the verb? The answer: in NONtransitive verbs that have an (oblique) object, for example:

SAMPLES:

<table>
<thead>
<tr>
<th>Series</th>
<th>Sentence</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (9)</td>
<td>igi h-çvd-eb-a mas</td>
<td>'he reaches for it'</td>
</tr>
<tr>
<td>II (10)</td>
<td>igi h-exmar-eb-a mas</td>
<td>'he helps him'</td>
</tr>
<tr>
<td>II (11)</td>
<td>igi ça-h-çvđ-a mas</td>
<td>'he reached for it'</td>
</tr>
<tr>
<td>II (12)</td>
<td>igi da-h-exmar-a mas</td>
<td>'he helped him'</td>
</tr>
<tr>
<td>III (13)</td>
<td>igi ça-h-çvđ-omi-a mas</td>
<td>'he has reached for it'</td>
</tr>
<tr>
<td>III (14)</td>
<td>igi da-h-xmar-ebi-a mas</td>
<td>'he has helped him'</td>
</tr>
</tbody>
</table>

My claim is that the overt machinery of a Series I transitive is behaving morphologically like that of a nontransitive plus object, and that is why we have the nominative-dative line-up in Series I that has bothered linguists about Georgian's "ergative language" status. There are parallels to be found in languages all over the world. Aspect and auxiliary elements closely interact with, and often redistribute, subject-verb and verb-object relations.

Now let's draw a parallel in English:
SAMPLES:

(15) 'he shells peas'
     'he shelled peas'

(16) 'he is shelling peas'
     'he was shelling peas'

(17) 'he is a mealymouthed sidewinder'
     'he was really in a pickle this time,' etc...

Samples (15) and (16)--both transitive--are clearly counterparts of one another. What distinguishes them is the aspectual machinery: (15) is the simple formation, (16) is progressive. In the Chomskyan framework, they differ by small but essential AUX distinctions in the deep structure. Now note that 'he' is the subject in all three samples, 15 through 17, regardless of transitivity. In sample (15) the concord is directly between 'he' and the verb 'shells' or 'shelled.' Rules of affix attachment and number agreement have applied quite mechanically. But in (16), the progressive counterpart, the subject-verb concord strictly speaking is not between 'he' and the transitive verb 'shell,' but rather between 'he' and the 'is/was'. The verb stem 'shel-' gets ING attached and is placed entirely outside of concord with the subject.\(^3\)

If we focus on just that portion of the line-up in (16), we have to say that the 'he is/was' is nontransitive. Morphologically, at any rate, it is identical to the 'he is/was' portion of the intransitive samples in (17), and indeed it has gone through exactly the same rules of affix attachment and number agreement.

Something like this is clearly going on in Georgian. In effect, the Series II forms without stem formant are equivalent to the English simple forms, with just the tense and person markers. The subject agrees with the verb directly in Series II, and as it happens the Georgian transitive requires the ergative-nominative line-up. The Series I forms have more machinery: the stem formant intrudes, so to speak, between subject and verb, so that the ergativity condition does not hold and the complex behaves like a nontransitive, requiring the subject to be in the nominative. The relation between verb and direct object is similarly loosened, "de-moting" it to oblique status and calling for a dative pronoun marked internally by h-.

A reasonable question arises here: Why no discussion of any simple present in Georgian? In modern standard Georgian the Series I present does duty for a range of present tense functions, including both simple and progressive (cf. the extended use of progressive in dialects of Irish English today). But Old Georgian also had a Series II simple present, called the permissive, which died out sometime in the last few hundred years. So the verb system is undergoing restructuring, and eventually no doubt my analysis will cease to be valid except in a diachronic or etymological context.

If my analysis holds water, it buys a number of explanations and also opens up new puzzles, new lines of exploration in the rich field of
Georgian verb studies. I have not had time in this paper to discuss the machinery of the inverted Series III forms, but my research to date, using the same approach and framework, points to a reasonable and relatively simple explanation there as well.

Thus, the seemingly intractable Georgian verb system is quite amenable to the kind of analysis applicable to more familiar languages. At the same time, new questions are raised with cross-linguistic and perhaps universal implications.

FOOTNOTES

1. In the modern standard language, h-concord is severely eroded, and in actual usage it is somewhat muddled. Where it does occur it appears as h, s, x, or Ø depending on the environment (for example, h → Ø / V, etc.) and except in a couple of conservative mountain dialects h- no longer marks 2nd person subjective at all. Current academy norms decree that h- should mark only an indirect or oblique object, never a direct object, but all this is complicated by dialect mixing and by confusion in usage. Many dialects lack any overt h- altogether, and in most others it has fallen into the disuse or misuse typical of dying morphological norms, cf. English "whom" (disuse) and "for he and I" (misuse). In standard Georgian, overt h-concord has been on its last legs for several hundred years. My justification is that it does persist in the living language, however confused and sporadic, and it continues to interact, sometimes overtly and sometimes not, with the other machinery discussed here.

2. In contrast, 1st and 2nd person objective m- and g- mark the direct object in both Series I and II. This remarkable discrepancy, tied in with the disparities between 1st/2nd and 3rd persons alluded to earlier and others not touched upon here, is of profound interest not only in Georgian but also for cross-linguistic characterization of the pronominal systems of human language.

3. A number of linguists have discussed different aspectual mechanisms by which the transitivity relation between the verb and its accompanying subject-object entities is, so to speak, broken up or diluted, cf. 'he is busy shelling peas', 'he is in the middle of painting the bathroom,' and so on for the subject; 'he plays at tennis', 'he's writing on his dissertation,' etc. for the object.

BIBLIOGRAPHY


I. Introduction

I will deal here with two syntactic rules that have been posited for the grammar of Navaho. They are relative clause extraposition (henceforth referred to as RCE--Perkins, 1975) and enclitic raising (henceforth referred to as ER--Kaufman, 1974), both of which were considered to be rules exhibiting unbounded rightward movement. The theoretical concern that motivates this study has two inter-related aspects: (1) the transformational component of many forms of transformational grammar (TG) fails to distinguish two different kinds of phenomena (see below); (2) a formal syntactic theory should try to represent the internalized grammar of a speaker, that is, it should have defensible arguments for psychological reality.

The first concern is based upon a simple distinction. Transformations are usually posited for two basic reasons. Some transformations produce structures that are deformed for a performative marking reason. These would include WH-movement and topicalization in English. These structures are not easily motivated in the phrase structure rules. Other transformations simply relate somewhat synonymous sentences. These include the passive and raising transformations in English. Such transformations are always structure-preserving. TG has formally ignored this distinction and has applied the cover term 'transformation' to both types of rules. I will motivate this distinction below in the discussion of Navaho. The transformations with a performative marking function will be illustrated by ER. The transformations that have a relating function will be exemplified by RCE. These structures will be considered as base-generated, and the rules that relate them to other structures are interpretive.

The second concern follows from the rule distinction outlined above. The separation divides the rules into those that apply 'top-down', that is, those that are real-time processes, and those that apply 'bottom-up', that is, those that are interpretive. This distinction makes stronger claims about what a speaker does when using these structures. This results in a more psychologically real description because of the shift in the place of abstraction.

This rule distinction and its resulting naturalness have been previously discussed in Natural Generative Phonology (Hooper, 1974), Upside-Down Phonology (Leben and Robinson, 1977), and in syntax with Brame's (1974) Inverted Cycle Hypothesis. These will be briefly discussed in relation to the present analysis in the conclusion of this paper. The rest of the paper is structured as follows: II. Relative Clause Extraposition (RCE); III. Enclitic Raising (ER); IV. Conclusion.
II. Relative Clause Extraposition (RCE)

The extraposition analysis for relative clauses was proposed by Perkins (1975) in order to explain the relationships shown in these examples (from Perkins):

1. \[ \text{'ashkii \ 'at'éd hashtl'ish yih yitlizh--ée \COMP \ V \ 3:3 sees} \]
   'The boy sees the girl who fell in the mud.'

2. \[ \text{'ashkii \ 'at'éd yoo'j \COMP \ 3:3 sees} \]
   'The boy sees the girl, the one who fell in the mud.'

The first example shows the basic SOV order. Relative clauses are headless in Navaho and so the relative clause construction in (1) is syntactically a nominalized clause, indistinguishable in form from an object complement. This creates ambiguity in that any NP may be considered the head. Context usually mitigates this. The second example shows the application of RCE. The NP 'girl' has been raised from the subordinate clause and the remainder has been attached at the root node.

Perkins concluded that these two sentences should be related by the rule of extraposition. Her decision was based on the fact that the posited extraposition rule was a root transformation (i.e. exhibits unbounded movement) and that it conforms to Ross's island constraints. I shall briefly consider evidence against these contentions and then present an alternative analysis.

The unbounded nature of RCE is posited in response to sentences such as these (from Perkins):
The strange thing here is that the movement only takes place over direct discourse verbs. No complementizer surfaces between the alleged sentences. I take this as evidence that there are no clause boundaries crossed in (3) and therefore a posited movement rule would not be unbounded. There are also semantic arguments for the lack of COMP here. The quoted utterance in (3) is not oriented personally or temporally with the speech act until the end of the direct discourse verb string. This adds additional support to the argument above in that the superficial lack of COMP reflects the semantic unity of this type of VP consisting of the direct discourse verb string.2

The second argument used by Perkins is that RCE obeys Ross's island constraints. The only relevant one here is the Complex NP Constraint (CNPC).3 Perkins offers this example in support of the CNPC for Navaho:

'He must cut himself.'
6. *Hastiin dibé neis'ah-ée adeeshgish, [ba'ni]tsood-ée]

The result of RCE is ungrammatical. The adjoined clause cannot refer to hastiin because that would entail stacking relative clauses. Perkins states that it cannot refer to dibé because of the CNPC. I offer this counter-example:

7. ['ashkii ['at'éeed nleïdi sidāh-fgi] yizts'os-ée] yoo'f
   boy girl over there 3:sits-COMP 3:3 kissed-COMP 3:3 sees

'The boy who kissed the girl who sits over there sees her.'

8. 'ashkii 'at'éeed yizts'os-ée yoo'f [nleïdi sidāh-fgi]
   boy girl 3:3 kissed-COMP 3:3 sees over there 3:sits-COMP

'The boy who kissed the girl sees her, the one sitting over there.'

This clause extraposition results in a grammatical output. The only way to repair the CNPC would be to add the semantic constraint that the adjoined clause must refer to an argument of the main verb. The CNPC seems to hold in the majority of cases because of the difficulty in finding examples where a clause embedded so far down does refer to the main verb. I conclude that RCE does not conform to the relevant island constraints.

Perkins suggests a counter-example to RCE that she calls the 'split-antecedent problem', but she feels that it is not sufficient to refute the movement analysis suggested by the two arguments above. This example (from Perkins) illustrates the problem:

9. Jeechqä'ì mosì yinooIchëéí, 'ahigán--ée
dog cat 3:3 chases 3(qu):fight-COMP

'The dog is chasing the cat, the ones that were fighting.'

The adjoined clause is construed with both 'dog' and 'cat' so there cannot be an embedded version of (9)—they do not form a single NP constituent. As Perkins noted, this is a serious problem for RCE and argues for base generation.

Given that the two arguments for movement have been weakened and the existence of the 'split antecedent problem', base generation of these two structures can be reconsidered. This entails allowing adjoined clauses to be generated in the phrase structure rules with a rule like: S→NP NP V S. Relative clause structures such as those discussed by Hale (1976) would be allowed in the base.
Semantically these structures are quite different from embedded ones. This construction allows the objective content to be concisely stated and frees the adjoined clause (which can also be initial and attached to the too) to be exploited by topic-comment articulation. Although both embedded and adjoined structures with the same propositional content would be generated separately in the phrase structure rules, they would be related by interpretive rules, which were discussed in the Introduction.

III. Enclitic Raising (ER)

Kaufman (1974) suggested another unbounded rightward movement transformation for Navaho. It accounts for sentences like these (from Kaufman):

11. shi-naaί kin-góó deeshááI nisin ni my-brother store-to l:wi 1:want 3:say 'My brother says he wants to go to town.'

12. shi-naaί deeshááI nisin ni-ní-góó Jáán bi-1 béehózin my-brother l:will go 1:want 3:say-COMP-to John him-with 3:it is known 'John knows where my brother says he wants to go.'

13. shi-naaί△-góó nisin níni- Jáán bi1 béehózin

Sentence (11) shows the normal declarative construction. The directional enclitic attaches to the noun which is its 'goal'. In (12), because it is an indirect question, the goal-NP is not realized and the enclitic moves (raises) rightward until it comes to a complementizer and attaches there. This movement is shown graphically in (13).

Kaufman regarded the movement as unbounded because the enclitic can cross as many direct discourse verbs as is necessary to attach to a complementizer. For basically the same reasons as outlined above, I do not consider the movement to be unbounded.4

ER creates traces which must be indexed with the enclitic in order to decode the sentence. A trace is defined as the 'structural residue' left by the unrealized NP and vacating enclitic. In (13), the delta is the trace. These traces are evidences of movement, that is, structure deformation. Combined with this transformation's performative marking function (namely, to mark indirect questions), ER falls into the first class of real-time process rules discussed in the Introduction.

IV. Conclusion

The problem which motivates the above rule distinction is a problem with abstraction. Abstract derivations (which usually incorporate
information of a diachronic nature) give us many structural insights but do not always describe the linguistic knowledge of a speaker. This paper has attempted to show that a rule of distinction can help to solve this problem. Intuitively too, abstract derivations which entail non-productive rules are deemed interpretive in character and are differentiated from productive generative rules which correspond to real-time performative marking processes. I will very briefly below outline how this distinction has been exploited previously in some other works.

In her discussion of Natural Generative Phonology, Hooper distinguishes three different rule types that were conflated in transformational generative phonology. She separates phonological rules which are phonetically motivated, morphophonemic rules which are morphologically conditioned, and via-rules which express lexical relations. She supports this distinction by showing its psychological reality. Via-rules are interpretive in that they capture generalizations about lexical relations without granting them the reality of the other rules.

The basic assumptions of Upside-Down Phonology (Leban and Robinson) are similarly motivated. In this framework, the lexicon contains words in a form that is close to phonetic. Most rules exist not to generate surface forms but to relate them. Hence these rules are abstractions from structural regularities and not mechanisms that create structure. The 'upside-down' rules undo a lexical form so it can be related to others. Pollack (1977) points out that there must be a distinction in rule type here too. He allows phonological rules which apply 'upside-down' and are usually products of diachronic change. He separates these from natural processes which apply actively ('right-side up') and represent processes like sandhi rules, loan phonology, etc.

A parallel development in syntax is seen in Brame's Inverted Cycle Hypothesis (ICH). He distinguishes two types of rules that he calls G-rules (genotype rules) and T-rules (transformational rules):

14. (adapted from Wasow, 1978)

Abstract Structures ← G-rules ← Base → T-rules → Surface Structures

The G-rules are 'inverse' transformations which relate base structures on an abstract level. T-rules generate structures that are not in the phrase structure rules. The ICH obviously depends on most of the transformations (in the old sense of the word) being structure preserving (cf. Emonds, 1976). This allows the base to come close to being an inventory of all structures and reduces the need for long abstract derivations. G-rules handle the abstraction but it is not clear to me how much a naïve speaker even has to know about them.

The rule distinction discussed in this paper fits nicely into this model. RCE exemplifies a G-rule, while ER is the product of a T-rule. Under this analysis, no generalizations are lost, but a measure of God's Truth is obtained. If it is not the case that Hocus Pocus has just been swept under the rug, this might be a small step towards a natural syntax.
NOTES

1 This is not Perkins' analysis. She uses a headed underlying form and deletion to get the surface structure. For good arguments against this analysis and in support of a raising one, cf. Hale and Platero (1974).


3 Perkins states that factive subject complements are not islands. The Coordinate Structure Constraint holds for the obvious reason that a relative clause cannot refer to one conjunct of a constituent.

4 The enclitic attaches to the NP constituent that contains the trace. The rule cannot recognize the NP constituent unless it has a COMP marker on it.

REFERENCES


A Cross-sectional Study of the Acquisition of Grammatical Morphemes of Adult L2 Learners in Formal Environments

Mary Ann Christison

A second statement which has captured the attention of researchers in second language acquisition in the past few years is the claim that second language learners, regardless of native language background, acquire certain English grammatical morphemes in similar sequence. This idea originated with Brown (1973) and his first language acquisition studies with children. Brown's longitudinal study with three unacquainted American children reported that there existed a developmental sequence of fourteen morphemes. This sequence was revealed by a procedure where the particular morphemes were scored for suppliance in obligatory contexts.

A later cross-sectional study conducted by deVilliers and deVilliers (1973), colleagues of Brown's at Harvard, reported a high degree of correspondence between the orderings in their cross-sectional study and the orderings reported by Brown for the same fourteen morphemes.

Heidi C. Dulay and Marina K. Burt (1973) adopted Brown's procedure and a subset of his morphemes to find if such an order existed for children learning English as a second language. They devised an instrument known as the Bilingual Syntax Measure (BSM) to elicit natural speech data from the children. Dulay and Burt found a particular order also existed among children learning English as a second language, but they did not find the same ordering as Brown had found in his studies with children learning English as a first language. They felt the difference in ordering could be attributed to the fact that the children in their study were older and more advanced in their cognitive and conceptual development; therefore, a different order was not unexpected.

Bailey, Madden and Krashen (1974) used the Bilingual Syntax Measure to test adults learning English as a second language and reported a high degree of correspondence with the order demonstrated by the children in the Dulay-Burt study.

Two years ago in the spring of 1977, I began a cross-sectional study to determine if the reported sequence of acquisition of grammatical morphemes for second language learners (Duly and Burt, 1973, 1974; Bailey, Madden, and Krashen, 1974) would be found to exist in adult ESL learners involved in informal environments when using a test other than the Bilingual Syntax Measure. If another test could produce similar results in adults, this would further substantiate the evidence for creative construction. Universal innate mechanisms would guide the learner into similar speech patterns which are measureable regardless of the instrument being used.

All of the data for this first study were collected using an original test designed to measure the acquisition sequence of the grammatical structures in Table 1.
TABLE 1.--The 11 functors

<table>
<thead>
<tr>
<th>Functors</th>
<th>Structures</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronoun case</td>
<td>Pron-(Aux)-(Neg)-(V)-(Pron)</td>
<td>He doesn't like him</td>
</tr>
<tr>
<td>Article</td>
<td>(Prep)-Det-(Adj)-(N)</td>
<td>in the tall man's hand</td>
</tr>
</tbody>
</table>
| Singular copula           | \[
|                           | \{NP, \{Fron\}, -(be), \{Adj\}, \{NP\}\}                                 | He's fat                      |
| -ing                      | \{\{NP, \{Fron\}\}, -(be), V+ing\}                                       | (He's) eating                |
| Plural                    | NP + pl                                                                     | window                        |
| Singular auxiliary        | \{\{NP, \{Fron\}\}, -be, V+ing\}                                         | She's eating                  |
| Past regular              | \{NP, \{Fron\}, -(have), V+pst, \{NP\}, \{Fron\}\}                      | He closed it                  |
| Past irregular            | \{NP, \{Fron\}, -V+pst, \{NP\}, \{Fron\}\}                               | He ate it                     |
| Long plural               | NP + pl                                                                     | horses                        |
| Possessive                | Det-(adj)-N+poss-(N)                                                        | the man's                     |
| 3rd person singular       | \{NP, \{Fron+sing\}, V+tns-(Adv)\}                                        | he eats too much              |

Adapted from Burt and Dulay (1975)

This is the same subset of morphemes as used by Dulay and Burt (1973 and 1974) and Bailey, Madden and Krashen (1974).

My rationale for using adult ESL learners involved in informal environments was based on Krashen (1976) and his hypothesis that the informal or natural environment and the formal or artificial environment (found for the most part in the classroom) contribute to different types of language competence. The informal or natural environment results in what is called "acquired competence," i.e., language learning which develops in predictable stages and naturally. For the most part, this is the typical learning pattern of children. The formal environment results in "learned competence" which is reflected in the fact that when given enough time, adult learners can correct errors as a result of the linguistic knowledge they may possess.

If Krashen's hypothesis is accurate (that informal environments affect acquired competence and the formal affect learned competence) then the language learner should have a greater opportunity to acquire a second language when involved in informal environments. In addition, an analysis of the speech of adult language learners from the informal environment should show learning strategies (i.e., over-generalization of lexical forms and repetition of deviant forms) used by children. The results of this first study appear to support my rationale.

The two methods of data analysis, the group score method and the group means method, adopted for this study were used by Heidi Dulay and
Marina Burt (1974a, 1974b). The two methods resulted in two separate sequences of acquisition (or difficulty orders as Larsen-Freeman (1975a, b) and others have since preferred to call them). Table 2 shows the two separate orders and the coefficient of correlation between these two orders as 91%.

**Table 2.**--The calculation of the correlation between the group score and the group mean by the rank-difference method

<table>
<thead>
<tr>
<th>Group Score Rank Order</th>
<th>Group Mean Rank Order</th>
<th>Difference in ranks (D)</th>
<th>(D^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pronoun case</td>
<td>1 Pronoun case</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Copula</td>
<td>2 Copula</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 Article</td>
<td>3 Article</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4 -ing</td>
<td>4 Singular auxiliary</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>5 Singular auxiliary</td>
<td>5 -ing</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>6 Short plural</td>
<td>6 Short plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 Past regular</td>
<td>7 Past regular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 Past irregular</td>
<td>8 Past irregular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 Possessive</td>
<td>9 Possessive</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10 Long plural</td>
<td>10 Long plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ p = 1 - \frac{6 \times \sum D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 2}{11(11^2 - 1)} = 1 - \frac{12}{1320} = 1 - 0.0909 = 0.9091 = 90.9\% \]

**Table 3.**--The calculation of the correlation between the group score method for adults and children by the rank-difference method

<table>
<thead>
<tr>
<th>Rank Order for Adults</th>
<th>Rank Order for Children</th>
<th>Difference in rank orders (D)</th>
<th>(D^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pronoun case</td>
<td>1 Pronoun case</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Copula</td>
<td>2 Article</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>3 Article</td>
<td>3 Copula</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>4 -ing</td>
<td>4 -ing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5 Singular auxiliary</td>
<td>5 Plural</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>6 Plural</td>
<td>6 Singular auxiliary</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>7 Past regular</td>
<td>7 Past regular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 Past irregular</td>
<td>8 Past irregular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 Possessive</td>
<td>9 Long plural</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>10 Long plural</td>
<td>10 Possessive</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ p = 1 - \frac{6 \times \sum D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 6}{11(11^2 - 1)} = 1 - \frac{36}{1320} = 1 - 0.2727 = 0.7273 = 72.7\% \]
The same procedure was also used to correlate the group score sequence for this study with the Dulay and Burt group score sequence with children. The calculation of the correlation between the group score method for adults and children by the rank-difference method appears in Table 3.

The same method was used to correlate the two sequences of acquisition between the two studies using the group means method. These results appear in Table 4.

**TABLE 4.**—The calculation of the correlation between the group mean method for adults and children by the rank-difference method

<table>
<thead>
<tr>
<th>Sequence of Acquisition for Adults from the Present Study</th>
<th>Sequence of Acquisition for Children—Dulay and Burt</th>
<th>Difference (D)</th>
<th>(D^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pronoun case</td>
<td>1 Pronoun case</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Copula</td>
<td>2 Article</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>3 Article</td>
<td>3 Copula</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>4 Singular Auxiliary</td>
<td>4 -ing</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>5 -ing</td>
<td>5 Plural</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>6 Plural</td>
<td>6 Singular auxiliary</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>7 Fast regular</td>
<td>7 Fast regular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 Fast irregular</td>
<td>8 Fast irregular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 Possessive</td>
<td>9 Possessive</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10 Long plural</td>
<td>10 Long plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ p = 1 - \frac{6 \times \sum D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 8}{11(11^2 - 1)} = 1 - \frac{48}{1320} = 1 - .3636 = .6364 = 63.6\% \]

The results from this first study provided strong evidence that adults involved in informal environments and exposed to natural L2 speech acquire certain structures in a universal order. The evidence was the high correlation between the sequences of acquisition found in the present study and those same sequences of acquisition found in the Dulay-Burt studies with children. If the interpretation of these results is correct (that adults from this study demonstrate a natural sequence or ordering of morphemes due to the influence of the informal environment) then adults involved in formal environments should demonstrate a different ordering or perhaps no particular ordering at all.

After several additional years of working with adult second language learners in both capacities, in informal and formal environments, I have failed to distinguish an observable difference between the language learning strategies demonstrated by either group. In fact, adults
involved in formal classroom environments are strongly motivated to reduce the learning burden by simplification strategies such as overgeneralization—strategies very similar to child language learning strategies. It was this evidence that produced the following questions which resulted in a second study with adult L2 learners involved in formal environments:

1. Would the same acquisition order of morphemes or any acquisition order be demonstrated by adult ESL learners involved in formal environments when using the same instrument to elicit the speech data?

2. Would the same acquisition order exist if different procedures were used to evaluate the data?

3. Would the same acquisition order exist if different data collection procedures were employed or is there something inherent in the test which explains the order it elicits?

In an attempt to answer these questions an additional cross-sectional study was conducted with 20 adult ESL learners from diverse linguistic backgrounds involved in formal classroom instruction. The instrument used to collect the data for this study was the same instrument used in the previous cross-sectional study involving adult ESL learners in informal environments. The morphemes tested were those which appear in Table 1.

The two methods of analysis, the group score method and the group means method produced two separate sequences of acquisition. These appear in Table 5.

Table 5.—Sequences of acquisition for adults involved in formal environments

<table>
<thead>
<tr>
<th>Group Score</th>
<th>Group Means Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Copula</td>
<td>1 Copula</td>
</tr>
<tr>
<td>2 Pronoun case</td>
<td>2 Pronoun case</td>
</tr>
<tr>
<td>3 Singular auxiliary</td>
<td>3 Singular auxiliary</td>
</tr>
<tr>
<td>4 -ing</td>
<td>4 Article</td>
</tr>
<tr>
<td>5 Article</td>
<td>5 -ing</td>
</tr>
<tr>
<td>6 Plural</td>
<td>6 Plural</td>
</tr>
<tr>
<td>7 Past regular</td>
<td>7 Past regular</td>
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<tr>
<td>8 Past irregular</td>
<td>8 Past irregular</td>
</tr>
<tr>
<td>9 Long plural</td>
<td>9 Long plural</td>
</tr>
<tr>
<td>10 Possessive</td>
<td>10 Possessive</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
</tr>
</tbody>
</table>

Table 6 shows the coefficient of correlation between the two sequences as 91 percent.
Table 6. -- The calculation of the correlation between the group score and the group means by the rank-difference method

<table>
<thead>
<tr>
<th>Group Score Rank Order</th>
<th>Group Means Rank Order</th>
<th>Difference in Ranks</th>
<th>( d^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Copula</td>
<td>1 Copula</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Pronoun case</td>
<td>2 Pronoun case</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 Singular auxiliary</td>
<td>3 Singular auxiliary</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4 -ing</td>
<td>4 Article</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5 Article</td>
<td>5 -ing</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 Plural</td>
<td>6 Plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 Past regular</td>
<td>7 Past regular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 Past irregular</td>
<td>8 Past irregular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 Long plural</td>
<td>9 Long plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10 Possessive</td>
<td>10 Possessive</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ p = 1 - \frac{6 \times \sum d^2}{N(N^2-1)} = 1 - \frac{6 \times 2}{11(11^2-1)} = 1 - \frac{12}{1320} = 1 - .0909 = .9091 = 90.9% \]

The same procedure was used to correlate the group score sequence from this study with the group score sequence from the previous study involving adult ESL learners in informal environments. These results appear in Table 7.

Table 7. -- The calculation of the correlation between the group score method for adults involved in informal environments and formal environments by the rank-difference method.

<table>
<thead>
<tr>
<th>Rank order for adults in informal environments</th>
<th>Rank order for adults in formal environments</th>
<th>Difference in ranks</th>
<th>( d^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pronoun case</td>
<td>1 Copula</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>2 Copula</td>
<td>2 Pronoun</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>3 Article</td>
<td>3 Singular auxiliary</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>4 -ing</td>
<td>4 -ing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5 Singular auxiliary</td>
<td>5 Article</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>6 Plural</td>
<td>6 Plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 Past regular</td>
<td>7 Past regular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 Past irregular</td>
<td>8 Past irregular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 Possessive</td>
<td>9 Long plural</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>10 Long plural</td>
<td>10 Possessive</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[ p = 1 - \frac{6 \times \sum d^2}{N(N^2-1)} = 1 - \frac{6 \times 12}{11(11^2-1)} = 1 - \frac{72}{1320} = 1 - .5454 = .4546 = 45.4% \]
A correlation was also made between the group means sequences of acquisition for this study and the previous study. Table 8 shows these results.

Table 8.--The calculation of the correlation between the group means method for adults in informal and formal environments by the rank-difference method

<table>
<thead>
<tr>
<th>Rank order for adults in informal environments</th>
<th>Rank order for adults in formal environments</th>
<th>Difference in ranks</th>
<th>$D^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pronoun case</td>
<td>1 Copula</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>2 Copula</td>
<td>2 Pronoun case</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>3 Article</td>
<td>3 Singular auxiliary</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>4 Singular auxiliary</td>
<td>4 Article</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>5 -ing</td>
<td>5 -ing</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6 Plural</td>
<td>6 Plural</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 Past regular</td>
<td>7 Past regular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 Past irregular</td>
<td>8 Past irregular</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 Possessive</td>
<td>9 Long plural</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>10 Long plural</td>
<td>10 Possessive</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>11 3rd person singular</td>
<td>11 3rd person singular</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

\[
p = 1 - \frac{6 \times \Sigma D^2}{N(N^2 - 1)} = 1 - \frac{6 \times 6}{11(11^2 - 1)} = 1 - \frac{36}{1320} = 1 - 0.2727 = 0.7273 = 72.7\%
\]

Considering the complexities of human nature it seems significant that the adults in this study were performing in a like manner to the adults from the first study 45.4 to 72.9 percent of the time. It should also be noted that the same five functors appear as the last five functors acquired in the studies with children and adults involved in formal and informal environments.

The correlation between the sequences demonstrated by adults involved in informal environments, adults involved in formal environments, and the children from the Dulay and Burt study, all learning English as a second language, can be interpreted in a variety of ways.

The correlation of the sequences of acquisition for this study with the sequences from the study with adults in informal environments and the children in the Dulay and Burt study, suggest that adults involved in informal environments are demonstrating a similar ordering to adults in informal environments and the children involved in the Dulay and Burt study.

It is assumed that children demonstrate the use of a universal mechanism in second language acquisition. If the subjects in the present study are behaving in a similar manner to the children in the Dulay and Burt study, it is certainly probable they are demonstrating the use of a universal mechanism and the ability to acquire a second language in the same manner as children.
The hypothesis concerning the contributions of the formal and informal environments on adult second language acquisition remains unclear. The most obvious interpretation seems to be that the correlation between the sequences of acquisition demonstrated by adults involved in formal and informal environments seems to suggest that environment has very little effect on how adults learn a second language. This is not entirely correct.

To begin with, the adults involved in formal environments for this study were also involved in formal environments. These adults were students who were living and studying in the United States and would be in daily contact with the English language in informal situations. To what extent these informal environments influenced the overall performance, we remain uncertain.

Secondly, it seems plausible that the classroom can provide both the formal and informal environment and thus accomplish both learning and acquisition simultaneously. Classwork is usually aimed at increasing conscious linguistic knowledge, but hopefully, to the extent that the language is used realistically then acquisition will occur. In other words, the classroom may serve as an informal environment as well as a formal linguistic environment. To what extent this factor influenced overall performance, we remain uncertain.

Current cross-sectional morpheme accuracy methodology has been accused of whittling away the data until what remains in the final analysis is less interesting than what has been discarded. Would the same acquisition order exist if different procedures were used to evaluate the data?

The methods of analysis used in this study and others obscure and eliminate variation in individual production of the morphemes under study and fail to reveal true systematicity in the data. Most cross-sectional second-language studies use the Group Means Method or a similar method (for example, Fathman, 1975:35) to establish an order for the morphemes under study. Larsen-Freeman (1975) and Rosansky (1976) point to the insensitivity to the Group means to variability among subjects. Thus, while different studies usually report similar group orders for the morphemes, using the Group Means Method, it is not clear what this "order" really means.

An alternate method of determining a group accuracy order (perhaps along with the Group Means) is called the Group Range Method (Andersen, 1977). The Group Range is, in effect, a modification of the 90% criterion for acquisition of a morpheme, as used by Brown. It gives the percentage of subjects who used each of the eleven morphemes correctly 90-100% of the time, 80-100% of the time, and 70-100% of the time, respectively. The superiority of the Group Range Method over the Group Means Method for establishing a group accuracy order for the morphemes is that, in addition to establishing an accuracy order for the morphemes, the Group Range tells us something about individual performance (e.g., how many students scored Pronoun case correctly 90-100% of the time). I am currently attempting to re-evaluate the data from both studies, in order to better assess the individual variability. Of course, this by no means exhausts the
possibilities of alternate techniques for analyzing, quantifying and displaying cross-sectional data. In general, researchers should be more accountable to the data.

I am also currently evaluating data obtained from these same students using other methods of data collection; namely, the Ilyin Oral Interview and written responses to the original text. Careful examination of this data should help answer the question concerning the test and the specific ordering it consistently elicits.

In order to get a broader view of a learner's use of a wide number of grammatical constructions, we need to go beyond the study of morphemes in isolation and relate the knowledge of these morphemes to the knowledge of the constructions that employ the morphemes and to get a broader view of a learner's use of a wide number of grammatical constructions.

References


The purpose of the studies reported in this paper is to determine whether or not the use of native-language test questions can provide a more satisfactory measurement of low-proficiency language learners than presently available examinations.

The problem. Instructional accountability in contemporary ESL and modern language programs requires periodic evaluation of students in training. Beyond the traditional testing concerns of validity, reliability, and efficiency, new concerns are now being voiced, such as test bias (Oller and Perkins, 1978), the relationship between test form and modality (Clifford, 1979) and test affect (Stevenson, 1979; Shohamy, 1979). Yet another matter is the need for accurate and sensitive measurement at low-proficiency levels (Maluf, 1979).

In connection with commercial tests from the "Ilyin Oral Interview" to the "Michigan Test of English Language Proficiency" or the prestigious TOEFL (Test of English as a Foreign Language), we find caveats enjoining the user to exercise caution in interpreting results when the test is administered to low-proficiency students. Sometimes a screening process is recommended in order to prevent beginning-level students from taking the exam.

An oft-expressed caution to those planning exams for less-advanced students is to avoid the situation somewhat prevalent in listening and reading tests where the student understands the passage but has difficulty with questions based on what he has heard or read (Valette, 1977, p. 104; Clark, 1972, p. 60; Harris, 1969, p. 62; Heaton, 1975, p. 76; Porter, 1976, pp. 152-153). One solution to this problem is to provide picture cues or "pure" responses (Clark, 1972, p. 28), that obviate the need for the student to cope with written alternatives. Pictures present limitations, however, due not only to their cost but also to possible ambiguities and the difficulty of representing complex or abstract ideas (Harris, 1969, pp. 38-39).

Background. A more practical solution to the problem of how to help low-proficiency students cope with questions on the foreign language is to permit the use of native language answers. For example, in connection with listening comprehension items, Valette recommends that beginning students give open-ended responses in the native language. She also suggests that for beginning students, passage comprehension questions might be presented in the native language (Valette, 1977, pp. 102, 106). And Clark cautiously recommends printed NL multiple-choice options in general achievement listening tests, for students with limited training in reading indicating positive results in at least one such effort (Clark, 1972, p. 60; see also p. 39 and Clark, 1975, p. 57).
In Holland, 240 secondary-school students participated in a testing experiment involving the use of native-language cues. Half received all-English language examinations, and half (equally proficient) took the same examination with NL multiple-choice questions. The FL mean was 77 percent; the NL mean was 82 percent. Similar results were obtained on French and German examinations (Groot, 1975a, p. 53). However, there was a preference on the part of these rather advanced students for the all-FL form.

In view of these modest studies and the overtures in favor of native-language cues, it seemed appropriate to examine experimentally their impact on students with low target-language proficiency.

Study I: Arabic Speakers

The need in Egypt to evaluate annually the English proficiency of two million secondary-school students has stimulated interest in the development of efficient, integrative objective tests. And the concern for appropriate assessment of students with relatively little proficiency in English led to an investigation of new testing strategies, such as the use of native-language cues. In a study conducted by Madsen and Iskander in Cairo, Egypt, it was hypothesized that low-proficiency students would perform higher on an EFL proficiency test with NL options than on the same test with FL options. Even though the NL options would appear in Colloquial Arabic (a conversational form, rare in print), it was assumed that such a form would provide a more sensitive measure of English proficiency than a test with English options, which examinees only half understood. But it was also hypothesized that this advantage would not hold for intermediate and advanced students. Experienced Egyptian teachers of English agreed that the effort required to decipher the printed representation of spoken Arabic would cancel out the benefit of responding to answers in the mother tongue.

The instrument. For legal and security reasons, it was not feasible to prepare Arabic (NL) options for available commercial EFL tests. Instead, a locally normed EFL proficiency test was selected: the Alternate Modality Listening Exam (AMLEX). Administered experimentally to American University in Cairo applicants, the AMLEX correlated in the .80's with the Michigan Test of Aural Comprehension (MTAC) and generally at this same level with the Michigan Test of English Language Proficiency (MTELP) (See Madsen, 1978, p. 341).

Table 1

<table>
<thead>
<tr>
<th>CORRELATIONS BETWEEN THE AMLEX AND TWO COMMERCIAL EFL TESTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Graduate Applicants (N = 72)</td>
</tr>
<tr>
<td>Management Applicants (N = 73)</td>
</tr>
</tbody>
</table>
The AMLEX consists of two sections of conversational utterances. In Section One, there are 45 questions requiring appropriate response:

**FL EXAMPLE:** How far is it to Helwan?
A. No, not far.
B. South of Cairo.
C. About 20 kilometers.

**EXAMPLE WITH NL OPTIONS** Whatever happened to her brother?

1. ـ تام في الزحمة
2. ـ تامه في الزحمة
3. ـ لاموها في الزحمة

Section Two consists of 45 statements requiring selection of appropriate paraphrase:

**FL EXAMPLE:** They work all but three months of the year.
A. They work nine months.
B. They work only three months.
C. They work every three months.

**EXAMPLES WITH NL OPTIONS** He wanted to visit Ismailia, but visited Suez instead.

1. ـ هوزار الاسماعيلة
2. ـ هوزار السويس
3. ـ هوزار الاسماعيلة والسويس

Both the cues and the options are printed. Examinees are given only 25 minutes to complete the test. Preparation, piloting, and revision of the Arabic form were carried out by Mona Iskander, an Egyptian EFL specialist. Since the AMLEX incorporates informal responses characteristic of the spoken language, it was necessary to utilize Colloquial Arabic for the form with NL options. This presented a challenge for examiner and examinee since in Arabic-speaking countries conversational language rarely appears in writing.*

*Colloquial Arabic, or a slightly classicized version thereof, is occasionally seen in cartoons or in newspaper reports of debates in the People's Assembly, but it is still difficult to read with speed and fluency because of the lack of a close sound-spelling correspondence and because of readers' attempts to impose classical word boundaries on colloquial utterances.
Subjects. Twelve groups of Egyptian students were selected, at three levels of English proficiency. Beginning and intermediate students (levels 1 and 2) were drawn from the Division of Public Services adult English program, sponsored by the American University in Cairo. Advanced-level students (level 3) were drawn from English Department courses at AUC. Level 1 examinees consisted of 43 students in two DPS classes; placed by locally-constructed tests, these students had a proficiency of 30 to 45 on the MTELP. Level 2 examinees consisted of 79 students in six DPS classes; their proficiency ranged from 50 to 70 on the MTELP. Level 3 examinees consisted of 51 students in six English Department classes, with scores above 80 on the MTELP. Completing the study were 40 persons at level 1, 76 at level 2, and 48 at level 3, for a total of 164 subjects.

Method. It was decided that subjects would constitute their own control, by taking both forms of the test. To counter practice effect, half of the students at each level took the NL (all-English) form first followed (the same day) by the form with Arabic distractors. The other half took the tests in the reverse sequence. A two-way analysis of variance was utilized to evaluate the effect of test form, sequence, level and interaction.

Results. As anticipated, sequence was statistically significant. When either test form was administered second, scores were higher than on the previous exam. Predictably, too, there were significant differences by level on both forms, level 1 scoring in the 40's, level 2 in the 60's and level 3 in the 70's. Level by sequence interaction was also significant, with the most dramatic gains being made at level 1, between the first and second administration of the test. But overall difference between performance on the all-English test and that with Arabic distractors was non-significant. And the test for interaction between test form and ability level was non-significant.

Discussion. The principal hypothesis was not borne out by the analysis of variance. Instead of the Arabic-answer form being easier for beginning-level students, the all-English form actually produced a slightly higher mean, though this difference was non-significant. As expected, the form with Arabic distractors did not constitute an advantage at advanced levels. In short, at no level did native-language answers in Colloquial Arabic constitute the advantage reported in the literature for speakers of European languages. It appears that the effort required to read the unfamiliar colloquial script cancels out the native language advantage.
Table 2

ANALYSIS OF VARIANCE: Arabic Speakers

Dependent Variable: Difference Between English and Arabic Forms

\[ \text{Diff.} = \mu + L + S + LS + E \]

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>2</td>
<td>278.60</td>
<td>139.3</td>
<td>1.1154</td>
<td>.3303 NS</td>
</tr>
<tr>
<td>Sequence</td>
<td>1</td>
<td>11675.</td>
<td>11675.</td>
<td>93.482</td>
<td>&lt; .0001 Sig.</td>
</tr>
<tr>
<td>Level x Sequence</td>
<td>2</td>
<td>2952.3</td>
<td>1476.1</td>
<td>11.820</td>
<td>&lt; .0001 Sig.</td>
</tr>
<tr>
<td>Error</td>
<td>158</td>
<td>19732.</td>
<td>124.89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Diff = Difference (English - Arabic scores)

\( \mu \) = Mean of population

L = Level (1, 2, 3)

S = Sequence (1, 2)

LS = Level x Sequence interaction

E = Error

*It should be noted that since the dependent variable is "difference" (English minus Arabic), when one tests level, this constitutes level by language interaction.

Table 3

COMPARISON OF MEANS BY LEVEL: Arabic Speakers

<table>
<thead>
<tr>
<th></th>
<th>All-English form</th>
<th>Arabic Distractor form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>45.025</td>
<td>43.925</td>
</tr>
<tr>
<td>Level 2</td>
<td>64.776</td>
<td>61.789</td>
</tr>
<tr>
<td>Level 3</td>
<td>77.500</td>
<td>77.500</td>
</tr>
</tbody>
</table>
Study II: Portuguese Speakers

The problem of the unfamiliar written Colloquial Arabic could be countered by providing oral multiple-choice options, but this would be costly and inefficient; moreover, it would introduce a heavy memory-load factor. It was decided, instead, to eliminate the problem by utilizing speakers of a European language. The follow-up study replicated the original, with a few basic modifications: To enhance the need for native-language props, examiners utilized oral stimuli on the test. And because of the erratic practice effect found on the second administration of either form of the test, it was decided to analyze only a single administration of the FL test and just a single administration of the test with NL distractors. A pre-test was used for grouping students by level. Also a questionnaire was introduced to assess affect.

The instruments. Again the AMLEX was used. But this time the stem was recorded on tape. Only the multiple-choice answers were printed. Instructions were both taped and printed—in the students' native language.

For selection purposes, J. Donald Bowen's Integrative Grammar Test (IGT) was employed. An oral modality test, the IGT measures language proficiency without sensitizing students to the AMLEX. The test has been validated but does not require the security of available commercial tests; and it can be quickly administered (19 minutes) and easily scored. The IGT consists of 50 sentences containing reductions, assimilations, and contractions; the 50 items are presented a second time on the test but in a new sequence. From contextual clues, students are required to identify the second word of the sentence (often distorted or obscured). The IGT correlates at .817 with placement tests consisting of the MTELMP, MTAC, and a written composition.

Also added to this study was a questionnaire which generated demographic information. Included, also, were two questions on test affect: one to determine which test was preferred and another to determine which test was perceived as being easier.

Subjects. Forty Brazilians, 18 to 30 years of age (mean age = 23.0) were involved in this study. There were 18 males and 22 females. All were native Portuguese speakers, currently residing in the United States. Their exposure to English ranged from a few months to 13 years, the average being 2.5 years. All but two were students; some were attending high school, others college, and some graduate school. In the low group there were 9 males and 11 females, the mean age being 23.1. In the high group there were also 9 males and 11 females, the mean age being 22.8.

Method. Subjects were first administered the IGT pre-test, individually. On the basis of this test, they were divided into two equal groups. By random selection, half of each group received the all-English (FL) test; the other half received the form with NL cues. To facilitate evaluation of affect, each group was also tested on the alternate form of the test, a week later. Like the pre-test, both forms of AMLEX were individually administered. The questionnaire was administered after the second test.
administration. Again, the independent variable was test form, the moderator variable was level of proficiency, and the dependent variable was performance on the AMLEX. Statistical analysis consisted of a two-way analysis of variance; and affect was evaluated by chi square.

Results. As expected, there were significant differences among the three levels. The overall differences by test type did not reach significance, however. And the interaction of achievement level and test type likewise failed to reach significance. The low group of Brazilians performed better on the form with NL distractors, though this did not reach significance. The upper groups did better on the all-FL test, with a difference significant at the .05 level.

Table 4
ANALYSIS OF VARIANCE: Portuguese Speakers

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>2</td>
<td>4310.4</td>
<td>2155.2</td>
<td>41.492</td>
<td>&lt; .0001 (Sig.)</td>
</tr>
<tr>
<td>Test</td>
<td>1</td>
<td>14.074</td>
<td>14.074</td>
<td>0.27095</td>
<td>NS</td>
</tr>
<tr>
<td>Level x Test</td>
<td>2</td>
<td>136.41</td>
<td>68.204</td>
<td>1.3130</td>
<td>NS</td>
</tr>
<tr>
<td>Error</td>
<td>34</td>
<td>1766.1</td>
<td>51.944</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A = Achievement level  
T = Test form  
AT = Interaction of level and test  
E = Error

Table 5
COMPARISON OF MEANS BY LEVEL: Portuguese Speakers

<table>
<thead>
<tr>
<th>Level</th>
<th>All-English form</th>
<th>Portuguese Distractor form</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>49.857</td>
<td>53.833</td>
<td>NS</td>
</tr>
<tr>
<td>Level 2</td>
<td>71.143</td>
<td>68.625</td>
<td>NS</td>
</tr>
<tr>
<td>Level 3</td>
<td>79.857</td>
<td>74.800</td>
<td>.05 (Sig.)</td>
</tr>
<tr>
<td>Total</td>
<td>66.952</td>
<td>65.753</td>
<td>NS</td>
</tr>
</tbody>
</table>
Table 6

PREFERENCE MEASURE: Portuguese Speakers

<table>
<thead>
<tr>
<th>FL Preference</th>
<th>NL Distractor Preference</th>
<th>Undecided</th>
<th>Significance Level (X²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Half</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Upper Half</td>
<td>12</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 7

PERCEPTION OF EASE: Portuguese Speakers

<table>
<thead>
<tr>
<th>FL Easier</th>
<th>NL Easier</th>
<th>Undecided</th>
<th>Significance Level (X²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Half</td>
<td>10</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Upper Half</td>
<td>13</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

The majority at all levels preferred the FL form. Dividing the Portuguese speakers into a high and a low group, we see a three to one preference for the all-foreign language test by advanced students. This approaches significance. A similar relationship holds for examinees' perception of exam difficulty; but in this category, differences for advanced students are significant.

Discussion. Unlike the Arabic groups, Portuguese speakers performed nearly as expected: the least proficient scored higher on the form with native-language cues (though not significantly higher)—an average of four points, instead of the five points reported in Groot's study. And this time the most advanced group did significantly better on the all-English (FL) form. This suggests that highly proficient language learners have essentially ceased to utilize the native language when communicating in the target language and that NL cues actually constitute something of a handicap for them. This is reflected in both their preference for the all FL form as well as their perception of its being easier. The fact that an even more dramatic difference among the groups did not occur seems to reflect the fact that most of the Brazilian examinees are fairly advanced in language skills and are used to functioning daily in the target language here in an English-speaking country.
Study III: English Speakers

To evaluate the impact of NL cues on language learners at near beginning level, researchers next evaluated approximately 100 Americans who were studying Portuguese, half of whom had had only minimal exposure to the target language. As with the Brazilian group, a listening test was utilized; and again, only a single administration of the test was evaluated. The IGT pre-test was eliminated.

The instruments. Once more, an oral-cued form of the AMLEX was administered, with printed multiple-choice options. The instructions on both forms were in the native language, English. But on one form all questions and distractors were in Portuguese; on the second form, the questions were in English and the distractors in English. An English version of the questionnaire administered to the Brazilians was prepared. And for the beginning group, an additional question was asked: whether or not the NL distractors were helpful, confusing or neither.

Subjects. The low group consisted of 54 male, native English speakers at the Missionary Training Center (MTC) in Provo, Utah, where participants were receiving intensive Portuguese instruction. They ranged in age from 19 to 24, the mean being 19.3 years. Their only FL instruction had taken place in high school; and none had previously studied Portuguese or lived in a Portuguese-speaking country. They had been studying Portuguese from three to eight weeks. The second group consisted of 47 native English speakers currently enrolled in advanced Portuguese classes at Brigham Young University. Three were females, and 44 were males. They ranged in age from 19 to 26, the mean age being 21.7. In-country exposure to the target language averaged 20 months, in either Brazil or Portugal, with Portuguese their normal tool of communication. In addition, they had had two months of intensive instruction in Portuguese prior to taking up residence in the foreign country. The beginning group ranged from 1 to 1+ on an FSI scale; the more advanced group was in the 2 to 2+ range.

Method. By random selection, half of each group received the all-Portuguese (FL) test; the other half received the form with NL cues. As in the Brazilian study, each group was also tested on the alternate form of the test to facilitate assessment of affect. To avoid differences that might be attributable to instruction, students in the beginning (intensive) group took the second form of the test the following day. The upper group took their second administration a week later. All students completed the questionnaire after they had sat for both tests. Once more, the independent variable was test form—all NL or one with NL distractors. The moderator variable was level of proficiency, and the dependent variable was performance on the AMLEX. Statistical analysis consisted of a two-way analysis of variance; and affect was again evaluated by chi square.

Results. Analysis of variance calculations disclose a significant difference between the two achievement levels (at less than .0001). Differences according to test type approached significance (.0847). But the interaction of test type and achievement level was nonsignificant.
Table 8

ANALYSIS OF VARIANCE: American Subjects
(each term ordered last in model)

\[ Y = A + T + AT + E \]

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>1</td>
<td>37093.</td>
<td>37093.</td>
<td>863.92</td>
<td>.0001 (sig.)</td>
</tr>
<tr>
<td>Test</td>
<td>1</td>
<td>130.25</td>
<td>130.25</td>
<td>3.0336</td>
<td>.0847 NS (Marginal)</td>
</tr>
<tr>
<td>Achieve- x Test</td>
<td>1</td>
<td>87.962</td>
<td>87.962</td>
<td>2.0847</td>
<td>.1556 NS</td>
</tr>
<tr>
<td>Error</td>
<td>97</td>
<td>42.936</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9

COMPARISON OF MEANS BY LEVEL: American Subjects

<table>
<thead>
<tr>
<th>Level</th>
<th>All-Portuguese form</th>
<th>English Distractor form</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>30.037</td>
<td>34.185</td>
<td>Sig.</td>
</tr>
<tr>
<td>High</td>
<td>70.333</td>
<td>70.739</td>
<td>NS</td>
</tr>
<tr>
<td>Total</td>
<td>50.185</td>
<td>52.462</td>
<td>NS (Marginal)</td>
</tr>
</tbody>
</table>

Table 9 indicates that there was a significant difference in the low group in the direction of the form with English distractors. The high group performed almost identically on both forms.
Table 10
PREFERENCE MEASURE: American Subjects

<table>
<thead>
<tr>
<th></th>
<th>FL Preference</th>
<th>NL Distractor Preference</th>
<th>Undecided</th>
<th>Significance Level (X²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>23</td>
<td>29</td>
<td>2</td>
<td>NS</td>
</tr>
<tr>
<td>High</td>
<td>28</td>
<td>17</td>
<td>2</td>
<td>NS</td>
</tr>
</tbody>
</table>

Table 11
PERCEPTION OF EASE: American Subjects

<table>
<thead>
<tr>
<th></th>
<th>FL Easier</th>
<th>NL Easier</th>
<th>Undecided</th>
<th>Significance Level (X²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>23</td>
<td>29</td>
<td>2</td>
<td>NS</td>
</tr>
<tr>
<td>High</td>
<td>22</td>
<td>24</td>
<td>1</td>
<td>NS</td>
</tr>
</tbody>
</table>

Turning to the questionnaire results, we note that among those who expressed a specific preference for one form, almost two-thirds of the advanced group preferred the all-foreign language test, while a slim majority of the low group expressed preference for the form with NL distractors. On perception of ease, the high group was almost evenly divided, while the same slim majority of beginning students viewed the NL distractor form as being easier. Results did not reach significance.

Table 12
PREFERENCE MEASURE (Americans): All FL Form First

<table>
<thead>
<tr>
<th></th>
<th>FL Preference</th>
<th>NL Distractor Preference</th>
<th>Undecided</th>
<th>Significance Level (X²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>6</td>
<td>21</td>
<td>0</td>
<td>.01 (Sig.)</td>
</tr>
<tr>
<td>High</td>
<td>11</td>
<td>12</td>
<td>1</td>
<td>NS</td>
</tr>
</tbody>
</table>
Table 13

<table>
<thead>
<tr>
<th>PREFERENCE MEASURE (Americans): Form with NL Cues First</th>
<th>FL Preference</th>
<th>NL Distractor Preference</th>
<th>Undecided</th>
<th>Significance Level (X²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>19</td>
<td>6</td>
<td>2</td>
<td>.02 (Sig.)</td>
</tr>
<tr>
<td>High</td>
<td>17</td>
<td>5</td>
<td>1</td>
<td>.02 (Sig.)</td>
</tr>
</tbody>
</table>

But analyzing preference according to which test form was taken first, we find a trend in favor of whichever form came last. An exception was the nearly even split among high students when the FL form was administered second. On perception of ease, there were significant differences at both levels in favor of whichever test was administered second. Finally, in regard to the question to the low group on whether or not the NL distractors were helpful, confusing, or neither, there was an indication (at the .02 level of significance) that they were helpful.

Discussion. In the third study, the major hypothesis was confirmed. Beginning-level students were able to perform significantly better on tests with native-language cues than on all-FL tests. There was also a tendency for them to prefer the NL distractors. Combining the results from studies

Table 14

<table>
<thead>
<tr>
<th>COMPARISON OF MEANS BY LEVEL: BRAZILIAN AND AMERICAN SUBJECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
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<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Low Americans</td>
</tr>
<tr>
<td>Low Brazilians</td>
</tr>
<tr>
<td>High Americans</td>
</tr>
<tr>
<td>High Brazilians</td>
</tr>
</tbody>
</table>
II and III, we find that those with the lowest mean appeared to benefit significantly from tests with NL cues. Those with the highest mean performed significantly better on the all-FL form, while the two middle groups registered nonsignificant differences. Affect results for Americans were somewhat confounded by sequence interaction;* but a low-group preference for NL cues did emerge. The high-scoring Brazilians perceived (significantly) that the all-FL form was easier than the form with NL cues; and among the strong majority expressing preference for one of the two forms, three-fourths favored the all-FL form.

Conclusions and recommendations. While rather low-proficiency language learners appear to perform better on a multiple-choice test utilizing NL distractors, the difference on the AMLEX is not of sufficient magnitude to recommend an immediate wholesale shift toward tests with native-language cues—even for the beginning student. But there is cause for cautious optimism that such cues may be desirable. For one thing, they may well reduce test anxiety, as was apparent during Maluf's test administration of low-level students. Improved test affect in turn promises not only a more positive attitude towards instruction but the likelihood of more accurate evaluation.

It is also quite possible that the effect of NL cues would be even more dramatic on a reading test, for example, where the target-language material is considerably more complex than that on the AMLEX and on which the multiple-choice options are far more difficult. Experimental replication with other test formats is highly recommended; first, in order to determine the degree to which they benefit students of lower language proficiency, and also to indicate whether affect is similarly positive. Replication with other types of language tests could determine whether or not persons approaching the intermediate level might likewise benefit from this strategy.

*It appears that the reason for the shifts in affect might well be due to the following: Sheila Maluf, in administering the tests to low-level American students, found them demoralized when they took the all-Portuguese test form first. They were greatly relieved when they took the form with NL distractors. These students rated the form with NL cues very high. Those who took the form with NL cues first, had little trouble with the all-FL test the following day because of the dramatic practice effect from the initial administration. As a result, their attitude toward the FL test was rather benign.
BIBLIOGRAPHY


COMPUTER-ASSISTED INSTRUCTION:
TRENDS AND ISSUES IN LANGUAGE TEACHING

Frank Otto

There has been considerable interest expressed recently in designing and implementing exemplary programs to teach native and foreign languages with the assistance of a computer. As we study the feasibility of such projects, we must objectively determine what ways and to what extent computer-assisted instruction (CAI) can make a unique and significant contribution to teaching languages more effectively.

The purpose of this paper is twofold:

1. To outline and comment briefly on aspects of teaching and learning languages that lend themselves favorably to the utilization of CAI. Variables will be discussed in terms of different methodologies and teaching styles. Unique aspects of CAI and learning will be discussed as they relate specifically to language teaching.

2. Types of delivery systems will be discussed in terms of their roles in the development of model materials for teaching languages via CAI. Main frame systems will be discussed. TICCIT-ESL segments will be available for review to interested conference participants (at a time designated by conference officers.) Call-up systems will be discussed. PLATO-ESL mini lessons will be available so that interested participants may have a hands-on experience with this type of material. (Time determined by officers.) Other applications include video disk and video tape which will be discussed as they relate to points 1 and 2 above.

As a result of two decades of research undertaken at universities and corporations and multi-million dollar expenditures by federal and state governments and by corporations, the development of computer-based instructional systems has moved into a demonstration and dissemination phase.

Certain media selection considerations should be kept in mind when contemplating whether or not to utilize CAI:

1. The objective requires interaction
2. Content and possible teaching approaches require feedback for different student responses
3. Content is more objective than subjective
4. There is need for separate student paths

Perhaps it is wise to clarify some terminology that will be used throughout this presentation. The most basic equipment (hardware) used to deliver CAI includes a computer which stores and transmits educational material and information (courseware) by means of a specialized computer language (software). The computer is less often seen by students and
teachers than the familiar learning stations (terminals). The learning station appears as a television or teleprinter which displays instruction and graphics information and has a keyset attached to it. Students interact with the computer by means of a keyset which has the standard typewriter keys with additional special function keys. Teachers use these learning stations to select curricular materials for their students; to decide the sequence of these materials or to provide their students with an index of lessons from which to choose; to monitor their students progress; and, in some cases, to prepare their own courseware.

The educational promise of CAI lies in its ability to individualize and personalize the instructional process and to simulate experiences not readily available. CAI lessons (courseware) can serve as text, test, and tutor while compelling students to be active participants in their own learning.

**INDIVIDUALIZED INSTRUCTION**

```
BEGIN

EXIT ← TEST

RECORD

SELECT

LR

LR

LR

LR

LR

LR

LR

SELECT BY TEACHER/STUDENT/COMPUTER
```
Students work at their own pace while their CAI lesson monitors their progress and effectively prevents them from continuing to more advanced instruction unless mastery is demonstrated. Students are kept informed of their progress through immediate feedback and achievement summaries and have varying amounts of control over their learning in that they can review previous instruction, request special help, or continue on to enrichment activities. The instruction can be systematically prepared, sequenced, tested, and revised.

CAI is usually prepared following one or a combination of three major modes: drill and practice, tutorial, and simulation.

The drill and practice mode has proved to be the most widespread, probably because it is the easiest to prepare and can be used to free teachers from the drudgery of making up and checking practice exercises. Typically, students are given a series of related questions to answer and are provided immediate feedback to the answers they give. Often, as the student demonstrated mastery, more difficult questions are posed by the computer.

In the tutorial mode, students are presented with instruction interspersed with appropriate questions. Often the student is allowed to ask related questions which the computer answers. Question formats are commonly multiple-choice, matching, fill-in and short answer. Sophisticated CAI systems can catch or allow for misspellings, judge as correct a variety of possible answers including synonyms and phrases and complex arrangements of them, and even allow students to touch portions of the display to elicit a computer response.

The simulation mode is perhaps the most exciting, for it can allow the student to use the computer as a tool to discover and generate new information. Educational games, another type of simulation, are captivating if not motivating for the intended learning activities. It is anticipated that the simulation mode will be prepared and used much more often as instructional developers and teachers become more familiar with it.

I am extremely optimistic about the future of computer-based instruction. My optimism is based upon current technological, psychological, and social trends which are likely to lead to significant development by the year 1990.

First, the technological trend toward miniaturization, improved computer power, and the remarkable reductions in unit-cost due to "chip" technology has now made it possible for all students in all of our academic institutions to take advantage of new, powerful, educational tools. By the year 1990, we will see a rich array of educational systems allowing universities to specialize in areas of interest and to cooperatively share resources and programs without concerns for equipment or location. It will be possible to launch a communications satellite, totally devoted to science and education, thereby eliminating "distance" as a physical and economic barrier to the access and use of CAI programs. Computer-based, video-disc systems will be the basis for "intelligent video books" which will
be capable of presenting interactive programs, controlled for reading level and vocabulary, and which will be automatically adaptive to student performance. Book-sized, personal computers with the power of today's small machines, will be as ubiquitous as hand calculators and will be used for everything from computer art to solving differential equations.

Secondly, research trends in cognitive psychology and instructional systems are shifting from an emphasis on effective methods to acquired facts and skills to the study and development of intelligent, knowledge-based systems are being developed which so thoroughly "understand" the subject domain and the student's grasp on the subject matter that they are able to assist the student to recognize, articulate, and use diverse forms of information in problem-solving environments. These developments are not simply new wrinkles in educational research, they are assaults upon the basic questions of "what is knowledge?" and "how is it best acquired?" These research efforts are laying the foundation for the solution of a much larger set of educationally significant problems that has even been considered in the past.

The third and possibly the most significant trend is social in terms of the positive change in the public attitude toward computers in education. The ever-widening acceptance and use of computers by scientists, engineers, and businessmen, and the broad public enthusiasm for programmable calculators and computer-based games is producing a transformation in social values which will have a profound impact upon education in 1990.

By 1990 the cost of computer-assisted instruction will be so inexpensive and its applications so broad that it will be viewed as an educational necessity.
ENGLISH FOR LATTER-DAY SAINTS

Lynn Henrichsen

Introduction

English for Latter-day Saints is a special English as a second or foreign language program designed especially for use by non-English speaking members of the worldwide Church of Jesus Christ of Latter-day Saints. As Church leaders who speak different languages come into contact with each other, they often feel and express the need for greater proficiency in English, the commonly recognized language of international communication. English for Latter-day Saints, an English language learning program centered around LDS situations and gospel topics has been created to meet this need.

History

The beginnings of English for Latter-day Saints can be traced back to Munich, Germany where President Harold B. Lee, speaking at the Europe area conference in August 1973, said, "Think how it would be helpful if every one of you speaking your native tongue would learn to speak English. I would like to challenge you to do that. Then we will be able to talk with you more clearly and we could understand better..."

Halfway around the world, in Korea, President Lee's challenge was received by President Rhee Ho Nam, then president of the Seoul Korea Stake. Phase one of the English for Latter-day Saints program was initiated a few months later at the request of Church members in Korea who wished to improve their English speaking and listening skills in Church situations as they prepared for the upcoming Korea area conference.

In January of 1974, the Church Educational System asked the faculty of Brigham Young University-Hawaii Campus (then the Church College of Hawaii) to develop materials for the program. A faculty committee was formed to prepare a design statement and begin writing the first lessons.

President Rhee Ho Nam visited the BYU-Hawaii campus in April of 1974 and, after returning to Korea, selected twenty Korean Church leaders to be the charter group of students to use the program which at that time was called English for Korean Saints.

The materials developed by the committee were first pilot tested with a group of Korean Saints in Laie, Hawaii, and then, in May 1975, the English for Korean Saints program was inaugurated in Seoul, Korea. The participants in the program included two members of the Seoul Korea stake presidency, five members of the high council, the stake executive secretary and stake clerk, four bishops and a branch president, four counselors in bishoprics or branch presidencies, and two other Church leaders. The twelve-week course concluded in August, 1975, shortly before the Korea area conference.
At the end of the course, an evaluation of English for Korean Saints was conducted. Based on the conclusions of this report, and after a discussion with President Rhee Ho Nam in Hawaii, a formal proposal for a second series of language lessons was submitted to the Church Educational System. The CES accepted and funded this proposal in September of 1976. With this funding came a commission to produce Church-related ESL materials that could be used with the highest possible efficiency, not just in Korea, but in any country. Hence, the new title of the series—English for Latter-day Saints.

The phase two English for Latter-day Saints writing committee, composed of selected members of the Division of Communications and Language Arts at BYU-Hawaii, began materials design and production in January 1977. A finished set of materials was ready for distribution in March of 1978. These materials were taken to Korea and Japan in April of 1978, and three pilot classes were set up—one each in Seoul, Korea; Tokyo, Japan; and Kobe, Japan. A subsequent request for an E-LDS class in Pusan, Korea resulted in a set of materials being sent to that city also.

Currently, English for Latter-day Saints is in its third phase—a complete revision of the English for Korean Saints materials. This phase will result in a set of materials on a lower level—comparable to that of the original English for Korean Saints materials. When this phase is completed, English for Latter-day Saints will consist of two sets of English teaching/learning materials, one at a slightly higher level of difficulty than the other.

**Material Description**

Each student set of the original English for Korean Saints materials consisted of three books—Conference Listening, Listening Competency, and Dialogs, Readings, and Grammar Notes—accompanied by a set of cassette tapes. In addition, there were four teacher's books—one to accompany each student book plus a general How to Conduct English for Korean Saints teacher's manual.

After these materials were used and evaluated in Korea, it was decided that a consolidation and reorganization was in order. Each level of the current English for Latter-day Saints materials consists of two student books—Basic Lessons and Conference Listening—with teacher's manuals. This printed material is accompanied by seven cassette tapes—four to accompany the Basic Lessons and three as an integral part of the Conference Listening program.

Each of the twenty-five basic lessons has six parts. It begins with a reading passage (transparency number one) which has been selected for its inspirational as well as instructional value. The selections come from original Church sources, such as the Ensign, general conference reports, Church history, the writings of General Authorities, and Church leadership manuals. Although difficult passages are avoided, those chosen are not simplified. They represent the "real world" Church language which Church leaders (even in non-English speaking countries) commonly encounter.
Each of these readings is accompanied by a glossary (transparency number two) of the more difficult terms which it contains. The definitions are kept as simple as possible without reducing their accuracy and are limited to the particular meaning employed in the passage except when that meaning is unusual. Since these E-LDS materials are intended for use in a number of different countries, native-language translations are not used. Each definition is followed by a sentence which illustrates the vocabulary item in another, gospel context.

After students have read the selection and worked through the glossary, they encounter comprehension questions (transparency number three) based on the reading, and discussion questions, whose purpose is to provide a beginning for in-class discussion and conversation.

Next come three dialogs (transparency number four) and the first line of a fourth dialog (transparency number five). The first three dialogs, which are all related to the topic of the reading selection and which often utilize and reinforce vocabulary covered in the glossary, present English in a natural, gospel-oriented context. Students learn the first three dialogs and then develop a fourth dialog, both individually and as a class, thus employing the vocabulary and grammar they have learned earlier. In producing this fourth dialog, students create novel utterances by combining and changing what they have already learned in the preceding dialogs. Their use of English is purposeful and situational as well as creative. In this respect it is interesting to note the resemblance between the EKS and E-LDS materials and the currently popular notional-functional approach to language teaching.

A fifth part of each lesson is the grammar note (transparency number six). The grammar notes rarely exceed one page in length and focus attention on a single aspect of English grammar. They serve to reinforce the grammar which has been presented in an indirect fashion through earlier exposure in each lesson, and they also help prepare the students for the final part of the lesson—the writing task (transparency number seven).

The writing tasks, designed to meet the expressed letter-writing needs of EKS students, follow a guided composition format. The student is given a model (usually a sample of Church correspondence) which he must manipulate according to instructions. However, the task involves more than simply following directions. Because of linguistic interrelationships, one change often requires other changes. For example, in the sample shown, task 1: B requires students to change announcement to announcements. This simple change results in the necessity of deleting the article an and changing the verb form from the singular is to plural are. In these tasks, students gain an awareness of the grammatical interrelationships in English and are forced to rely on their overall knowledge of its grammar.

A set of cassette tapes accompanies the twenty-five basic lessons. They present, in an audio format, the readings, questions, and dialogs of each lesson, thus providing reinforcement through a second sensory mode. These tapes also make it possible for students to study and practice English away from the classroom—-even though they are not in an English-speaking environment.
The teacher's manual which accompanies the basic lessons offers a variety of resources to the teacher, ranging from a short history of the project to a diagnostic test of oral English proficiency. The major portion is devoted to suggestions—both general and specific—for teaching English to speakers of other languages. Most of the general suggestions—originally designed for missionaries faced with the prospect of teaching English as part of their proselyting effort in foreign countries—would be helpful to any untrained teacher of English as a second language. The specific suggestions are based on the experience gained from using the materials with a pilot class on the BYU-Hawaii campus and provide even a beginning teacher with the background requisite to success in teaching an E-LOS class for the first time.

The second student book in English for Latter-day Saints is entitled Conference Listening and consists of six lessons centering around talks delivered by General Authorities in general conference (transparency number eight). Before listening to each segment of a talk, the student is prepared for the listening task by being introduced to the more difficult vocabulary contained in the passage and by being given a purpose for listening, in the form of a question to be answered. For example, in the sample shown (transparency number nine) the student listens to the glossary items on the tape and then is asked "What two reasons does President Tanner give for having area conferences in addition to the two general conferences held each year in Salt Lake City?" After listening to the recorded segment of the talk, the student stops the tape player and writes down his answer. Then, he starts the player again and can listen to the correct answer given on the tape. In this manner, the student fills out a worksheet for each lesson. Since the answers are not found anywhere in his book, the student must arrive at the answer to each question through successfully listening to either the talk itself or the oral answer on the tape.

The teacher's book for Conference Listening (transparency number ten) is exactly the same as the student book with one important exception—it contains the transcripts of the General Authorities' talks and the correct answers to the questions. Needless to say, this timesaving feature is appreciated by the volunteer teachers who donate their time to the program.

**E-LDS Teachers**

In producing these materials, the E-LDS committee has kept in mind the kind of teachers who will probably be using them. Although the teachers of English for Latter-day Saints classes have been native-speakers of English and most of them have had the experience of learning at least one foreign language, few have had any formal training as language teachers. Therefore, it was decided that classroom materials following a more traditional format would be easier for them to teach and lead to greater success in the classroom.

**Successes of the Program**

The success of the EKS and E-LDS programs have been rewarding. The original English for Korean Saints program may have enjoyed its great
success because of two important, but external factors (1) the enthusiasm and dynamism of President Rhee and (2) the pressing need to learn English created by the upcoming Korea area conference. EKS participants overwhelmingly reported that their speaking, listening and reading skills had improved. All aspects of the program received a high rating in effectiveness and interest. A statistical report of their feelings is contained in the English for Korean Saints Evaluation of Phase I report published in October of 1975. Comments made by program participants as part of this evaluation add a more personal note to the figures. Here are a few of their remarks:

"I have got rid of my fear of using English and have gained confidence."

"In listening, before the ESL class I couldn't understand the Church leaders speak. But when I went to a stake leadership meeting at the fourth ward and heard President Till speak, for the first time I could understand a substantial part, maybe 70% of what he said. I could also understand quite a bit of what President Kimball said in the Melchizedek Priesthood meeting of the area conference."

"I was able to talk with the General Authorities in the area conference and understand what they said. For example, I was able to answer questions of Brother Cullimore about the Church in Korea."

"As a bishop I am now able to discuss our building project in English with Brother Pearson, the building coordinator. So now we can get better cooperation."

"The things I have learned will help me to ask or read about the Church policy in English, and to talk with visiting Church leaders, and especially to discuss Church business with the missionaries."

Participants also appreciated the inspirational value of the materials. Here is what one said in this regard:

Through this program my own testimony has been strengthened. For example, when I learned in the listening materials that the Mexican Saints sacrificed a lot to attend the Mexico area conference, their faith motivated me to strengthen my testimony. I'll remember the story about the 48-hour bus trip to the Mexico area conference forever.

In April of 1978, three English for Latter-day Saints classes were started. The one in Kobe, Japan was completed successfully. The second, in Tokyo, is still going on, and the third, in Seoul, Korea, got off to a good start but after a few months was postponed. The lack of pressure to learn English in the form of an impending area conference may have contributed to the failure of students to persevere through months of study. President Rhee's move to Pusan (where he is now mission president and starting up a new English for Latter-day Saints class) might also have removed some of the pressure on Church leaders in Seoul to learn English.
Another reason behind the difficulties E-LDS classes have encountered is the simple fact that Church leaders are some of the busiest people in the world. Pressure from other sources, such as family, profession, and Church duties, must be countered by a compelling need to improve English skills if the necessary time is to be devoted to language study. That they have found any time at all to study English is a minor miracle, and that they have done so to such an extent that their proficiency has improved is a great tribute to these busy professional men. Many of them have commuted over long distances in order to attend English for Latter-day Saints classes. Some have found it necessary to listen to the tapes while driving since they have no other free time. Their desire to learn English is certainly great, and producing materials to help them improve their English communication skills has definitely been worthwhile. However, in order to serve a wider audience—one which has more time to study English—future English for Latter-day Saints programs may follow any of a number of different directions.

Some Possibilities for the Future

Only a few of these possibilities can be mentioned here. One would be to create materials to help Church members learn English when they have more time, that is, before they become leaders. For example, a program designed to help non-English speaking missionaries learn English from their English-speaking companions seems worthwhile.

Other peer-tutoring approaches which do not require a native speaker of English are also possible. Work on a gospel-oriented version of the highly successful Dyad Learning Program has already been started.

Another possibility would be to produce a self-contained set of programmed English learning materials, including tapes, which could be distributed through meetinghouse libraries. A moderately priced text and tape set which could be distributed by mail might also be feasible.

In some parts of the world, an English program resembling the recently developed Learn German Through the Book of Mormon, which builds upon the similarities between related languages, might be workable.

Although English for Latter-day Saints materials have not yet been used with women, there is a definite need for leaders of the women's auxiliaries to gain a proficiency in English. Sister Barbara Smith, general president of the Relief Society, has expressed her desire for a program designed for non-English speaking Church women, and local leaders in the E-LDS target areas have noted a similar need.

Without a doubt, the variety of possible, future English for Latter-day Saints programs is great. At present, it is difficult to predict the direction they will take.

One thing, however, is certain. The need for international communication in the Church will continue to grow, and as long as there are enthusiastic, dedicated Church members willing to devote their time and energy to learning English, TESL professionals in the Church have an obligation to produce materials which will aid these devoted brothers and sisters as they respond to the prophet's challenge.
LESSON 3: READING SELECTION

"DON'T GO ABOARD THAT STEAMER"

by

Wilford Woodruff

After spending two years and one half in New England and Canada getting the Saints out, I started back with the last lot, about a hundred, from Boston. We landed in Pittsburg at dusk. We were anxious not to stay there, but to go on to St. Louis. I saw a steamer making steam ready to go out. I went to the Captain and asked him how many passengers he had. "Three hundred and fifty." "Could you take another hundred?" "Yes." The Spirit said to me, "Don't go aboard that steamer; you nor your company." All right, said I. I had learned something about that still, small voice. I did not go aboard that steamer, but waited till the next morning.

In thirty minutes after that steamer left, it took fire. It had ropes instead of wheel chains, and they could not go ashore. It was a dark night, and not a soul was saved. If I had not obeyed the influence of that monitor within me, I would have been there myself, with the rest of the company.

The Thirteenth Ward would not have had an Atwood for a Bishop; the Church would not have had a Leonard W. Hardy as Bishop. They and their families were with me, and also Brother Samuel Hardy, who is upwards of ninety years old and now lives in St. George, Utah.

I never disobeyed that Spirit but once in life; I did it then through the urging of other persons, and it nearly cost me my life. I have been acquainted with this Spirit. It was not the blow of trumpets, nor thunder and lightening; it was the still, small voice to me. All the way from my boyhood I have been governed and controlled by that Spirit.

LESSON 3: GLOSSARY

lot: group (not the usual meaning of lot: much, many)
He started home with the last lot of people.

dusk: after the sun goes down; twilight in the evening
They arrived home at dusk, tired and hungry.

anxious: eager; expectant
He was anxiously awaiting his mission call.

aboard: on; in (as in a vehicle, plane or boat)
The people got aboard the bus and it drove away.

took fire: burst into flames; caught on fire
The box took fire very easily.

influence: advice; suggestion; power
The influence of the Holy Ghost kept him out of trouble.

monitor: advisor; guide
The Holy Ghost was his sure monitor.

upwards of: more than; above
The building was upwards of 300 feet high.

disobeyed: did not follow
The boy disobeyed his parents, which made them very sad.

urging: persuading; pressuring
The man committed a sin because of the urging of evil friends.

have been acquainted: have had knowledge of; have known
That man should have been acquainted with the Lord before he died.

governed and controlled: led; directed
We should allow the Lord to govern and control our lives.
LESSON 3: COMPREHENSION AND DISCUSSION QUESTIONS

True/False Questions

1. All one hundred Saints were on the steamer that caught fire.
2. The captain was willing to take 100 extra passengers.
3. Brother Woodruff said he had never disobeyed the promptings of the Spirit in his life.
4. The Saints stayed in Pittsburg all night instead of continuing their journey.
5. Some people once persuaded Brother Woodruff to disobey the promptings of the Holy Spirit.

Discussion Questions

1. Where was Wilford Woodruff before this event took place?
2. What did the Holy Ghost tell President Woodruff?
3. What caused the steamboat to sink?
4. Name some of the people who were with President Woodruff.
5. What is the main idea of this story?
LESSON 3: DIALOGS

1

Thomas Wells: Do you ever have difficulty telling when the Holy Ghost is talking to you?

Patricia Brown: Oh yes. All the time. I can’t tell if it is the Holy Ghost talking or just me.

Thomas Wells: How can you tell the difference?

Patricia Brown: I fast and pray, and hope I can tell when it is the Lord’s will or when it is my wish.

Thomas Wells: Aren’t you supposed to be able to tell the difference?

Patricia Brown: Yes, but you can’t tell when you are selfish. I’m too selfish most of the time and want my own way.

2

Alice Park: Once I was prompted by the Holy Ghost not to take a ride in a car.

George Shaw: What happened?

Alice Park: Nothing happened. I just stayed home and didn’t go.

George Shaw: Do you think if you had gone something bad would have happened?

Alice Park: I don’t know. I just felt I shouldn’t go, so I didn’t.

George Shaw: Do you think it was the Holy Ghost telling you not to go?

Alice Park: Yes, I think so.
LESSON 3: DIALOGS (continued)

3

Max Lundberg: Have you ever ridden on a steam-powered boat?
Lynn Nichols: No, I have never seen one, except in pictures.
Max Lundberg: I would like to go for a ride on one of those old steam-boats.
Lynn Nichols: Yes, that would be fun, but where would you go to find one?
Max Lundberg: I don't know, so I guess I won't be able to go for a ride on a steam-powered boat.

4

Sally Smith: Do you know anybody who can tell when the Holy Ghost is talking to them?
Ronald Williams:
Sally Smith:
Ronald Williams:
Sally Smith:
Ronald Williams:
LESSON 3: GRAMMAR NOTES

COMMANDS

A. A command or strong request always has the subject you. We could say You go home, or You hand me the salt. But, because the subject is always you, we simply leave it off.

    Go home.
    Hand me the salt.
    Put on your coat.

B. The negative of a command or strong request is

    do + not + verb

    Do not go home.
    Don’t go home.

    Do not hand him the salt.
    Don’t hand him the salt.

    Except in very formal usage or in writing don’t is used rather than do not.

C. A command is always in the present tense.

    Go to the store and buy some eggs.
LESSON 3: WRITING TASK

407 Apricot Drive
Salt Lake City, UT 84408
April 4, 1977

Graham Wilson
Route 1 Box 1498
Coalville, UT 84117

Dear Bishop:

(1) Enclosed is an announcement to be read in an appropriate meeting. (2) After it is read in the meeting, will you please post the announcement in a prominent place.

(3) If you have a question about this announcement, will you please write our office for an answer.

Sincerely yours,

John Wilson
Area Supervisor

TASK 1

A. Copy the above letter substituting note for announcement, important for prominent, inquiry for question and reply for answer. (Be sure to change a and an as necessary.)

B. Rewrite the letter changing announcement to announcements, meeting to meetings, question to questions, and answer to answers. Change the verb forms and pronouns as necessary. (Be sure to change this to these in sentence 3. Begin your letter: “Enclosed are announcements to be read in appropriate meetings.”)

TASK 2

Rewrite this letter making sentences 2 and 3 in command form by taking out will you before the please.
LISTENING COMPREHENSION
PROGRAM FROM THE OCTOBER
1976 GENERAL CONFERENCES

"THE PURPOSES OF CONFERENCES"
by President N. Eldon Tanner
First Counselor in the First Presidency

LESSON 7: THE PURPOSES OF CONFERENCES - PART I

1. Listen to these definitions of words which President Tanner uses in the first part of his talk.

   **briefly**: Briefly means lasting only a short time.
   
   *The prophet spoke briefly to the people.*
   
   that is
   *The prophet spoke to the people for a short time.*

   **specifically**: Specifically means particularly; definitely.

   *The Lord told Joseph Smith specifically to join none of the existing churches.*
   
   that is
   *The Lord told Joseph Smith definitely to join none of the existing churches.*

   **practicable**: Practicable means something can be done or carried out; possible.

   *It is not practicable to meet every day.*
   
   that is
   *It is not possible to meet every day.*

   **accomodate**: Accomodate means to have room for.

   *The building cannot accommodate all the people who want to attend the meeting.*
   
   that is
   *The building has not enough room for all the people who want to attend the meeting.*
THE PURPOSES OF CONFERENCES - I

Now listen carefully to President Tanner and answer the following question:

What two reasons does President Tanner give for having area conferences in addition to the two general conferences held each year in Salt Lake City?

NOW LISTEN TO THE TAPE OF PRESIDENT TANNER

Answer the question: What two reasons does President Tanner give for having area conferences in addition to the two general conferences held each year in Salt Lake City?

Stop the player until you have written down your answer. Then listen and see if you have answered it correctly.

LISTEN TO THE ANSWER ON THE TAPE

2. Here are some more definitions of words that you will hear in the next part of President Tanner's talk.

strategic: Strategic means favorable or advantageous.

*America in 1830 was a strategic place and time for the restoration of the gospel.*

that is

*America in 1830 was a favorable place and time for the restoration of the gospel.*

primary: Primary means main; first in importance.

*A missionary's primary purpose is to call people to repentance.*

that is

*A missionary's main purpose is to call people to repentance.*

environment: Environment means surroundings.

*He was happy in his environment.*

that is

*He was happy in his surroundings.*
THE PURPOSES OF CONFERENCES - PART I

Now listen carefully to President Tanner and answer the following question:

What two reasons does President Tanner give for having area conferences in addition to the two general conferences held each year in Salt Lake City?

NOW LISTEN TO THE TAPE OF PRESIDENT TANNER

Wherever I go, people seem to be interested in hearing about the area conferences we hold throughout the world. Today I should like to tell briefly why we hold them, how they are conducted, how the people respond, and the effect they are having in the different areas. I shall deal specifically with the area conferences held in Europe this summer.

President Kimball has explained that the Church has grown so rapidly throughout the world that it is no longer practicable to limit our general conferences to those held in April and October at the headquarters of The Church of Jesus Christ of Latter-day Saints in the city of Salt Lake. First, it would be impossible to accommodate all the people who should come from around the world; and also, many who would like to come are unable to. So we are taking the conferences to the people.

Answer the question: What two reasons does President Tanner give for having area conferences in addition to the two general conferences held each year in Salt Lake City?

Stop the player until you have written down your answer. Then listen and see if you have answered it correctly.

LISTEN TO THE ANSWER ON THE TAPE

The two reasons President Tanner gave for having area conferences in addition to the two general conferences held each year in Salt Lake City are:
1. It is not possible to take care of all the people who would like to attend these two conferences.
2. There are many people who would like to come to the conferences who cannot make the long trip to Salt Lake City.
"Many are called, but few are chosen." If you are a member of the Church of Jesus Christ of Latter-Day Saints, you probably have a semantic knowledge of that motto divergent from the understanding of the general population. Learning to speak in the contextual lexicon of a group, religious or secular, is one essential requirement of long-term membership in that group.

Many ordinary verbalizations in English have idiosyncratic significance within particular institutionalized religions. This paper will present a study of one type of speech behavior, that of oral testimony among Mormons, as the accomplishment of communicative performance in an ecological setting for religious behavior. Three models for the analysis of talk in a religious setting will be described: ethnomethodology, discourse analysis, and sociolinguistics. We will apply these systems to a discussion of how oral testimony among Mormons displays claims of transcendent knowledge and also serves as a social device for maintenance of group cohesion.

This presentation is part of a larger study of language functions and stylistics among members of the Church of Jesus Christ of Latter-Day Saints. The data mentioned here are preliminary in nature, meant to be illustrative rather than definitive. The research is being conducted in Southern California, and the method of data collection is that of participant observation. The study thus far is based on three years of participation in the formal and informal activities of one stake of the Mormon church, which included Sunday services, Sunday School, special lectures, informal conversations with members, and correspondence. A literature research was also conducted of official church publications, and ex officio and "underground" materials.

Theories of Language in Use

Speech acts are multi-functional and dynamic in character. That is to say, the process of discourse cannot be analyzed merely by examining grammatical sequences. An utterance may be considered for its semantic intention, its illocutionary power, its interactive effects, or its discursive relationship to other utterances. Attention may also be given to inappropriate silences, deviation or absence of expected discourse sequencing, theme alteration or interruption, manifest and covert power strategies, or message misinterpretation.

One approach to the study of language in use is that of ethnomethodology, which treats verbal interaction in Austin's (1962) sense of talk as the "doing of activities," and from the ordinary language dictum that activities are done in and by the talk that speakers and listeners use.
Harvey Sacks (1974) and his associates (Sacks, Schegloff, & Jefferson, 1974) have developed a theory of "naturally occurring" conversational sequences based on Austin's model. The rule-generated parameters include: (1) only one speaker talks at a time, and (2) speaker change recurs. By treating the commonplace particulars of talk as problematic, as formal linguistic theory does not, Sacks has been able to uncover the formal operations used by members to accomplish conversation.

Ethnomethodology does not assume a normative model of behavior, but instead posits situations as context-bound. The method of interpretation is that of indexical documentation. Verbal reference to rules as explanations for prior or future behavior are indexical performances relevant to the particular context in which they occur rather than actual explanations of other events. For example, an explanation to a church leader as to why one has not been attending Sunday services is a constitutive feature of the dialogue with the official rather than of nonattendance itself.

Another approach to the study of language in use is that of discourse analysis (Russell, 1976; Candlin & Green, 1977). Such an analysis considers linguistic units above the rank of clause, and their sequences within the context of situation and existential meaning. John Regan (1979) describes nine systems of discourse analysis used by international researchers for the study of such subjects as child language, classroom interaction, and routinized verbal exchanges. Discourse analysis has also contributed to development of materials for teaching English as a second language and technological English for foreign professions (e.g., Lezberg, A., & Hilferty, A., 1978).

In addition to ethnomethodology and discourse analysis, sociolinguistics concerns itself with the sociocultural framework of verbal interaction (Trudgill, 1974). The sociolinguist's task involves making an in-depth study of selected "naturally occurring" instances of conversational interaction, to observe whether or not actors understand each other, and to describe the process of the mutual negotiation of a definition of a social situation (Schenkein, 1978). The priority given to the situated communicative event makes possible an understanding of what is accomplished and how it is accomplished.

Oral Testimony in the Mormon Church

Oral testimonies provide an accessible means to discover how theoretical religious precepts are internalized into a personal framework which may then be articulated by reference to experience. Oral religious testimonies are routine, public communications of personal experience (Dolgin, 1974). Though governed by specifiable norms of performance and interpretation, they permit a personalized framework for expressing one's transcendent feelings regarding everyday routines.

The philosophical framework for this approach to oral testimony is that of phenomenology, especially the concept of "multiple realities"
put forth by Alfred Schutz (1962, 1970). In Schutz's theory, reality is considered to be a negotiable condition, generated through an ongoing creative process without a priori determinacy. Speech is a constituent uncovering feature which displays the person's assumptions about reality to himself and others.

According to Schutz, we experience the common everyday world as determined by that which transcends our immediate bodily experience. That which seems to transcend our experience of being in the world may be formulated within any one of many finite provinces of meaning. As Joseph Childton Pearce suggests in The Crack in the Cosmic Egg (1971), "Any world view is a creative tension between possibility and choice."

Culture and language affect one's world view and influence the value of choice, shaping our assumptions into a non-ambiguous notion of a real world of events outside of our perception of it. Language first shapes one's view of reality, then the individual uses that language to express his understanding of the world. In this way, the act of speaking is itself reflexive, reinforcing the world view it expresses. It is in this way that oral religious testimony of belief claims influence the reality of others and also reinforce that same reality in oneself (see, for example, Langer, 1962; and de Chardin, 1960).

The speaker of an oral testimony stands in a relationship of authority to the other members of the congregation. That is, he is accepted as an expert on his own experience. The speaker presents information to the other members under the assumption that it may be directly instructional, or that the contents may serve as a model of what may be appropriate items to mention in a testimony, or to make public a private experience. We shall have more to say about this further on.

The oral testimony of a member of the Mormon church involves the verbal expression of a disciplined reordering of individual life process, based on a reality which unites those individuals who share that knowledge as a group, legitimated in terms of that group reality.

Another study of oral testimony involving claims of transcendent knowledge is that of Demarest (1975), who did research with the First Church of Christ, Scientist, whose members are known as Christian Scientists. Demarest points out that "one immediate and identifying feature of Christian Science oral testimonies is the repetitious use of key words and phrases peculiar to the Christian Science milieu."

M. A. K. Halliday has referred to this phenomenon in his article entitled "Anti-Languages" (1976). An anti-language orients, or foregrounds, certain words common in ordinary language, by giving them idiosyncratic meanings in particular social settings of a cohesive group divergent from the majority culture. Another feature of what Halliday terms anti-language is a characteristic functional orientation toward the interpersonal and textual modes. The interpersonal mode is the "set" toward the listener, and the textual orientation is the "set" toward the message. The need for a specialized argot or divergent meanings for ordinary words arises from an urgency to maintain group internal cohe-
sion and solidarity under pressure for dispersal or destruction engendered by the dominant society. A common motto among Mormons is "to be in the world, but not of the world."

The social accomplishment of the speech event of "giving a testimony," and simultaneously giving a display of identification with a shared reality of transcendent meaning requires "background" knowledge (e.g., what do I know or believe to be the case that is appropriate to this occasion), and "foreground" knowledge (e.g., do I feel that today I will give a testimony).

Claims of transcendent knowledge can be verified through its effect upon behavior, or through empirical facts which are to be interpreted through the filter of specialized, non-empirical knowledge (Polanyi, 1958, 1966; Samarin, 1972). The shift from expression of everyday meanings to claims of transcendent meanings involves an adjustment in both cognition and language use.

There are two possible approaches to accomplishing this shift: (a) using the register of a specialized jargon, which provides linguistic cues to apprehension of the transcendent domain and verbal display of facility with these terms; or (b) the invocation of a set of rules for interpreting everyday language with divergent semantic meanings. These two strategies, taken together, may serve as markers of the transcendent domain. Shifting between the two provinces - the ordinary and the transcendent, emphasizes the differences between commonsense interpretations of mundane reality and the specialness of the indexed reality.

This is not to say that members of the Mormon church live in two separate realms of meaningfulness - one of everyday affairs and pragmatic considerations, and the other an isolated sanctuary of emotional satisfaction. Oral testimonies are, instead, an accessible display of the language and interpretive rules by which these cognitive shifts are collapsed into one reality.

While each testimony verbalizes a personal cognitive transformation, it is simultaneously a social accomplishment. That is, the "doing" of an oral testimony is a public, reconstitutive and celebrative accomplishment which contributes to the production and maintenance of a particular interpretation of how it is to be in the world. Addressed to both members and investigators of the church, this type of speech act instructs covertly the process of formulation and evocation of private knowledge and interpretation of mundane experience.

In this verbalization, the discourse has the illocutionary force of both a response and a performative (Dore, 1977). It is a response to the invitation by the church leadership on the particular occasion, and in the general encouragement to give oral testimonies on any appropriate occasion when one is moved to do so.

A testimony is a performative in that it accomplishes the speaker's claim that he has a testimony to give that is a valid display of "doing" such a speech act as a member of the Mormon church. Testimony also has
the illocutionary force of description. Certain events, situations, or persons are identified as proper items to be included in a person's oral testimony by the speaker himself.

Consummation of the illocutionary act of the testimony is accomplished by the other members of the congregation by virtue of attendance at the service. Relevant beliefs are assumed to be shared by the members, and it does not require the active listening of everyone but the speaker to accomplish the perlocutionary effect of the testimony. That is, the contextual features relevant to the status of giving the testimony are sufficient to complete the illocutionary force of the act (Lewis, 1972; Dore, 1977).

An especially interesting performative aspect of Mormon oral testimony is in the use of pronoun referents. The persons mentioned in a testimony are not addressed directly, other than second person plural when addressing the congregation as a whole. God and individuals, whether present in the service or absent from it, are referred to in the third person, singular or plural. The speaker believes that his testimony accrues benefit to himself and the other persons present, and that one primary purpose, as often explicitly mentioned, is to give public thanksgiving to God. Apparently, the speaker believes that God overhears, or is actively involved as an additional, albeit superordinate, listener to his utterance.

The uncovering of God as involved listener to testimonies reveals them to be performatives in a here-and-now frame of reference. The speaker is not saying, "God, I'm letting these people know that I'll be praying to you about these things I'm telling them now," nor is he telling the membership what he will be doing and thereby making a public promise to relate this content to God. Instead, the speaker is in effect saying to the membership, "By telling you what I want God to know and what I want you to know, I am performing/accomplishing both purposes simultaneously." In this way Mormon oral testimony enacts multi-layered "doings": expressions of internalized knowledge claims, information to the membership, and prayer to God.

Summary

In this paper, we have been noticing members' procedures for accomplishing Mormon oral testimony. The idea has been put forward that a religious speech performance may be an enactment of claims of transcendent knowledge, and also a reconstitutive act of intersubjective consensus about reality. This report on the research is in the spirit of "work in progress." It is hoped that these remarks will interest fellow researchers to "lengthen your stride" in exploration of man's most abiding and satisfying activity - the "doing" of religion.
Bibliography


Candlin, C. N., & Green, M. Problems in discourse analysis theory. Paper presented in Inter-Session Seminary, Discourse Analysis Commission, Association Internationale Linguistique Applique (AILA), Claremont Graduate School, Claremont, CA., April, 1977.


WHY learn LANGUAGE(s)? A capable Ph.D. specialist on campus responded extemporaneously:

"Because you have to, for many reasons: if you want to eat, or when you are a baby, you learn types of language to get what you WANT. If you are called on a mission, or are to travel abroad, or have a high school requirement; or, maybe you have an insatiable desire to Learn Languages(!) (That may be less frequent!); it may be that you are going to want to COMMUNICATE... or, perhaps, just ENJOY. Or, you may be somehow "behind enemy lines" of some nature, and you want to get out the best way. Say...how about a general education requirement?"

For whatever purpose, a LangGram can potentially provide resource aids to build maps of language questions: support without stifling, or enhancing without inhibiting. In the study of INTERNATIONAL GRAMMARS, using a LANGUETICS model [See Intercultural Communicative Indicators model, available from L.I.R.C.], we find a need for accurate DIRECTION for language learning and use. That is, for LANGUAGE in the fullest senses, significant cultural patterns, contents, contexts, and modes.

Alfred Korsybski's language qualifier was, "The map does not represent all of the territory." (See Farb, Peter, Word Play. A. Knopf, 1973. 1969.) This indication may be that to learn languages one has to know the direction to GO, the DESTINATION desired, and HOW best to get there. Only to "learn a language" may be insufficient, unless one is anxious to mentally meander as a wave driven in an ocean storm. Even with direction, "all the territory" of language is seldom if ever achieved by even native users.

Combining proposals of Seymour Fersh and Edward T. Hall (in Tyler, et al. Reading Between the Lines, E.R.I., Provo, Utah, 1978.) we can identify clues that our mental LANGUAGE MAPS can give direction based only on our own expanding cultural experience. However, our personal LANGUAGE MAPS provide limited information probably little better than those used, comparatively, by Columbus, sailing West in 1492. When realistically applied to the complex shifting situations of life, they can lead us to great continents of understanding -- those of human experience, with language that is largely unexplored -- and about which we know MUCH but yet relatively next to nothing.
President David O. McKay has said that to LEARN A LANGUAGE is to learn another way of thinking: i.e., how "they" think and feel, and WHY. (Secrets of a Happy Life, Bookcraft, SLC, Utah. 1967. pp. 51-52.) We ask: WHOSE thinking? About WHAT? When? In what "manner"? (Note Pres. S. W. Kimball's request to present messages in a MANNER others can grasp and understand. SLC/April, 1974. See also D & C 1:24, et al.)

So, what is or should be the direction(s) or our language learning -- the purposes and the processes? Do we proceed to "learn EFIK" of Nigeria, or do we map out our time, space, and procedures? Do we seek validity? For which topics or of what USE to us? Do we aim for the destination from the start?

This presentation approaches part of a much larger project (Intercultural Communicative Indicators -- Languetics) to MAP all significant or critical learning and use of language in its broadest (including COMMON) senses: verbal, para-verbal, non-verbal, and para-normal, especially as these contextually related for total message transfer. Our purpose here is to suggest that devising, validating, and using aids to language learning and use requires knowing WHAT to learn and use, according to the predilections, presuppositions, and experience of the learner/user. Catalyzing "map use" can make the purpose and the process of each person involved a fascination, an interest, and a discovery in the constantly expanding fields of exploration called "language."

An abstract of a LanGram would answer at least the questions posed in this presentation but would not be limited to them alone, or may use only selected approaches.

Introduction

What is a LanGram? An immediate and practical orientation to the value and positive challenges of learning and appropriately using the verbal and non-verbal languages of the peoples of the world.

They pose significant questions and suggest a meaningful series of responses as to:

1) What a person may already know or can readily discover/experience/practice/enjoy;

2) What are the most helpful:
   a) CUES -- explicit indicators of meaning;
   b) CLUES -- implicit indicators of meaning;
   c) CODES -- special senses;
   d) CAVEATS -- what to use in particular ways or to avoid; and
**Why LanGrams?**

Effective communication between people who use differing languages usually goes beyond common (even when accurate) translation. It normally requires orientation to backgrounds, particular socio-linguistic details, and uniqueness. Most recent reliable resources become all the more important to those who want to increase their understanding of how and why certain peoples use distinct languages in our rapidly integrating world.

**Who can USE LanGrams?** Writers and editors of LanGrams can refine their own familiarity with the given language(s). Travelers, correspondents, program administrators, media and other communicators, and language learners for unique purposes -- all can profit from knowing peoples through up-to-date orientations to their languages. Extended learning can be facilitated via optimal resources (texts, people, institutions, systems, et al.).

**What RESOURCES can LanGrams Writers use?**

Experience of self and many others is central. Reliable insights and feelings of practitioners will be validated before LanGrams are shared publicly. As users of LanGrams find new and more refined data and resources, the LanGrams are to be up-dated. Sources, cited in appropriate editorial format, can benefit all users. Obviously, not as many or as detailed references are to be found for each of the world's more than 5,000 spoken languages and their related dialects. Validity and reliability will vary. But, the "best" data and teaching and sharing in-print methods are expected to be used as research, development, and publication takes place. New resources and expanded experience will make such developments possible.

**What QUESTIONS and TOPICS should be used to elicit appropriate LanGram data?**

Someone has said that half of the great knowledge of the world is the APPROPRIATE QUESTIONS (and the other half -- meaningful answers). The "guideline" questions used for the LanGram development and use will constitute the majority of this presentation, with helpful illustrations being taken from current LanGram developments. The "guideline" questions are used to catalyze pertinent and language/culture-specific detailed responses concerning both verbal and non-verbal messages. It is anticipated that the LanGrams will aid users to:

1) Learn EMPATHY for people who use the language in their particularly unique circumstances.
2) Work with DIFFERENCES that make a difference to what otherwise would be misunderstandable.

3) Highlight significant language similarities.

Questions used appear in these categories:
GEOLINGUISTIC DEMOGRAPHY
SOCIO-POLITICAL ASPECTS AND CONSTRAINTS
LANGUAGE ARTS AND DEVELOPMENT
RESOURCES -- FOR ORIENTATION/INFORMATION APPLICATIONS

References for the presentation include an EFIK (Nigeria) LanGram, and texts which suggest "which languages to learn...and how-to," as well representative references.

Topic QUESTIONS for LanGrams

A. GEOLINGUISTIC DEMOGRAPHY

1. Specifically, WHO now uses this LANGUAGE -- by WHAT name?
   a. Total numbers, and predominances: Male, Female, Age Levels, et al.
   b. Distinctions in spoken and written variations -- by number, group.

2. WHERE and WHY?
   a. Historical background, setting, circumstances helpful to understanding and using this LANGUAGE. Orientations of users: agriculture, industrial, artistic, progressive vs. traditional, etc.

3. What are the numerical and place relationships with other LANGUAGES?
   a. What "trade" language relationships are current or tending?
   b. To what extent do specified DIALECTS overlap with this LANGUAGE?

4. How BI-TRI-MULTI-lingual are which users of this language
   Primary, secondary, tertiary, and lingua franca users, by place.
   Other: (Other world-languages used in the areas, etc.)
B. SOCIO-POLITICAL ASPECTS AND CONSTRAINTS

1. Political status and restrictions: policies, attitudes, laws?
   a. Official uses, constraints [such as on import of other language texts, use in the media, etc.], censorship, other caveats.

2. Educational status and restrictions?

3. Economic influences and commercial factors with impact?

4. Religious groups use and impact -- who uses WHAT? (See A. above, also.)

5. Cultural circumstances and attitudes: at home, on "the street" and in society in general? (See also questions in APPLICATIONS, with cultural variations and special uses.) Convergence and divergence factors.

6. Literacy rate and results? (Other factors: fast-slow information-rate, etc.)

7. TRENDS for the above, and other pertinent correlative factors within this category and between it and others.

Other:

C. LANGUAGE ARTS AND DEVELOPMENT [Uniqueness and Availability]**

1. Orthography, script, sounds, systems (current, changes, trends)?
   a. Alphabet or other script. Reading: Up, down; left to right, etc.
   b. Variance from spoken to written. Levels of acceptability, style.

2. Extent and availability of written and spoken grammars in-print, glossaries, dictionaries (uni-, bi-, tri-lingual), other aids? Projected publications (soon to be available)?

3. Vocabulary development: technical, literary; borrowed vs. "purist."

4. In print or currently projected, or oral, scripture, literature, science, periodicals, entertainment press, folk-materials, etc.? What is "classic"?

5. Use of reproduction hardware (press, recording, illustrations, etc.)?
   a. Printing and reproduction laws: local, imports; other restrictions.


a. Discourse style and continuity.
b. Parts of speech, with unusual factors.
c. Change patterns, infixes, standards, etc.
d. Other grammatical modifiers: clauses, constructions.
e. Cases and their description.
f. Distinctions for person and number?
g. Genders and related factors.
h. Phonemes and their variances; tones and intonations.
i. Vowel, consonant, and other constructs.
j. Sounds uncommon when compared with world phonetics of major languages.
k. Structure: inflected, agglutinative, polysynthetic, monosyllabic, synthetic, analytic, isolating; interrelations, distinctions.
l. Favoring: endocentric or exocentric constructions?
m. Favoring: coordinated or subordinated phrases?
n. Verbs: distinctions of voice? Moods (Subjunctive, indicative, etc.) And tenses or aspects?
o. Forms of redundancy.
p. Sentence length abnormalities.
q. Modification slots used for adjectives; adverbs used as phrases.
r. Restrictions on sentence modifications?
s. Discourse shifts -- prominent, idiosyncratic. Their functions?
t. Pronouns and their markers (personal, possessive, demonstrative, interrogative, relative, indefinite): person, number, gender, case, inclusiveness/exclusiveness. Hierarchies of features?
u. Particular abstract terminology.
v. Specialized vocabularies (see Aginsky lists and Languetic Codebook).
w. Classes of nouns or verbs and their markings: usual, unusual.
x. Syntactical markers. (Subject-verb-object...or?)
y. Common borrowing, compounding, antimeria, extension, or derivation of developing new vocabulary and their markers.
z. Figures and modes of speech (direct, indirect, first or third person in the narrative, euphemisms) in levels and circumstances.

OTHER: (See Languetics Codebook, Language Indicators, including study of fallacious logic, etc.)

D. KEY RESOURCES (Double check for reliability, validity: what to avoid!)

1. PEOPLE who can help: bilinguals, tutors, specialists in translation and interpretation, genre-specialists. Note dialects, current work.
2. TEXTUAL: bilingual/bicultural dictionaries, grammars, other aids. Note Unesco and other UN terms lists and those used for specialties.

3. INSTITUTIONS and ORGANIZATIONS which teach/share language info/methods: academic, societies/associations, commercial, embassies and governmental, and para-governmental (OAS, Unesco, etc.)

4. SYSTEMS: Human Relations Area Files, Computer systems: Dialog, Orbit, etc.; and synthesis systems such as TSI: AscaTopics, etc.

OTHER: (See also Languetics CODEBOOK and questions for CULTURGRAMS and other types of "Grams" from LIRC.)

E. APPLICATIONS

1. Orthography aids and examples (aids for writers, translators)

2. Culture-specific phrases + pronunciation + translation:
   a. Politeness
   b. Survival
   c. Customs
   d. Authority and class distinction terms, expressions
   e. Economic, religious, intergroup, or other genre-specific.
   f. Traditions (proverbs, word play, et al.)
   g. Other KEY terms.

3. Non-verbal expressions favored by given people(s) in the culture.

4. Terms and non-verbal expressions to AVOID!

5. Other terms, clues, cues, codes, and caveats to help best USAGE.

OTHER:

F. OTHER: Logic patterns, language-to-language transfer devices for translators and other message processors, nuances to look for, etc.

**See Languetics CODEBOOK, pp. 96-112 for other categories. (Available from BYU/LIRC/Tyler, 240 B-34 BYU, Provo, UT 84602.)
The Semantics of the Inner and Outer Local Cases of Finnish

Helvi Temisevă

In 1936 Roman Jakobson published an extensive study on the Russian case system. In this study he presented a new approach in analyzing case. Looking for the invariant in the Russian case system lead him to the discovery of the semantic conceptual features which are the means to the end of language-communication. The pioneering work of Jakobson has inspired others to do similar studies in Russian and other languages as well.

Also the paper to be presented is the result of such an attempt to apply this approach to a language, specifically to the Finnish case system. The study was begun with the idea of finding the invariant meaning of the different case endings in the Finnish case system in order to discover their semantic conceptual features. Behind this immediate objective was, of course, a hope of finding the semantic structure of the Finnish case system.

The purpose of this paper is to show some of the results of this study by a) pointing out that the semantic conceptual features in the Finnish case system really forms a system that fits together into a perfectly functioning unity and b) particularly dealing with one specific part of the case system since the scope of this paper excludes a thorough presentation of the whole case system.

The Finnish Cases

Most grammarians agree that the Finnish case system consists of fifteen cases, but some consider the accusative case to be the same as the nominative and the genitive. The complementary distribution shown in the usage of these cases supports this latter stand, which also was accepted as basic to this study. To this merger, yielding 14 cases, is added the proitative, which some grammarians consider to be a particle rather than an independent case.

In the following is presented a list of the Finnish cases in the order they usually are given in the grammar books; immediately after the case name is mentioned the semantic conceptual feature of each case. Following that, a diagram which shows how the cases with their semantic conceptual features form a functioning system will be presented. After that follows definitions of the four conceptual features that are found in the group of six cases which together form the so called inner and outer local cases: the inner cases, inessive, elative, illative and the outer cases, adessive, ablative, allative. These cases have been chosen to exemplify the system in this presentation. Finally I present minimal
pairs that give a binary comparison between the inner and outer local cases.

The cases and their semantic conceptual features:

- **Nominative** - unmarked  
- **Genitive** - extension  
- **Accusative** - same as genitive and nominative  
- **Partitive** - objectiveness  
- **Essive** - objectiveness and extension  
- **Translative** - restrictedness  
- **Inessive** - dimensionality  
- **Elative** - dimensionality and restrictedness  
- **Illative** - dimensionality and extension  
- **Adessive** - transitivity  
- **Ablative** - transitivity and restrictedness  
- **Allative** - transitivity and extension  
- **Abessive** - objectiveness and restrictedness  
- **Comitative** - duplication and extension  
- **Instructive** - duplication  
- **Prolative** - duplication and restrictedness

Let us now look at the diagram suggested to me by Dr. John S. Robertson. This diagram illustrates the function and distribution of the semantic conceptual features in the Finnish case system in a similar manner as the cube forms used by Jakobson and others illustrate these factors in other languages. The diagram has three-dimensions with two flat intersecting planes. Each square plane is divided in four. The cases that show only one semantic conceptual feature are in the middle axis of the planes and the other cases that share the same feature are respectively on the corners of the planes.

From the above list and this diagram one can see that some cases share some conceptual features. Thus the outer local cases, adessive, ablative and allative, have transitivity as their common feature. The feature of objectiveness is shared by three cases, partitive, abessive and essive, and three other cases, instructive, comitative and prolate, share duplication. The inner local cases, inessive, elative and illative have dimensionality as their common feature. Restrictedness and extension are the most widely distributed semantic conceptual features in the Finnish case system. Both of them appear in five cases. Restrictedness is found in translative, elative, ablative, abessive and prolate. Extension is in accusative-genitive, illative, allative, essive and comitative.

The inner and outer local cases to which we now restrict our attention are situated on the vertical extreme axes of the diagram. The inner cases are on the right hand and the outer cases on the left hand vertical axis. As these cases show the semantic conceptual features of transitivity, dimensionality, extension and restrictedness, short definitions of these features follow below.
The Distribution of the Features

ABESSIVE
- objectiveness
- restrictedness

ABLATIVE
- transitivity
- restrictedness
- lta

TRANSLATIVE
- restrictedness
- ksi

ELATIVE
- dimensionality
- restrictedness
- sta

PARTITIVE
- objectiveness
- a
- ta

PROLATIVE
- duplication
- restrictedness
- itse

PABTITIVE
- objectiveness
- a
- ta

INSTRUCTIVE
- duplication
- n

ADESSIVE
- transitivity
- lla

DISSIVE
- objectiveness
- extension
- na

ILLATIVE
- dimensionality
- extension
- length, vow.
+ n
- h + vow, + n
- seen
- siin

ALLATIVE
- transitivity
- extension
- lle

ACCUSATIVE & GENITIVE
- extension
- n

COMITATIVE
- duplication
- extension
- ine + poss. suff.
Transitivity is the feature that gives one the least amount of information. It gives the notion of contact, manifestation, contrast or effect. The Finnish outer local case, adessive--with the case ending of -lla, -llä--has transitivity. Consider the following example: "Kirja on pöydällä.--The book is on the table." The book is lying on the table, in the surface of it. The book is not part of the table itself, but it is in touch, in contact with it. From this contact comes the notion of transitivity.

The feature of dimensionality gives what its name already indicates, the notion of dimensions. With dimensionality something is contained within something or within something's range. The inner local case inessive--case ending -ssa, -ssä--has dimensionality. "Kirja on laatikossa.--The book is in the box." Here one has the dimensions of the box. It is contained within the box.

The feature of extension (or goal or directionality as Jakobson calls it) requires a dual perception with an established relationship between the two and where one of the two entities is the goal or the point of focus. Allative, an outer local case--with the case ending -lle--has extension together with the feature of transitivity which is the feature that all the outer local cases share. Also illative--an inner local case with the case ending lengthened vowel plus -n; -h + vow. + n; -seen, -siin--has the feature of extension together with dimensionality which is the feature that is common to all the inner local cases. The following will exemplify the notion of this feature, extension: "Pane kirja pöydälle.--Put the book 'onto' the table." "Pane kirja laatikkoon.--Put the book into the box." In the first, the allative example, there is the dual perception of a book and a table. The table is the entity which is the point of focus. There is the book and the table, the notion of extension and transitivity. In the illustrative example the book and the box are the two objects that have a relationship established between them, the box being the goal or point of focus. The book is asked to be placed so that it will be contained by the dimensions of the box, and thus is given the notion of extension and dimensionality.

The feature of restrictedness which Jakobson calls marginality also requires a dual perception, where one of the perceptual entities is a "narrowed, cancelled, modified, exceptional, restricted, faded, peripheral, or an otherwise marginal version of the other." In this abridged form of the study, restrictedness appears only as the second feature of ablative, an outer local case with the case ending of -lta, -lta, and of elative, an inner local case with the case ending of -stä, -stää. "Ota kirja pöydältä.--Take the book from the table." "Ota kirja laatikosta.--Take the book from the box." In the ablative example there is the dual perception of the book and the table, the book being in touch with the table, whereas in the elative example the book is contained by the dimensions of the box, but in either case the situation is not constant, the notion of restrictedness implies a change, an alteration of the state of being. The book will no longer remain where it was, the contact and the containment respectively will be cancelled.
Minimal Pairs in Inessive and Adessive

In the following I will present some minimal and near minimal pairs that will contrast the inner local cases with the corresponding outer local cases. Consider first this example:

Inessive: Tyttö kävi lähteessä, kaivossa, haudassa.--The girl visited "in" the spring, well, grave.
Adessive: Tyttö kävi lähteellä, kaivolla, haudalla.--The girl visited the spring, well, grave.

The inessive example really indicates that the girl was inside these places, in the spring surrounded by the water, in the well and in the grave, but the adessive example conveys the message that she went to the respective places and was in contact with them, for instance, by getting water from the spring or well, or by taking flowers to the grave.

Consider now an another example, a minimal pair which also shows dimensions and contact:

Inessive: Lapsi lepää maan povessa.--The child rests in the bosom of the earth.
Adessive: Lapsi lepää äitinsä povella.--The child rests on his mother's bosom.

In the inessive example the child is dead and buried, and is thus surrounded by the earth. This gives the feature of dimensionality, whereas in the adessive example there is the feature of transitivity. The child is in touch with his mother's bosom.

Here is another minimal pair where the features of dimensionality and transitivity are displayed.

Inessive: Isä on saunassa.--Father is in the sauna.
Adessive: Isä on saunalla.--Father is at the sauna.

In the inessive example the message is clearly this: Father is in the sauna taking a saunabath; he is inside in the building doing what the express purpose of the building indicates: taking a saunabath. Thus he is not only surrounded by the saunabuilding but he is contained by the 'ritual', the concept of sauna.

In the adessive example the message is less specific. Here father is not enclosed in any specific act. We know only that he is somewhere in the sauna surroundings, most likely doing something related to the saunabath--cutting wood for the heating of sauna, carrying water there, or maybe preparing the birchbundles. In the process of doing these things he might even shortly step in, but other than that he is only in contact with the building and the concept connected to it, but not surrounded by it.
Consider now this near minimal pair that contrasts the notion of containment given in dimensionality and the notion of contact given in transitivity.

Inessive: Kirkonpenkissä on aina tilaa.—There is always room "in" the church bench.
Adessive: Puistonpenkilla on aina tilaa.—There is always room on the park bench.

In this near minimal pair it is question of two different kinds of benches. The church benches, which are close together in rows and squares, and which in olden times where even provided with a small gate that let one into the pew, form a structural unity different from a separate, single park bench. This conceptual difference between the two kinds of benches can be seen through the use of the cases. The inessive brings out the idea of containment, the enclosed church benches, and the adessive the idea of mere loose contact, the open park bench.

In the following example it is to be noted that the Finnish word taivas is translated into English both as heaven and as sky.

Inessive: Taivaassa on enkeli.—There is an angel in heaven.
Adessive: Taivaalla on enkeli.—There is an angel in the sky.

In using the inessive case ending the concept taivas gets the dimension of an abode, a place wherein someone, in this case the angel, can be contained. The adessive ending changes the concept of dimensions to kind of an open display area, the sky, which the angel could be in contact with.

Minimal Pairs in Elative and Ablative

The next set of examples will contrast the inner local case, elative, with the corresponding outer local case, ablative. The elative like all inner local cases shows the feature of dimensionality and likewise ablative shows transitivity, the common feature of all the outer local cases. Besides these distinctive features the elative and the ablative share the common feature of restrictedness. With this in mind consider the following minimal pair.

Elative: Siirtolaiset lähtevät laivasta.—The emigrants leave "out of" the ship.
Ablative: Siirtolaiset lähtevät laivalta.—The emigrants leave the ship (surroundings).

In the elative example, the emigrants have been inside, contained by the dimension of the ship, but now they are getting out from there and thus the containment is cancelled. In the ablative example the emigrants are also leaving the ship but this time there is no clear clue whether they have been inside the ship at all. They have been in contact with the boat one way or other, maybe only as people coming
to bid farewell to someone aboard the ship, but now this contact is cancelled.

Here is another minimal pair using the same cases and thus displaying the same notions as the previous example.

Elative: Hän tuli katosta.--He came through the ceiling.
Ablative: Hän tuli katoilta.--He came from the roof.

In Finnish there is only one word for ceiling and roof. Katto is used for both. (Sometimes a distinction is made by adding the prefix sisä- meaning 'inner'.) Thus in the elative example the word can really mean either roof or ceiling.--or most likely both since the person is coming through some sort of an opening up there. In passing through he is surrounded by the concept of katto, and when he is through, this containment is cancelled. In the ablative example there is only one possible interpretation: the roof, since only by being on the roof he can be in contact with the surface called katto. And the notion of restrictedness is seen in the fact that this contact is cancelled.

Consider now one more minimal pair using the elative and the ablative. Even in this example of more abstract nature the notions of dimensions, contact, and cancellation are evident.

Elative: Hän pelasti lapsen varmasta kuolemasta.--He saved the child from a sure death.
Ablative: Hän pelasti lapsen varmalta kuolemalta.--He saved the child from sure death.

In the elative example the child is already seen in the grip of death, maybe severely injured in a state where only a doctor's skill can save it. In the ablative example the child is only in a danger that would become fatal if the situation would continue uninterrupted. Maybe the child would have been hit by a car unless someone had acted. Thus the features of dimensionality, containment, and transitivity, contact, are clearly brought forth in this example of internal and external danger of death.

Minimal Pairs in Illative and Allative

The following group of examples will contrast the inner local case, illative, with the corresponding outer local case, allative. Also these cases have the same features of dimensionality and transitivity that has been shown in the other inner and outer local cases, and in addition to the other features they share as a common feature the feature of extension. Consider now this minimal pair:

Illative: Levitä lannoite perunamaahan.--Put the fertilizer into the potato field.
Allative: Levitä lannoite perunamaalle.--Put the fertilizer onto the potato field.
In both examples one can see a relationship between the fertilizer and the potato field, where the potato field is the goal. The notion of goal is given by the shared feature--extension. The difference is given by the other semantic features--dimensionality (illative) and transitivity (allative). The illative example implies that the fertilizer is going to be surrounded by the ground; it has to be plowed into the field. In the allative example the fertilizer is supposed to be brought in contact with the ground; it is spread on the surface.

Here is another minimal pair in illative and allative.

Illative: Luther kiinnitti teesinsä Wittenbergin linnankirkon oveen.--Luther attached his theses "into" the door of the Wittenberg Cathedral.
Allative: Luther kiinniitti teesinsä Wittenbergin linnankirkon ovelle.--Luther attached his theses at the door of the Wittenberg Cathedral.

This example perhaps more clearly than any of the previous ones presents the fact that the feature of dimensionality does not necessarily imply interiority. The notion of dimensions can be given by a finite area, for instance, as in this illative example, where the finite area of a door is the goal of the act of attaching. In the allative example the goal can as well be the door post or even the wall close by the door, i.e. some place that is in "touch" with the door.

Consider now two near minimal pairs which also convey the notions of dimension, contact and goal.

Illative: Orava hyppeli puusta puuhun.--The squirrel jumped from tree to tree.
Allative: Koira juoksenteli puulta puulle.--The dog ran from tree to tree.

The squirrel is surrounded by the tree, its branches and foliage, whereas the dog is only in contact with the tree, its trunk; and both of them has a tree as the goal of their movement.

Illative: Meille laitettiin seinästä seinään ulottuva kokolattiamatto.--We got a whole carpet installed from wall to wall.
Allative: Meidän tauluja muutettiin seinältä seinälle.--Our pictures were moved from wall to wall.

In the illative example one sees the dimensions of a finite area whereas the allative gives the notion of contact. With one wall as the starting point the other wall was the goal, whether it then was for the carpet or the pictures.

A Few More Examples

To conclude the series of examples a minimal pair and a near minimal pair will be presented. The examples are given in nominative-allative and elative-illative cases.
Nominative-Ablative:  Hän kulki talo talolta etsien poikaansa.--He went house by house looking for his son.

Elative-Illative:  Hän kulki talosta taloon etsien poikaansa.--He went from house to house looking for his son.

In the first example the person searching is going from one house to another. He is in contact with the house by looking at it and perhaps walking in its surroundings but he does not enter in. This reflects the feature of transitivity. Then he cancels this contact by moving to the next house--feature of restrictedness. In the other example which uses the inner local cases the person also goes from one house to another but this time he enters into the house--dimensionality and extension--and steps out of it again--dimensionality and restrictedness.

This near minimal pair demonstrates the same idea:

Nominative-Ablative:  Helmi helmeltä hän sormeili rukousnauhaansa.--Bead by bead she fingered her rosary.

Elative-Illative:  Hän siirtyi helmestä helmeen rukousnauhassaan.--She moved from bead to bead in her rosary.

In the first example there is smooth movement from bead to bead when a contact is established and cancelled, but in the other one each individual bead is "entered into" so to say as the fingers move around its dimensions, feeling it, and then move to the next bead.

Summary

This study, and particularly the wider study of the Finnish case system on which this presentation is based, has brought forth substantial evidence that the concept of the semantic conceptual features is a functioning fact even in a non Indo-European language. A systematic semantic structure is found in the Finnish case system.

Because of the delimitations necessarily required from a presentation of this nature the subject cannot be covered in greater detail or depth. However, even from such a limited scope of data it is evident that the Finnish case endings are signs that each in their own range carry the same conceptual meaning; they convey messages reasonably expressed in the terms of the semantic conceptual features.

Footnotes

As an interesting aspect which confirms the exactness of Dr. Robertson's presumption of this format for the Finnish case system, it has to be mentioned that while he was drawing the diagram he found that there was an empty corner left in the duplication-restrictedness level. He assumed that there was a lost case in the language, which assumption was confirmed by the former existence of a prolicative case, and what more, the semantic conceptual features of this missing link—the prolicative case—were found to be exactly what could be expected, namely, duplication and restrictedness.

Definition given by Dr. John S. Robertson, Fall Semester, 1976, at B.Y.U.

If any interest has been awakened towards the subject, reference can be made to the writer's recent Master's Thesis entitled: The Semantic Conceptual Features in the Finnish Case System: the Inner and the Outer Local Cases.
William Blake said "if the doorways to perception were cleansed, the world would appear to man as it really is--infinite." It is our good fortune that the world does not appear to us in its infinite state; we should be overwhelmed by its vastness if we did not have, as Blake put it "doorways to perception" by which the information present in the world "out there" is selected and classified, as it enters our inner world of experience. Blake's 19th Century poetic statement finds modern scientific expression in Russell DeValois' (1966) recent experiments, which explicitly show the neurological mechanisms by which an infinite visual spectrum is categorized into separate colors. Indeed, such neuro-perceptual mechanisms are doorways to perception in providing structure to an otherwise infinite world.

Take, for example, the following design, analyzable from any number of different perspectives. The two perspectives I shall describe, however, demonstrate that the difference between the mathematical operations addition and multiplication is based on a simple difference in perception. For example, if the box in the upper left-hand corner is viewed as empty, gradually being filled with lines in the succeeding boxes to the right and down (the second box has one line, the third, two etc.) we have the basis
for addition. Hence, if we take the third box to the right, which has two lines and the fourth box down, which has three lines, and look where they intersect, we see a box containing five lines: $2 + 3 = 5$. If, on the other hand we view the box in the upper left-hand corner as a plane, subject to successive division by the lines in the succeeding boxes to the right and down, we have the basis for multiplication. Hence, if we take the third box to the right to be divided into three parts by two lines, and the fourth box down to be divided into four parts by three lines, and look where the boxes intersect, we see a box divided into twelve parts: $3 \times 4 = 12$.

Thus, the difference between addition and multiplication is here a mere difference in perception. Nothing in the referential schema changes; only the perceptual starting point shifts.

Jakobson describes a similar perceptual shift in terms of every day language (1973:52):

About the same bottle one can say that it is half empty or half full. Half empty and half full are not the same, they are not synonyms because they have a different frame of reference, a different starting point. Taking the empty bottle as unmarked is different from taking the full bottle as unmarked.

We thus take language to be a system of signs through which the speaker asks the hearer to view the referential world. If I the speaker choose to say that a bottle is half full, I am asking the hearer to view it differently than if I had said the same bottle was half empty. If I ask the hearer to view the upper left-hand corner of the design as a divisible plane, the mathematical consequences are ultimately different than if I had asked him to view it as an empty box.

We therefore define language as a device by which the speaker conveys information to the hearer; more specifically, it is a tool by which the speaker triggers the hearer's perceptual attitude; it is a means by which the speaker cues the hearer to view the referential world. These perceptual categories, both as the phonological distinctive features of the signans, and as the semantic conceptual features of the signatum ("interprets" in Pierce's terms), work to "readjust...extrinsic matter, selecting, dissecting and classifying along their own lines."

Of paramount linguistic interest, therefore, is the nature of the above-mentioned distinctive and conceptual features, which significantly are central to Jakobson's enormous body of work on linguistics. Much has been said regarding the phonological, distinctive features, but the semantic conceptual features remain relatively obscure. They were first described in impressive detail in Jakobson's pioneering "Beitrag zur Allgemeinen Kasuslehre..." and later in his "Morphological Inquiry into Slavic Declension" which in my opinion are among the most original and important contributions to linguistic theory.

Their application to linguistic study has yielded significant statements about the semantic nature of the Russian case system, as well as other grammatical and lexical systems of Russian, the French tense system, the French prepositional system, to name a few.
In his discussion of the Russian case system, Jakobson demonstrates that the eight cases, taken together, form a perfectly organized system, as defined by their formal and concomitant conceptual markers. He speaks of 1) the unmarked case: the nominative, which has no associated conceptual feature, 2) the singly marked cases: accusative, marked with the conceptual feature "directionality," instrumental, marked with the "marginality" and the so-called genitive II, marked with the conceptual feature "quantification," 3) the doubly marked cases: dative marked with both "directionality" and "marginality," genitive I marked with both "quantification" and "directionality," locative II, marked with "quantification" and "marginality," and 4) the triply marked case: locative I, marked with "directionality," "marginality" and "quantification."

Structurally, the paradigm may be presented as follows:

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<table>
<thead>
<tr>
<th>nominative</th>
<th>accusative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(directionality)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>genitive II</th>
<th>genitive I</th>
</tr>
</thead>
<tbody>
<tr>
<td>(quantification)</td>
<td>(directionality)</td>
</tr>
<tr>
<td>(marginality)</td>
<td>(quantification)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>instrumental</th>
<th>dative</th>
</tr>
</thead>
<tbody>
<tr>
<td>(marginality)</td>
<td>(directionality)</td>
</tr>
<tr>
<td>(marginality)</td>
<td>(marginality)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>locative I</th>
<th>locative II</th>
</tr>
</thead>
<tbody>
<tr>
<td>(marginality)</td>
<td>(directionality)</td>
</tr>
<tr>
<td>(marginality)</td>
<td>(marginality)</td>
</tr>
<tr>
<td>(quantification)</td>
<td>(quantification)</td>
</tr>
</tbody>
</table>
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The three conceptual markers—directionality, marginality and quantification—indissolubly linked to their formal markers, combine to form the logical system schematized above. These conceptual features, in their paradigmatic, syntagmatic and extralinguistic contexts, exemplify a portion of the invariant cues, the "interpretants," referred to above, by which the Russian speaker conveys information to his hearer.

In my investigation of the numberline as a semiotic system, I have found, predictably, that the numbers themselves are also signs by which information is communicated, and that they too, form a logical system, different from, but similar in logical rigor, to the case system described above. Most strikingly, close analysis of the different types of numbers (whole, negative, fractions, irrationals, and complex) has revealed conceptual features starkly similar to those defined by Jakobson in his description of the Russian case system. This is not to minimize the profound differences that exist between the two linguistic and mathematical systems, based on their form, their paradigmatic structure, their use, and other semantic differences. But, significantly, because both natural language and the language of mathematics are products of the human mind, it should not be surprising to discover that ultimately they share the same conceptual constitution. It is this conceptual constitution which is the subject of this investigation—not with the end of proving that mathematics is ultimately the basis of linguistic organization, or the reverse, but rather that both natural language and the language of mathematics have the same conceptual core.
Quantification

Mathematics, founded on the simple act of counting, is often called the language of quantification. Similarly, Jakobson named the genitive and the locative cases of Russian the cases of quantification. This term, quantification, is wholly appropriate both because the whole numbers (0 1 2 3 ...), which answer the question "how many X's are there?", express quantity, and because genitive/locative also quantify, as in the examples, stakan vody 'a glass of water' or polnyj myslej 'full of thoughts.'

This particular use of the genitive is called the Genitivus Partitivus, the partitive genitive, where "the use of the genitive signifies a definite or indefinite degree of involvement and thus establishes a spatial or temporal boundary." 2

A second variant use of the genitive might be called contextual ab­sence, which in Jakobson's terms signals a referent "which remains out­side the prediction." Such is the meaning of zero. For example, if I asked the question "how many cotton wood trees are there in this room?" an appropriate answer would be zero because any existing cotton wood trees are absent from the given context of this room. Zero makes it possible to speak of things not present.

From a mathematical point of view the zero in 10 means that all counting numbers are absent in the context of the one column; 100 means that no counting numbers exist either in the one column or in the ten column, and so on.

The semantic notion given by zero--absence from a particular context--is consistent with certain uses of the genitive, as suggested above.

For example, limončika by! "Oh for a little lemon!" signals that the lemon has its existence independent of the speaker--the lemon is only imagined, not real. In the sentence vody, vody[G]...no ja naprasno stradal'cu vodu[A] podaval (Puškin) 'Water, water!...but in vain I offered the sufferer water' the first two instances of water are perceived abso­lutely outside the sufferer's consumption--we know that he never tastes of the water. In Jakobson's terms, the referent "remains outside the pre­diction."

Normally in Russian the accusative marks the so-called direct object, but it is usual for the direct object to take the genitive, if the sentence is negated:

ne našel kvartiru 'found no apartment'
našel kvartiru 'found an apartment'

The co-occurrence of the genitive and negative makes perfect semantic sense because the verbal action (including the direct object) remain outside the predication.
The above rule is not iron-clad, however. The accusative can be found marking the direct object in negative propositions, but with semantic consequences:

ja ne slychal etoj sonaty[G]  'I have not heard the sonata'
ja ne slychal etu sonatu[A]  'I have not heard the sonata'

In the first sentence, according to Jakobson "the emphasis is on the unknown-ness of the sonata on the part of the speaker"; the sonata is predicationally absent, whereas in the sentence with the accusative "this emphasis is lacking and the fact that I have not heard it becomes mere accident, which is unable to eliminate the sonata from the predication-- the presence of the sonata takes precedence: this nuance requires the A in contrast to the G." (p.27)

To summarize, quantification is found both in the whole numbers and in the genitive (and locative) cases of Russian, in both the contextual variants described by Jakobson:

1) the counting numbers are analogous to the genitival use that signals partitive.
2) zero is analogous to the genitival use that signals absence from predication.

Marginality

Up to this point the discussion has included only the whole numbers, which can be represented on the numberline as follows:

0 1 2 3 4 5...

The system of whole numbers is infinite in that a new segment can always be added to the right, thus increasing the length and number. But such changes in the numberline are only quantitative. The numberline can be changed qualitatively (with semantic consequences) in its infinite extension to the left, with the addition of the negative numbers:

... -3 -2 -1 0 1 2 3 ...

The perceptual attitude triggered by the negative numbers is comparable to the perceptual cue given by the so-called peripheral cases, the instrumental, the dative, the genitive I and the locative I.

The definition of the negative numbers, as well as those grammatical morphemes that have the conceptual feature marginality, often includes the notion of cancellation. Notice how the notion cancellation figures in the following typical mathematical definition of the negative numbers (Wheeler, p. 122):

If a is a natural number, then -a will be defined to be a unique number such that \( a + (-a) = -a + a = 0 \)
That is, \(5 + (-5) = 0\). In other words, in the context of addition, the negative tells the mathematician to perform an operation of cancellation. Children learning to subtract are often given such concrete examples of cancellation as: if I had five apples and ate two, how many would be left? Later they learn that the minus sign, \(-\), in the context of addition means cancellation.

Jakobson's conceptual feature "marginality" is similarly described. C. H. Van Schooneveld (1977:4) says that "the Russian instrumental and such prepositions or preverbs as vy-, ot, and iz have in common the cancellation of the initial narrated situation and the break between this situation and the ensuing situation."

Cancellation, however, is only one contextual perspective. In further describing the Russian cases that share the feature marginality, Jakobson uses the term "peripheral": The instrumental "indicates that its referent occupies a peripheral status in the overall semantic content of the utterance." Similarly on the numberline the negative numbers are peripheral in the sense that they presuppose the counting numbers, which are perceptually central to the numberline. Jakobson is careful to point out that "what is specific to the peripheral cases is not that they indicate the presence of two points in the semantic content of the utterance, but only that they render one peripheral with respect to the other." (Pp. 33, 34) Likewise, on the numberline 2 and 4 represent random points, as \(-1\) and 1 might. But \(-1\) is peripheral with respect to 1, whereas 2 has no such relationship to 4. Each, peripheral, negative number has associated with it a central, counting number, but the reverse is not true: one can imagine counting without negative numbers, but it is difficult to imagine a negative priority over the positive numbers. Thus, in counting, the negative numbers are marginal or peripheral, while the whole numbers are central.

A similar marginal/central distinction emerges in the study of the instrumental. For example, in the sentence oxotnik[N] ranil olenja streloj[I] 'the hunter wounded the deer with an arrow' the focus is on the agentive hunter, while the instrumental arrow is peripheral. On the other hand, in the sentence olenja ranila strela[N] 'the arrow wounded the deer' the focus in on the arrow--no comment is made regarding peripherality.

In sentences as on zdes' sud'ej 'he functions here as judge,' budet sud'ej 'he has been elected judge,' stal sud'ej 'become a judge,' on isbran sud'ej 'he has been elected judge,' sud'ej on posetil nas 'he visited us as judge,' one sees the centrality of the individual referred to by the full cases, and the marginality of the individual as given by his role as judge. Here the instrumental "refers to the same entity as the corresponding (expressed or implied) full case in the same sentence, and signifies that a special function of that entity--a passing, occasional property--is involved." (p. 37)

When we pass from the negative numbers of mathematics to the marginal cases of Russian, we at first glance appear to have changed worlds; all the landmarks seem so dissimilar. But a broader view reveals compelling parallelisms. The negative numbers can be described in terms of
cancellation in the context of addition, just as van Schooneveld similarly described the semantic effects of the instrumental. In the context of the numberline the negative numbers are peripheral to the central counting numbers, just as the referent of the instrumental is marginal with respect to a centrally implied referent.

Directionality

With the addition of the negative numbers, we have a numberline which extends infinitely to the right (counting numbers) and infinitely to the left (negative numbers), with zero as the origin.

The next qualitative change is given by subdividing, or in other words by providing for fractions in the numberline, as represented in the following:

```
...-1 0 1 2 3 4 5 6 7 8 ...
0 1 2 012345 012345678
0 1 2 3 012345 012345678
```

In this case each unit is subdivided into aliquot parts. For example, the unit from 7 to 8 is divided into eight units: or the unit from 1 to 2 is divided into two units: . This systematic subdivision now permits us to understand what fractions mean. We will look at the fractions from two points of view, each of which is equally valid; each of which figures prominently in Jakobson's description of the accusative case.

The first perspective is given in these terms: a fraction, for example 1/8 has a numerator of one and a denominator of eight. The denominator, eight, tells us where on the number line to start counting (on the subdivided unit segment between 7 and 8) and the numerator, one, tells us how many subdivided segments to count (one):

```
012345678
012345678
```

The conclusion to be drawn is simply this: the geometric value of the numerator is determined by the denominator. The numerator one of 1/8 is this long , whereas the numerator one of 1/2 is this long . The numerator in and of itself has no specific geometric value. One, for example, could be geometrically equivalent to two given a denominator of four and eight respectively: 1/4 = 2/8.

It might be said that a fraction specifies two things: a) how much and b) in which denomination. Twenty has quite a different value in the denomination of dollars than in the denomination of cents. The denomination ascribes the value.

From this perspective it is now obvious why 0/8 is a possible fraction, whereas its inverse 8/0 is not. 0/8 says to count nothing in denominations of 8, whereas 8/0 requires something that is impossible: to count to eight in a nonexistent denomination. Simply put, a fraction with a zero denominator has no meaning in the logic of mathematics: nothing exists by which the value of the numerator can be ascribed.
This first view of fractions we shall call "ascription" because the denominator ascribes a relative value to the number given by the numerator.

The second perspective is given in terms of an imaginary trip. Suppose that one were to take a trip on the unit segment from 7 to 8, which has been subdivided so, $\frac{7}{8}$, where zero represents the point of departure and eight, the goal. Thus, $\frac{1}{8}$ means that on the trip from zero to eight, the traveler has gone the distance of one toward the goal of eight: 012345678. $\frac{2}{8}$ would mean of course that he has traveled two towards eight: 012345678. $\frac{0}{8}$ would mean that he stayed home, whereas $\frac{8}{0}$ is impossible because no goal is given.

This second view we shall call "goal" because the denominator is the goal with respect to the numerator.

The notion of goal, as suggested above, coincides with Jakobson's description of the accusative, which in its primary contextual variant of marking the direct object, "denotes an object upon which is directed the action of the verb." (p. 6 Morphological). Thus, čitat' knigu 'to read a book' the action of reading is directed on the book. In the phrase na stol 'onto the table' the notion of goal is present, whereas in na stoli 'on the table' no such goal is apparent.

The notion of ascription (recall that the denominator ascribes a specific value to the numerator) emerges in the so-called weakly governed accusative "where a segment of space or time...is entirely filled by the action," as žit' god 'to live a year' idt'i v'erstu 'to go one verst'. Here one's living or one's going is given a specific value as determined by "a year" or "one mile" respectively.

The remaining untouched portions of the numberline are those segments bounded by the fractional numbers. These bounded segments contain the so-called irrational numbers, which can be defined in terms of van Schooneveld's conceptual feature dimensionality. A full description, however, exceeds the limits of this paper.

The final number type is the complex numbers, which in effect, turn the numberline into a Cartesian plane, the points of which are codetermined by the x and y axes. Their conceptualization can be defined in van Schooneveld's conceptual feature "duplication," the elaboration of which is reserved for another paper.

The expansion of the numberline can be described in these structural terms:
whole numbers

negative numbers integers

fractions rational numbers

irrational numbers real numbers

imaginary numbers complex numbers

The right-to-left numberline becomes more and more dense, until it is completely filled with the real numbers. It is finally extended upward and downward, giving the imaginary numbers, which together with the real numbers constitute the whole numbers.

Conclusion

The proposition of this paper is that the language used by Jakobson in describing the conceptual features of the Russian cases is starkly similar to the language needed to describe the information conveyed by the whole numbers, negative numbers and fractions; that is, the conceptual features isolated in describing the cases are those features necessary to the description of the number types above.

Such a proposition is based on the assumption that language is a system of signs, paradigmatically given and ordered, by which information is encoded and decoded. The nature of such information, which is invariantly linked to its signans, and mediated by its paradigmatic, syntagmatic and referential context, is given at least in part by the conceptual features quantification, marginality and directionality.

We emphasize that these features do not derive from the referential world, but are rather perceptually given, and as such are doorways to perception, as it were, or interpretants by which the in-coming information of the referential world is classified and categorized.

Of course, we are only beginning to understand such semantic similarities as are proposed in this paper, but in Sapir's terms (p. 144) "some day, it may be, we shall be able to read [from our further research] the great underlying ground plans." If indeed the proposition of this paper has validity, then we are that much closer to understanding the essence of man's greatest intellectual endowment--natural language, and in a broader sense, language in all its aspects.
FOOTNOTES

1 This is quoted from Waugh (1975) who takes it from a source unavailable to me: Jakobson (1949).

2 My quotations of Jakobson's "Beitrag..." and "Morrophological Inquiry..." are taken from xerox copies of English translations done by Kenneth L. Miner and Rodney Sangster respectively.

BIBLIOGRAPHY


0. This article proposes a classification of the Russian verb in terms of three features, [activity], [action] and [act]. The presence of these features, which reflect different views of the process depicted by the verb, can be justified morphologically, in that they are represented as stem differences in certain classes of Russian verbs. They can also be justified semantically, in that their presence can be seen to account for a rather consistent difference in the way prefixed verbs are interpreted. We will first look at verbs which can be described as depicting activities, actions and acts, and then examine their behavior when prefixed.

1. The three features which I propose can most generally be defined as describing the degree to which the process depicted by the verb can be said to be determined. I will be using the term determination in a somewhat broader sense than is customary in Slavic linguistics, using it to refer to a variety of internal and external limitations on the process denoted by the verb.

Russian verbs may be described as being nondetermined or determined. Nondetermined verbs are those which denote what I shall call activities. An [activity] verb is one which presents the most general view of the process, representing it as a general state of affairs, a kind of behavior, a characteristic or (in the case of motion verbs) as random or nondirectional movement. Nondetermined [activity] verbs are opposed to determined verbs, verbs which denote what I shall call actions and acts. While [activity] verbs depict the process as a general state, [action] and [act] verbs present a more limited and specific view. [Action] verbs depict not a general or characteristic state but rather a coherent process. [Act] verbs present the activity in terms of a single constituent gesture. These distinctions are summarized in (I):

I. NONDETERMINED (General View) DETERMINED (Specific View)
   [activity] [action] [act]
   random process coherent process gesture

To see how some processes may be stylized as [activities], [actions] or [acts], consider the three sets of sentences in (II):

II. ACTIVITIES:

1) my ran'še xodili v teatr 'we used to go to the theater'
   we formerly went to theater
2) deti valjalis' v grjazi
   children rolled in mud

3) on kidal kamni v vodu
   he threw stones into water

4) on drožal ot xoloda
   he shivered from cold

5) ona prekrasno tancovala
   she splendidly danced

6) on pisal stat'i
   he wrote articles

7) oni ne čitali gazet
   they not read newspapers

8) deti kričali na ulice
   children shouted in street

'ACTIONS:

1a) my šli v teatr
   we went to theater

2a) on valilsja na postel'
   he rolled onto bed

3a) on kidal kamni v vodu
   he threw stones into water

4a) Ø

5a) Ø

6a) on pisal stat'ju
    he wrote article

7a) oni ne čitali gazetu
    they not read newspaper

8a) on kričal, čtoby my šli napravo
    he shouted that we go to right

'the children were rolling around in the mud'

'he was throwing stones into the water'

'he was shivering in the cold'

'she was a splendid dancer'

'he used to write articles'

'they didn't read any newspapers'

'children were shouting in the street'

'we were on our way to the theater'

'he fell into bed'

'he was throwing a stone into the water'

'he was writing the article'

'they weren't reading the newspaper'

'he shouted for us to turn right'
Sentence (1) can refer to a prior custom ('we used to attend the theater'), a mode of locomotion ('we used to walk to the theater, [but now we drive]') or, without the adverb, to a round-trip ('we went to the theater'). Sentence (1a), however, denotes a coherent, ongoing process ('we were on our way to the theater'). The two verbs xodit' and idti 'walk, go' invariably denote general or characteristic [activity] versus coherent [action] even in those figurative usages where, because of the semantics of the situation, only one of the verbs can be used, cf. Gallant (1979).

The verbs in sentences (2) and (2a) are semantically more differentiated. Sentence (2) depicts a series of rolling movements (general non-directed activity), while sentence (2a) depicts, as it were, one roll in one direction, the [action] of falling over.

The verbs in sentences (3) and (3a) are identical; one senses, however, a difference in meaning. Sentence (3) can be read as a kind of activity ('he was engaged in throwing stones [as opposed to some other kind of activity]') or as multiple activity, dejstvie v neskol'ko priemov, ('he was throwing stones one after the other into the water'). Sentence (3a), with a singular object, can be read only as an ongoing [action] ('he was in the process of throwing a stone into the water'). If the verb in (3a) is conceived as an [action], then even with a plural object it denotes one coherent movement ('he was throwing the stones [all of them at once] into the water'). The verb in sentence (3b) is marked by its suffix as denoting a unitary event, rather than a general activity or an ongoing process. Here again, the object can only be a specific one ('he threw a [specific] stone') or ('he threw the stones'). Because of its semantics, the verb in (3a) is perfective in aspect, which in Russian means that it cannot be used in the present tense; it cannot represent an ongoing process.

The verbs in sentences (4) and (5) denote kinds of motion which cannot be represented as coherent [actions], i.e., cannot denote motion proceeding from place to place. To an English speaker this restriction is perfectly understandable in the case of drozhat' 'shiver, tremble', but odd in the case of tancevat' 'dance'. In Russian, one cannot say something like *oni peretancevali yerez ploščadku ('they danced across the floor'), because the Russian verb tancevat' denotes a kind of activity.
rather than a means of locomotion. In English one can say *they danced across the floor and out onto the veranda*, because the English verb *dance*, unlike Russian *танцевать*, is optionally specifiable in terms of the feature [directional], the specification of which opens up the possibility of further specification in terms of adverbs and prepositional phrases manifesting specific kinds of direction. Since the Russian verb *танцевать* denotes exclusively an [activity] it cannot be specified for directionality. A result of this is that with prefixes, such as *поперек 'across'*, it cannot have a directional sense. The notion of spanning a plane depicted in *поперек 'across*' cannot be given a spatial interpretation, but rather only a directional or quantificational one. The verb *поперетанцевать*, literally *'dance across'*, can have only the meaning of distribution (*поперетанцевать* vs *танец 'dance all the dances [one after another]*') or of exceeding someone else (*мы поперетанцевали 'we out-danced everyone else'*). We see in this brief example how the view of the process denoted by the verb determines its semantics in a consistent fashion.

The verb in sentence (4), *дрожать 'shiver'*, can be viewed either as a state of complex [activity] or as one complex [act], as in sentence (4b). We shall see later that verbs such as *дрожать 'shiver'* differ consistently from those like *кидать 'throw'*. Both verbs can be stylized in terms of single constituent [acts], e.g., on *кинул 'he threw', on *дрогнул 'he shivered'*. But only verbs like *кидать* can be stylized as coherent [actions], e.g., on *кидал 'he is making a throw'. The reason for this restriction is that while verbs like *кинуть 'throw',* denote simple repeatable acts presentable either as a single act (*кинуть 'делать кидок [make a throw]'*) or as a multitude of acts (*кидать 'делать кидки' [make a series of throws]*) , verbs like *дрожать 'дрогнуть' denote complex behavior, whether or not it is presented as a single [act] or as general [activity]. English reflects this kind of difference in verbs such as *throw, jump, shout, shiver, tremble: one can say make a throw, take a jump, give a shout; but not *give a shiver, *give a tremble. Verbs such as *throw, jump and shout denote simple acts or activity composed of repeated acts. But verbs such as *shiver and tremble denote complex activity which even when presented in terms of one constituent gesture (he shivered/trembled [once]) remains complex. The situation is precisely the same in Russian. The verbs *кинуть 'кидать' and бросить 'бросать', both meaning 'throw', as well as *прыгнуть/прыгать 'jump' and *крикнуть 'кричат' 'yell', all denote simple, repeatable acts and are associated with nouns which denote one simple act (*кидок 'a throw', *бросок 'a throw', *прыжок 'a jump, крик 'a yell'). Unlike the English verbs *shiver and tremble*, the inherently complex Russian verbs *дрожать 'дрогнуть' and -тrep(т)нуть['сja]/[тrepetат]'[сja] are not associated with what could be called semelfactive nouns: the nouns *дрожание 'shivering' and треметь 'trembling' cannot refer to one act. This distinction between verbs denoting simple versus complex acts and activities will be crucial to an understanding of their behavior with prefixes. We shall see that verbs which can denote simple acts or coherent actions involving motion (i.e., *кинуть 'кидать', бросить 'бросить', прыгнуть 'прыгать'), like their English counterparts *toss, throw and jump*, are directional with prefixes (or verbal adverbs in English); but verbs which denote only complex acts and complex activities involving motion (i.e., *дрожать 'дрогнуть', -тrep(т)нуть['сja]/[тrepetат]'[сja]), like their English counterparts
shiver and tremble, cannot be directional. Here again we see that the semantics of the verbal base determines the manner in which the predicate can be elaborated. (For further discussion, see Gallant [1979] and Isačenko [1960].)

The verbs in sentences (6) and (6a) are identical, but here too one senses a difference in meaning. Sentence (6) characterizes its subject in terms of a general [activity]: *on pisal stat'ì* (with stress on the object) means 'he wrote articles, he was an article writer'. Sentence (6a), on the other hand, presents a coherent [action]. With a plural object, the sentence *on pisal stat'ì* (with stress on the subject) means 'he (was the one who) wrote the articles'. English expresses the difference by omitting or supplying a definite article. The general, generic [activity] verb *pisat'* ('be a writer of') cannot be used with a singular subject, unless it can stand for a mass concept, e.g., *on pišet prosu* 'he writes prose'. English has somewhat more freedom to create mass nouns (e.g., one can say *he drives truck*, but not *he drives car*), but neither English nor Russian can form such sentences as *on pišet roman, on pišet stat'u* '*he writes novel, *he writes article'. The more specific [action] verb (6a) *pisat'* 'be in the process of writing' can, however, be used with a singular object or a definite plural object. The Russian verb *pisat'* can in slang be viewed as a single [act], cf. *pisnut'* 'drop a line': *pisi mne iz Kiev* 'drop me a line from Kiev'.

The verb in sentence (7) makes a categorical statement ('they were not newspaper readers'). The object is in the genitive after the negated verb just because the verb denotes a general or generic [activity]. The verb in (7a), presents a coherent [action] performed on specific singular or plural objects. The specificity of the object is determined to a large degree by the specificity of the verb, and it is this specificity which allows it to stand in the accusative after the negated verb, cf. Timberlake (1975).

The verb in sentence (8) presents the activity of making sounds, The verb in (8a), however, presents a more specific notion, the production of an utterance. The verb in (8b) views the activity in terms of a unitary event, a single, simple [act].

2. We have seen that the distinction between general [activity] and specific [action] and [act] is reflected in the morphology of several of these verbs. These morphological distinctions have been extensively discussed in Russian linguistics under two separate rubrics. The distinction between [activity] and [action] expressed in the morphology of a small group of verbs denoting kinds of locomotion has been discussed as a distinction of determinacy. These pairs of imperfective verbs have been described as expressing a difference in directionality: the determined imperfective (e.g., *idit*') is unidirectional, insisting on a view of the action as proceeding in one direction, while the nondetermined imperfective (e.g., *xodit’*) does not insist on a unidirectional interpretation, cf. Isacenko (1960) for discussion and references. This definition seems somewhat too precise, because the feature [unidirectional] can account for only the literal meanings of the verbs, cf. Gallant (1979). I would rather view the distinction in terms of the features [activity] and
[action] and say that forms like *idti* tend to be unidirectional just because they denote coherent movement.

The other morphological distinction that we have noted is that of semelfactivity, one-time action, overtly expressed in what I have called [act] verbs. This distinction is not usually discussed together with that of determinacy, because of the fact that semelfactive/nonsemelfactive pairs differ in aspect: semelfactives are perfective. I think, however, that one can unite the two traditional concepts of determinacy and semelfactivity and also include those verbs which in Russian do not express these distinctions morphologically. An attempt at such an integral view is represented in the following chart (III).

### III. NONDETERMINED DETERMINED

<table>
<thead>
<tr>
<th>[ACTIVITY]</th>
<th>[ACTION]</th>
<th>[ACT]</th>
</tr>
</thead>
</table>

#### I.

<table>
<thead>
<tr>
<th>1) <strong>xodit'</strong></th>
<th><strong>idti</strong></th>
<th>Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>walk, go</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2) <strong>ezdit'</strong></th>
<th><strong>exat'</strong></th>
<th>Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>ride, go</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3) <strong>valjat'(sja)</strong></th>
<th><strong>valit'(sja)</strong></th>
<th>Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>roll around</td>
<td>tip over, fall</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4) <strong>voročat'</strong></th>
<th><strong>vorotit'</strong></th>
<th>Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>move around, turn over</td>
<td>turn</td>
<td></td>
</tr>
</tbody>
</table>

#### II.


<table>
<thead>
<tr>
<th>5) <strong>kidat'</strong></th>
<th><strong>kinut'</strong> (kidok)</th>
</tr>
</thead>
<tbody>
<tr>
<td>throw</td>
<td>a throw</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6) <strong>prygat'</strong></th>
<th><strong>prygnut'(pryžok)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>jump, hop</td>
<td>a jump, hop</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7) <strong>brosat'</strong></th>
<th><strong>brosit'</strong> (brosok)</th>
</tr>
</thead>
<tbody>
<tr>
<td>throw</td>
<td>a throw</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8) <strong>skakat'</strong></th>
<th><strong>skaknut'(skažok)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>jump, gallop</td>
<td>jump a jump, leap</td>
</tr>
</tbody>
</table>
Section I lists pairs of imperfective verbs which display the distinction between [activity] and [action]. In (IA) I have listed two of the fourteen pairs usually discussed in terms of the category of determinacy, defined as a distinction in unidirectionality. If one treats forms such as *idti* as denoting coherent processes which may or may not involve locomotion through space, then it is possible to account for most of their figurative meanings as well. For example, the verb *idti*, like English *run*, depicts not only motion through space, but a variety of abstract coherent processes. One of its usages describes the functioning of mechanisms, e.g. *časy idut* 'the clock is running'. In those figurative phrases where the nondetermined [activity] verb *xodit* can also be used, it refers not to the actual coherent process but rather to the general ability of the mechanism to function at all, e.g., *časy xodjat* 'the clock works'. These distinctions are illustrated in the sentence *časy ne isporceny, xodjat, a teper' ne idut, ne zavedeny* 'the clock isn't broken, it works; but it isn't running now, it isn't wound'.

The verbs in (IB) are two of about a dozen pairs of imperfective verbs which could be added to the traditional group of verbs of motion.
Like the verbs of motion, these verbs display the distinction of general or random motion versus coherent, hence often unidirectional movement. In these verbs, however, the distinction of determinacy is the basis rather than the sum of their semantic difference. They are semantically much more differentiated than the verbs in (IA).

Section II contains perfective semelfunctives and imperfective non-semelfactives. Isačenko (1960) has shown that verbs like brosit', which are correlated with semelfactive nouns can be treated as semelfactives, even though they are not marked through suffixation as being so. The forms boltat' and drožat' denote inherently complex activity and therefore cannot be used as [action] verbs. They are also, as we shall see never directional with prefixes.

Section III lists two [activity] verbs which cannot be used to refer to coherent, directional movement.

Section IV lists three verbs in which the distinction between [activity] and [action] is not usually expressed. One verb, čitat', has a variant, -čest', a bound stem in the modern language. We shall see that prefixal derivatives with this form are more restricted in meaning than those with the stem čitat'.

3. Before we examine the behavior of these 15 verbs with various prefixes, I would like to sketch very briefly a theory of verbal prefixation which is elaborated in some detail in my book (Gallant [1979]). I would propose the idea that prefixes manifest the selection of variable semantic features of the verbal base. What this means is that prefixes do not add meaning to the verb but rather reveal the selection on the part of the speaker of certain of its semantic possibilities. We have seen, for example, in the case of the verb tancevat' 'dance' that one cannot add any one of the so-called directional prefixes of Russian to give it a directional meaning. This means that the semantics of the verbal base governs the selection and interpretation of the prefix, and not vice-versa.

I would conceive verbal prefixation as a device for representing the process denoted by the verb in relationship to an abstract conceptual system depictable in geometric terms as a framework consisting of two primary axes, a [horizontal] and a [vertical], plus derivative [plane]s and [volume]s. This conceptual framework constitutes an integral system of limits, describable in terms of semantic features -- limits which in combination with other features of the verbal base are interpretable as spatial, temporal or quantificational surfaces, limits or thresholds. This cognitive geometry is depicted in (IV).
IV. THE PREFIXAL FRAME

<COMPARATIVE>
Prefixes can be represented as a combination of two kinds of features: frame features, such as [horizontal], [vertical], [volume], [plane], and interior [domain] (the shaded figures), describe that part of the framework which the process is viewed in relation to; relational features, such as [transgression], [spanning], [imposition], [withdrawal] and [rapprochement], state the relationship of the process to the framework of surfaces and limits.

The cardinal axes of the prefixal frame, the [horizontal] and [vertical] are semantically distinct. It is important to note that these axes do not represent literal surfaces extending left/right and up/down. Rather, they represent kinds of surfaces, or limits, or thresholds. The [horizontal] seems to represent a natural limit: prefixes which state relationships to it tend to be evaluative in connotation. The [vertical], on the other hand, seems to represent a conventional limit: prefixes which involve the [vertical] have more to do with comparative concepts such as the extent or degree of the action and its distribution among its participants.

In this brief paper I will deal with only four prefixes: \( \nu \nu - \), which manifests the speaker's view of the process as figuratively transgressing a horizontal; \( \sigma \sigma - \), which views the process as transgressing a different kind of limit, i.e., the vertical; \( \nu \nu - \), which presents a view of the process as spanning a plane; and \( \nu \nu - \), which denotes spanning a plane whose interior domain is significant. The features given for the prefixes \( \nu \nu - \) and \( \nu \nu - \) are adapted from Flier (1975).

4. Verbs from chart (III) are illustrated with the prefix \( \nu \nu - \) in chart (V):
V.

VZ-

 [+ horizontal ]
[+ transgression]

<table>
<thead>
<tr>
<th>ONSET (turbulent activity)</th>
<th>UP (action/motion)</th>
<th>UP (act/motion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABRUPT ONSET (turbulent action)</td>
<td>ABRUPT GESTURE (turbulent act)</td>
<td></td>
</tr>
</tbody>
</table>

1) vsčijti
   go up

2) vs"exat'
   go up

3) vsvalit'
   pile on, heap blame

4) vsvorotit'
   turn up

5) vskinut'
   toss up

6) vsprygnut'
   jump up

7) vabrosit'
   throw up

8) vskočit'
   jump up

9) vsbolťat'
   stir up (cause to be in motion)

10) vskričat' "ot boli
   shout with pain

15) vskričat' čto
    shout something

vsřiknut'
   give a shout
The most striking feature of \( vz^- \) is that it occurs with very few verbs. As we have seen, \( vz^- \) depicts a view of the process as transgressing the marked axis of the limitational framework. The semantics of those verbal bases which contain the \( vz^- \) features is limited by and large to those verbs which denote various kinds of eruptive disturbances, e.g., those denoting kinds of surface disorders ('plowing': \( vspazat' \), 'cutting': \( vrezat' \), 'swelling': \( vspuznut' \), 'disarrangement': \( vstormoZit' \)) and states of physical and mental agitation (\( vspvolnovat'sja \)). When [action] and [act] verbs denoting motion are further specified for the \( vz^- \) features, they denote motion in a marked direction, i.e., 'up', the direction contrary to gravity. \( vz^- \) does not combine with [activity] verbs denoting motion unless they are already marked for particular turbulence, e.g. (9) \( vzbol'tat'(sja) \) 'agitate'. Note that the [act] verbs listed in (9) and (10) are not directional with \( vz^- \): these are precisely the verbs which cannot denote a simple [act] or a coherent [action]. The verbs listed in (15) represent sounds or utterances and therefore cannot be directional when prefixed. An indication of the fact that the semantics of the verbal base determines the prefixes with which it can combine can be seen in the interesting fact that the prefix \( vz^- \) occurs in only those verbs of 'sound' which denote sounds produced by animate beings and among those only loud or expressive sounds, e.g., \( vzrevet' \) 'roar', \( varydat' \) 'sob'. With these [activity] verbs, it denotes the threshold of activity, a sudden or abrupt onset.

Verbs with the prefix \( za^- \) are listed in chart (VI):
VI.

ONSET
(activity)

EXTREME DEGREE
(patient)

BEYOND
(goal of motion)

BEYOND
(goal of act)

DEVIATION
(path of motion)

FIXATION, COVERING
(patient)

1) zaxodit'
begin walking
zaxodit'sja
walk too much

2) za'ezdit'
begin driving
za'ezdit' lošad'
drive a horse to exhaustion
za'ezdit'sja
drive too much

3) povar zavaljal testo
the chef began rolling
the dough
zavaljal'sja v posteli
do položanja
lie around in bed till noon

4) zaprygat'
begin jumping
zaprygnut' za červu
jump beyond the line

5) zas zakat' v ty
neprijetelju
ride off behind enemy lines

6) on opjat' zapisal
he's started writing again
zapisat' svoi mysli v tetradi
write one's thoughts in a notebook
zapisat' vsju stranicu karakuljami
cover a whole page with scribbles
ja zapisalsja, šeja bolit
I've been writing too long, my neck hurts
Za-\textsuperscript{,} which represents transgression of the unmarked axis, occurs with an enormous number of Russian verbs and specifies them essentially as to the degree of action. With verbs denoting coherent or noncomplex movement, the prefix is read directionally to mean 'beyond' or 'behind'. This interpretation is dependent upon an understanding of the limit denoted by the prefix to refer to the [goal] of the movement. If it is felt to refer to the [path], then the movement is interpreted as transgressing the path or prior direction: forms such as za\textsuperscript{fijti} can be interpreted as meaning 'stop by'. With some [action] verbs, such as those illustrated in (3) and (13), the prefixed form is interpretable as denoting the idea of covering (with verbs denoting movement, e.g., za\textsuperscript{valijt}'roll over') or the idea of fixation (with verbs such as pis\textsuperscript{at}'write' which already convey the notion of composition). With these verbs the process is interpreted as being applied to the [patient].

With [activity] verbs, on the other hand, za- is interpreted differently. With nonreflexive intransitive verbs, i.e., with verbs which are not limited by the overt expression of a [patient], the limit expressed by za- is interpreted as the threshold of activity, and the verb is felt to be inchoative. If the verb is transitive, e.g., (3) za\textsuperscript{alajfal testo} 'began rolling dough', the prefixed form can be interpreted as inchoative only if the object is felt to be an internal one, as it is in such generic usages as val\textsuperscript{jjat} testo 'roll dough, engage in dough rolling'. Otherwise, with [activity] verbs involving expressed patients (either as a direct object or with the reflexive particle -\textsuperscript{sja}), the limit expressed by za- is felt to apply to the patient, and the verb is interpreted as activity affecting the patient to an extreme degree, e.g., (2) za\textsuperscript{ezdit}'lo\textsuperscript{zad} 'drive a horse to exhaustion', za\textsuperscript{ezdit}sja 'become absorbed in the activity of riding or driving to such a degree that one doesn't notice the time or that one finally becomes exhausted'. Whether the extreme degree of involvement is pleasurable or painful depends on how the sentence is further elaborated.

Unlike the prefixes vz- and za-, which refer to the transgression of a limit, the prefixes pere- and pro- refer to the spanning of a plane. Pere- 'across' is unspecified for the notion of interior [domain]; it means just 'get to the other side'. Pro- 'through', on the other hand, is specified for [domain] and focuses on what, so to speak, one must go through to reach the other side. These two prefixes are nicely contrasted in the famous Russian proverb \textsuperscript{aizn}' pro\textsuperscript{zit} ne pole pere\textsuperscript{jit}: 'to get through life is not as easy as crossing a field'.

Verbs with the prefix pere- are illustrated in chart (VII):
VII.

REPETITION
(activity, patient)

EXCESS DEGREE
(activity, patient)

1) možno mne perexodit’?
may I take the move over
again?

my perexodili vse
okrestnosti goroda
we went to all parts
of the city

2) esženo-pereezženo k nemu
za den’gami
everyone comes (repeatedly)
to him for money

3) perevoročat’ vse vešči
v sunduke
turn everything over
in the trunk (disarrange)

7) perebrosat’ vse kamni v vodu
throw all the stones into
the water (one after
another)

9) pereboltat’ rastvor
shake up the solution thoroughly

11) peretancevat’ ešče raz val’s
dance the waltz over again

peretancevat’ vse tancy
dance all the dances

peretancevat’ vsex
outdance everyone else

12) mal’čik pereguljal i prostudilašja
the boy was out walking too long
and caught cold

14) on peresčital vse knigi
v nasej biblioteke
he has read through all
the books in our library

15) on perekričal vsex drugix
he outshouted all the others

PERE-

[ + plane ]
[ O domain ]
[ + spanning ]

ACROSS
(path, patient)

REPTITION
(action)

perejti cerez ulicu
go across the street

on pereezhal pole
he drove across the field

on pereezhal sobaku
he drove over a dog

perevorotit’ bot’no go s
odnogo boka na držkoj
turn the patient over from
one side to the other

perebrosit’ kamen’/kamni čerez zabor
throw a stone/the stones over the
fence (one movement)

on pererečil/perečel pis’mo
neskol’ko raz
he read the letter over
several times
With verbs denoting coherent or noncomplex motion the prefix is read directionally, and the verb means 'movement across'. The [plane] spanned can be taken to refer either to the [path] of the movement, e.g., (2) on pereexal pole 'he drove across the field', or to the [patient] subjected to the movement, e.g., (2) on pereexal sobaku 'he drove across (ran over) a dog'. With [action] verbs not denoting movement, e.g., (14) perestat', the [plane] spanned can refer to the action itself, and the prefixed verb can denote repetition.

[Activity] verbs prefixed with pere- can denote a repetition of the activity or a repetition of the patient of the activity (e.g., [11]), if the patient is not felt to be external to the activity. Otherwise, with patienial verbs the sense of the prefix is that of degree. It can have a distributive meaning, e.g., (7) or the second sentence in (11), and be interpreted as activity affecting all the patients one after the other in series. Or it can denote exceeding the normal degree of activity, e.g., (12) 'the boy walked, strolled too long', or exceeding others in the performance of the activity, e.g., (15) 'outshout'.

Verbs with the prefix pro- are illustrated in chart (VIII):
VIII.

DURATION
(activity)

EXHAUSTION
(activity, patient)

1) vše utro proxodil po lesu
he spent the whole morning walking around in the forest

5) vše utro prokidal sneg
s kryší
he spent the whole morning shoveling snow off the roof

9) proboltaj krasku xoresh'ko,
rovnee vykrasiš'
shake up the paint really well and it'll go on more smoothly

14) ona pročitala vsju noć'
she read all night long

15) rebenok prokričal vsju noć'
the child cried all night

dali emu prokričat'sja
they let him cry himself out

PRO-

[+ plane ]
[+ domain ]
[+ spanning ]

THROUGH
(path, measure)

PAST
(path)

PAST
(action)

MISS, MISTAKE
(goal, patient)

on prošel čerez dvor
he went through the court

on prošel dva šaga
he took two steps

on prošel mimo nix
he went past them

dožd' prošel
the rain was over

on sagovorilešja i prošel
povorot dorogi
he got talking too much and missed the turn

on prokinul kamen'
mešdu sue'ev
he threw the stone between the branches
For the prefix pro- the interior domain of the plane which the process spans is marked. With [action] and [act] verbs, then, the normal interpretation of the prefix is 'through'. Other interpretations are possible, depending on what features of the predicate the prefixal features are associated with. If focus is on the [path] of the movement, the verb is interpreted as depicting motion past an object. If that object is felt to be the natural [goal] of the movement, then the connotation is one of missing the object, e.g. the last sentence under (1) 'he missed the turn'. If focus is on the process itself, as in don'd'prozel 'the rain passed', then the connotation can be that of termination.

In verbs which do not denote motion the process is felt, as it were, to span the patient, e.g., (14) 'she read his letter through', (15) 'the rooster uttered a cry, revealing himself'. The sentence on progovorileja is particularly interesting: it presents the action of uttering something as exceeding the intentions of the utterer.

[Activity] verbs prefixed in pro- express a thoroughness of degree. They have a perdurative sense when accompanied by expressions of [measure], e.g., (1) 'he walked the whole morning through': the activity is presented as spanning the length of time. Or they have an exhaustive sense, as in (15) 'they let the child cry himself out', i.e., perform the activity until it (the activity) is exhausted.

5. Summary. Our discussion of three features representing views of verbal processes has shown that the two traditional grammatical categories of determinacy and semelfactivity can be combined under one rubric. And the examination of the behavior of these three kinds of verbs under prefixation has given some evidence that it may be possible to describe morphemes in terms of consistent features rather than positing separate lexical items to correspond to different usages of the same forms.

NOTES

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2) The unprefixed trepetnut' is attested in L. A. Bykova, Nesootnositel'nuye glagoly nesoversennogo vida v sovremennom russkom jazyke, Trudi filologichnogo fakul'tetu XDU, tom 6, Xarkiv, 1958 (cited in Isačenko [1960:260]).
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ON THE SOUND SHAPE OF LANGUAGE

Linda R. Waugh

1. It has been recognized, at least since the time of the medieval doctrine de modis significandi, (modes of signifying) that language has double articulation (articulatio prima et secunda). Briefly, this means that language has two types of signs, one of which is purely differential or 'distinctive', and the other of which is directly significative and meaningful. In the case of the first type of sign (e.g., distinctive features - also phonemes, syllables), the signified of the sign has simple 'mere otherness'. In the case of the second type, (e.g., word - also morphemes, phrases, clauses, etc.), the signified has what Sapir called [[1925] 1949:34] "singleness of reference"; it conveys a specific unit of information. The distinctive features (the smallest signs of the first type) are significative only in the sense that they differentiate words of unlike meaning, that they carry (mere) otherness: they are sense-discriminative, not sense-determinative. (See Jakobson, Fant & Halle; Jakobson & Halle; Jakobson 1968; and Jakobson & Waugh.) In fact, the attribute 'distinctive' in the term, 'distinctive feature' means the sense-discriminative properties of sound: those properties which are capable of differentiating between words of different meaning. The 'distinctive features' then are those attributes of sound which signal that a given word in which they occur is, with a probability of near-to-one, different from any other word in the language endowed with a different property. Thus, in English, given distinctive features can differentiate shows from showed (continuancy), zeal from deal (continuancy), mad from bad (nasality), tailor from sailor (continuancy), mobility from nobility (gravity), fashion from passion (continuancy), in the following: "It shows the strange zeal of the mad sailor with neither nobility nor fashion." "It showed the strange deal of the bad tailor with neither mobility nor passion."

The proviso "with a probability near-to-one" was added because of the possibility of homonymy (e.g. pair and pear in English) in a given linguistic system. Homonymy limits the sense-discriminative capacity of the features to a probability near to one, but does not cancel this vital function. There exists also the possibility of doublets, e.g. in English either (/i/) vs. either (/ay/) or Russian škap vs. škaf 'cupboard'. And yet, because of the sense-discriminative use of the features, there is a tendency for the doublets to be interpreted as evidencing some difference in meaning. In English, therefore, the difference between either (/i/) and either (/ay/) generally denotes a difference in style of speech or in social background (either) with /ay/ is felt to be more prestigious. This can be seen in the song by Ira and George Gershwin: "you say eether and I say eyether, You say neether and I say nyther...". In Russian, on the other hand the use of word-final /f/ on a noun (škaf) signals that the word is still felt as a foreignism.
It is on the basis of the sense-discriminative capacity of the features that neutralization takes place in certain environments, for neutralization is nothing more than the suspension in a given environment of this sense-discriminative capacity -- it is the loss of the ability of the sense-discriminative features to be sense-discriminative, hence the loss of the feature. In Russian, for example, in the word-final, the voiceless opposition in obstruent consonants is neutralized and an "incomplete" phoneme (see Jakobson & Waugh 1979) results. That these incomplete phonemes have no distinctive voicelessness is evidenced by the fact that there are no words in Russian which may be differentiated solely by the presence or absence of voice (e.g. [p] vs. [b]) in the word-final. The implementation of these incomplete phonemes by the voiceless member of the lost opposition is due to the unmarkedness of voicelessness as against voicing.

It is well known, that while distinctive features signal that two words are different in meaning, they do not signal what the meaning difference is: distinctive features do not (at least in their primary usage) signal meanings, if by 'meaning' we denote 'information more specific than otherness'. And it is in this sense and in this sense only, that the distinctive feature is 'meaningless' but the word is 'meaningful': according to the type of signified which each sign has, not the fact of having one. All linguistic signs, from discourse to the distinctive features, have a signified; they only differ as to the type of signified. Distinctive features, then, signal only 'mere otherness': in that sense they have no singleness or reference and carry no unit of specific information; words on the other hand have a singleness of reference and do carry a unit of specific information.

Since all the distinctive features have 'mere otherness' in their signifieds, it follows then that for them, the structure, the system of relations based on oppositional equivalences and differences, is found only in the signifier, not in the signified (cf. Jakobson 1972:78). The signified remains undifferentiated, being merely differential, while the signifier is differentiated according to binary, oppositional, hierarchical laws of patterning. The distinctive features, then, reflect that area of language where the oppositional structure inheres in the signifier and where the signified gives only 'differentiatedness'. On the other hand, morphemes, lexical items, phraseology, word order, etc. all are part of that area where the structure inheres in the signified, according to binary, oppositional, hierarchical laws of patterning, and where that structure is coordinated with formal properties as well.

Since the distinctive features are only sense-discrimination, they have an indirect, a mediated relation to meaning: it is only through their use as the signifier of another sign (e.g., a word) that they may be associated with meaning, while the word itself has a direct, an immediate relation to meaning. Thus, signs with a directly significative signified, are made up, in their signifier, of signs which themselves do not carry meaning. This creates a dialectic tension, an inherent asymmetry, a sharp discontinuity between the signifier and the signified or any grammatico-semantic sign, a tension which is resolved by the unity of the sign, on the one hand, but on the other hand allows for the formation of a large vocabulary. We have in a very real sense, 'tools to make tools': the
This is not to say, however, that the distinctive features are merely the smaller units out of which the larger units are built. Clearly, there is no comparison of size to be made between distinctive features and grammatico-semantic features. In addition, in viewing the whole/part relationship which holds for linguistic signs in general, we see that, for the most part, wholes (e.g., words), in which structure inhere in the signified are made up of smaller parts (e.g., morphemes), which themselves are also directly meaningful. There is, for these two, no disparity between the whole and its parts. It is only when one goes from the morpheme to the phoneme or the distinctive feature that the discontinuity, the 'sudden jump', occurs. Thus, in the whole/part hierarchy of signs the 'descent' from morpheme to phoneme is not just (or not even) a descent from bigger to smaller, but from one type to another. In fact, it would be better to say that we are dealing here with two hierarchies: (1) discourse/utterance/sentence/clause/phrase/word/morpheme/conceptual feature, including all those signs which are directly meaningful; and (2) syllable/phoneme/distinctive feature, including all those signs which are only differential. Furthermore, the first hierarchy is basically in a whole/part relationship with the second, although some of the signs in the second hierarchy (e.g., phoneme) may be 'larger than' some signs in the first (e.g., morpheme), morphemes being potentially identifiable with a single distinctive feature or a combination of features (e.g., German hatte/hätte: past tense/subjunctive 2).

Moreover, these two hierarchies are correlated with the two major types of patterning in language: the 'sense-discriminative system', the area with signs like distinctive features, which have 'mere otherness', indirect signification, mediated relation to meaning, and oppositional structure in the signifier; and the 'grammatico-semantic system', the area with signs like words, which have 'singleness of reference', direct signification, immediate relation to meaning, and oppositional structure in the signified. This opposition of 'sense-discriminative system' vs. 'grammatico-semantic system', has, unfortunately, been widened metonymically to equate 'sense-discriminative system' with sound, or formal properties of signs, and 'grammatico-semantic system' with meaning in general or meaning properties of signs. Yet it is not at all the case that form (or sound) is always correlated with 'mere otherness', neither in language nor in other semiotic systems. While some formal structure may, in other systems, also evidence duality (e.g., the genetic code, cf. Jakobson & Waugh), it is equally obvious that many 'formal' structures (e.g., systems of clothing, kinship systems, food systems, etc.) do not evidence 'duality' in the strict sense meant here. In these latter cases, while differences of form can of course be discerned, they are also directly meaningful. Thus, their analog is not with the sense-discriminative system at all but rather the grammatico-semantic system. And if we turn to language structure itself, there also can be no straightforward equation of 'sound' (or properties of sound) with 'units with mere otherness', for many phonic properties are directly meaningful. This can be seen most clearly if we study such obviously meaningful elements as intonation contours (cf. Jurgen-Bunings & Van Schooneveld; Ladd), emphatic stress, phrasing and pausing, etc. But it holds also for properties which look at first glance like the distinctive
features and yet are quite different from them, not necessarily with regard to form but rather with regard to function.

2.1 In the last few years, it has become clear through research done from such varied points of view as language structure, discourse analysis, variation theory, child language acquisition, speech perception, dichotic experiments, electric tracings of the brain, temporary inactivation of one hemisphere of the brain, etc., that the speech sound as a whole is an artifact made for speech and invested with communicative import. In particular, it has been found that the speech sound is a multi-layered, hierarchized signal with a variety of components which are invested with a variety of functions, only one of which is 'mere otherness'. It is in this sense that the speech sound can be said to be multifunctional, for the phonic properties which make up the speech sound, while they coexist in the sound, nevertheless evidence a variety of functions. In particular, there exist redundant features, expressive (or stylistic) features, configurative (demarcative and culminative) features, and physiognomic features. (See Trubetzkoy [1939] 1969; Jakobson, Fant, & Halle 1952; Jakobson & Halle; Jakobson & Waugh 1979.) In addition, all of these, rather than having 'mere otherness', are directly significative in various ways.

Far from being ancillary or superfluous, the redundant features indexically (see Jakobson 1968) inform about the presence or absence of given distinctive features which are either simultaneous in the given bundle or adjacent in the given sequence (e.g., in English, nasality in the vowel informs about an adjacent nasal consonant: in vs. it, id). In this sense, the redundant features are inherently different from the distinctive features because they do have "singleness of reference": they inform about specific distinctive features. And they do not have "mere otherness", because they are not used to differentiate directly two words or morphemes of otherwise identical form. Nor are they relatively autonomous in their patterning: rather, their patterning is dependent upon the patterning of the distinctive features. So, in the hierarchy of percepts contained in the sound, the distinctive features perform the primary function while the redundant features perform the secondary one. Of course, in some cases the redundant features may substitute for the distinctive features, but this is only in special modes of speech (especially in elliptic speech).

In like fashion, the configurative features (see in particular Trubetzkoy [1939] 1969) fulfill a directly meaningful role, since they show either the unity (culminative features) or the limits (demarcative features) of meaningful units such as morphemes, words, phrases, etc., which they occur in. They, like the redundant features, are indexical to given grammatico-semantic units. (It should be pointed out that the phonic properties which function as configurative features may also be used in a distinctive or redundant function in the same system.) It is in this sense that the word may exist as a 'phonological' phenomenon, given by specific properties in the sound. For example, in English, stress plays a culminative role in that it signals both the unity of the word and the number of words and word-groups in any given syntagm. In some languages, the device known as vowel harmony fills the similarly
culminative role of indicating the unity of the word. In Czech, stress plays a demarcative role, indicating the beginning of the word. Of course, it is also possible to have negative signals of word boundaries; in Russian, the presence of a voiced consonant is a (negative) signal that no word boundary is present after the consonant, because in word-final position neutralization of the voiced~voiceless opposition occurs. (For other examples of configurative features, see Trubetzkoy [1939] 1969, and Jakobson, Fant & Halle.)

Expressive (or stylistic) features indexically inform about, e.g., the placement of an item in a special subset of the vocabulary (loan words; exclamations) or the subjective attitude of the speaker (anger; despair; enthusiasm). There existed in 19th century French, for example, an affected manner of speech whereby many Parisian women pronounced [œ] and [a] almost as [œ] and [œ] (Passy 1989: 248). Special items of vocabulary such as interjections often use sounds and clusters of sounds which don't occur otherwise in the language: e.g., interjections spelled as tut, brr, phooey in English. (Cf. Bolinger 1963:122f) As Sapir pointed out ([1915] 1949:188), in certain North American Indian languages, "sometimes sounds are found in songs which do not otherwise occur in the language." Likewise, in Russian, the presence of a non-palatalized consonant before /e/ signals special vocabulary items such as loan words (e.g., /kafe/), acronyms (e.g., /nep/), or names of letters of the alphabet (e.g., /be/). In English, vowel length signals the subjective involvement of the speaker: it's so-o-o-o big! Likewise, in English, the aspirated release of a word-final tense stop (e.g., [θɔph], [nɔtʰ], [bækʰ]) is a signal of a special style of speech (e.g., careful pronunciation, emphasis of various degrees). In fact, at least six different emotive variants have been discerned by Fónagy (1976) for Hungarian sound sequences: anger, hate, sadness, joy, tenderness, irony.

The physiognomic features (identifiers) inform about and are overtly indexical to the age, sex, geographical and ethnic origin, social class, education, kinesthetic type, personality, etc., of the speaker. Here there are two major things to be discerned: what constituents in the speech sound carry these types of information for the addressee; and which of these are consciously or subliminally regulatable by the addressee. For example, many speakers are adept at using (or on the contrary not using) certain elements which communicate their geographic or ethnic origin (cf. Labov 1972). Likewise, the general pitch of the 'voice', the specific ways of articulation, etc., may indicate a male or female speaker.

These last two types of features-- the expressive and the physiognomic--are not necessarily binary (whereas the distinctive, redundant, and configurative features are all binary) and hence evidence "gradience" (Bolinger 1961: see also Labov 1964, 1972).

The 'barrier' between each of these functions of phonic properties, while it may not be absolute, is certainly basic enough to create great difficulty when speakers try to change the properties from one function to another. Thus, in English, as mentioned above, nasality in the vowels is redundant, while in French it is sense-discriminative (e.g. [boarjæ] 'bon a rien', [rjenafɛʁ] 'rien a faire', [bonami] 'bon ami'). Anyone who has
tried to teach French to native speakers of English knows how difficult it is for English speakers to learn the sense-discriminative use of nasality. Likewise, in Russian, sharpness (palatalization) or /r'/ is distinctive, while in Norwegian it is configurative (demarcative, being word-final); Norwegians seem to be unaware of its presence at all and have great difficulty in discerning and especially in producing /r'/ as a sense-discriminative element.

2.2 The difference between these various functional phonemic properties has also been confirmed by recent research on the brain (see Kumura 1967, and Balonov & Deglin). In the first place, as many linguists had already surmised, speech is processed differently in the brain from all other auditory phenomena, whether produced by humans, by animals, or by other environmental factors (see Balonov & Deglin 77ff). Secondly, the left hemisphere (the dominant one) is particularly well suited for the perception of distinctive and redundant features (Balonov & Deglin; Zaidel 1978) while the right hemisphere is more suited for the perception of the emotive and physiognomic features and other significative phenomena like intonation (Blumstein & Cooper 1972, 1974).

The recognition of all auditory stimuli outside of language is supervised solely by the right hemisphere (Balonov & Deglin: 77ff). Its inactivation does not affect the distinctive features, but has a totally destructive effect on all other auditory stimuli: noises of humans and animals, of industry, of transport, and of natural forces, as well as musical tones, chords, and melodies (cf. Gordon 1970; Mindadze et al. 1975), even in those cases when these auditory stimuli are quite familiar to the patient. Subjects with a temporarily inactivated right hemisphere were helpless when faced with the following auditory stimuli, which were perfectly recognizable as long as this hemisphere remained active: the ringing of a clock, singing birds, splashing water, neighing horses, a howling snowstorm, a roaring lion, a crying child, the clatter of crockery, peals of thunder, a grunting pig, the clank of metal, the call of a rooster, snoring, a barking dog, a lowing cow, the sound of a furnace, footsteps, a cooing dove, the rumble of a plane, cackling geese, a ringing telephone, the thundering of waves at high tide, etc. (Balonov & Deglin: p. 77). During the inactivation of the right hemisphere, the noise of applause was taken for the winnowing of grain, laughter was taken for crying, thunder was taken for an engine, the squeal of a pig was taken for the noise of a caterpillar tractor, the honking of geese was taken for the croaking of frogs, a dog barking was taken for the cackling of hens, the noise of a motorcycle was taken for that of an animal, etc. (pp. 80 ff.)

In addition, the inactivation of the right hemisphere renders the listener completely unable to recognize or even notice sentence intonations. The affective or emotive, intonations are (as one would have guessed) particularly likely to disappear, as are the emotive and physiognomic features. Thus, patients with a temporarily inactivated right hemisphere lose the ability to distinguish between men's and women's voices or to tell whether two utterances belong to one and the same speaker or to two different people, as well as to identify even the most familiar individuals by sound only; moreover, the patient also loses the ability to regulate his own voice in accordance with a given emotional situation. (see Balonov & Deglin: pp. 164ff, 171ff). The right hemisphere also acts as a "brake" or "censor": it exerts a "damping" influence on the language centers of
the left hemisphere (Balonov & Deglin pp. 145ff, 182ff, 186). This property may be correlated with the fact that the expressive features are also right-hemisphere phenomena.

Thus, the right hemisphere is used for all auditory phenomena outside of language, including natural phenomena and human-produced phenomena such as music, and in addition the emotive and physiognomic features, while the left hemisphere is particularly well suited for the distinctive and redundant features. The inactivation of the left hemisphere sharply obstructs the recognizability and reproducibility of distinctive features, redundant features, and the accentual design and internal structure of the word. Under the inactivation of the left hemisphere the network of distinctive features loses its stability and equilibrium, and the disintegration of this system in turn reveals a hierarchical order in the deficits suffered by patients. The most common types of confusion between phonemes are limited to one single distinctive feature, and the various features manifest different degrees of resistibility. In particular, the features which are learned early in child language acquisition and which disappear latest in aphasics, are those which remain most viable under deactivation of the left hemisphere. They are least prone to disappear. (Balonov & Deglin 132, 142, 181) In addition the hierarchical relation within any given feature, the relation known under the term markedness, is also confirmed by these studies with the unmarked value being more resistant than the marked.

At the end of their very interesting monograph, Balonov & Delgin conclude with the following hypothesis:

"The mechanisms of sound production and the auditory functions of the right hemisphere prove to be considerably older than the mechanisms of sound production and the auditory functions of the left hemisphere which secure speech articulation and the discrimination of speech sounds on the basis of distinctive features." (p. 194)

The asymmetric arrangement of the human brain and the development of the left dominant hemisphere have apparently been interconnected with the origin and growth of language, especially with distinctiveness (sense-discrimination), one of the dividing lines between human language and animal communication.

I might add here that more recent work by Russian investigators on the semantic system of language have proven to be equally fascinating. It seems to be the case generally that those properties of language which are binary, oppositional, and especially based on markedness are left-hemisphere phenomena, while those properties of language which are more holistic are right-hemisphere phenomena. Thus, not only distinctive and redundant features, but also grammatical meanings (both of morphological and of syntactic phenomena) are handled by the left hemisphere, whereas not only emotive and physiognomic features but also certain aspects of lexical meaning are handled by the right hemisphere. Furthermore, the left hemisphere seems to handle those phenomena which relate to future time, while the right hemisphere handles those phenomena which relate to present and past time. To take the terminology of Charles Sanders Pierce,
we may say then that they symbolic properties of language seem to be left-hemisphere phenomena and the iconic and indexical properties seem to be right-hemisphere phenomena.

It would seem to be the case then that those properties which are unique to human beings—mediacy and the distinctive features, grammatical meaning, future time reference, symbolic signs (in the sense of an imputed contiguity relation between signifier and signified)—all of these are left-hemisphere phenomena. It is obvious that some of the most important research on language in the next decades will come from studies of the brain, and that in particular we can test our hypotheses about language structure against these new findings.

2.3 Thus, the same phonic property may perform different functions in different languages, and different phonic properties may perform the same function in the same language. It is in this sense that sound is, by its very nature, functional or semiotic and not merely phonic; moreover, it is multifunctional, being invested simultaneously with a variety of functions. But it still remains the case that the functions which the various phonic properties fulfill are variously interrelated and that in the hierarchy of percepts contained in the speech signal, the distinctive features are primary while all the others are secondary: the distinctiveness function is not cancellable or optional, while the others are to a greater or lesser degree. An utterance without configurative features might make 'parsing' into words or phrases difficult, or an utterance without expressive features might sound flat and belie inattention on the part of the speaker, but utterances without distinctive features are confined to such restricted patterns as interjections, or intonation contours superposed on e.g. mm or hm (in English), etc. In general, ideational cognitive utterances don't exist without some distinctive features. In fact, even in elliptic speech where certain distinctive features are left out (elided), many still remain; and furthermore certain redundant features assume the distinctive function. Only a certain amount of ellipsis of the distinctive elements is possible, if communication is still to take place.

Thus, if we were to ask what information is carried by speech (linguistic) signal and may potentially be used by members of a given speech community, then we would have to conclude that all aspects of the speech sound are endowed with a linguistic function. It is in this sense that we may say that the speech sound as a whole is an artifact: all of its aspects are communicative and none are pre-given to language. This means that the dichotomy of etic~emic is a false one, as Claude Levi-Strauss has noted: "Both the natural and the human sciences concur to dismiss an outmoded philosophical dualism. Ideal and real, abstract and concerte, 'emic' and 'etic' can no longer be opposed to each other, What is immediately 'given' to us in neither the one nor the other, but something which is betwixt and between, that is already encoded by the sense organs as by the brain" (1972). An 'emic' point of view which focusses only on distinctiveness and an 'etic' point of view which disregards the multifunctionality of the speech components are equally futile and abstractionist.

3. While it is the case that the distinctive features are the sense-discriminative units par excellence and that generally speaking
sense-determination is vested in the redundant, configurative, expressive, physiognomic, and intonational features only—in all language, but to varying degrees and with certain differences between speakers, there is also the tendency (one might even say the "drive") for the distinctive features themselves to have a direct and immediate relation to meaning. The propensity for sense-determination by the distinctive features also means that the essential disunity between the signs with 'mere otherness' and all others is, in a sense, counterbalanced and counteracted by the power of the former to have a meaning of their own.

A particularly interesting manifestation of this drive for immediate signification may be discussed under the heading of sound symbolism, although sound iconism would be more appropriate since there seems to be an iconic (similarity) relation between sound and meaning. In particular, it has been found that there is a latent tendency, which may become patent in certain circumstances, for the sounds of given words to be congruent with (similar to) their meanings. Such correspondences are very often built on the phenomenal interconnection between the different sense-synesthesia, including the most difficult facet of 'colored hearing' (the relation between sound and colors). Given its synesthetic basis, it is not surprising that these iconic associations tend to be universal for the languages of the world. However, such universal tendencies can only be discerned with respect to the distinctive features (the phonemes, being bundles of distinctive features, may evidence too many different tendencies) and are best understood in terms of (relational) oppositions, since the features themselves are oppositional. Thus, the grave~acute feature (low tonality~high tonality) in the vowels and to a certain extent in the consonants, tends to be associated with the oppositions bigger~smaller, thicker~thinner, darker~brighter, softer~harder, heavier~lighter, sweeter~bitterer, slower~quicker, less pretty~prettier, less friendly~friendlier and, for some speakers, with black~white, blue~yellow (darker~lighter colors). (See Jespersen 1922 and 1933; Sapir 1927; Chastaing 1958, 1961, and 1965; Fônagy 1963; Fischer-Jörgensen 1978; Peterfalvi 1970; Köhler 1910-1915; Wellek 1931.) Such correspondences may underlie so-called popular or folk etymology, may contribute to the life or death of certain words, or may lead to a reanalysis of the meaning of given words in the light of the form. Furthermore, it can create, as Lévi-Strauss has pointed out, une petite mythologie (1976). Grammaticization of sound-symbolism may also be found in sound-symbolic ablaut, e.g., in Yoruba, low tone vs. high tone: biri 'to be large' vs. biri 'to be small', sûru 'to be big' vs. sûru 'to be little', gborò 'to be wide' vs. gborò 'to be narrow', kibití 'to be of big size' vs. kibití 'of small size' (Westermann 1927 and 1937). Sound symbolism is also, according to e.g., Jespersen (1922), more prevalent in children than in adults—i.e., the symbolic (iconic) import of sounds is reinforced with each new generation. This has great importance for the problem of language origins and language evolution as well as for the differentiation of human and animal communication.

The constant dialectic between the purely sense-discriminative use of the distinctive features and sound-symbolic use (especially when non-grammaticized) was succinctly put by Benjamin Lee Whorf:
"language, through lexation, has made the speaker more acutely conscious of certain dim psychic sensations; it has actually produced awareness on lower planes than its own: a power of the nature of magic. There is a logic mastery in the power of language to remain independent of lower-psyche facts, to over-ride them, now to point them, now toss them out of the picture, to mod the nuances of words to its own rule, whether the psychic ring of the sound fits or not. If the sounds fit, the psychic quality of the sounds is increased, and this can be noticed by the layman. If the sounds do not fit, the psychic quality changes to accord with the linguistic meaning, no matter how incongruous with the sound, and this is not noticed by the layman." (267f).

A phenomenon similar to sound symbolism in its striving for an iconic relation between form and meaning is reduplication, which is "used to indicate such concepts as distribution, plurality, repetition, customary activity, increase of size, added intensity, continuance" (Sapir 1921), and may serve to impart a playful and at the same time a disparaging tone to the utterance, as it does in Russian (with dissimilation of the initial consonant): sifis-pifis 'such a nothing as syphilis' or in English with the use of the phonestheme [Sm]: Brooklyn-schmookyln, Joe-schmoe.

Further tendencies of sounds toward independent signification can be noted under the general heading of word affinities: features, phonemes, collocations of phonemes which are common to a set of words with like meaning may come to be associated with that meaning: e.g., in the series of words nip, clip, tip, sip, dip, grip, nip, quip, vip, flip, drip, the post-vocalic stop is (synesthetically) sensed to be like a 'blow' and the (sound-symbolic) /I/ seems to suggest a briefer focus upon the action (vs. /ae/ in slap, clap, rap, tap, flap, lap): cf. the use of /u/ to suggest foolishness (rube, boob, faloot, loon, nincompoop, stooge, coo-coo, goof, spoof - Bolinger 1965:200), and of /I/- as expressive of movement (flow, flutter, flap, flake, flicker, fling, flit, flurry, flirt, see Jespersen 1922 and Bolinger 1965). To this class of phenomena may be added other sense-determinative uses of the features, namely, the restriction in English of word-initial /θ/ to words of deictic meaning (e.g., then, there, the, this, that, they, thee, thou, thy, thine, though, thus, etc.); or, an example of its use in grammatical meaning, the compulsory presence in the Polish instrumental of the nasality feature (either in a nasal vowel or in the consonant /m/; Jakobson 1971b:181). Such sound-meaning association, especially in lexical meaning, can become the basis of a sui generis synchronic etymology labeled "secondary associations" by Hockett (see 1958), "submorphemic differentials" by Bolinger (see 1965), "psycho-morphs" by Markell & Hamp (1969-1961), "phonetic symbolism" by Marchand (1959), "phonesthemes" by Householder (1946). And, as has been pointed out, such associations may lead to the survival of certain members of the general class and to the addition of new members to the class.

An even more radical drive toward immediate signification is to be found in North American Indian "abnormal types of speech" (Sapir [1915] 1949: 179-196), in which people with some defect (e.g., hunchbacks, the cross-eyed, the left-handed, the greedy) are spoken of (or sometimes to) with the insertion of certain infixes in the utterance and with
characteristic changes in consonants (so-called 'consonantal play'). The same types of substitutions are used when alluding to or quoting the 'speech' of such (sacred) animals as the Deer, Mink, Raven, Sparrow, and Wren. Analogous processes may also be used as literary devices in myths and songs: "song texts often represent a mutilated form of the language, but study of the peculiarities of song form generally shows that the normal forms of speech are modified according to stylistic conventions, which may vary for different types of songs" (Sapir 1949:188).

The alternation of the sound-shape in American Indian usage is closely associated with the world-wide process whereby words are variously modified because of taboo. On the one hand, such modifications camouflage the subject meant; on the other hand, to a certain degree they highlight the subject. Furthermore, the sound-shape must not deviate too far from the tabooed shape, or else the taboo character is lost; and the replacement of the tabooed shape by the altered form is felt to be a way of avoiding possible danger, bad luck, or ill will. In some cultures, in addition, the taboo reaches the level of certain sounds or sound combinations which are then prohibited e.g. to either males or females (so-called 'male and female forms of speech'). In Chukchee, for example, women regularly replace /r/ and /ç/ by /s/, unless they are quoting male speech, in which case they do not make the substitutions (Bogoraz 1922:665). In Gogo-Yimidjir (Australia) women always use the tense (voiceless) variants of the stops whereas men use the lax (voiced) variants (de Zwaan 1969:216f).

The strongest propensity of the distinctive features for autonomization and for immediate signification is found in the universal phenomenon of poetry (whether of children or of adults) through such obvious phonic poetic devices as rhyme, semi-rhyme, alliteration, assonance, etc., through meter (whether based on number of syllables, number of stresses, etc.), through the general repetition of sound, syllables, words, etc., through the division into lines, strophes, parts, etc., and through the general exploitation of the word 'affinities' noted above. Far from being subordinated to the meaning, in poetry sound plays a leading role, operates in full partnership with the meaning, and may even help to create meaning. Of course, such a leading role may also be present in 'ordinary' adult speech: through thick and thin, forgive and forget, deep sea, sky high; or in slogans: I like Ike; in word play: Focus Pocus (the name of a camera store in Buffalo, N.Y.); punning; and spoonerisms like "Let me sew you to another sheet" etc. And, it should not be forgotten, as has often been pointed out (Cukovskij; Sanches & Kirschenblatt-Gimblett) that all sane children go through a stage where they invent rhymes, play with sound for its own sake, and tend to assign meanings to sounds directly. In many ways, adult speech and adult attitudes toward sound may be seen as the assignment of the primary role to mediated signification while in children its status remains unclear.

While symbolism, synesthesia, word affinities, consonantal play, and in particular poetic usage, show the drive for autonomization through the direct association of sound shapes with meaning, a complementary phenomenon—the drive for autonomization through the use of the sound shape with no meaning attached—is exemplified by glossolalia, e.g. kindra fendra kiraveca of the Khlysty (Nečaev 140), and kupóy shandrê filê sundrukuma shandrê lása hòya takî of an An American Presbyterian minister (Samarin
1972:77). It is also evident in this magical Russian formula chanted for protection against mermaids (Jakobson 1966:639f):

```
au au  
šivda vnoza  
kalandi indi  
okutomi mi  
šixarda kavda  
mitta minogam  
jakutašma bitaš  
nuffan zidima.
```

Such usage is correlated with the magic function of language and thus complements, especially, taboo usage as well as mythic consonantal play (noted above). Moreover, in many cases, it is seen as a way for the human and the divine, for the human and the superhuman, to communicate. One interesting phenomenon which awaits further explanation is the prevalence of clusters such as nd, nt, ndr, ntr in these various types of pronouncements by speakers of widely divergent linguistic backgrounds (see Jakobson & Waugh). These mythic uses bear obvious resemblances to avant garde poetry - e.g. Morgenstern's "Das grosse Lalulā", with lines like Seiokrontro-prafriplo, Montraruru miromente, and Entepente, leiolente; to children's counting out rhymes (game preludes) - e.g.,

```
Inty, ninty tibbety fig  
Deema dima doma nig  
Howchy powchy domi nowday  
Hon tom tout  
Olligo bolligo boo  
Out goes you
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(see Sanches & Kirschnblatt-Gimblett 1976:92f); to the verbal play which children seem to delight in and to use as a dynamic part of the acquisition process:

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Like a piggy bank  
Like a piggy bank  
Had a pink sheet on  
The grey pig out
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(see Weir), and to many phraseological expressions in ordinary language (e.g., abracadabra, cf. salagadula michakaboula bibbidy bobbidy boo, from Walt Disney's "Cinderella").

All of these uses show the so-to-speak 'spell' of the speech sounds, the magical power which is associated with the sound per se. And we see here that the drive for autonomization of the distinctive features is associated with the mythical, the poetic, the magical, and the playful use of language in addition to its so-called 'ordinary use.

4. While 'mere otherness' and mediated and indirect signification separate language not only from systems of animal communication but also from many other human symbolic or semiotic systems, it is supplemented by
those multifunctional phonic properties which have direct signification
and it is complemented (or even superceded) by the tendency on the part of
the distinctive features themselves for direct signification.

Edward Sapir has said: "what fetters the mind and benumbs the spirit
is ever the dogged acceptance of absolutes." (Sapir 1949:159) The re-
search on the brain as well as the work of linguists on the sound shape of
language has shown that there should be no absolutization of the dichotomy
of 'sound' and 'meaning', but that instead there is an ongoing dynamic
dialectic between 'mere otherness' and 'singleness of reference', 'distinc-
tiveness' and 'redundance', 'sense-discrimination' and 'sense-determina-
tion', 'mediation' and 'non-mediation', 'direct' and 'indirect' significa-
tion, 'structure in the signifier' and 'structure in the signified', left
hemisphere and right hemisphere. Such mutually intersecting dichotomies
are examples of the pervasive asymmetry of patterning inherent in language,
and are manifestations of both the dynamic synchrony and the multifunc-
ionality which are part and parcel of linguistic structure.

FOOTNOTES

1This paper is based in part on the conclusions reported in Jakobson

2This section is inspired directly by Ch. 4 ("The Spell of Speech
Sounds") of Jakobson & Waugh.

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The little word _as_ is certainly not one of the English language's more ostentatious words. But what it lacks in stature, it makes up for in numbers. According to a word frequency test _as_ is ranked near the top of the list along with the most common articles, pronouns, and prepositions. Consequently, a better understanding of the function of _as_ could be a very useful thing indeed.

One of the most interesting debates in connection with this word is concerning the differences between it and _like_. In many environments they can be interchangeable, and yet strict grammarians would tell us otherwise. Probably we all remember a commercial popular years ago which received a good amount of grammatical criticism. The original line was:

Winston tastes good _like_ a cigarette should.

A while later they followed it up with the quip:

What do you want? Good grammar or good taste?

because apparently people had been complaining to them that they should have used _as_ instead of _like_ in this case. But either seems to sound correct to most English speakers.

Winston tastes good _like_ a cigarette should.

Winston tastes good _as_ a cigarette should.

In fact, _as_, though technically the correct choice, tends to sound a bit stilted. What then is the difference here that the grammarians were so concerned about? Most speakers of English probably couldn't tell you. A grammar book would tell you that _like_ is a preposition and _as_ is a conjunction, and that consequently you cannot join two clauses with a preposition, as seems to have been done in this case. This explanation is not totally satisfying, however, when one explores the numerous other similarities and differences between these two words. Consequently, I have returned to raw data for much of my investigation and will use Junction Grammar as a language model in discussing my observations.

As a data base I have used a computerized corpus being developed by the Translation Sciences Institute. It consists of over half a million words of text taken from various Church publications. It easily provided a wealth of examples of all the common usages of these two interesting words.

First of all, let's consider what _like_ is trying to tell us in the above sentence. The example makes the statement that 'Winston tastes good', followed by the assumption that a cigarette should be like that.
(Well, no accounting for taste.) In other words, the predicate 'tastes good' is an attribute that Winston does have and that a cigarette should have, and the words like and as can be used to bridge the gap. The corpus provides some other examples where either word sounds appropriate to most English speakers:

The poor would be aided as they had been before.

The poor would be aided like they had been before.

They conversed with him as one man talks with another.

They conversed with him like one man talks with another.

They looked as if they had lost a friend.

They looked like they had lost a friend.

He doesn't sing as he used to.

He doesn't sing like he used to.

The nuance of difference between like and as in these examples is subtle. In fact, many English speakers would probably perceive no difference at all.

There are cases, however, where one can be used and the other clearly cannot. For example, like has a clearly adjectival usage which cannot be replaced by as.

in like manner

with like certainty

of like value.

The equivalents with as are definitely ungrammatical.

*in as manner

*with as certainty

*of as value

This would seem to indicate that like could, in this case at least, be given a JG representation of an adjective modifying a noun:
This then illustrates one significant difference. *Like* has a purely adjectival usage, while *as* does not.

As an adjective, *like* can be modified by a prepositional phrase. This is not common in modern English, but is often found in English of Biblical style.

He will preside over the whole church and be like unto Moses.

It is preferable in modern English to leave out the preposition.

He will be like Moses.

The question then arises: How is *Moses* associated with *like* if there is no intervening preposition? Does *like* become a preposition in this environment, or is some other structure involved? Evidence for its becoming a preposition is that a pronoun following it does take the oblique case.

He will be like him. *He will be like he.*
However, this type of inflection following like does not occur with the equivalents of like in other languages such as Spanish, French, and German, so the inflection might just be an English specific phenomenon. In fact, like is decidedly not a preposition in these languages, and consequently may not be in English. Another possibility could be associative subjunction, which has been known to gobble up prepositions in noun phrases. Compare these:

a lecture about history

a history lecture

One version has a preposition, the other does not. The JG structures of these two reflect this difference, while maintaining the similarity of meaning.

A similar parallel could be drawn for like.

In passing, it is interesting to note that like also has a further structural reduction in which it becomes a suffix.

He was Moses-like.
Here the noun has been fully incorporated into the ad. [adjective]

Another piece of evidence that like is always adjectival in nature rather than prepositional is that it can occur with many of the same quantifiers that ads can:

- kind of like / kind of happy
- somewhat like / somewhat happy
- more like / more happy
- most like / most happy
- so like / so happy

However, like should by no means be considered a normal, garden-variety adjective. It has two qualities in particular which set it apart from regular adjectives. First, it can modify other categories beside nouns and not change its inflection.

He is happy like us. (adjective)

He reads books like us. (predicate)

Second, it can occur with more quantifiers than just those which normally occur with ads, such as:

- very much like / *very much happy
- a lot like / *a lot happy

The point to be made by comparing it to other ads is that, notwithstanding these differences, it is similar enough to ads to warrant being given an ad node in the J-tree. And 95 percent of the examples from the corpus were followed by a noun phrase and could be consequently handled with this @ structure. These were the grammatically correct cases. But what of the other 5 percent? Every single one of them was followed by a sentence, rather than a noun phrase, and in every case like could be appropriately replaced with as or as if. Some examples:
They were standing like we had stood.

They were standing as we had stood.

It seemed like we lived on an airplane most of the time.

It seemed as if we lived on an airplane most of the time.

This then is part of what the grammarians were worried about in the advertisement. *Like*, technically, should be followed by a noun phrase, not a sentence. *As* such, it functions as a modifier of some part of the main sentence, rather than as a point of intersection between two sentences, as it does when it can be replaced by *as*.

Having proposed structure for the "grammatically correct" usages of *like*, the wizardry of *as* must be explored to see how it differs from the modificational function of *like*, and to see why it can be considered grammatically "incorrect" to use *like* in the same place as was used. The distinction pointed out so far is the difference between modification and point of intersection. *Like* is primarily a modifier. *As* marks a point of intersection. The true wizardry of *as* is found in the fact that *as* can mark the intersection of almost anything.

For example, it can mark an intersection on predicate level time and manner modifiers. Here, the two times or manners are compared and found to be equivalent.

They were touched by his presence as he shook hands with them. (time)

Do unto others as you would have others do unto you. (manner)

Note that in neither example is a specific time or manner indicated in either clause of the sentences. The time or manner must be calculated by finding the intersection between the two clauses. This type of calculation is a very special type of comparison operation and it would seem that *as* is an instance of this operation. Consequently, the above example could be given the following J-tree:
In this example the interjunction operation of normal modification has been replaced by the comparative operation, which is marked with as. There are many other places where standard interjunctions can be replaced with the comparative operation as. One very common structure where this occurs is with non-verbal participles. In JG, non-verbal participles are a very special kind of modifier whose logical subject must be calculated because it is different from the structural subject. A couple of examples will illustrate this:

Ed died a rich man.

The people elected John president.

Here, a rich man tells something about the way Ed died, but it also tells something about Ed. Consequently, as a modifier, the noun phrase a rich man feels both adjectival, because its logical subject is Ed, and adverbial because it is also a manner modifier. The JG structure for an example like this reflects both aspects.
In the second example above, president doesn't say anything about the manner of election, but rather describes what John was elected into being. Consequently, rather than being a predicate level manner modifier, it has the flavor of a verb level directional modifier. The J-tree reflects this difference.
Notice that the logical subject of the predicate level modifier is the subject of the sentence, while the logical subject of the verb modifier is the direct object of the sentence. This set of relationships will always hold true for non-verbal participle modifiers.

The same set of relationships often occurs with as.

Ed served as a bishop for four years.

They sustained Brigham Young as president of the Church.

Note that bishop tells something about how Ed served, as well as telling something about Ed, and that president of the Church was a position Brigham Young was sustained into, as well as something he became. Consequently, these examples could be given non-verbal participle structure, with the associative operation replaced by the comparison operation as.
It is interesting to note that if like replaces as in such examples, the meaning changes significantly.

He served as a bishop.

He served like a bishop.

Like does not imply that he was a bishop, just that he served in a bishop-like manner. The reason for this is that like in this case would be a regular predicate level manner modifier, not a non-verbal participle. In other words, like would be purely adverbial in nature, and not adjectival at all.

A similar phenomenon occurs with appositives. Consider these:

We, the people involved, must decide.

We, as the people involved, must decide.

The only difference in structure here, again, is the replacement of the associative operation with the comparative as.
Another case where the comparative junction can replace an inter-junction is with statements related to tags. Compare these three versions:

He says that an error has been made,

An error has been made, he says.

As he says, an error has been made.

In the first example, he says is the main clause, while in the other two, an error has been made is the main clause. The structure of the first example is quite straightforward. The quote is a regular direct object of say.
The change of rank for the tag statement is handled by a specialization of subjunction which interjoins the quote to the performative verb such that the quote becomes the main clause.

And this subjunction can easily be replaced by the comparative as.

Often these tag structures are thought of in terms of intersecting planes. In other words, the structure for the simple statement:

He says that an error has been made.

is all in one plane, while the tag statement is actually in two different planes, which is what causes the change in rank. The two planes intersect at the point marked by the specialized subjunction or as. There are other cases when the intersecting plane approach would solve some problems previously attributed to hiatus. Consider this:

They have not done it as I have.
If a comparison of manner is intended, then this is an instance of a structure already discussed, but there is another reading. The intersection may be on the predicate itself. If this is the case, the predicate must be shared by both subjects. A structure reflecting this would be:

```
SV
 / \
 N       PV (not)       SV
 / \       / \     / \   
 they     v       PV      N
 / \       / \     / \   
 have     PV     PV       v
 |       |     |       |
 |       |     |       |
 done     it
```

There are yet other cases where as functions as an operation, but hopefully these are sufficient to illustrate the point.

These usages of as as a comparative operation are of fairly recent origin. Historians tell us that in Old English the usage was different.

The Old English counterpart of the ubiquitous modern as was so. In Old English this was common in expressions like "so cold so snow" (Modern "as cold as snow"). In the original construction the first so was felt as a demonstrative pronoun, and the second as a relative pronoun; that is, "It is so cold so snow" had the force of "It is [in] that [degree] cold [in] which snow is cold." In Old English the adverb all, with the meaning "quite, entirely," was often added to so to strengthen it: "It is all-so cold so snow." This all-so steadily weakened to alse, ase, and finally as.

This indicates that as was originally a relative construction like that/which or then/when, both of which use the operation of interjunction. Consider this example of interjunction on a noun referment.

I have that which I want.
As can be viewed as a homogenous interjunction in an ad referment.

He ran as fast as he could.

Notice that if no specific adjective is mentioned explicitly, as in:

He ran as he could.

the result is the comparison operation previously discussed because there is nothing explicit to interjoin on.

The same phenomenon occurs with quantifiers. If a full referent is used in the quantifier position, there is no trouble in giving this example a parallel representation.
These examples have illustrated that when two as's are present, a topic relative structure is indicated, while when only one is present, the comparison operation is being used. This is a completely different type of structure than the adjectival modifier function of like. It is much more versatile. While like is technically supposed to be followed by a noun phrase, as can be used to compare almost anything. Some examples have already been given and there are more:

We, as individuals,... (noun)
as many as you want (quantifier)
They viewed him as guilty. (adjective)
As never before,... (adverb)
It was cut as with a knife. (prepositional phrase)
as stated elsewhere... (passive participle)
It was accepted as coming from friends. (active participle)
It will happen as has been predicted. (predicate)
He came as he had promised to come. (sentence)
With all this versatility, it's no wonder that as is one of the most frequently used words in the English language, along with a, the, and, etc. However, like is slowly encroaching into the domain of as, but only in cases where as is a comparative operation, never when it is functioning as a relative. Returning to some previous examples, we can see this:

*like cold like snow

They conversed with him like/as one man talks with another.

They looked like/as if they had lost a friend.

And finally our first example:

Winston tastes good like a cigarette should.

is another example of when like can replace as because as is functioning as an operation.
This paper has only scratched the surface of the wizardry of as as a comparative operation. The little word as will probably remain a challenge to linguists for some time to come.

FOOTNOTES

ITS - AN INTERACTIVE TRANSLATION SYSTEM

Alan K. Melby

It is well known that computers are tremendously useful in solving long and involved arithmetic calculations. We are now seeing an explosion of additional application areas for computers. The Translation Sciences Institute (TSI) of BYU is exploring various ways that computers can be made useful in translation.

FAHQT - A CURRENT IMPOSSIBILITY

The idea of machine translation (MT) is not new. There have been many MT projects since the 1950's. Nearly thirty years of research on this problem have pointed out the immense difficulty of the task, the inadequacies of linguistic theories, and the limitations of computers. It is now generally agreed that fully automatic high quality translation (FAHQT) of general text is impossible, given our current, limited understanding of language. However, this does not mean that computers are not extremely useful in translation. It simply means that the computer is better suited as a partner with, rather than a replacement for, the human translator.

REACTIONS

The realization that FAHQT was not soon to be obtained evoked widely varied reactions.

1. Basic Research

Some have turned their attention to basic research. For example, some workers in Artificial Intelligence do automatic translation restricted to a small set of structures and vocabulary items. They have no immediate plans for large scale application, but they are doing very interesting work in the context of "a general investigation of language and thinking" (Carbonell et al, 1978, p. 50).


Others are interested in commercially practical machine aids to translation. One option is to develop special editors and automated dictionaries for translators. These aids have already proven their usefulness and are becoming more widely accepted and used (at TSI and elsewhere). This level of machine assistance can be termed machine-aided human translation. At this level the human takes the active role and requests specific help from the machine. There is another level of man-machine partnership which we will call human-aided machine translation. At this level the machine takes the active role and requests specific help from the human. This human help can take several forms.
3. Human-Aided Machine Translation--Montreal

One MT project (METEO) at the University of Montreal translates weather forecasts from English to French. The MT system examines each sentence individually. It translates some sentences on its own. When it runs into trouble on a sentence it sends it to a human translator at a video terminal. The system then merges the machine-translated and human-translated sentences into a single document which can be reviewed and distributed. This approach has been successful in the translation of weather reports because they form a rather restricted sub-language (Kittredge, 1978). This allows the programs to be tailored to the sub-language in question, and 60% to 90% of the sentences of weather report can be translated automatically. The sub-language approach is currently being applied to the translation of a certain kind of aviation manuals.

4. Another Form of Human-Aided Machine Translation--BYU

The BYU MT project (ITS) determined over seven years ago to develop a human-aided machine translation system. However, a different set of requirements led to a somewhat different implementation than the Montreal project. The BYU project was to handle general modern English prose, especially LDS Church publications. This material is definitely not restricted enough to be called a sub-language. An automatic translation would be acceptable on only a fraction of the sentences of a typical text from general or LDS English. So the BYU group decided to have the computer ask the human for help on specific problems within each sentence during the course of the translation process, rather than requiring each sentence to go fully automatic or fully human. This has led to years of interesting research on the problem of how to get the computer to know what to ask the human and what to do with the answer. The unifying linguistic model of the BYU project is Junction Grammar.

There is another important requirement on the BYU system. It must produce output in multiple target languages. A reasonable question to ask is whether the computer need ask a separate set of questions as it translates into each language or whether the computer can ask questions which are helpful in translating into several or all of the target languages. This sharing of questions does in fact work and allows the overhead of human interaction to be distributed over all the target languages. Thus, for each added target language the number of additional questions becomes smaller and the system as a whole becomes more cost effective.

5. All or Nothing

We have seen that when it was realized that fully automatic translation would not come soon if ever, some returned to basic research, some developed machine aids for human translators and some explored human-aided machine translation. Unfortunately, there were also some who concluded that if computers could not do fully automatic translation of all kinds of text, they were of no use at all in the translation process. This is like saying that if an automobile cannot drive by itself over any terrain it is not useful at all. Those who insist on FAHQT should by analogy insist on being able to tell their car their destination and sit back.
They should reject automobiles entirely because of the need of human aid at the steering wheel.

The BYU group feels that even with its limitations and even if it is only in the Model-T stages, human-aided machine translation can and will be very useful in solving real world communication problems and will produce many significant insights into the nature of language as well.

The rest of this paper will describe the BYU Interactive Translation System (ITS) in general and a few of the recent advances in the system.

BYU ITS SYSTEM

In a production environment, the input to the BYU system will normally be a document which has been or is being published in English and is to be translated into all or several of the target languages of the system. Currently ITS translates from English into Spanish, Portuguese, German, French, and Chinese. At present, the major effort is adding more grammar and vocabulary, including idioms. The current version of the system was begun a little over a year ago and is scheduled to be ready for production testing in September 1979. Until then, most test material is oriented to the specific grammar and vocabulary items being programmed. In addition to our full-time activities of adding grammar and vocabulary, the system is already used to translate a paragraph a week of current LDS English into the five target languages to monitor the system and detect problems. Of course, the paragraph is pre-edited to remove constructions which have not yet been programmed.

The major steps in the ITS process are: SETUP, ANALYSIS, TRANSFER, SYNTHESIS, and POST-EDITING.

1. SETUP

SETUP is the process of defining manageable blocks of text and numbering the sentences within each block. In the case of current LDS publications, the English text is available on a typesetting tape. To avoid unnecessary retyping of text, we have recently developed the capability of automatically decoding the typesetting tape into format which can be fed directly into the ITS.

2. ANALYSIS

After SETUP, the text is analyzed, sentence by sentence, into a representation called a J-tree (i.e. a Junction Grammar tree). The J-tree makes explicit many aspects of language that humans determine unconsciously when they listen or read. For example, modifiers point explicitly to whatever they modify and ambiguous words receive special suffixes to indicate which definition applies in the sentence in which they occur. J-trees are defined by Junction Grammar, which was developed by Eldon Lytle.

During analysis, the computer must often ask the human operator for assistance. This is done using a video terminal. However, as mentioned
before, the questions of analysis are "shared" questions. Thus, analysis is only done once, no matter how many target languages the system will translate into.

3. TRANSFER

The J-tree produced by ANALYSIS has neutralized many of the apparent differences between languages. Therefore, given a sentence and its translation into, say, German, suppose one analyzes both the original sentence and its translation into J-trees. The differences between the two J-trees can be mechanically adjusted far more easily than the differences between the surface sentence and its translation. The task of TRANSFER is to adjust for the differences which remain at the J-tree level.

Most of the adjustments of TRANSFER can be done automatically. They are stimulated by the presence in a sentence of a particular word or structure. But another task of transfer is doing the actual translation of words from English into a target language. In many cases, even where the words are ambiguous in the original sentence, the choice of a translation can be made automatically. However, there are cases of "precision resolution" where the information in the J-tree is not precise enough to determine the proper translation of a word. In the past, these cases were handled by requiring TRANSFER to make an arbitrary choice. If the choice was wrong, it was cleaned up by the post-editor. However, it was observed that this approach often required more adjustment by the post-editor than just changing the base form of the word. No word is an "island", so to speak, in a sentence. The choice of one word often affects the inflection and/or order of one or more other words in the sentence. So the effect of choosing the wrong word in TRANSFER is often magnified several times by the time it reaches the post-editor. This is the "precision" problem.

Recently, we realized that the post-editor may use his time more effectively if the computer asks some precision questions in TRANSFER before the effect of a wrong choice is magnified. The computer narrows down the possible translations of a troublesome word as far as possible and then presents the remaining choices to the human operator. The human need only reply with a single number to indicate his choice rather than changing a whole word and its implications later on. Further experimentation and "tuning" of the system will be necessary before an optimum balance of human-machine interactions in the various steps will be obtained.

4. SYNTHESIS

SYNTHESIS is the processing step which converts an adjusted J-tree into a sentence of the target language. It is very important but often goes somewhat unnoticed because its processing is entirely automatic.

5. POST-EDITING

The POST-EDITING step is a review step where the completed translation is examined by a human post-editor (probably the same person who
answered the precision questions in TRANSFER). After post-editing, which could include a second review at a translation center in the target language area, the translation can be typeset automatically. It is extremely significant that during the entire ITS translation process the text need never be manually entered or retyped. During POST-EDITING, only the parts which need changing are changed. This eliminates many typographical errors.

RECENT ADVANCES

There are many recent advances in the ITS which were not discussed above but deserve mention. I have chosen only five.

1. Computer Resources

It has been almost exactly once year since the dedication of the Wilkinson computer, an IBM 370/128. The machine has performed exceptionally well the past year and has greatly enhanced the institute's computer resources. It has allowed us to convert to the VM operating system, which has facilitated program development. The Wilkinson computer has also been tied to the institute's NOVA 3 mini-computer by direct wire, thus further integrating the ITS and word processing aspects of the institute. Our profound appreciation toward the Wilkinson family continues.

2. Scripture References

When scriptures are quoted in LDS publications, they are not re-translated with the rest of the text. The official Church translation is looked up and inserted. This is a task which takes no imagination and should be done with a computer. We wanted to do something but did not have the resources to enter the entire set of Standard Works in five languages immediately, so we hit upon a compromise plan in cooperation with the BYU library. The library has kept careful records of all the scriptures quoted in General Conference since 1950. Using TSI programs and with the help of library personnel for data entry, the library's entire scripture reference file has been entered onto disk files and processed to produce various listings. The ITS language teams are now entering the official translations of all the scriptures which were referenced five times or more. This amounts to about 1300 verses. These verses account for about 60% of all the scripture citations in General Conference in nearly 30 years, yet they amount to only 2% of the verses in the Standard Works.

3. Corpus and Concordance

There are many projects which have produced a corpus of some sort and a concordance of it. The concordance is a well-accepted tool in literary analysis and gospel study. Upon consultation with the Montreal translation project, which uses concordances for linguistic research, we decided it would be worthwhile to gather a specialized corpus of modern LDS English. We chose material from the Church magazines, Sunday School manuals, Family Home Evening manuals, etc. Using the decoding process mentioned above, we were able to produce a corpus using typesetting tapes borrowed
from the Church word processing service in Salt Lake City. We then developed a technique for producing a file of pointers from each distinct word to its occurrences in the corpus. To this we added a means of dynamically generating a subset of the concordance for a specific list of words that a particular researcher is interested in. Note that all this was done without entering the data manually.

The corpus currently consists of over one half million words and can be enlarged as needs and resources dictate. It has been available to institute personnel for only a month but is already being used regularly in researching questions of word sense, idiom, and function word usage.

4. Special Characters

Thanks to the integrations of ITS and the word processing activities at the institute, we can now obtain proof copies of translated output in "true" characters (i.e. upper and lower case characters with diacriticals) on a special print train at several hundred lines a minute. We can also obtain proofs on a "daisy wheel" printer for slower but higher quality output. Importantly, the same disk file which is read to produce proofs can then be read to produce typeset output if the proofs are found to be satisfactory. Due to other recent advances, we can even obtain proof copies of output for languages that do not use the Roman alphabet, even for Chinese and other non-alphabetic languages. During the regular ITS processing, the Chinese characters are represented by telegraphic codes as specified by CETA, a Washington D.C. organization which correlates such matters in the United States. Then the telegraphic codes are sent to the NOVA 3, converted to a dense matrix of dots, and printed on a Versatec printer/plotter.

5. Linguistics and Interaction

There has also been progress in the area of linguistics and the interaction between the human operator and the computer. The first priority in ITS is to get enough grammar and vocabulary into the system so that it can handle real text with little or no pre-editing. That means the system must produce a detailed syntactic-semantic representation of each sentence. This has not yet been done but, if all goes well, will be nearly attained by this fall, thanks to advances in the range of constructions that are now handled by Junction Grammar. Only a few years ago, a full analysis of real text could not even be done on paper. We would pick up a Church magazine and start analyzing a paragraph. Nearly half the sentences would contain constructions that were still not treated satisfactorily in Junction Grammar. We could only hope that further linguistic research would find the needed answers. That hope has largely come true. Now it remains to program the grammar we understand.

Of course, once the system is able to handle real text, it is important to reduce the interaction needed during the translation process where possible without sacrificing the quality of the output. Until recently, the cost of the computer processing was a major concern. But as the cost of computer time continues to drop and the cost of human translator time increases, it becomes desirable to have the computer go
to more and more trouble to answer some of its own questions, and to make the questions it does ask easier and faster for the human to answer. We have recently taken some steps in this direction.

a. Dictionaries

In the area of dictionaries, the various kinds of information they supply is being redistributed to make the computer processing more effective and to make the interactions easier and more accurate.

b. Guesses, Confidence, and Interaction Level

The analysis and transfer programmers are no longer forced to decide between interacting always or never on a given question. We have added the option of interacting "sometimes," depending on a delicate dance of the computer's "guess" at the answer to its own question, its "confidence" in its guess, and the "level" of interaction specified by the operator. At a lower interaction level, the computer will ask fewer questions but make more mistakes, and vice versa at a high interaction level. This capability will allow us to experiment to find optimum settings for the various parameters. The effort is somewhat like optimizing the performance of a complex machine.

c. Ease of Answering Questions

In terms of overall human time involved, it is just as effective to make it easier and faster to answer questions as it is to reduce the number of questions. We have just received new video screens which display more lines of text and have developed highlighting techniques which should allow progress in this direction.

6. Literal Translation

As mentioned above, some sentences of real text contain constructions which have not been programmed for. Due to the tremendous flexibility of human languages, this may decrease but will never go away. Therefore, we are implementing a "literal" option in this version which steps in to avoid total failure on a sentence and provides a simple word-for-word translation for the post-editor.

FUTURE PLANS

There are several areas where much more research and development on the ITS system will be needed even after this fall. I will mention only a few. In addition to improving the grammar of English implemented in analysis, it is anticipated that there may be added the capability of looking further ahead and pursuing the consequences of several possibilities simultaneously, thereby reducing interaction. This capability is heavily used in some MT projects, while others claim it is needed only on
a limited basis if all aspects of a semantic analysis are properly integrated. A more obvious need is for the system to analyze text as coherent discourse rather than as isolated sentences. This would allow the system to take advantage of answers the human provides early in the text to make better guesses later in the text. Discourse analysis would naturally lead into the problem of drawing inferences from statements in the text and eventually would lead to the problem of somehow representing the real world inside the computer in a useable way. All this has been done in a very restricted context called a "micro-world" but never in a large-scale system such as ITS. Of course, as the analysis grammar is improving, transfer and synthesis will need much more research and development.

While further research is in progress, the institute finds itself in the desirable position of having found several levels of useful machine-aids to translation without having nearly exhausted the possibilities for major future advances.

REFERENCES


Kittredge, 1978, Same as above.

To obtain more information on Junction Grammar and ITS, write for a copy of the journal Junction Theory and Application. Selected issues contain an annotated bibliography.

Junction Theory and Application
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COMMUNICATION GAMES IN THE LANGUAGE CLASS

John Harvey

Many of us can remember a time, not so long ago, when almost everybody seemed to be happy with what was going on in our foreign-language classrooms. What was going on seemed to fit rather neatly with linguistic theory and with psychological theory—at least with American linguistic theory and American psychological theory—and there seemed to be every prospect that it would work.

Nowadays, much the same sort of thing is going on in our foreign-language classrooms—most of them, most of the time—but hardly anybody seems to be happy with it. For one thing, it no longer seems to be up-to-date theoretically. For another, it doesn't seem to work very well after all.

But what else is there?

Well, there are several new cults: the Silent Way, Counsel-learning, Suggestopedia. I call them 'cults', perhaps unfairly, to try to suggest what I find uncomfortable about them. Each of them seems to have its guru and true believers. Each of them seems to be wrapped around a central mystery. Each of them seems to be presented more in terms of revelation than in terms of argument and evidence. I find something of interest in each of them, but less than I am asked to find, and less than I am looking for. In particular, I find very little about language.

We should keep our minds open. Certainly the claims of the cultists are impressive, and any validation would be exciting. But my hunch is that something else will be needed to fill the bill.

Another alternative, of a very different sort, is individualization. This is an alternative with a vengeance. With all our debate over drill and bait theory, we have almost forgotten that the audiolingual theory was originally just that, a theory that put the spoken language first. Unless we want an alternative to that, to putting the spoken language first, we presumably don't want our students doing their homework in class.

Again, of course, I'm being unfair. We do need to cope with the problems presented by widely different abilities, learning styles, and interests. Somehow. But not by turning the teacher into a file clerk.

That is probably enough on the alternatives I am not going to consider, although the ones I have mentioned and others I have not do deserve serious study. The alternative I am going to consider is not yet institutionalized enough to be called a movement. It is not yet a tidy body of doctrine. It has hardly begun to become available in the form of materials. But I do think it is a definite trend.
More and more, perhaps starting with John Carroll (1952), people have been saying that communication is what is lacking. There has been relatively little effort to define the concept of communication in terms of language and language learning, and not much has been suggested as to how to make communication happen in the classroom. I should mention, parenthetically, that Gerald Dykstra stands out as an exception to both these statements. But the word 'communication' is everywhere, and behind the word, I suggest, is an idea whose time has come. I use the cliche deliberately, since I can't think of a better way of expressing the convergence of several lines of thought into an inevitable idea, into an idea which occurs to any number of people at roughly the same time.

Not that the idea doesn't have a history of its own. Like everything else in language learning, it probably has a pre-history. I just think that the present explosion of interest in communication has been set off by fairly recent developments in linguistics and in related sciences. In particular, despite Chomsky's disclaimers, I think it has been inspired by the rise of transformational grammar, which has brought new respect for the depth, complexity, and creativity of language.

I said earlier, without naming names, that the audiolingual method, and the structural linguistics and behaviorist psychology which were supposed to buttress it, are no longer in good theoretical repute. I am reasonably sure I said it without objection. I went on to express my misgivings about the theoretical supports of the Silent Way, Counsel-learning, and Suggestopedia, and I stated flatly that individualization was throwing the baby out with the bathwater--the baby being the idea of the primacy of speech, and the bathwater being particular mindless classroom activities intended to implement that idea. Now let me sketch the kind of theory that I think can be developed as a basis for a communicative approach to language learning.

Since we are talking about learning language, we need some sort of a model of learning. The model I propose is essentially contained in a single, simple slogan: learning by doing. There is nothing very novel or particularly sophisticated about this idea, but I think it takes on some novelty and some sophistication if we apply it in a deep sense rather than in a surface sense. In other words, I am not talking about what the student appears to be doing, I am talking about what he is really doing. And I'm saying that that is what he is really learning.

If you ask me whether Jennifer is learning to ride her bicycle, and there she is pedaling along tilted ten degrees off to the right supported by her right training wheel, I say that she isn't. She may be learning to pedal, but she is not learning to balance, which is the whole trick. Now, I will admit--I have to admit for my later argument--that there are degrees of approximation. If Jennifer starts to get up off that right training wheel for a few yards at a time, she is closer to riding a bicycle, and therefore closer to learning to ride it. But we still can't leave that right training wheel out of our analysis of the learning situation. Certainly she isn't leaving it out of hers.
We want the language learner to use the language. That's how he's going to learn to use it. But we have to be sure that he's really using it, not just appearing to use it.

On the surface level, one student utterance of a given sentence may be roughly equivalent to any other. But we have a pretty good idea of how different they may be on a deep level. One student utterance of the sentence might be repetition after the teacher. Another might be recall from a memorized dialogue. Another might be manipulation on cue. We can't count these as real use of the language. Then another might be free creation and urgent expression. That's a different matter.

It is true that these differences are differences in what is taking place inside a black box. But that does not mean that they are beyond knowing. If you can hang a man on circumstantial evidence—and I think you can—then you can hang a learning model on it. So the learning model sets up a requirement for a performance model on it. So the learning model inside the black box, given the inputs and the outputs. With a better idea of what real language use involves, we'll be in a better position to make it happen.

We need some sort of model of the performance of the speaker and some sort of model of the performance of the hearer—or perhaps, since specialization is seldom carried that far, some sort of model of the performance of the speaker/hearer. If we consult the linguist and the psychologist, we will come away with something less than a scientific model of performance. But we will not come away empty handed.

The linguist is likely to insist on components to deal with semantics, syntax, phonology, and lexicon, or some such breakdown. The psychologist is likely to insist on general cognitive components to deal with knowledge, logic, and imagination, at least, and on affective components certainly including drives and inhibitions. Notice that this does not pretend to be an exhaustive listing or a definitive categorization. But it does give an idea of the number and variety of components that will be needed for a working model.

Our consultants will undoubtedly warn, further, that each of these components will be internally complex, and that each of them will be related to each of the others in complex ways. Take the syntactic component of the performance model, for example. We could hardly expect it to be significantly simpler than the syntactic components of current competence models. Again, think back over the debate as to what, if anything, is wrong with one of the highest-frequency sentences in the English language, 'Colorless green ideas sleep furiously.' We can take the intensity of that debate as a measure of the intimacy of the relations between syntax and semantics, and between these linguistic components and the general cognitive components dealing with knowledge, logic, and imagination. And this is not even to mention the positive and negative affect aroused by that sentence.

Obviously, this performance model is almost as sketchy as my learning model. At the time, it is overambitious in the present state of the art,
and probably will be in any foreseeable state of the art. I am only saying
that we must take into account every factor that we know, intuitively, to
be important. I don't think that the models of learning and performance
explicit or implicit in current language-teaching methods do. I think that
they fail to do justice to much of what we know or have reason to suspect
about the mind and about language.

One thing we know to be important, or have very good reason to suspect
is important, was left out of my performance model. I mentioned earlier
that every speaker is a hearer, and vice versa, or that everybody is a
speaker/hearer. But I have not mentioned the obvious fact that every
speaker requires a hearer, and vice versa, or that every speaker/hearer
requires another. In other words, the performance model needs to be ex­
panded into a communication model. There are obvious counter-examples to
any claim that language is purely a communicative device, but none of them
would seem to weigh heavily against regarding language as first and fore­
most a communicative device.

The speaker's performance cannot be understood without considering his
mental representation of the hearer. I offer two thought experiments to
illustrate this. First, imagine yourself writing, 'to whom it may concern',
a letter explaining why you have decided not to attend the party the Joneses
are throwing next Saturday. Don't you find yourself wondering whom it
might concern after all? What if it's somebody who has never heard of the
Joneses? What if it's the Joneses? Next, imagine yourself conveying sub­
stantially the same explanation to your spouse. Would you need to be so
explicit or so tactful? Would you even need to be articulate?

But it doesn't stop here. The hearer's performance cannot be under­
stood without considering his mental representation of the speaker. Imagine
yourself opening a letter. Don't you look at the letterhead or the signa­
ture first?

Actually, it doesn't stop here, either. The speaker's representation
of the hearer has to include an estimate of the hearer's representation of
the speaker. And vice versa. And so on.

Communication is nothing if not a cybernetic process. We have seen
that speaker and hearer are looped together in terms of what has been
called 'feed-forward', that is, in terms of their intentions and expecta­
tions. They are also looped together, of course, in terms of feedback.
Both speaker and hearer need feedback on the extent to which the message
sent was equivalent to the message received. If this feedback doesn't come
immediately from what the other party says or does, it should come at some
time from some source. Something has to result from what has been said and
from how it has been understood, if communication is not to break down.

As soon as we put the subjective performances of speaker and hearer
together into a communication model, we realize that there is an objective
relationship between them, namely what in fact the speaker communicates to
the hearer. This is a function not only of what the speaker says but also
of what the hearer already knows. We have arrived, of course, at the basic
concept of information theory, in which the amount of information is
measured by the unpredictability of the message -- technically by the num-
ber of yes/no questions which the hearer would need to select the message
from the array of likely messages.

Notice that this measure of communication means that we can't judge
the performance of the speaker just on the basis of what he says. We have
to ask ourselves whether he has really told anybody anything -- that is,
whether he has told anybody anything they didn't already know. Nor can we
judge the performance of the hearer just on the basis of how he responds.
We have to ask ourselves whether he could have responded that way anyway.
To anticipate, the implications of this for the language classroom are
immense. Most of what normally passes for real use of the language fails
to meet the test.

Let's trace the path of one communication event through this model,
not even trying to touch all the bases.

The speaker starts out with some knowledge of the total situation,
including an estimate of what the hearer knows about it. The speaker
also has something he wants, something he can only get if the hearer is
better informed. He therefore formulates a message -- for simplicity,
let's think of it as prelinguistic, what he wants to say rather than how
he is going to say it --, shaping this message to fit what he thinks the
hearer knows and what he thinks the hearer needs to be told. He then
processes the message linguistically -- looking up lexical items, applying
semantic, syntactic, and phonological rules -- to encode it into a signal.
For our present purposes we may equate the signal with the surface
structure.

The hearer processes the signal linguistically to decode it into a
possible message. He checks it against his knowledge of the situation,
including his estimate of what the speaker knows, and knows about him.
If it doesn't make sense, he may recycle it. If it does, he takes what
is new to him in the message and adds it to his knowledge. This may in
turn affect what he wants -- as the speaker intended.

But we have not yet completed the path of the communication event.
Some clue has to loop back from the hearer to the speaker that the message
he sent was the message received, and some clue has to loop back from the
speaker to the hearer that the message he received was the message sent.

My essential claim is that students will learn a spoken language in
the classroom just to the extent that what they do in the classroom
approaches this communication model.

To help in examining this claim, let me extract three key features
from the communication model, features I have gotten into the habit of
calling reference, intention, and uncertainty. I think these three
features, taken together, most clearly point up what the communicative
approach requires and what it offers.

First, the reference feature. The reference recognizes that communi-
cation, to be communication, must first of all be about something.
A word, a phrase, or a sentence has reference if it points to something in particular. There must be a referential framework, a definable state of affairs consisting of everything taken to be the case, a total situation specified by the total information available. Among other things, it must be reasonably clear who is talking to whom, when, and where.

If the learner says, for example, 'The book is on the table.', we should ask ourselves whether he has in mind any particular book, any particular table, and any particular configuration of book and table. He might not. He might just be producing a well-formed string. If that is the case, it may well be because no universe of discourse including any particular book on any particular table has been established.

The objection that there is always some book on some table in the classroom, by the way, doesn't hold. For one thing, I could come up with an elephant in a Volkswagen. And the question would be, what elephant in what Volkswagen? Or rather, do we have any way of knowing?

Referentiality makes it possible for what is said to be judged true or false, sensible or nonsensical, appropriate or out of place. It insists that what is said be open to confirmation or disconfirmation. It lays the basis for feedback.

When we communicate in our own language, our referential framework is simply the world as we know it, or any part of it. But the world is too wide for the language learner--by definition. If he could talk about anything he might have in mind, he wouldn't be a learner, or at least he would be a very advanced learner. On the other hand the classroom is too narrow, except for the merest beginner. There just isn't enough there to talk about for very long, or enough the learner needs to learn to talk about. Somehow, then, we have to arrange to bring samples of the world into the classroom, representations of parts of reality which are limited enough not to overchallenge the learner's abilities but rich enough to exploit those abilities.

Most current instruction is based on a script of some sort, a dialogue or narrative which is learned thoroughly and then forms the basis for a certain amount of discussion. This script does provide a referential framework, almost always a carefully limited one, although seldom a sufficiently rich one. Strangely enough, however, it is precisely in those parts of current instruction which aim at communication where the situation is inadequately characterized. In free conversation, for example, more often than not the learner finds himself in a referential limbo.

Recently, in a Chinese class in Washington, I heard the teacher ask a student 'Has your wife come here with you?' It was a question the student could understand--just-- and one he knew how to answer in the affirmative or the negative. But there was no context whatsoever. If the reference was to the real world, and assuming he had a wife, the student could take 'here' to refer to the classroom or to the school or to Washington, each perhaps calling for a different answer, and he had no idea how to give an elaborate answer such as 'She came to Washington with me, but she hasn't come to school with me today.' If something else was supposed to count as
real, what was it? Was he perhaps being cast in the role of Mr. King in
the text, whose wife has indeed accompanied him, to China? Or was he
being invited to cook up an answer? Well, in that case, the affirmative
would be much easier.

Whatever was going on in this reference-free exchange, it was certainly
not communication.

Next, the intention feature. The intention feature recognizes that
communication, to be communication, must be purposeful, must be to some
end.

There is an obvious affective sense in which unmotivated speech falls
short of communication, but there is also a crucial cognitive sense. Just
as important as feedback in the communication model -- and therefore in
the learning model -- is 'feed-forward'. The speaker's intentions, and
the hearer's expectations, give sharpness and weight to the feedback.
There is increasing evidence to suggest that, unless a hypothesis is
being tested, the data will seldom surrender or volunteer any meaning.

It would be ideal to be able to harness the learner's real-life inten-
tions, but unfortunately these have little standing in the classroom.
There are levels of intention on which this is not true, of course. The
learner's intention to learn the language is clearly relevant. His in-
tention to leave when the bell rings is clearly exploitable, perhaps by
insisting on a leave-taking ritual. But most of the time, as things stand,
the learner can't say anything he has any reason to say, and has no reason
to say anything he can say.

Somehow, then, we must arrange for the learner to have moment-to-
moment reasons to use the language he has. By far the simplest way is to
give him one big reason and let the small ones follow naturally from it as
things develop.

Finally, the uncertainty feature. The uncertainty feature recognizes
that communication, to be communication, must overcome unpredictability.

If communication is the resolution of uncertainty, there has to be
uncertainty to resolve. But if all the information has been made public
by the time communication is supposed to begin, if nothing has been with-
held, nothing really remains to be said. Behavior superficially re-
ssembling communication may ensue, but its redundancy will be nearly abso-
lute. This is the case with most classroom discussion of the classroom.
Everybody knows that Mrs. King accompanies her husband to China, and that
the book is on the table. Nobody can inform anybody of either fact. In
a way, we're back to spouse talking to spouse. Speaker and hearer share
so much information that there is no point in being articulate. All the
machinery of an articulate utterance would be spinning its wheels rather
than functioning to convey meaning.

But, of course, how that machinery functions to convey meaning is
precisely what we want the learner to learn, and he will only learn it by
seeing it in operation and by operating it. Unless he can observe how form and content crucially depend on one another, unless he gets to try fitting one to the other, he will never work out the complex relationship between a sentence and its meaning—which is the language.

Or, to put it another way, the evidence of the relationship between a sentence and its meaning is no more available in the absence of the meaning than it would be in the absence of the sentence.

The communicative approach offers a simple remedy. It arranges for different people to know different things. The total information about the situation is divided up, perhaps with some overlap, but with everybody screened off from some part of it. At the same time, of course, a requirement is built in for wider distribution of the information. Everybody has a need to know what others know, and has a need for others to know what he knows. It goes without saying that the only licensed channel for the transfer of information is the target language.

My colleague John Francis and I have been working for some time—in connection with the development of a Peace Corps Korean course, a private school program in French and Spanish, a French immersion program, and a government-sponsored Chinese course—to devise classroom activities along these lines. What we have come up with we call communication games. I understand that Adrian Palmer and Margot Kimball of the University of Utah used the same term in a paper they presented to the TESOL Conference in Miami. I haven't seen their paper, but I wouldn't be at all surprised to find considerable convergence in substance as well as in terminology. And I wonder if they don't share some of our misgivings about the term, despite its inevitability.

The word 'games' has the drawback of suggesting a lack of seriousness, except perhaps in competitiveness. But our communication games are not intended as diversions from the hard work of language learning, or as rewards for it, but rather as the hard work itself. In fact, if there is one thing about them that is not serious, it is the occasional element of competition. Usually, everybody 'wins'.

These communication games are game-line in the sense that they stimulate purposeful human interaction, and in the further sense that they are purposeful human interaction, on a different level. Like games, they are based on made-up situations, with roles to play, rules to follow, and goals to pursue within those situations.

Once taken seriously, communication games often turn out to be diverting and rewarding after all. But it is important to realize, I think, that this windfall profit derives not so much from the simulation of reality as from the reality of communication itself. They are games, but they are communication games. Success in them hinges on the successful exchange of information. It is not at all a bad feeling to be putting the language to work. It is an even better feeling when, the more you use it, the better you can use it. These feelings are nature's way of telling you that you are functioning properly as a language-using, language-learning animal.
Let's take a look at a simple communication game played in the sixth unit of the Chinese course I mentioned. (Incidentally, there are 58 communication games in 39 units, and something like one-third of all class time is devoted to them) This game is designed to contrast the new expression 'to work at (some place)' with the old expressions 'to be at (some place)' and 'to live at (some place)'. This is not a matter of simple lexical substitution, as it appears in English, but rather a matter of three different constructions which cast the same morpheme in the different roles of verb, verbal suffix, and preposition. So it needs work.

Since we aren't actually playing the game -- I wish we could -- we can cheat and look at the teacher's answer sheet, which represents the total situation. This consists of four copies of a street map showing three named office buildings on one side of the street and three named hotels on the other side. Each of these copies of the map is marked to show where one person works (any of the three office buildings), where he lives (any of the three hotels), and where he happens to be now (any of the six buildings). Since this is a game of what we call the 'Science' type, in which the players try to make out significant regularities in the data and base predictions on them, the situation has been rigged: each of the four people is shown as staying at the hotel across the street from his office building, and each of them is at his hotel now.

Now let's look at the worksheets the players are given. There are four different worksheets, one for each group of the four players in a group. Each worksheet is generally like the answer sheet, with four street maps to represent the facts about the four people, except that only on one of the street maps -- a different one on each player's work sheet -- is marked those facts.

Each player, then, knows about one person and needs to know about the other three if he is to work out the significant regularity in the situation, and the only way he can find out about the other three people is to talk with the other three players. This choreographic pattern, by the way, in which each player pairs off with every other player in turn, we call 'milling'. Notice that it has the effect that each learner is talking half the time, and being talked to directly the other half.

In a game of the 'Science' type, each player gathers information using question-word questions, coding it on his worksheet as he goes, until he is able to form a hypothesis about the significant regularity. Then he tests his hypothesis by making predictions with yes/no questions or, better, with slightly more yes than no questions. A hit counts as a hit, a miss as a miss.

I chose a simple example, at the risk of having it appear trivial, although anyone who has been involved in the first fifty or so hours of a language course may recognize that this Science game is considerably more demanding than most classwork at that level. It may be worthwhile, now, to suggest what a communication game of the 'Science' type but at a much more advanced level might look like.

Imagine that each player is given a dossier defining his role in terms of socioeconomic background and political opinions, and that he
is then to proceed as in my simpler example, this time specifically as a social scientist whose research objective is to uncover correlations such as 'well-off people with children eighteen and under tend to favor higher local expenditures for schools, unless they happen to be conservatives.' For fun, we might allow him to uncover such idiosyncratic exceptions as one poor and childless citizen who also favors higher expenditures for schools, on the grounds that he wishes he had had a chance to go to school himself.

In general, we have found the Science paradigm to be extremely productive across all levels and for most kinds of material. Other game types are most restricted in range, all the way down to a one-shot type like 3-D Tic-Tac-Toe, which so far, at least, has only been used to practice giving directions inside a building. Game types differ in many other ways than in range of application. We have identified more than a dozen independent variables which interact to produce a variety we have hardly begun to explore.

If you think back over the two versions of 'Science' I have described, I think you will agree that the reference feature, the intention feature, and the uncertainty feature of the communication approach are all there. The situation is defined by the full set of worksheets. The overall goal, to find the pattern—and, implicitly, to help others find the pattern—motivates the production and comprehension of each question and each answer. The division of information is accomplished by the provision of a different worksheet to each of the players.

A workshop would be a better setting for discussion of the nuts-and-bolts aspect of developing and implementing communication games. I would like to mention, however, that each game is preceded by a 'briefing', a run-through of a stripped-down version of the game which gives the teacher a chance to demonstrate it to the whole class, and to make sure that they are ready for it, and that each game is followed by a 'debriefing', a general discussion of the total situation which has been uncovered which gives the teacher a chance to check up on what learning has taken place, and to deal with any difficulties which have arisen. I should also mention, although it is perhaps obvious, the very different role of the teacher in this kind of learning activity. Except during the briefing and debriefing, when he has the class in his usual firm grip, the teacher is likely to feel a bit left out. He shouldn't be, however. Besides functioning as a roaming linguistic monitor and linguistic resource, he may participate as a player himself and therefore function as a linguistic model for one group at a time, and at all times he remains the classroom manager, which in this case involves trouble-shooting the game.

I would like to close on a more uplifting note. In the Chinese course the games are a follow-through on material presented and practiced earlier in the unit. That's probably the way they should be introduced into classroom practice. In fact, I think their spread into other courses in other languages should probably proceed by piggybacking a game here and a game there onto existing materials. I invite you all to try it. But I would like to think that communication games, despite their undignified name, have a more central role to play. I would like to see a course
built around a sequence of communication games, with any other necessary inputs downgraded to the function of priming the learner for the games. I'm not sure that almost all presentation and practice of the material couldn't take place in a communicative context, with a great deal of openness to learner initiative in what gets learned. Anyway, it's worth a try.