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PHONEME FREQUENCY IN ENGLISH
AT VARIOUS FORMALITY LEVELS

J. Donald Bowen
University of California at Los Angeles

There is in Southern California a modest journalistic effort bearing the name "California Intermountain News" with the additional legend in the masthead "Serving the Mormon Community in California." The usual weekly issue runs eight small (11" x 15") pages and carries items of interest to its Mormon readership, including new bishoprics and stake presidencies, articles about artists, athletes, businessmen, and others who have achieved distinction, etc. A few weeks ago there was an announcement of a new bishopric, or maybe it was a stake presidency. I remember only the name of the first counselor, which was "Gordon Mauss," spelled G O R D O N M A U S S. The bishop (or stake president) in responding to his call, commented to his audience: "I must tell my first counselor that I come from Spanish Fork, and therefore I hope he'll forgive me if I slip in my pronunciation once in a while and refer to him as "Garden." Brother Mauss, apparently either used to this interpretation of his name, or thinking the word "garden" has pleasant connotations or suggests such religious usages as Gethsemane or Eden, allowed as how the pronunciation "Garden" wouldn't bother him a bit, "so long as you don't call me Mouse."

This incident could probably be told only to an audience on the Wasatch Front. No other would understand it. It is built on two patterns of pronunciation and spelling that are fully characteristic of intermountain English, revealing just how important it is to be in control of the way we say things; otherwise we can be grossly misunderstood.

I have just referred to a level of variation in the pronunciation in a language that answers to the question "Where is the language spoken?" because geographic location is included in pronunciation information. I wish, however, to address another parameter of pronunciation in the present study, one that responds to differences in the level of formality. This is often referred to as "register," though there is some difference of opinion in just what "register" includes. I'm not really interested at the present moment in settling the problem of the correct definition of "register," so I propose to follow the usage represented in my title, and just refer to the phenomena as a variation in "formality levels."

I call to your attention differences in pronunciation that seem to depend on the occasion for the communication and the person or persons being addressed. Let me offer an example. When we feel it appropriate to be very formal, we might ask "Where are you going to stay tonight?" On a more friendly level, we might say "Where're you goin' to stay tonight?" But to an intimate friend, we might say something like "W're
ya gonna stay t'night?" I don't mean to suggest that one level or form is any better than another. Actually I believe, with many others, that each is appropriate and therefore correct within the sphere of its own usage. But as I say, I'm not here to argue the forms, just to illustrate them—and to some extent, to count them.

I want to try to quantify some of this data, something that is not new in language research. Scholars and others have been interested in quantifying various kinds of data in their investigations of language materials. Aside from an interest in how many volumes are found in a library, how many books are published in a year, how many scholarly journals are produced, etc., there are many specific studies that are concerned with quantification. We measure the size of a dictionary by the number of entries it contains. This gives us a measure of extent, a count of words that all differ from each other. If we are the editor of a newspaper or magazine, we need another kind of quantification. We have so many pages, so much space to fill, and we must make our copy match our space. We are interested in the total number of words in an article, not the number of different words. As teachers of English as a first or as a second language, we might be interested in knowing something about the order of frequency of English words. We refer to the extensive general frequency counts of the mid-1900's that identify the number of times a lexical item appears in the texts counted, and the more recent vocabulary density studies calculated by type-token ratios (the proportion of the number of different words to the total number of words in a text). In all of these cases we are interested in numbers of words.

We can also be concerned with sentences and clauses. Usually once a clause type is defined, we can count the number of its occurrences. One useful measure of complexity is the number of words that appear in a clause or sentence. We can measure syntactic complexity as inherent in such concepts as a ratio of the average number of words per T-unit, an independent clause plus any dependent clause that appears with it. These procedures allow us to make comparisons that can be helpful in a language classroom. We compare the levels of complexity and presumably difficulty to learners, or degree of assumed familiarity (for first language learners) or presumed need (for second language learners), or we identify significant interference problems and look for alternations within the morphophonemic systems.

Another area where quantification is relevant is in letter counts. Letter frequency data could be used for such interesting tasks as the arrangement of letters on a typewriter keyboard if this were not already a closed and settled issue. We could better match frequently occurring letters with strong fingers. Probably the most common application of letter frequency counts is in cryptography, where the relatively stable frequencies of individual letters is a very helpful clue to their identification in hidden writing.

In the case of word and letter counts, the items counted are relatively easy to quantify because they have the characteristic of discreteness. We have no trouble identifying and recognizing what we are counting.
And please note that the data we count in these cases come originally from written sources. This is not surprising, since paper and pencil data can be manipulated much more readily than oral data can. Even if we assayed to study oral data, the first thing we would do is to put it in written form and prominently recognize or introduce the quality of discreteness. While the boundaries that separate letters (at least in print) and words are easily recognized and used in making counts, this is not true of T-units. Before they can be counted, it's necessary for a competent technician to pre-edit the material and mark the appropriate boundaries. This of course makes syntactic counts much more complex to produce than word counts or letter counts. These are nonetheless easier to perform than counts of the sounds of a language. These latter items are not discrete and indeed are not visible until someone produces a written representation of them, which is very difficult for several reasons:

1) Technicians often write what they often think would be said instead of what is said; e.g., /hɛːtsa/ instead of /hɛsta/ or /ɛmbɛsədɔr/ instead of /ɛmbɛsədər/.

2) There are legitimate differences between speakers that must be considered and resolved: /fydɔr/ ~ /dydɔr/ or /fɪkəmbmɪks/.

3) There are alternative analyses of certain sounds, and before analysts can produce reliable counts, there must be agreement as to the constituents of such items as affricates and diphthongs: Is the first sound of the word chat a unit /	ʃ/ or a combination of /t/ + /s/ ? Similarly, is the diphthong at the beginning of the word ate best interpreted as a unit /e/ or as the simple vowel /e/ followed by a glide /y/? If the latter, are these to be interpreted in the count as one or two phonemes?

4) Another difficulty is to select between alternate forms in free variation. Thus regard may be interpreted as /ræɡərd/ or /riŋɡərd/; electric as /ɛləˈktrɪk/ or /fɪləˈktrɪk/.

Linguists are quick to remind us that symbols are arbitrary and mean only what we choose to make them mean, but astonishingly reluctant to accept anyone else's symbol system. There are also the difficulties mentioned that people speak different dialects, use different style, and select from different registers. To get agreement on all the options implicit in these choices is manifestly impossible. The usual result is time lost in fruitless argument. I have decided to avoid these problems by analyzing my own spoken forms. When I'm satisfied that an utterance seems right to me, that will be the acceptable form. Other analysts will no doubt disagree with some of my decisions. For the listener who cannot accept the interpretations offered, I say simply I have described what I do; you can describe what you do.

I have not only chosen my own speech to analyze, I have identified and designated three formality levels, identified in terms of a formality scale vaguely labeled "moderately formal," "moderately informal," and "liberally informal." These designations correspond roughly, but only roughly, with the middle three of Martin Joos' five clocks; these are usually referred to as deliverative, consultative, and casual. I have done this because I have noticed considerable difference in the phonetic output of my own speech, correlated, I think, with the
formality requirements of the level on which I have spoken.

I have chosen two segments of oral discourse to analyze: the diagnostic passage of Clifford Prator's "Accent Inventory" and a selection from Thornton Wilder's Our Town. I think it will be useful for you to hear each of the three versions I have analyzed. But I can't depend on myself to produce them reliably and consistently under audience pressure, so I have recorded them when the circumstances were calming. I'll play a recording of the three interpretations of the Prator diagnostic passage. You can follow along if you'd like, on your handout.

It is interesting and I think significant to note that different time intervals were required for these recordings, though the text is identical in all three. One of the characteristics of informality is a more rapid delivery of the phonetic material. Thus the moderately formal version which I have marked "0" took 75 seconds. The moderately informal version took only 62 seconds. The liberally informal version, marked "2" took only 52 seconds. Version "1" is 17% shorter than version "0", and version "2" is another 18% shorter than version "1". This undoubtedly has an effect on the pronunciation of the faster versions, and may partly explain why the neutral vowel schwa tends to replace full vowels found in the text, as in the case of /árguːment/, with the schwa appearing in each of the last two syllables, which pronounced more carefully is /árgyuːment/.

Another characteristic of the speeded-up version is a reduction with some words in the number of sounds in the informal renderings. The aitches drop off from where and he in "Where should he live?" Note also that the high back rounded vowel in should is likely to become a schwa in the informal version. And the /t/ drops out of words like plenty, quantity, and advantage (/pléni, kwáŋti, ədvənaj/).

What can we learn in this kind of analysis that will be useful to a teacher? One interesting pattern of information that surfaces is the relative weight of occurrences of the different English vowels. Looking at the data for the Prator selection, we see that in style level "0" schwa occurs 59 times, just 25% of all vowels. In style level "1" this is increased to 98, accounting for 41-1/2% of all vowels. Style level "2" produces 116 occurrences of schwa, just over 50% of the 231 vowels in the selection.

Another interesting observation is that alveolar consonants are far more frequent in occurrence than consonants from any other place of articulation. 196 alveolar consonants yield a percentage of 31.6. The next highest are labial consonants--65 for 10.4% and palatal with 59 for 9.4%. Velar account for only 36 (5.8%); pharyngeal for 21 (3.4%) and dental for 10 (1.6%). When we recall that the palatal assimilation series is made up of an alveolar plus a /y/ we can understand why morphophonemic complexity in English is associated with palatal and alveolar sounds, making them much less stable than the sounds of either extreme of the vocal tract. Thus the bilabials and labiodentals and the velars are likely to appear unchanged at all three style levels.
where the middle series, alveolar and palatal, have extensive changes.

It is interesting to juxtapose and examine the Prator and Wilder selections, to compare the data which emerge. The Wilder excerpt is very conversational and highly informal, with almost exclusive use of one-syllable words (9 exceptions in a vocabulary of 64): eight 2-syllable and one 3-syllable—the name Emily. The Prator selection, in contrast, is a much more formal presentation, an explanatory description of the problems of adjustment that foreign students coming to the United States must face. This selection has 64 monosyllables and 45 polysyllables (27 2-syllable, 12 3-syllable, and 6 4-syllable). With many polysyllabic lexical items the Prator selection is more susceptible to reductions by losing syllables. Such words as cultural, casual, finally, usually, casually, regularly lose an internal syllable when interpreted in an informal linguistic context: /kəlchɾəl, kəζhəl, ʃæŋli, ʃəwzəli, kəζhəli/. Also, the word he appears 10 times with many occasions to drop the h, supported by the appearance of other words that can drop initial /h/, such as his, him, has, what, where, which, etc. Several prepositions (to 9 occurrences, in 5 occurrences, of 5 occurrences, for 4 occurrences, and a sprinkling of others which frequently occur with weak stress in informal contexts) introduce the vowel schwa: /tə/, /ən/, /ev/, /far/. The extensive appearance of the vowel /ə/ in multisyllables and in particles helps boost the total number of occurrences of schwa from 59 in the formal version to 116 in the informal version, an increase of 98%. In contrast, the proportion and progression of schwa can be shown by the percentages of occurrences of schwa in the 0, 1, 2 versions of the two selections. Prator 9.4 - 16.1 - 19.6; but in Wilder 6.6 - 11.3 - 15.6. With fewer weak-stressed syllables in the Wilder excerpt, there are fewer opportunities for schwa to appear.

The percentages of schwa compared to all other vowels in the two selections for style levels 0, 1, and 2 are:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ə/ Prator</td>
<td>25.0</td>
<td>40.6</td>
<td>50.2</td>
</tr>
<tr>
<td>/ə/ Wilder</td>
<td>16.7</td>
<td>28.0</td>
<td>37.9</td>
</tr>
</tbody>
</table>

There is room in Prator for this heavier occurrence of schwa because of the greater number of polysyllables and the more frequent use of particles that reduce under weak stress.

For the same reasons of distribution, the number of occurrences of /t/ reduce faster in the Prator selection, where the percentages in the Prator selection, where the percentages in the three style levels are:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>/t/ Prator</td>
<td>8.4</td>
<td>7.6</td>
<td>7.3</td>
</tr>
<tr>
<td>/t/ Wilder</td>
<td>7.8</td>
<td>7.9</td>
<td>7.2</td>
</tr>
</tbody>
</table>
As mentioned earlier, /t/ disappears in such patterns as advantage-
advantage, winter-winner, and voices to become /d/ in forms like liter-
leader, united-united, etc. We can see again by looking at the change 
figures on the three style levels that labial and velar consonants are 
much more stable than alveolar and palatal, as a rule.

Two comparisons show a greater complexity in the Prator selection, one 
partly phonological and both lexical. These are the syllable-per-word 
and the type-token ratios, which are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Syllables</th>
<th>Words per Word</th>
<th>Tokens</th>
<th>Types per Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prator</td>
<td>236</td>
<td>1.46</td>
<td>162</td>
<td>109</td>
</tr>
<tr>
<td>Wilder</td>
<td>128</td>
<td>1.12</td>
<td>116</td>
<td>64</td>
</tr>
</tbody>
</table>

This indicates many more multisyllabic words in Prator (Wilder is 
almost monosyllabic). Likewise the vocabulary density in Prator is 
much higher than in Wilder. That is to say, there is much more 
repetition of words in Wilder. The discussion of type-token ratios is 
a side trip to the main thrust of the analysis presented in this paper. 
It does, however, confirm that repetition in any form depresses the 
amount of diversity in the analysis.

The data in this study has been gathered by hand counting. This is 
obviously an inefficient way of proceeding in the age of computers. I 
hope to be able to analyze more extensive blocks of data utilizing the 
computer. For this purpose I am suggesting a representation of the 
data shown by a sample in three alphabets (regular, phonetic, and 
computer) on the handout. The text has to be machine readable, but I 
would hope that it is also suggestive to the scholar who has to work 
with it. Two problems in devising an inventory of symbols is how to 
mark stressed syllables and what symbol to use for the schwa. I've 
decided tentatively that the slash following a vowel or glide can 
indicate any higher level of stress (strong, secondary, or medial) with 
the absence an indication of a weak-stressed vowel. I've selected the 
Q to represent the schwa. It has a closed circle similar to the 
printed O and the handwritten a. e has a smaller closed loop, but I 
and u have no suggestive connection. It is unfortunate that a better 
selection seems unlikely. After taking care of the schwa, we still 
have five symbols to represent six vowels. I have followed tradition 
by selecting the sequence AE to represent the low front unrounded 
vowel, commonly called the digraph. A few consonant problems: For 
postdentals I propose H, ZH, CH, and J, adapting the pedagogical 
transcription I have used elsewhere. This improves readability, though 
it will create a few problems in words like hothouse, that must be 
taken care of by inserting space or a hyphen: HOT HOUSE or HOT-HOUSE.

These, then, are some of the considerations that have gone into 
analyses made for this paper. It hasn't solved all of the problems one 
can think of, but it hopefully makes a modest contribution to a better 
understanding of the problems of analyzing pronunciation, especially as 
it is involved in formality levels.
Three Interpretations of the Prator Diagnostic Passage

0. wen a studwental from enadhur kântriy kâmz twu stâdiy in dha
1. wen a studwental from enadhur kântriy kâmz te stâdiy in dha
2. wen a studwental from enadhur kântriy kâmz te stâdiy in dha

yuwnâytâd stéyts hiy hâz twu fâynd dhîy ântsærz twu mënîy
yenâydâd stéyts hiy hâste fâynd dhe ântsærz te mënîy
yenâydâd stéyts hiy hâste fâynd dhe ântsærz te mënîy

kwêshchenz ând hiy hâz mënîy prôblêmz twu thîngk âbâwt hwer shûd
kwêshchenz ând iy hâz mënîy prôblêmz te thîngk âbâwt wêr shûd
kwêshchenz ân iy âz mënîy prôblêmz te thîngk âbâwt wêr shûd

hiy lfv wûd it biy bêtar if hiy lôkt fêr a práyvât rûwêm 5f kâmpes
iy lfv wûd it biy bêdar if iy lôkt fêr a práyvât rûwêm 5f kâmpes
iy lfv wêd at biy bêdar ef iy lôkt fêr a práyvât rûwêm 5f kâmpes

sr if hiy stêyd in dha dôrmîtriy shûd hiy spénd 5l âv hiz têyım
er if iy stêyd ân dha dôrmîtriy shûd iy spénd 5l âv iz têyım
er ef iy stêyd ân dha dôrmîtriy shûd iy spénd 5l âv iz têyım

jât stôdiying shûdent hiy trây twû têyk âdvântij âv dhe mënîy
jês stôdiying shûdent iy trây te têyk âdvântij âv dhe mënîy
ja stôdiyan shûdent iy trây te têyk âdvântij âv dhe mënîy

sôwshel ând kôlichural âktfviityyz hwich âr ûfêrd ât fêrst it iz
sôwshel and kôlichural aktfviityyz wich er ûfêrd ât fêrst it iz
sôwshel ân kôlichural aktfvediyz wich er ûfêrd ât fêrst âts
<table>
<thead>
<tr>
<th>Occurrences</th>
<th>% of all phonemes</th>
<th>% of vowels</th>
<th>% of consonants</th>
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<td>0    1  2</td>
<td>0  1  2</td>
<td>0   1  2</td>
</tr>
<tr>
<td>59 98 116</td>
<td>/ə/</td>
<td>9.43 16.09 19.66</td>
<td>25.00 41.52 50.22</td>
</tr>
<tr>
<td>52 46 43</td>
<td>/t/</td>
<td>8.35 7.55 7.29</td>
<td>7.73 10.08 10.46 11.14 10.56</td>
</tr>
<tr>
<td>36 36 36</td>
<td>/r/</td>
<td>5.78 5.91 6.10</td>
<td>5.93 8.27 8.58 8.91 8.59</td>
</tr>
<tr>
<td>36 32 20</td>
<td>/ɪ/</td>
<td>5.78 5.25 3.39</td>
<td>4.80 7.23 8.85 8.36 8.15</td>
</tr>
<tr>
<td>35 34 31</td>
<td>/iy/</td>
<td>5.62 5.58 5.25</td>
<td>5.48 6.46 6.97 6.96 6.80</td>
</tr>
<tr>
<td>32 32 32</td>
<td>/l/</td>
<td>5.14 5.25 5.42</td>
<td>5.27 5.43 1.34 0.84 2.54</td>
</tr>
<tr>
<td>28 33 30</td>
<td>/d/</td>
<td>4.49 5.42 5.08</td>
<td>5.00 5.17 5.09 5.01 5.09</td>
</tr>
<tr>
<td>25 26 25</td>
<td>/s/</td>
<td>4.01 4.27 4.24</td>
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</tr>
<tr>
<td>21 5 3</td>
<td>/h/</td>
<td>3.37 0.82 0.51</td>
<td>1.57 4.65 4.83 5.29 4.83</td>
</tr>
<tr>
<td>20 19 18</td>
<td>/z/</td>
<td>3.21 3.12 3.05</td>
<td>3.18 4.65 4.83 5.01 4.83</td>
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<tr>
<td>19 19 19</td>
<td>/f/</td>
<td>3.05 3.12 3.22</td>
<td>3.13 4.65 4.83 5.29 4.83</td>
</tr>
<tr>
<td>19 6 4</td>
<td>/uw/</td>
<td>3.05 0.98 0.69</td>
<td>1.57 2.58 2.68 2.23 2.50</td>
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<tr>
<td>18 18 19</td>
<td>/m/</td>
<td>2.89 2.96 3.22</td>
<td>3.02 2.58 3.48 3.06 3.04</td>
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<tr>
<td>18 18 18</td>
<td>/k/</td>
<td>2.89 2.96 3.05</td>
<td>2.97 2.32 2.41 2.51 2.41</td>
</tr>
<tr>
<td>18 11 11</td>
<td>/æ/</td>
<td>2.89 1.81 1.86</td>
<td>2.19 2.32 2.41 2.51 2.41</td>
</tr>
<tr>
<td>15 15 14</td>
<td>/ɛ/</td>
<td>2.41 2.46 2.37</td>
<td>2.41 2.32 2.41 2.51 2.41</td>
</tr>
<tr>
<td>14 10 10</td>
<td>/ɔ/</td>
<td>2.25 1.64 1.69</td>
<td>1.86 2.32 2.41 2.51 2.41</td>
</tr>
<tr>
<td>13 5 5</td>
<td>/ɑ/</td>
<td>2.01 0.82 0.85</td>
<td>1.23 1.88 1.88 1.95 1.88</td>
</tr>
<tr>
<td>10 10 8</td>
<td>/v/</td>
<td>1.60 1.64 1.36</td>
<td>1.53 1.81 1.88 1.95 1.88</td>
</tr>
<tr>
<td>10 13 11</td>
<td>/w/</td>
<td>1.60 2.13 1.86</td>
<td>1.86 1.81 1.88 1.95 1.88</td>
</tr>
<tr>
<td>9 9 9</td>
<td>/p/</td>
<td>1.44 1.48 1.52</td>
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<td>/b/</td>
<td>1.44 1.48 1.52</td>
<td>1.48 1.81 1.88 1.95 1.88</td>
</tr>
<tr>
<td>9 9 9</td>
<td>/dh/</td>
<td>1.44 1.48 1.52</td>
<td>1.48 1.81 1.88 1.95 1.88</td>
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<td>9 9 8</td>
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<td>1.44 1.48 1.36</td>
<td>1.43 3.81 3.81 3.46 3.69</td>
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<tr>
<td>7 7 7</td>
<td>/ch/</td>
<td>1.12 1.15 1.19</td>
<td>1.15 1.81 1.88 1.95 1.88</td>
</tr>
<tr>
<td>7 7 7</td>
<td>/sh/</td>
<td>1.12 1.15 1.19</td>
<td>1.15 1.81 1.88 1.95 1.88</td>
</tr>
<tr>
<td>7 5 1</td>
<td>/u/</td>
<td>1.12 0.82 0.17</td>
<td>0.70 2.97 2.12 0.43 1.84</td>
</tr>
<tr>
<td>Occurrences</td>
<td>% of all phonemes</td>
<td>% of vowels</td>
<td>% of consonants</td>
</tr>
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<td>2</td>
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<td>0.34</td>
</tr>
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<td>1 1 1</td>
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<td>0.16</td>
<td>0.17</td>
</tr>
<tr>
<td>1 1 1</td>
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<td>0.16</td>
<td>0.17</td>
</tr>
<tr>
<td>0 0 0</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Tot.** | 623 | 236 | 387

0 = formal, consultative key
1 = moderately informal, modestly casual key
2 = liberally informal, extensively casual key
\( \bar{X} \) = composite mean
While success in first language acquisition is inevitable in all normal individuals, success in second language acquisition is highly variable. The effects of aptitude and motivation on proficiency in second language learning have been examined, but relatively little has been said about what social factors might also influence the degree to which a second language is learned. Within the construct of social distance, this paper explores societal factors that either promote or inhibit social solidarity between two groups and thus affect the extent to which a second language learning group (2LL group) acquires the language of a particular target language group (TL group). Social distance pertains to the individual as a member of a social group which is in contact with another social group whose members speak a different language. The assumption is that the greater the social distance between the two groups the more difficult it is for the members of the 2LL group to acquire the language of the TL group. The following issues are involved in social distance: In relation to the TL group is the 2LL group politically, culturally, technically or economically dominant, non-dominant, or subordinate? Is the integration pattern of the 2LL group assimilation, adaptation, or preservation? What is the 2LL group's degree of enclosure? Is the 2LL group cohesive? What is the size of the 2LL group? Are the cultures of the two groups congruent? What are the attitudes of the two groups toward each other? What is the 2LL group's intended length of residence in the target language area?

In terms of political, cultural, technical or economic status, in a language contact situation, one group may be either dominant, non-dominant, or subordinate (see Dennis & Scott 1975). If the 2LL group is dominant in relation to the TL group such that its modal status (standard of living, level of education, degree of technical development, political power) is higher than that of TL group, then social distance will prevail between the two groups. In such a situation the 2LL group will tend to learn little of the target language and a class of interpreters will usually evolve to mediate communication between the two. If the 2LL group's modal status is lower than that of the TL group, then the 2LL group will be subordinate in the relationship, and once again social distance will prevail. This situation will limit contact between the two groups such that the 2LL group may have little
opportunity, need or desire to learn the target language. If, however, the modal status of the 2LL group is roughly equal to that of the TL group, then the former is considered non-dominant in relation to the latter and social distance becomes minimal. Such a situation should facilitate intergroup contact and thus promote the acquisition of the target language by the 2LL group. Of course there may be differences of opinion between the TL group and 2LL group as to the relative modal status of the latter; therefore, the dominant, non-dominant, subordinate dimension has to be assessed by viewing it both through the eyes of the TL group and the eyes of the 2LL group.

In terms of cultural patterns involving life-style and values, there are three general integration strategies which the 2LL group might adopt: assimilation, adaptation or preservation. If the 2LL group decides to assimilate, then it gives up its own life-style and values and adopts those of the TL group. If it chooses to acculturate, then its members adapt to the life-style and values of the TL group, but at the same time maintain their own cultural patterns for use in intragroup relations. Preservation, as defined here, is a strategy in which the 2LL group completely rejects the life-style and values of the TL group and attempts to maintain its own cultural pattern as much as possible. Assimilation fosters minimal social distance and preservation causes it to be maximal. Hence, second language learning is enhanced by assimilation and hindered by preservation. Adaptation falls in the middle. Again, the TL group and the 2LL group may have conflicting goals with regard to assimilation, adaptation and preservation, therefore, these strategies must be examined from both the point of view of the TL group and that of the 2LL group. It should be noted that conflicting goals are likely to generate hostility between the two groups. Such hostility would perhaps foster even greater social distance than would be caused by both parties being comfortable with the 2LL group choosing preservation as its integration strategy.

Shermerhorn (1970, see also Paulston 1975) uses the term "enclosure" to refer to structural aspects of integration as opposed to cultural aspects (life-style and values). Enclosure involves factors such as endogamy, institutional separation, and associational clustering. If the two groups have separate schools, churches, clubs, recreational facilities, if they have restrictions on marrying outside their specific group enforced by either custom or law, if they tend to have separate professions, crafts or trades, then the degree of enclosure is considered high. On the other hand, if the two groups share the same social institutions, are free to marry outside their group and engage in the same professions, crafts and trades, then the degree of enclosure is low. High enclosure maintains social distance, limits contact between the two groups and thus hinders acquisition of the target language. Low enclosure has the opposite effect.

Cohesiveness is another factor affecting social distance. If the 2LL group is cohesive, then its members will tend to remain separate from the TL group, thus producing social distance. A factor closely related to cohesiveness is size. If the 2LL group is large, then intra-group
contact is likely to be far more frequent than inter-group contact and in certain cases may even exclude the latter.

Congruence or similarity between the culture of the TL group and that of the 2LL group also affects social distance. If the two cultures are similar, then integration is facilitated and social distance is reduced. Congruence, of course, is a relative term and therefore we speak of cultures A and B as being more congruent than cultures A and C.

Another factor that affects social distance is the attitude of the two groups toward each other. Attitudinal orientation refers to the cultural expectations maintained by the 2LL group towards the TL group and vice versa. Such expectations involve ethnic stereotypes by which one community either positively or negatively values the other, these favorable views will be communicated to the learner and will enhance his acquisition of the target language. This is especially true if both groups hold the belief that the acquisition of the target language by the 2LL group is both possible and desirable. On the other hand, if both communities hold negative stereotypes about each other and/or feel that the acquisition of the target language by the 2LL group is either unnecessary or undesirable, then social distance will prevail and acquisition of the target language will be inhibited. Of course, it is possible that the two groups evaluate each other differently. For example, the TL group could have positive attitudes towards the 2LL group while the 2LL group holds considerably less positive or even negative views towards the TL group. Attitudes usually cannot be accurately assessed by observation but must be measured using social-psychological instruments such as semantic differential scales, matched guise procedures, and cultural preference scales (see Gardner and Lambert 1972; Gardner et al. 1974).

The final factor involved in social distance is the 2LL group's intended length of residence in the target language area. If the 2LL group intends to remain permanently (or at least for a long time) in the target language area, then it is likely to develop more extensive contacts with the TL group than if it were just passing through or remaining for only a short time. Therefore, an intended lengthy residence in the target language area would tend to reduce social distance.

There are two important points that must be made regarding the social factors described above. The first is that these factors are not independent; they often interact such that one will affect another. For example, a group's desire for preservation is likely to make it cohesive and also produce high enclosure. The second point is that the social factors within each grouping are treated as though they were discrete categories, but in reality each grouping is a continuum. In other words, the categories dominant, non-dominant and subordinate represent the terminal and middle points on a continuum rather than discrete designations into which all groups can be neatly classified.

Using these social factors we can describe good and bad second language
<table>
<thead>
<tr>
<th></th>
<th>Political, economic, technical, cultural</th>
<th>Culture</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLgp views</td>
<td>TLgp desires</td>
<td>2LLgp desires</td>
<td>2LLgp desires</td>
</tr>
<tr>
<td>2LLgp views itself</td>
<td>assimilation adaptation preservation</td>
<td>assimilation</td>
<td>high enclosure</td>
</tr>
<tr>
<td></td>
<td>dominant</td>
<td>adaptation</td>
<td>moderate enclosure</td>
</tr>
<tr>
<td></td>
<td>dominant</td>
<td>preservation</td>
<td>low enclosure</td>
</tr>
<tr>
<td></td>
<td>subordinate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Bad language learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Situation I</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>B. Bad language learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Situation II</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>C. Good language learning</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Situation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. American living in Saudi Arabia</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. American Jewish immigrants to Israel</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**TABLE 1**

Analysis of social distance characteristics for good and bad language learning situations

A. Bad language learning

- Situation I
- Situation II

B. Bad language learning

- Situation II

C. Good language learning

- Situation

D. American living in Saudi Arabia

E. American Jewish immigrants to Israel
learning situations based on the extent to which social distance is promoted. This is illustrated in Table 1 where rows A and B indicate the characteristics of bad language learning situations and row C those of a good language learning situation. Row D illustrates the social distance profile of Americans living in Saudi Arabia and row E that of American Jewish immigrants to Israel. The matching *'s in rows A and D and the matching X's in rows C and E are used to show the similarity of the social distance profiles in both columns.

One of the bad situations (row A, Table 1) would be where the TL group views the 2LL group as dominant and the 2LL group views itself in the same way, where both groups desire preservation and high enclosure for the 2LL group, where the 2LL group is both cohesive and large, where the two cultures are not congruent, where the two groups hold negative attitudes toward each other, and where the 2LL group intends to remain in the TL area only for a short time. This type of situation is likely to develop for Americans living in Riyadh, Saudi Arabia (row D, Table 1). The population of Riyadh is about 300,000 (Paxton 1973). There are currently 8,000 Americans in that city and within a few years the number is expected to reach thirty thousand. The Americans will most probably be viewed as technically, economically and perhaps even culturally dominant, and they will most probably have the same view of themselves. Because the two cultures are so different (congruent) in terms of religion and social customs, both parties will probably desire high enclosure. Thus the Americans will live in certain parts of the city, have their own medical facilities, schools, and recreational activities. In addition, most of the Americans will probably be on two or three year contracts such that their intended length of residence in Saudi Arabia will be short. The attitudes of the two groups towards each other cannot be judged a priori and would require careful assessment.

The second bad situation (row B, Table 1) has all the characteristics of the first except that in this case, the 2LL group would consider itself subordinate and would also be considered subordinate by the TL group. This has been the traditional situation of Navajo Indians living in the Southwest (and of American Indians in general). For years, by their own view and that of the Anglos, they have been politically, economically, technically and culturally subordinate to the dominant English-speaking majority. The fact that they have been forced to live on reservations and at the same time desired to preserve their own culture, which is quite different from that of the Anglo majority, has produced high enclosure and cohesiveness. In this contact situation it is probably safe to assume that attitudes of the two groups towards each other have been more negative than positive. All these factors have placed the Navajos at considerable social distance from English-speaking Americans and have made their acquisition of English difficult. Similar political, economic, technical and cultural subordination has existed for first generation immigrants to the United States from all over the world. The concomitant social distance was often only overcome by the second generation, who learned English while their parents did not.
A good language learning situation (row C, Table 1) would be one where the 2LL group is non-dominant in relation to the TL group, where both groups desire assimilation (or at least acculturation) for the 2LL group, where low enclosure is the goal of both groups, where the 2LL group is small and non-cohesive, where both groups have positive attitudes towards each other, and where the 2LL group intends to remain in the target language area for a long time. Under such conditions social distance would be minimal and acquisition of the target language would be enhanced. An example of such a situation would be American Jewish immigrants to Israel (row E, Table 1). They consider themselves politically, economically, technically and culturally equal to the Israelis, and this view is reciprocated by the Israelis themselves. Since low enclosure is desired for the Americans both by themselves and by the Israelis, Americans do not remain cohesive. Since both cultures have similar religious beliefs, the other cultural differences which may exist are minimized and the two cultures can be said to be reasonably congruent. In this case we can generally assume that the two groups have positive attitudes towards each other. Finally, since the Americans are immigrants seeking Israeli citizenship, they obviously intend to remain in Israel for a long time. All these factors facilitate the acquisition of Hebrew by the Americans.

Certain 2LL groups lack a modal tendency and therefore are difficult to classify in this system. As is noted in Shermerhorn (1970), there are at least four ways subordinate minority groups can react to their subordinate status. They can assimilate and abandon their life-style and values for those of the TL group. They can seek a pluralistic situation in which they make certain adaptations to the target language culture, but essentially choose to maintain their own life-style and values. They can attempt to secede and separate themselves politically from the dominant group or they can become militant and attempt to seize political power from the dominant group. Thus in cases where a 2LL group has several subgroups with different modal tendencies, each subgroup would have to be categorized separately in assessing its social distance from the TL group.

The social distance classification system presented above can sometimes produce contradictions, but at the same time it can provide a basis for explaining these contradictions. For example, we have noted that if the 2LL group is dominant its acquisition of the target language will be hindered. However, Jill de Villiers (personal communication) has pointed out that there are white farmers in Africa who are certainly dominant but who nevertheless speak the local language fluently. This can be explained by the fact that the farmers must know the local language to maintain their dominance. In this case, the apparent contradiction of a dominant 2LL group acquiring the language of a subordinate group could be the result of the dominant group's lack of cohesiveness.

In order to experimentally test these ideas about social distance one might choose a population such as Americans in Saudi Arabia and compare its success in the acquisition of Arabic to the success in the acquisition of Hebrew experience by American immigrants to Israel. This research strategy would require finding comparable samples of subjects.
from both populations and finding comparable measures of language proficiency. To examine social distance phenomena a questionnaire might be developed which would be filled out by experimenters doing research in second language acquisition. In it they might attempt to classify the subjects with whom they were working (either groups of individuals) on social distance dimensions. The questionnaire would be designed to permit the researcher to rate a particular 2LL group's dominance, cohesiveness, enclosure, etc., on a numerical scale, to compute a social distance score for the group and then to relate that score to the extent of development found in his subject(s)' speech.

However, there are several problems associated with a numerical quantification of a group's social distance. For example, we cannot assume that each characteristic (cohesiveness, attitude, subordination, etc.) is equally powerful in promoting social distance nor, as mentioned earlier, can we view these categories as necessarily being independent of each other.

As the classification of 2LL groups in either the bad or good language learning situations becomes less determinant (i.e., if a group stands somewhere between the bad and good situations), then success in acquiring the target language becomes more a matter of the individual as an individual rather than of the individual as a member of a particular social group. In addition, in either a good or bad language learning situation, an individual can violate the modal tendency of his group. Thus an individual might learn the target language where he is expected not to, and not learn the language where successful acquisition is expected. In these cases it is psychological distance (or proximity) between the learner and the TL group that accounts for successful versus unsuccessful second language acquisition. Schumann (1975a and b) has delineated the factors which create psychological distance between the learner and the speakers of the target language. These factors are affective in nature and involve such issues as the resolution of language shock, culture shock and culture stress, integrative versus instrumental motivation and ego-permeability.

REFERENCES


MEASURING THE READING LEVEL OF LDS MATERIALS:
A SUPPLEMENT TO THE DALE WORD LIST

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Mitra I. White
University of Utah
LDS Church Correlation Evaluation

INTRODUCTION

During the past year, the Editing Section of the Church Curriculum Department has been conducting a study of the reading levels of Church publications. Using a computerized program, editors measure the reading level of Church manuscripts and, when necessary, lower the reading level during the editing process.

One of the formulas used in this analysis is the Dale-Chall formula, generally considered the most accurate formula for measuring the reading level of adult materials. It is based on the Dale word list of 3,000 words, which are known by 80 percent of fourth graders. Because of the heavy reliance on "LDS vocabulary" in materials published by the Church, the Dale-Chall formula sometimes exaggerates the reading difficulty of materials intended for an LDS audience.

PROCEDURES

In an attempt to account for the specialized vocabulary known by most Church members, we proposed to supplement the Dale list with a list of LDS words when the Dale-Chall formula is used to measure materials prepared for an LDS audience. This supplement was obtained by--

1. Identifying non-Dale words that occur frequently in LDS publications.

2. Testing 850 of these words on LDS fourth graders to determine which ones are known by 80 percent of the children.

3. Adding these words to the Dale list when the Dale-Chall formula is applied to LDS materials.

Eight hundred and fifty words were selected from a frequency count prepared by the BYU Translation Services Department and the Church Information Systems Department. The frequency count was obtained from Church magazines, general and area conference addresses, the 1979-80 Gospel Doctrine manual, the 1980-81 Family Home Evening manual, Gospel Principles, and Gospel Essentials.
These words were divided into twenty-five test forms of thirty-four words each and tested in a three-option, multiple-choice format. After pretesting in twenty-five Utah wards, the test was administered by the Correlation Department to fourth graders in the United States, Canada, the British Isles, Australia, New Zealand, and the Philippines. Thirty-eight stakes were selected for the study according to a stratified random sampling from Utah, other western states, the Midwest, the East, and foreign countries.

FINDINGS

Of the 850 words tested, 249 were identified correctly by at least 80 percent of the LDS fourth graders. These words (listed in the Appendix) should constitute a valid addition to the Dale word list when the Dale-Chall formula is applied to LDS materials.

An analysis of variance showed that children in the United States scored significantly higher on the test than children in foreign countries (P < .01).

RECOMMENDATIONS

1. In addition to supplementing the Dale list with a list of LDS terms, the test results may have other uses for Church writers and editors. By indicating what terms and concepts are not clearly understood by LDS fourth graders, the test results might be used to identify topics that need to be emphasized or better clarified in the youth curriculum of the Church. The results indicate, for example, that most students are familiar with the concept of resurrection (86 percent), but few with atonement (32 percent). Other terms that do not seem to be clearly understood by this age group are standard works (24 percent), exaltation (31 percent), degrees of glory (39 percent), charity (46 percent), chastity (50 percent), moral (32 percent), morality (24 percent), revelation (50 percent), and patriarchal (18 percent).

2. The words could be tested on LDS populations at higher levels (grades 6, 8, 10, 12, 13, and 16) to determine when the words can be considered "familiar."

3. At present very little is known about the reading abilities of LDS adults. Numerous materials are published each year for different adult audiences in the Church—priesthood leaders, the Relief Society, clerks and secretaries, teachers, members in developing areas, all adult members, etc. Some measure of the reading ability of these groups would make it possible to target different Church publications to an appropriate reading level.

4. Readability measurement needs to be expanded to non-English Church materials, particularly in the areas where literacy rates are low. Formulas have been developed for several foreign languages.
Computerized versions of these formulas would make them much more accessible to Church writers and translators.

5. The Church publications that rate highest in difficulty are administrative materials—handbooks, bulletins, and instructions. These are also the materials that rely most heavily on a technical vocabulary. Most of these words are not commonly used by fourth graders and thus do not appear in our 249-word supplement. More research is needed to determine how well these terms are understood by adult members, particularly Church leaders who are fairly new in the Church and must read a large amount of instructional material.

6. Much more research is needed in the broad area of writing style. The following questions have scarcely been addressed: What style is most appropriate for Church materials? How formal should it be? What style do members prefer? How does the writing style of Church publications affect the interest level and the effectiveness of the message?
## APPENDIX: LDS SUPPLEMENT TO THE DALE WORD LIST

<table>
<thead>
<tr>
<th>Score</th>
<th>Word--Word Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>84%</td>
<td>ABSENCE -- Not being there</td>
</tr>
<tr>
<td>91%</td>
<td>ACCOMPLISH -- Get done</td>
</tr>
<tr>
<td>90%</td>
<td>ACCOMPLISHMENT -- Something done after hard work</td>
</tr>
<tr>
<td>84%</td>
<td>ACHIEVE -- Gain by hard work</td>
</tr>
<tr>
<td>94%</td>
<td>ACTION -- Doing something</td>
</tr>
<tr>
<td>87%</td>
<td>ACTIVITY -- Doing something with others</td>
</tr>
<tr>
<td>85%</td>
<td>ADVANCE -- Move forward</td>
</tr>
<tr>
<td>80%</td>
<td>ADVISER(OR) -- Teacher or helper</td>
</tr>
<tr>
<td>82%</td>
<td>ALMIGHTY -- All powerful</td>
</tr>
<tr>
<td>100%</td>
<td>AMEN -- End of prayer</td>
</tr>
<tr>
<td>84%</td>
<td>ANCESTORS -- People who lived before us</td>
</tr>
<tr>
<td>87%</td>
<td>APOSTLES -- Twelve men who lead the Church</td>
</tr>
<tr>
<td>80%</td>
<td>APPROVE -- Accept</td>
</tr>
<tr>
<td>81%</td>
<td>ASSIGN -- Give a job</td>
</tr>
<tr>
<td>86%</td>
<td>ASSIGNMENT -- Job'</td>
</tr>
<tr>
<td>87%</td>
<td>ASSIST -- To help</td>
</tr>
<tr>
<td>94%</td>
<td>ASSISTANCE -- Help</td>
</tr>
<tr>
<td>81%</td>
<td>ASSOCIATION -- A group</td>
</tr>
<tr>
<td>97%</td>
<td>ASSURE -- Make someone feel sure</td>
</tr>
<tr>
<td>88%</td>
<td>ATTENDANCE -- Being there</td>
</tr>
<tr>
<td>96%</td>
<td>ATTITUDE -- Way of feeling</td>
</tr>
<tr>
<td>89%</td>
<td>BAPTISM -- Being covered with water when you join the Church</td>
</tr>
<tr>
<td>82%</td>
<td>BEYOND -- Farther than</td>
</tr>
<tr>
<td>93%</td>
<td>BISHOP -- Church leader</td>
</tr>
<tr>
<td>91%</td>
<td>BLESSINGS -- Gifts from God</td>
</tr>
<tr>
<td>86%</td>
<td>BRETHREN -- Men who are members of the Church</td>
</tr>
<tr>
<td>88%</td>
<td>CALLING -- Job in the Church</td>
</tr>
<tr>
<td>94%</td>
<td>CAST OUT -- Get rid of</td>
</tr>
<tr>
<td>90%</td>
<td>CELESTIAL kingdom -- The highest place in heaven</td>
</tr>
<tr>
<td>89%</td>
<td>CELESTIAL marriage -- Lasting forever</td>
</tr>
<tr>
<td>84%</td>
<td>CEREMONY -- Special meeting</td>
</tr>
<tr>
<td>80%</td>
<td>CHALLENGE -- Something hard to do</td>
</tr>
<tr>
<td>91%</td>
<td>CHAPEL -- Holy room in a church</td>
</tr>
<tr>
<td>97%</td>
<td>CHAPTER -- Part of a book</td>
</tr>
<tr>
<td>88%</td>
<td>COMMANDMENT -- God's law</td>
</tr>
<tr>
<td>89%</td>
<td>COMPANION -- One who goes with another</td>
</tr>
<tr>
<td>84%</td>
<td>CONFERENCE -- Large meeting</td>
</tr>
<tr>
<td>83%</td>
<td>CONFIRM -- Put hands on a person's head</td>
</tr>
<tr>
<td>83%</td>
<td>CONTACT -- Get in touch with</td>
</tr>
<tr>
<td>89%</td>
<td>CONTROL -- Have power over</td>
</tr>
<tr>
<td>81%</td>
<td>CONVERT -- Someone who joins the Church</td>
</tr>
<tr>
<td>86%</td>
<td>CONVERT -- Help someone join the Church</td>
</tr>
<tr>
<td>86%</td>
<td>COOPERATE -- Work together</td>
</tr>
<tr>
<td>97%</td>
<td>COUNCIL -- Group of leaders who meet together</td>
</tr>
<tr>
<td>83%</td>
<td>COUNCILOR, high -- Church leader</td>
</tr>
<tr>
<td>85%</td>
<td>COURAGE -- Bravery</td>
</tr>
<tr>
<td>87%</td>
<td>CREATE -- Make</td>
</tr>
<tr>
<td>85%</td>
<td>CREATION -- Make something</td>
</tr>
</tbody>
</table>
87%  CREATION -- All the world
83%  CREATION -- When God made the world
81%  CUSTOM -- Usual way of doing something
80%  DEACON -- Can pass the sacrament
100% DECISION -- Making up your mind
83%  DECLARE -- Make known
86%  DEPRESSED -- Sad
83%  DEVELOPMENT -- Growth
82%  DIRECTOR -- Someone in charge
80%  DISCIPLE -- Follower
87%  DISCOURAGED -- Losing hope
82%  DISCOURAGEMENT -- Loss of hope
84%  DISCUSS -- Talk about
88%  DISCUSSION -- Talk between people
87%  DISTRICT -- A certain area of the Church
90%  DOUBT -- Not being sure
87%  EDUCATIONAL -- Has to do with learning
97%  ELECT -- Chosen
80%  ETERNAL -- Endless
86%  EVERLASTING -- Never-ending
85%  EXPERIENCE -- Learn by doing
86%  FAITH -- Believing in something you cannot see
87%  FAITHFUL -- Can be trusted
100% FASTING -- Going without food
80%  FERVENT -- With great feeling
97%  FINAL -- Last one
84%  FIRSTBORN -- Oldest child
80%  FOLLOWER -- Does what someone else says
88%  FORCE -- Power
87%  FORCE -- Making someone do something
93%  FOREVER -- Always
81%  FORGAVE -- Forgot the bad someone did
89%  FORGIVE -- Forget the bad someone has done
100% FORGIVENESS -- Forgetting the bad someone has done
83%  FULFILL a dream -- Make happen
80%  FULL-TIME -- Do all the time
91%  FUND -- Supply of money
92%  FUNERAL -- Meeting for someone who died
86%  FUTURE -- Yet to come
93%  GENEALOGY -- Family history
96%  GLORIOUS -- Wonderful
82%  GOSPEL -- Teachings of Jesus
85%  GRIEF -- Great sadness
80%  GUARDIAN -- Takes care of another
80%  GUILTY -- Having done wrong
92%  HANDICAPPED -- Blind or crippled
86%  HANDOUT -- Something given
83%  HEAVENLY FATHER -- God
94%  HEAVENS -- The sky above
89%  HENCEFORTH -- From this time on
92%  HOLDER, priesthood -- One who has the priesthood
91%  HOLDS the priesthood -- Has the priesthood
94%  HOLY GHOST -- Spirit that tells us what is right
94%  HONEST -- Tells the truth
<table>
<thead>
<tr>
<th>Percentage</th>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>91%</td>
<td>HONESTY</td>
<td>Truthfulness</td>
</tr>
<tr>
<td>82%</td>
<td>HONORABLE</td>
<td>Can be trusted</td>
</tr>
<tr>
<td>93%</td>
<td>HUMAN</td>
<td>Person</td>
</tr>
<tr>
<td>86%</td>
<td>ILLNESS</td>
<td>Sickness</td>
</tr>
<tr>
<td>87%</td>
<td>ILLUSTRATION</td>
<td>Picture or example</td>
</tr>
<tr>
<td>85%</td>
<td>IMPORTANCE</td>
<td>Seriousness</td>
</tr>
<tr>
<td>85%</td>
<td>IMPROVEMENT</td>
<td>Makes better</td>
</tr>
<tr>
<td>86%</td>
<td>INDEPENDENCE</td>
<td>Freedom</td>
</tr>
<tr>
<td>83%</td>
<td>INDIVIDUAL</td>
<td>One person</td>
</tr>
<tr>
<td>81%</td>
<td>INFLUENCE</td>
<td>Cause a change</td>
</tr>
<tr>
<td>84%</td>
<td>INSTRUCTION</td>
<td>Lessons</td>
</tr>
<tr>
<td>86%</td>
<td>INSTRUCTOR</td>
<td>Teacher</td>
</tr>
<tr>
<td>82%</td>
<td>INTEREST</td>
<td>A liking for</td>
</tr>
<tr>
<td>84%</td>
<td>INTRODUCE</td>
<td>Make known</td>
</tr>
<tr>
<td>82%</td>
<td>INVOLVE</td>
<td>Get someone into</td>
</tr>
<tr>
<td>93%</td>
<td>JOURNAL</td>
<td>Daily record</td>
</tr>
<tr>
<td>94%</td>
<td>JUDGE</td>
<td>Decide</td>
</tr>
<tr>
<td>85%</td>
<td>KNEEL</td>
<td>Got on knees</td>
</tr>
<tr>
<td>96%</td>
<td>KNOWLEDGE</td>
<td>What you have learned</td>
</tr>
<tr>
<td>90%</td>
<td>LOCAL</td>
<td>By where you live</td>
</tr>
<tr>
<td>86%</td>
<td>LOYAL</td>
<td>Can be trusted</td>
</tr>
<tr>
<td>87%</td>
<td>MANUAL</td>
<td>Book of lessons</td>
</tr>
<tr>
<td>87%</td>
<td>MATERIALS</td>
<td>Things needed to make something</td>
</tr>
<tr>
<td>88%</td>
<td>MEETINGHOUSE</td>
<td>Church building</td>
</tr>
<tr>
<td>80%</td>
<td>MEETINGS</td>
<td>People getting together for a reason</td>
</tr>
<tr>
<td>83%</td>
<td>MESSENGER</td>
<td>Someone who brings news</td>
</tr>
<tr>
<td>85%</td>
<td>MIRACLE</td>
<td>Wonderful thing that is hard to believe</td>
</tr>
<tr>
<td>91%</td>
<td>MISSION</td>
<td>Time of teaching the gospel</td>
</tr>
<tr>
<td>81%</td>
<td>MISSION</td>
<td>Important work</td>
</tr>
<tr>
<td>100%</td>
<td>MISSIONARY</td>
<td>One who teaches the gospel</td>
</tr>
<tr>
<td>100%</td>
<td>Mob</td>
<td>Angry crowd</td>
</tr>
<tr>
<td>80%</td>
<td>NATURAL</td>
<td>Part of the outdoor world</td>
</tr>
<tr>
<td>83%</td>
<td>NEEDY</td>
<td>Very poor</td>
</tr>
<tr>
<td>100%</td>
<td>NONMEMBER</td>
<td>Doesn't belong to the Church</td>
</tr>
<tr>
<td>81%</td>
<td>NUMEROUS</td>
<td>Many</td>
</tr>
<tr>
<td>90%</td>
<td>NURSERY</td>
<td>Room for small children</td>
</tr>
<tr>
<td>82%</td>
<td>OBEDIENCE</td>
<td>Doing what you are told to do</td>
</tr>
<tr>
<td>100%</td>
<td>OBEDIENT</td>
<td>Doing as you are told</td>
</tr>
<tr>
<td>91%</td>
<td>OFFERING</td>
<td>Something given</td>
</tr>
<tr>
<td>93%</td>
<td>OFFICIAL</td>
<td>Someone who holds an important job</td>
</tr>
<tr>
<td>85%</td>
<td>ORGANIZE</td>
<td>Put in order</td>
</tr>
<tr>
<td>89%</td>
<td>PARTAKE</td>
<td>Take a share</td>
</tr>
<tr>
<td>82%</td>
<td>PARTICIPATE</td>
<td>Take part in something</td>
</tr>
<tr>
<td>83%</td>
<td>PARTICIPATION</td>
<td>Taking part in something</td>
</tr>
<tr>
<td>88%</td>
<td>PARTNERSHIP</td>
<td>People working together</td>
</tr>
<tr>
<td>90%</td>
<td>PATIENCE</td>
<td>Ability to wait</td>
</tr>
<tr>
<td>88%</td>
<td>PATIENT</td>
<td>Able to wait</td>
</tr>
<tr>
<td>81%</td>
<td>PATTERN</td>
<td>Model to follow</td>
</tr>
<tr>
<td>80%</td>
<td>PERFORM</td>
<td>Do</td>
</tr>
<tr>
<td>85%</td>
<td>PERSONAL</td>
<td>For yourself</td>
</tr>
<tr>
<td>89%</td>
<td>PERSONALITY</td>
<td>What a person is like</td>
</tr>
<tr>
<td>86%</td>
<td>PERSONS</td>
<td>Human beings</td>
</tr>
<tr>
<td>82%</td>
<td>PIONEER</td>
<td>Explorer</td>
</tr>
<tr>
<td>93%</td>
<td>PIONEERS</td>
<td>Traveled to Utah</td>
</tr>
</tbody>
</table>
POSTER -- Sign
PRACTICE -- Do many times
PREPAREDNESS -- Being ready
PRESENCE -- Being there
PRESIDENT -- Main leader of a group
PRIDE -- Being pleased with yourself
PRIESTHOOD -- Power God gives to good men
PRIMARY -- Church meeting for children
PRIORITIES -- Things that are most important
PRIVATE -- Alone or secret
PROBLEM -- A hard question
PROBLEM -- Difficulty or trouble
PROJECT -- A job to do
PROPHET -- Head of the Church
PUBLISH -- Print
PUNISHMENT -- Pain received for doing wrong
PURPOSE -- Reason for doing something
REALLY -- Truly
REBAPTISM -- Join the Church again
RECIPE -- Cooking directions
REJECT -- Turn away from
RELATION -- Belongs to the same family
RELATIVE -- Belongs to the same family
RELIEF SOCIETY -- Church group for women
RELIGION -- Belief in God
RELIGIOUS -- Believes in God
REMEMBRANCE -- Memory
REQUEST -- Ask for
RESPOND -- Answer
RESPONSIBILITY -- An important job
RESTORE -- Bring back again
RESURRECTION -- Rising from the dead
REVERENCE -- Love and honor for God
REVERENT -- Quiet
RIGHTEOUS -- Does good
SABBATH -- Sunday
SACRED -- Holy
SACRIFICE -- Giving up something
SATISFY -- To please
SACRED -- Jesus
SCATTERED -- Spread around
SCRIPTURAL -- From holy writings
SEALINGS -- Joining families together forever
SECRETARY -- Writes things down
SECTION -- Part
SELFISHNESS -- Not sharing with others
SERIOUS -- Important
SESSION -- One meeting
SEXUAL -- Of men and women
SITUATION -- How things are
SKILL -- Something you can do well
SOMEDAY -- At some future time
SPARE -- Save
SPIRIT -- Part of man that doesn't die
SPIRIT -- Helps us know what's right
STAKE -- An area made up of several wards
STANDARD -- Rule to live by
STATEMENT -- Something said or written
STORAGE -- Things kept for later use
STOREHOUSE -- Where things are kept
STRENGTH -- Power
STRENGTHEN -- Make stronger
STRIVE -- Try hard
STUDENT -- Learner
SUCCEED -- Do well
SUCCESS -- Something done well
SUGGEST -- Give an idea
SUGGESTION -- Idea that might work
SUPPLY -- Something kept for future use
SUPPORT -- Help
TALENT -- Something you can do well
TEMPLE -- House of God
TESTAMENT -- Part of the Bible
TESTIFY -- Tell what you know is true
THEREFORE -- Because one thing is true, another thing is true
THINE -- Yours
TITHE -- Give one-tenth to the Church
TITHING -- One-tenth given to the Lord
TOTAL -- All
TRANSLATION -- Written in another language
TRIBE -- Large family
UNDERSTOOD -- Knew the meaning
UNIT -- A part
UNSELFISH -- Thinking of others
WARD -- Mormons who live in the same area and attend Church together
WELFARE -- Helping poor people
WICKED -- Bad
WICKEDNESS -- Doing evil
WIDOW -- Woman whose husband is dead
WITNESS -- Tell what you know is true
WORD OF WISDOM -- Lord's law of health
WORLDWIDE -- The whole world
WORSHIP -- Honor God
THE EFFECT OF MULTIPLE RETESTING ON AFFECT AND TEST PERFORMANCE

Mary Lee Scott
Brigham Young University

The ostensible purpose of most tests, including language placement examinations, is to measure a student's knowledge and skill in a given subject area as accurately and as efficiently as possible. Unfortunately, this is not always as clear-cut a task as it may originally appear, as there seem to be several sources of variance in student scores in addition to a student's actual knowledge of the subject matter and random error of measurement. Many researchers (Millman, Bishop, and Ebel, 1965; Ford, 1973; Woodley, 1975; Wu and Slakter, 1978) have suggested that test wiseness is also a source of variance in student test scores.

Test wiseness or test "sophistication" (Erickson, 1972) has been defined by Millman, Bishop and Ebel (1965:707) as "a subject's capacity to utilize the characteristics and formats of the test and/or test taking situation to receive a high score. Test wiseness is logically independent of the examinee's knowledge of the subject matter for which the items are supposedly measures." Ebel and Damrin (1960) have suggested that test wiseness is a specific cognitive skill and as such, is capable of being developed through experience. It is felt to be responsible, at least in part, for the effects of practice and coaching on performance. In general, practice refers to actual experience in taking a certain type of test, such as a standardized achievement test or an IQ test, while coaching refers to training in test-taking techniques, including feedback on performance on sample test questions or alternate test forms (Berkeley and Sproule, 1973).

The results of the many studies examining the effects of practice and coaching on test performance are somewhat conflicting and inconclusive. In general, it seems that practice may result in a trend toward improvement in performance, although this improvement is not always statistically significant (Greene, 1937; Howard, 1964; Droege, 1966; Lane, 1966; Kreit, 1968; Mann, Taylor, Proger, Dungan and Tidley, 1970; Bowen, 1977). Other studies, examining the effect of coaching on test performance, have discovered that although an increase in test wiseness can be shown, these skills do not always generalize to an outside criterion test unrelated to the specific exercises used in training (Frankel, 1960; Wahlstrom, 1968; Lewis, 1971; Hecht, 1973; Woodley, 1975).

The effect of lack of test wiseness or test "sophistication" on performance (Berkeley and Sproule, 1973) is of genuine concern to test developers in the field of language testing as well. Several studies
have shown that the performance of students of similar ability but from different national backgrounds varies considerably on different test formats (Vernon, 1962; Millman and Setijadi, 1966; Lo and Slakter, 1973; Farhady, 1979). At most large universities and programs in English as a Second Language, applications for admission are received from students all over the world, and so their test wiseness or lack of it becomes an important issue in assessing the accuracy of the scores these students receive on entrance and placement examinations. At the same time, it becomes important to know which tests may cause the greatest amount of variance in scores due to practice effect.

Very little research has been done to date on the effect of practice in language testing. Bowen (1977) conducted a study in which 38 students at the American University in Cairo took five forms of the Michigan Test of English Language Proficiency (MTELP) over a period of ten weeks. Results revealed only small gains that were not statistically significant (about 0.7 points per administration), well within the standard error of measurement, across the test administrations. These findings led Bowen to conclude that there was no significant learning from practice. However, it should be noted that there was a regular tendency toward gain in score for the three subtests of the MTELP involved in the study (grammar, reading and vocabulary), although the gain was consistent only in the case of the reading test which showed gains with an interval of almost 25%. Bowen suggested that as the reading test was administered last and the three subtests were not separately timed, students may have learned to pace themselves better on later administrations, thus earning better scores. Bowen conceded "it could be argued that self-pacing and coping with mental fatigue are precisely the kind of elements of 'test wisdom' that practice effect is concerned with, and that therefore the reading test might well be the best evidence of practice effect." (p. 301). This conclusion is consistent with an outline of test wiseness strategies proposed by Millman, Bishop and Ebel (1965) which includes a time-using strategy including pacing and skipping or guessing at items which the examinee is unable to answer immediately.

With reference to another possible source of score variance, several researchers, as well as the American Psychological Association (1969), have suggested that lack of familiarity with test format or the testing situation may cause an examinee to experience anxiety which in turn may affect his or her performance on the test (Ammann, 1970; Berkeley and Sproule, 1973; Lange, 1978).

Gener appears that test anxiety and lack of test sophistication can influence the performance of examinees. As Berkeley and Sproule (1973:58) stated, "... individuals who are anxious about test taking or who are not sophisticated in test taking, perform less well on tests than they should. Their test scores do not accurately reflect their true levels of aptitude or achievement."
Methods

The purpose of this study was to examine the effects of multiple retesting on affect and performance on five different types of tests. The principle hypotheses examined in the study were that gain in performance due to practice effect would be different for different test types, and that student affect would vary significantly from test to test and for different administrations of the same test. In addition, it was hypothesized that Spanish-speaking students would differ significantly from Japanese students in their performance and affective reaction to different test types because of cultural and educational background.

The subjects in this study were students in the Brigham Young University Intensive English Program during the Spring Term of 1980. Seventy-three adult students participated in the study. Two major language backgrounds, Spanish and Japanese, were represented: sixty percent of the students were Spanish-speaking, while forty percent spoke Japanese. The range of student proficiency in English included beginning students, with little or no previous English instruction, to advanced. The students involved in the study were required to take the examinations discussed as part of an initial placement battery and subsequent evaluations during the term.

The students were divided into a high and low proficiency group based on their scores for a speaking test given on the day of the first test administration. Both the high and low proficiency students were administered a battery of three tests on three different occasions with approximately seven class periods between each administration. The content of each test was modified superficially each time in an attempt to minimize the effect of item recall from one administration to the next. Care was also taken to assure that testing conditions and procedures were as similar as possible for each administration to guard against a possible influence on the results of the study.

The speaking test was the same for both the high and low batteries and consisted of an oral interview lasting from eight to ten minutes, designed to assess a student's ability to communicate orally in English. In the course of the interview, opportunities were provided for the student to answer yes/no and information questions, respond to statements, and seek clarification. In addition to the oral interview, the high test battery consisted of a grammar test and a reading test. The grammar test was a modified version of the Integrative Grammar Test (IGT) (Bowen, 1975). In this test the students heard a series of sentences (spoken by an examiner) and were asked to write down the second word they heard in each sentence. A pause of ten seconds between each sentence allowed the students to record their answers. For example, the students might have heard a sentence such as, "Give 'm an inch and he'll take a mile." The students would record him as the second word they heard, even though the sentence was spoken at normal speed and only the m of him was actually heard. The reading test in the high battery involved an editing task. Thirty unnecessary and extraneous words had been added to a 220-word reading passage at the ninth grade reading level. These
words were chosen at random from the Dale list of 3,000 familiar words (Dale and Chall, 1948). The words were inserted after every third to fifteenth word in the passage using a table of random numbers. Students were allowed 10 minutes to locate the unnecessary words and cross them out.

As mentioned previously, the low test battery also included the oral interview, as well as a reading test and a listening test. The reading test required the students to identify as true or false statements referring to three picture series. The listening test was a modified version of the appropriate response section of the Alternate Modality Listening Exam (AMEX) (Madsen, 1977). In this test students heard a question and three possible answers from a pre-recorded tape. The three possible answers were also written in their test booklets. The students were required to choose the best answer to the question on the tape.

After each administration of the high and low test batteries, students completed a Likert-style questionnaire designed to assess their affective reactions to the different test types, adapted from a similar questionnaire used by Jones, Madsen and Brown (1980). In this questionnaire students were required to evaluate each test on the basis of eleven criteria: 1) fairness, 2) how well the test corresponded to previous English instruction, 3) how well they liked the test, 4) how frustrating they found the test, 5) clarity of test instructions, 6) how well they felt they performed on the test, 7) how pleasant the experience of taking the test, 8) their perception of the difficulty of the test, 9) reliability, 10) validity, and 11) how well they felt the test reflected their knowledge of English. Responses to these criteria were assigned a numerical value from one to ten: one indicating a very negative response, and ten a very positive one. A final item on the questionnaire asked students to indicate whether or not they had ever taken a test exactly like any of the tests in the batteries administered in this study. The questionnaire was translated into Spanish and Japanese so that each student received it in his or her native language.

Results and Discussion

The tests administered in this experiment evidenced an acceptable degree of reliability. Calculations using the Kuder-Richardson formula 21 showed that the editing test in the high test battery had the highest reliability coefficient (.86), while the T/F picture test in the low battery had the lowest coefficient (.57). It was not possible to calculate reliability coefficients for the oral interview using the Kuder-Richardson formula 21 as the items on this test were not of equal difficulty, nor were they weighted equally when scored. Test-retest correlations were generally quite high in both batteries. The oral interview in the high battery correlated the highest with an average correlation of .96 (compared with .86 in the low battery), while the T/F picture test had the lowest average correlation, at .78.

Table 1, containing mean scores for the high and low batteries converted to percentages, shows a ranking of the tests in terms of
### TABLE 1
ACTUAL DIFFICULTY RANKING OF HIGH AND LOW TEST BATTERY PERCENTAGE SCORES

<table>
<thead>
<tr>
<th>Test</th>
<th>(pts poss) (mean)(% of tot)</th>
<th>Test</th>
<th>(pts poss) (mean)(% of tot)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGT</td>
<td>50 25.88 56.76 Oral</td>
<td>Oral</td>
<td>50 21.61 43.22</td>
</tr>
<tr>
<td>Oral</td>
<td>50 35.20 70.40 AMLEX</td>
<td>40   20.53 51.33</td>
<td></td>
</tr>
<tr>
<td>Edit</td>
<td>30 22.57 75.23 T/F Pict</td>
<td>20   15.29 76.45</td>
<td></td>
</tr>
</tbody>
</table>

### TABLE 2
PERCENTAGE OF STUDENTS REPORTING PREVIOUS EXPOSURE TO TESTS

<table>
<thead>
<tr>
<th>Test</th>
<th>Japanese % tot</th>
<th>Spanish % tot</th>
<th>Total Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Battery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>46.15</td>
<td>77.88</td>
<td>68.18</td>
</tr>
<tr>
<td>IGT</td>
<td>15.38</td>
<td>7.41</td>
<td>10.00</td>
</tr>
<tr>
<td>Edit</td>
<td>53.85</td>
<td>55.66</td>
<td>55.00</td>
</tr>
<tr>
<td>Low Battery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>31.25</td>
<td>35.29</td>
<td>33.33</td>
</tr>
<tr>
<td>T/F Pict</td>
<td>12.50</td>
<td>29.41</td>
<td>21.21</td>
</tr>
<tr>
<td>AMLEX</td>
<td>43.75</td>
<td>23.53</td>
<td>33.33</td>
</tr>
</tbody>
</table>
their actual difficulty. A mean test score of 56.8% on the IGT indicates that it was the most difficult test in the high battery, while the oral interview (70.4%) was the next most difficult, and the editing test (75.2%) was the least difficult. As can be seen, there was quite a difference between the difficulty of the IGT and the other two tests which were fairly close in actual difficulty.

A mean score of 43.2% on the oral interview for the low proficiency students made it the most difficult test in the low battery. The AMLEX (51.3%) was the next most difficult test, and the T/F picture test was substantially easier than either the oral interview or the AMLEX.

As part of the affect questionnaire mentioned earlier, students were asked to indicate whether or not they had taken a test exactly like any of the tests administered in this study at any time prior to the study. Table 2 is a summary of those students who reported previous exposure to tests like those involved in this experiment.

In the high test battery, students reported being least familiar with tests similar to the IGT, more familiar with tests like the editing test, and most familiar with the format of the oral interview. The gap between the IGT and the other tests was considerable.

In the low test battery, students reported the least familiarity with the T/F picture format, and equal familiarity with tests similar to the oral interview and the AMLEX.

Both the Japanese and Spanish high proficiency students were least familiar with the format of the IGT, while the Japanese appeared most familiar with tests like the editing test, and the Spanish speakers with the oral interview. In fact, considerably more of the Spanish-speaking students were familiar with the oral interview than were the Japanese.

In the low test battery, the Japanese students were least familiar with the format of the T/F picture test, while the Spanish speakers were least familiar with that of the AMLEX. Again, the Spanish-speaking students were most familiar with the oral interview, while the Japanese reported more exposure to a test like the AMLEX.

The hypothesis that the gain in student performance attributable to practice effect would be different for different test types was generally supported by the results of the study. Results also tended to support previous research indicating that the greatest gain in performance resulting from practice effect seems to occur between the first and second test administration. In the high battery, the greatest increase in mean raw score between the first and second administration occurred on the IGT (6 points). This represented 12% of the total points possible. As will be recalled, this was the test format with which students had reported being least familiar. It seems logical to assume that an increase in performance occurred as students became more familiar with this format. The editing test showed almost as great a gain in raw score as the IGT (5.45 points),
which was actually a greater gain in percentage of total points possible (18%), between the first and second administration, even though students reported considerably more familiarity with it. The oral interview evidenced no significant gain (1% or .75 points). It should be noted that a greater percentage of the students reported being familiar with the oral interview format than with the other two tests.

The IGT showed a much smaller increase in mean student score (5% or 2.36 points) between the second and third administration, while the gain for the oral interview was larger (3% or 1.66 points) than that obtained between the first and second administration. This increase is still quite small when compared with student gains on the other two tests between the first and second administration. The mean score for the editing test remained virtually the same between the second and third administration.

In the low battery the oral interview showed the greatest gain (10% or 4.97 points) between the first and second administration. The AMLEX showed a gain of (8% or 3.16 points), and the T/F picture test an increase of (6% or 1.19 points). The T/F picture test showed a greater gain between the second and third administration (16% or 3.18 points), while the other two tests evidenced lesser gains (3 percent or 1.40 points for the oral interview and 2% or .85 points for the AMLEX). No clear relationship is apparent between performance gain in the low test battery and prior exposure to test format. An analysis of variance showed that the gains in performance across administrations were statistically significant only for the tests in the high battery.

Significant differences were observed in the performance of the Japanese and Spanish speaking students on the tests in both batteries, in support of another of the hypotheses of this study. This finding would seem to be related to results reported in the study by Farhady (1979) where students from different language and culture backgrounds performed at different levels on various types of tests. In the present study, the Japanese students scored higher than the Spanish-speaking students on all the tests in both batteries, although these differences were not statistically significant. This finding is surprising in view of the fact that the Spanish students generally reported being more familiar with the test formats than were the Japanese, with the exception of the IGT and the AMLEX.

An analysis of variance also demonstrated a significant difference in the affect ratings of the Japanese and Spanish-speaking students for the oral interview; the Spanish speakers rated it more positively than the Japanese on every item except their perception of the difficulty of the test, where their rating was quite similar to that of the Japanese students. This may have occurred at least partially because the Spanish were more familiar with the oral interview format than were the Japanese. It may also be due to a greater emphasis on speaking skills in the previous English instruction received by the Spanish-speaking students. The latter suggestion is merely tentative as this information was not available in this study.
The only affect rating for the oral interview which changed significantly across administrations was student evaluation of test difficulty. The students generally perceived the test as increasing in difficulty with each administration even though the results showed a trend toward improvement in their scores across administrations. Student perception of their performance remained fairly constant over the three administrations as well. Perhaps this test appeared less difficult to students at first because it was the least structured of all the tests. But as students became more familiar with it and compared experiences with their friends they may have perceived it as being more demanding than was originally apparent.

The hypothesis that student affect will vary significantly from test to test was strongly supported by the results of this study. A significant difference was revealed in the ratings for all of the tests in the high battery for all the affect items. For the tests in the low battery, affect ratings were significant for all items except test fairness, clarity of instructions, reliability, and how well the tests corresponded to previous English instruction.

In the high test battery, the oral interview was generally rated the most positively, the editing test the next most positively, and the IGI the least positively. It seems the students liked least the test that they were the least familiar with and which at the same time was the most difficult for them in terms of their actual performance.

In the low test battery, the mean affect ratings showed that students felt most positively about the T/F picture test, next most positively about the oral interview, and least positively about the AMLEX. Again, it will be recalled that the T/F picture test was the least difficult for the students, while the oral interview and AMLEX were considerably more difficult with regard to actual student performance.

Significant differences were also observed for the affect ratings of the two language groups for both test batteries, again supporting the original hypothesis that these groups would differ in their affective reaction to the tests. In general, it appeared that the ratings of the Spanish-speaking and Japanese students differed most for those items which involved more emotive reactions, such as how well they liked the tests, how frustrating they considered the experience of taking the tests, their perception of their performance, and how pleasant they considered the experience of taking the tests, the Spanish rating these items more positively than the Japanese. Other items seemed to involve more cognitive evaluations (how well the tests corresponded to previous instruction, clarity of instructions, test reliability, validity, and how well the tests reflected knowledge of English); and there did not generally seem to be as great a difference in the way the two language groups rated these items. It should be noted, though, that student evaluation of test fairness and difficulty seemed to involve both emotive and cognitive judgments.

In general, it was found that the Spanish-speaking students rated the tests in both batteries more positively than did the Japanese students. This trend included their evaluation of their performance,
even though as noted earlier, the Japanese had generally performed more successfully than the Spanish speakers on all of the tests. When this finding was reported at the Language Testing Conference at the University of New Mexico last summer, one of the participants in the conference who had lived for many years in Japan, suggested that this may have been a result of the Japanese culture, which requires that a person underestimate his performance or ability.

Although Japanese and Spanish-speaking students differed on several affect ratings, it is interesting to note that both groups felt the oral interview had the greatest validity and best reflected their knowledge of English.

Student affect was shown to vary for different administrations of the same test as well as among different test types. In the high test battery, students felt the tests were significantly less frustrating on the second and third administration and the instructions clearer. They also felt their performance had improved on the latter two administrations. In the low test battery, students considered the tests less frustrating with each administration. In general, it would seem that these findings support earlier conclusions by other researchers (Sassenrath, 1967; the American Psychological Association, 1969; Lange, 1978) that greater familiarity with test format leads to a decrease in the anxiety aroused by the testing situation.

Conclusions and Recommendations

The results of this study generally support the hypotheses originally postulated. Significant gains in performance were revealed for the tests in the high battery, while a general trend toward an increase in score was demonstrated for the tests in the low battery, although this trend was not statistically significant. The greatest improvement in test performance was generally found to occur between the first and second administration of the tests.

In conclusion, it is recommended that further study of the effect of practice on test performance and affect be undertaken in an effort to improve and refine current strategies in language testing. Research should be extended to include other language backgrounds besides Spanish and Japanese in order for findings such as those encountered in this study to be generalizable to many different language testing needs. In the meantime, as Farhady (1979) has suggested, perhaps batteries should be composed of various formats to avoid being unfair to one cultural background or another.

Finally, it appears important to begin to implement the findings of this and other similar studies by selecting language tests for use in placement batteries or for other purposes which are less susceptible to the effects of practice and negative test affect, while still accurately assessing a student's proficiency in the target language.
American Psychological Association, Task Force on Employment Testing of Minority Groups

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MEASURING THE IMPACT OF ESL-TEST ANXIETY
ON TEST PERFORMANCE

Harold S. Madsen

The purpose of this study is to assess how detrimental the effects of anxiety are in ESL language exams. Anecdotal accounts have registered preferences for or reactions against certain kinds of language tests (Savignon 1972, Groot 1976:48, Mullen 1979:188). But empirical research on the subject of ESL or FL test affect is rather limited (Jones and others 1980, Shohamy 1980, Scott and Madsen 1980).

Helpful insights on test anxiety are available however in a large body of psychological literature spanning the last two decades. One construct still being investigated is that of trait and state anxiety (Spielberger 1966, Sarason 1975, Tobias and Hedl 1972, Newmark and others 1975). Trait refers to a fairly 'stable personality characteristic,' while State is considered more transitory, tending to 'fluctuate in response to different stimuli' (Wildemuth 1977). Studies have shown among other things that girls tend to manifest higher test anxiety than boys do (Manley and Rosemeir 1972, Wilson 1973, Morris and others 1976), and that persons with low anxiety outperform those with high anxiety (Kestenbaum and Weiner 1970, Rosenzweig 1974, Ohlenkamp 1976).
Another construct in the anxiety literature has particular relevance for this study. It had generally been assumed that anxiety was harmful or debilitating to test performance. But two decades ago Alpert and Haber identified facilitating as well as debilitating anxiety, and they produced an instrument to identify the two types (1960). Subsequent studies have broadened our understanding of facilitating and debilitating anxiety, relating them for example to students' general outlook on life and performance in school (Gaudry and Spielberger 1971, Bronzaft and Dobrow 1976, Bronzaft and others 1973, Scovel 1978).

The empirical research on second-language test anxiety referred to at the outset has demonstrated expected differences between students at various levels of proficiency and has shed light on the result of practice effect, credit versus non-credit contexts, and even the anxiety profiles of A, B, C, D, and E students. A consistent finding has been the dramatic contrasts between the amount of State anxiety generated by various types of language tests (Stevenson 1979, Shohamy 1980, Madsen and others 1981). Implicit in these findings is the suggestion that language exams which generate considerably more anxiety than others be avoided. A contrasting view, however, is that such a step would be premature until we determine whether or not these tests are in fact debilitating rather than facilitating. Oller (1980) has suggested, for instance, that if the cloze test were as debilitating as some suggest, it would not produce the robust correlations it does with other measures.
The object of this investigation is to discover some means of assessing when the anxiety level of a test crosses the debilitating threshold. Since the intercorrelation of well-written language exams is generally rather high, it seems plausible to assume that many students are not excessively disoriented by higher-anxiety-producing exams. If any of these tests are in fact debilitating, they probably disturb the performance of only a portion of the student population. Identifying this population should enable the researcher to determine to what extent a language exam is biased against that group. There is some evidence that persons with certain cultural traits may be more susceptible to anxiety on a given language test than others are (Barabasz 1970, Bronzaft and others 1974, Scott and Madsen 1980). And we have already mentioned the relationship between sex and anxiety as well as proficiency level and anxiety.

In looking for that group which might be particularly susceptible to anxiety-arousing tests, one is led by the psychological literature to study people with high Trait anxiety: that is, people who are by nature prone to be anxious when taking any kind of examination. It is hypothesized that students who are anxiety prone will not be evaluated as well on stressful tests as are those who are not anxiety prone. One rationale for this assumption is that anxiety-prone individuals engage in more task-irrelevant activities while taking a test (Wine 1971, Nottelmann 1975, Dusek and others 1976). It is assumed that if this tendency
is heightened during highly frustrating tests, there will be more
disorientation and irrelevant behavior, resulting in a less accurate
measure of language ability. Less accurate measurement should in
turn be reflected in a depressed correlation with a general (non-
threatening) measure of language proficiency, particularly in
contrast to the performance of a low-anxiety group. Also, the
literature suggests that the females in this study and those with
less proficiency would register higher levels of anxiety.

Method

Subjects. The 146 adult subjects involved in this study are
enrolled at five levels of instruction in the Brigham Young Uni-
versity English Language Center intensive English program. Of
these, 45 males and 69 females (a total of 114) completed all of
the testing. This group consists of 74 Spanish speakers, 25
Japanese speakers, and 15 from other language groups (6 French,
2 Chinese, and one each of Portuguese, Finish, Greek, German,
Arabic, Serbo-Croatian, and Indonesian). They range in profi-
ciency from near beginning level to advanced (530 on the TOEFL).

Measurement. Six weeks prior to the end of the term, all
students were administered the BYU/ELC Progress Battery. This
five-part instrument included a twenty-item oral interview
conducted individually, a thirty-item multiple-choice grammar
test, a ten-item true-false reading comprehension test based on two prose selections, a single dictation, and a twenty-item multiple-choice, appropriate-paraphrase listening test.

As a measure of their Trait anxiety, all students were administered the Alpert-Haber Achievement Anxiety Test, the last week of the semester. This test was translated into Spanish and Japanese. The fifteen speakers of other languages took the English version, with a teacher available to answer questions. The AAT includes 10 items that measure debilitating anxiety (such as 'Nervousness while taking an exam or test hinders me from doing well'); 10 items that measure facilitating anxiety (for example, 'I work most effectively under pressure, as when the task is very important'); plus neutral items; and all three types are scrambled. Responses are marked on a five-point Likert-type scale, ranging from 'almost never' to 'almost always.'

At the end of the semester students were administered the six-section BYU/ELC Promotion Battery. This included a new twenty-item oral interview conducted individually, a thirty-item multiple-choice grammar test, a thirty-item multiple-choice sentence-paraphrase reading test, a single dictation, ten multiple-choice appropriate paraphrase listening comprehension items, and two selected-deletion cloze passages totalling thirty blanks.

Immediately upon completing the Promotion Battery, students were administered a short three-item State Anxiety questionnaire related to each of the six subtests they had just taken. For
each test they would respond on a five-point Likert-type scale (ranging from 'strongly agree' to 'strongly disagree') on the following statements: 1) I liked the test, 2) This test was difficult, 3) I felt pleasant (happy, calm) during this test. These are adaptations of the items that factor analysis had shown to be highly emotive on the Jones-Madsen Affect Questionnaire (Jones and others 1980).

Data analysis. The average State anxiety level was determined for each of the six parts of the Promotion Battery. High and low anxiety prone students were selected with reference to self ratings on the AAT (the top third being rated as high Trait anxiety subjects, the low third being rated as low Trait anxiety subjects). Each subtest of the Promotion battery was correlated with the Promotion Test total, and a test of difference between two Pearson coefficients from independent samples was calculated, including a correction for attenuation. The effects of sex, language background, and proficiency level were evaluated for the Trait and State anxiety measures, utilizing analysis of covariance.

Results and Discussion

State anxiety ratings of the six subtests (Table 1) rather consistently identified the oral interview as the least anxiety
producing and the reading test as most anxiety producing. On an absolute scale, the reading test was the only measure that consistently registered in the +Anxiety range (above 9.0). Cloze was next most frustrating. Smallest differences between tests of high and low frustration are recorded at levels one and two. This may be due in part to the limited ability of students at these levels to interpret the English-language questions (simple as they were).

As predicted, means on the Promotion Battery for the low anxiety group were uniformly higher than for the high anxiety group, all differences but the oral interview and the writing test being statistically significant (Table 2). Reliabilities for the subtests were computed using Kuder-Richardson formula 21 (Table 3). Reliability coefficients for the writing test (dictation) and the total utilized the parallel test form procedure (Thorndike 1971:404-406), i.e. Pearson correlations between Promotion and Progress Battery dictations, and between Promotion and Progress totals, minus the cloze.

For high and low anxiety students, Pearson product-moment correlations were calculated for each of the six Promotion subtests with the Progress Battery total (Table 4). These were also corrected for attenuation. A statistically significant difference (at the .027 level) was found between the high and low anxiety group correlations on the frustrating reading test. This supports the principal hypothesis that a significantly
lower correlation will result for high Trait anxiety students on tests that maximize State anxiety.

While one might have expected to find differences among one or more other tests that tend to generate State anxiety, there is a rather straightforward explanation as to why only the reading test produced this result: It was the only subtest that crossed into the + Anxiety threshold on an absolute scale. The cloze and listening tests produced more anxiety than did speaking, grammar, and writing; but they registered only in the twilight zone between anxiety producing and anxiety allaying measures.

An analysis of covariance was next employed (Table 5) to evaluate the effect of proficiency level, sex, and language on Trait anxiety—the general tendency toward anxiety as measured by the AAT. Proficiency (as measured on a combined Progress-Promotion Battery total) proved to be the only significant variable. However, a chi square test evaluating the effect of sex on high and low Trait anxiety ratings revealed a statistically significant difference (chi square = 3.86), females being more inclined toward the high anxiety rating.

Analysis of covariance was also used (Table 6) to evaluate the effect of sex, language and proficiency on the State anxiety measures. A total State anxiety measure was generated for each individual by combining the anxiety ratings he or she gave to each of the six subtests. Results found both sex and language to be significant, with proficiency approaching significance. Females
indicated that they experienced greater State anxiety than the males said they did; Japanese registered higher State anxiety than did Spanish speakers. These latter findings tend to corroborate what we find in the literature.

Conclusions

Results of this study suggest that an ESL test can be debilitating to a substantial segment of our classes. While the frustrating test in this study was a reading exam, we obviously cannot generalize these results to all reading measures or even to all reading tests of this type. It is apparent, however, that relatively simple means are at our disposal to evaluate the amount of frustration or anxiety inherent in an exam for a given language group (although this information is available to us only after the exam has been taken). To avoid results that are biased in favor of students who are not anxiety prone, that exam could be excluded when testing comparable groups in the future.

This investigation has attempted to determine the degree of frustration encountered on a variety of ESL language exams, but not the cause of this frustration. Certainly the source of frustration is of the utmost importance, and this also needs to be determined. Anecdotal accounts and research indicate that in addition to the form of the exam (cloze, oral interview, etc.) faulty instructions, lack of face validity, difficulty level,
insufficient time, and flagrant cheating by other students are a few of the factors that can cause anxiety and frustration while taking a test.

In further investigations of debilitating test anxiety, it would be helpful to consider other populations as well, such as national or ethnic groups, those with differing learning styles, etc. Also there is no need to restrict such studies to classical empirical research. For example, personal interviews following the exam may provide excellent insights not otherwise available.

Finally, this study indicates the value in looking beyond the traditional test criteria of validity and reliability. There is clearly a need to screen our tests to eliminate unnecessary anxiety together with its hidden bias.
<table>
<thead>
<tr>
<th>Level</th>
<th>writing</th>
<th>oral</th>
<th>grammar</th>
<th>reading</th>
<th>listening</th>
<th>cloze</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7.0</td>
<td>6.9</td>
<td>7.5</td>
<td>8.0</td>
<td>7.6</td>
<td>9.2</td>
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<tr>
<td>2</td>
<td>8.1</td>
<td>7.6</td>
<td>8.1</td>
<td>9.2</td>
<td>8.7</td>
<td>8.4</td>
</tr>
<tr>
<td>3</td>
<td>7.8</td>
<td>7.7</td>
<td>7.1</td>
<td>10.7</td>
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<td>11.1</td>
<td>9.5</td>
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<td>5.9</td>
<td>6.6</td>
<td>10.5</td>
<td>8.4</td>
<td>8.2</td>
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<tr>
<td>Average</td>
<td>7.88</td>
<td>7.14</td>
<td>7.60</td>
<td>9.90</td>
<td>8.52</td>
<td>8.80</td>
</tr>
</tbody>
</table>

Note: Absolute scale 3 = anxiety allaying 9 = anxiety threshold 15 = highly anxiety producing

Table 1

State Anxiety Ratings by Level for the Six Subtests
<table>
<thead>
<tr>
<th>Anxiety Group</th>
<th>N</th>
<th>writing</th>
<th>oral</th>
<th>grammar</th>
<th>reading</th>
<th>listening</th>
<th>cloze</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Anxiety</td>
<td>42</td>
<td>76.4</td>
<td>62.4</td>
<td>47.6</td>
<td>28.5</td>
<td>55.0</td>
<td>42.1</td>
</tr>
<tr>
<td>Low Anxiety</td>
<td>38</td>
<td>78.2</td>
<td>66.9</td>
<td>59.8 *</td>
<td>42.7 *</td>
<td>64.2 *</td>
<td>51.3 *</td>
</tr>
</tbody>
</table>

* Between-group difference: $P < .05$

Table 2

Means of High and Low Trait Anxiety Groups On the Six Subtests
<table>
<thead>
<tr>
<th>Anxiety Group</th>
<th>N</th>
<th>writing</th>
<th>oral</th>
<th>grammar</th>
<th>reading</th>
<th>listening</th>
<th>cloze</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Anxiety</td>
<td>42</td>
<td>.720</td>
<td>.690</td>
<td>.892</td>
<td>.657</td>
<td>.700</td>
<td>.780</td>
</tr>
<tr>
<td>Low Anxiety</td>
<td>38</td>
<td>.700</td>
<td>.820</td>
<td>.923</td>
<td>.892</td>
<td>.570</td>
<td>.810</td>
</tr>
</tbody>
</table>

* Spearman-Brown correction for uniform item no. of 30

Table 3

Reliabilities (KR-21) of High and Low Trait Anxiety Groups On the Six Subtests*
<table>
<thead>
<tr>
<th>Anxiety Group</th>
<th>N</th>
<th>writing</th>
<th>oral</th>
<th>grammar</th>
<th>reading</th>
<th>listening</th>
<th>cloze</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Anxiety</td>
<td>42</td>
<td>.62</td>
<td>.68</td>
<td>.80</td>
<td>.57</td>
<td>.64</td>
<td>.71</td>
</tr>
<tr>
<td>Low Anxiety</td>
<td>38</td>
<td>.43</td>
<td>.65</td>
<td>.85</td>
<td>.82 *</td>
<td>.60</td>
<td>.71</td>
</tr>
</tbody>
</table>

* Difference between correlations: $P < .05 (.027)$

(Note: When correlations are corrected for attenuation, the only significant difference is still reading [.03].)

Table 4

Pearson Correlations of High and Low Trait Anxiety Groups On the Six Subtests
<table>
<thead>
<tr>
<th>Source</th>
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<th>SS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
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<td>Proficiency</td>
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<td>286.8477</td>
<td>6.18</td>
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<tr>
<td>Sex</td>
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<td>84.4638</td>
<td>1.82</td>
<td>.1802</td>
</tr>
<tr>
<td>Language</td>
<td>2</td>
<td>57.0851</td>
<td>0.61</td>
<td>.5426</td>
</tr>
<tr>
<td>Sex x Language</td>
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<td>25.9050</td>
<td>0.28</td>
<td>.7571</td>
</tr>
<tr>
<td>Error</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5

Analysis of Covariance

Dependent Variable: Trait Anxiety
<table>
<thead>
<tr>
<th>Source</th>
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<th>SS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>1</td>
<td>360.0792</td>
<td>4.46</td>
<td>.0370</td>
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<tr>
<td>Language</td>
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<td>8.92</td>
<td>.0003</td>
</tr>
<tr>
<td>Sex x Language</td>
<td>2</td>
<td>103.4662</td>
<td>0.64</td>
<td>.5287</td>
</tr>
<tr>
<td>Proficiency</td>
<td>1</td>
<td>260.3537</td>
<td>3.23</td>
<td>.0753</td>
</tr>
<tr>
<td>Proficiency x Sex</td>
<td>1</td>
<td>246.5128</td>
<td>3.06</td>
<td>.0834</td>
</tr>
<tr>
<td>Proficiency x Language</td>
<td>2</td>
<td>638.9399</td>
<td>3.96</td>
<td>.0220</td>
</tr>
<tr>
<td>Error</td>
<td>104</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6

Analysis of Covariance

Dependent Variable: State Anxiety
Footnotes

KR-21 assumes not only that the tests are unspeeded but also that items are equally difficult (a questionable assumption on most language tests). To the extent that items vary significantly in difficulty, KR-21 provides a lower reliability estimate than does KR-20 (Thorndike 1971:413-415).
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I. ADJUNCTION IN JUNCTION GRAMMAR

Junction Grammar is based on the relationships, or junctions, which hold between linguistic units. JG recognizes three general junction operations: conjunction, subjunction and adjunction. Conjunction (symbolized &) is the relationship between items of coordinate grammatical rank. It corresponds to the traditional notion of coordinating conjunction. Subjunction (symbolized with *) is the relationship which holds between elements of super- and subordinate grammatical rank. It is the relationship underlying the traditional concepts of modification, complementation and subordination. Adjunction (symbolized +) is the basic building operation which joins linguistic operands to form a complex result different from its constituents. It is the relationship between verbs or prepositions and their objects, the relationship joining predicates to their subjects.

A full adjunction configuration has three levels (see Figure 1). At the lowest is the predicator—the nucleus of the adjunction. The predicator is optionally adjoined to one or more objects. The predicator and its adjuncts together form a predicate, which is adjoined in turn to the subject to form a full predication, or a statement in junction terminology. It is this meaning of statement to which the title of this paper makes reference. The nucleus, the predicate and the statement of an adjunction are abbreviated with X, PX and SX respectively, where X is a category variable which ranges over the predicator categories.

\[ SX \]
\[ PX + Y \]
\[ X + (N) \]
\[ X = V, A, P, N \]
\[ Y = \text{any category} \]

Figure 1. Adjunction Configuration

One of the distinguishing features of Junction Grammar is its extension of the role of predicator to other categories than the verb. Eldon Lytle, originator and principal exponent of JG, has put forward very fine defenses of this practice elsewhere (1974, pp. 75-79; 1971, pp. 67-80; 1977, pp. 29-36), so I will not repeat them here. The following noun phrases demonstrate the economy and semantic similarity yielded by a uniform treatment of relative modifiers. Note that V stands for verb, A for ad (either adjective or adverb), P for preposition and N for noun.

*This paper was originally presented at the Fifty-fifth Annual Meeting of the Linguistic Society of America, December 28, 1980.*
**SV Modifier:** The official who had a lot of money

**SA Modifier:** The very rich official

**SP Modifier:** The official with a lot of money

**SN Modifier:** The mayor, a multimillionaire,

Recent developments in JG suggest that nouns are subjoined to ads when they function in the nucleus of an adjunction. Prepositions, in turn, can be viewed as transitive ads. This reduces the predicator categories to two in theory: V and W, which is the cover symbol for ads and prepositions. In practice, however, it is usually clearer to use the redundant labels P and A (sometimes P, Adj and Adv).

One more category appears in J-trees, that of quantifier (abbreviated Q). Quantification is accomplished via subjunction of a quantifier to the various elements of an adjunction.

II. REDUCTION, ELLIPSIS, DIRECT REPRESENTATION

Junction Grammar rejects the role of reduction in the derivation of verbless (W-based) statements. Nor are they considered defective in any way—they are fully formed relative to their category. This position adheres faithfully to the simplicity principle of grammar formulation: If two sets of rules are equally capable of explaining a given phenomenon, except that one of them requires more structure (or involvement of the rules or supporting machinery, etc.) than the other, then the simpler rules are to be preferred. Selection of the more complex rules requires compensating justification. The burden of the proof of preferability lies with the more involved explanation. Junction Grammar maintains that verbless statements can be generated and analyzed using a direct underlying representation.

Ellipsis, unlike reduction, is recognized as a valid phenomenon in JG. Ellipsis is the likely explanation when the missing part repeats a previous word or phrase. It is marked by a construction which does not make good sense when taken at face value. The words which are lexicalized often reflect their relationship to those which have been ellipted. Consider these cases of ellipsis:

Arthur loved Jenny and Jenny Lance.

I haabbits than hutches.

The blue pencils don't sell as well as the yellows.

I'll bathe the baby if you'd like me to.

Kwasney and Sondheimer (1979, p. 49) identify two forms of ellipsis: contextual and telegraphic. The first is exemplified in a sentence like

President Carter has.
which makes sense as an answer to the question

Who has a daughter named Amy?

This otherwise extra-grammatical sentence can be explained as either an instance of ellipsis or a structure involving an anaphoric pro-form.

Telegraphic ellipsis, the second variety, is exemplified by this compound sentence appearing on a barber shop sign:

3 CHAIRS NO WAITING

In the JG formulation this is not credited to ellipsis. It is an example of a verbless statement, being a direct product of the base rules.

One final construction needs to be distinguished from the topic of this paper. That is the grammatical fragment, whether the nonstandard error found in much student writing--

He never washed before meals. Because no one had ever told him to.

or the two-punch appended phrase found increasingly in Madison Avenue copy--

Tanner toys can really take it. 'Cause that's the way we build 'em.

The difference between these two types is chiefly that one is accidental and the other is intentional. They are both best analyzed in terms of the neighboring sentence, the full stop notwithstanding. (This is a minor complication if the linguistic domain is discourse analysis rather than "sentence" analysis.)

III. VERBLESS STATEMENT ENVIRONMENTS, USES

Let's to the heart of the matter. What are the uses of verbless statements, and in what syntactic environments can they be found?

I have elsewhere (Tenney '979, pp. 7-8) proposed eight broad environments for both statement categories: independent, comment, substantive, noun-complement, verb-complement, ad-complement, quantifier-complement and relative. They are illustrated with verb-based statements in the sentences that follow:

Independent: He was decorated for bravery in World War II.

Comment: The problem, I feel, lies in their scheduling.

Substantive: I hope nobody notices.
Noun-Complement: I resent your innuendo that it might have been prevented.

Verb-Complement: It seems they've got us down for next week.

Ad-Complement: If we had some ham we could have some ham and eggs if we had some eggs.

Quantifier-Complement: She had so many children that she didn't know what to do.

Relative: I am the man to whose wife you made reference.

Notice that with relative statements the antecedent and the relative pro-form can function quite differently in their respective clauses. In addition, they may vary over many different categories. Consider, for example, the variety shown in these sentences:

Adverb Relative: Come back tomorrow, when I'm not in the middle of the wash.

Quantifier Relative: The more you scratch, the more it'll itch.

PV Relative: He sells used cars, like his brother Chris.

Statements can also be assigned to syntactic classes according to whether or not they are interrogative, exclamatory or imperative or some combination of these. Here, too, there are eight possible classes--four compound, three simple and one totally unmarked, corresponding to a simple declarative statement.

The statement environments and the syntactic classes vary independently, although the latter show more variety in independent statement environments. Verbless statements generally belong to the unmarked (declarative) or simple syntactic classes, as exemplified by the sentences which follow. In these and other example sentences, implicit elements required for an adequate semantic interpretation are included in parentheses.

Declarative: Steven French--A man as good as his word.

Interrogative: Me next?

Exclamatory: What a sight (this)!

Imperative: Hats off.

Independent verbless statements are used for a host of different purposes. They permeate our daily exposure to language, both spoken and written. They serve a pointing function in the so-called block language of titles, labels, signs and notices. By the very nature of such statements, they require the use of deictic words like this, here and such (whether implicit or explicit) for their meaning. Typical of this use are these examples:
(this) Toccata and Fugue in D Minor

Completed Forms Here

They are an effective device in descriptive narrative:

A tray for papers, a cup for pens—everything in its place.

They are used in writing to suggest a stream of consciousness:

(this) Great date! Full moon (here), warm night (here), atmosphere electric. A kiss tonight sure thing.

They are the basis for interjections, exclamations and expletives:

(this) Ouch!

(such) The things some people won't do for a little attention!

(this) Nonsense.

In like fashion they are used for conversation fillers:

(that) Right.

Imperative verbless statements occur in salutations—

Merry Christmas (to you).

as they do in blessings and curses—

Good luck (to you).

A pox on him.

and orders—

Anchors away.

They form the basis for many aphoristic sentences:

(if) Garbage in, (then) garbage out.

They can function as paragraph connectives in transitional phrases:

(this) So much for the physiological arguments.

They are used heavily in telegraphic messages, typical of print and broadcast headlines.

Interest rates up.

Flash flood warnings around state.
Verbless statements are invariably used to depict the speech of the unlearned.

Me Tarzan, you Jane.

Many palefaces in valley.

However, adept use of the closely related predicate-theme verbless statement is a sign of the linguistic confidence which is one end of a proper education:

A fine athlete, your Evan.

Out of the question, their marriage.

A near miss is the verbless predicate embedded to a modal verb in a verb-based statement. This construction was common in Early Modern English (in Shakespeare, for example) and before; it is considered archaic in contemporary English.

The truth will out.

has verb-predicate parallel

The truth will triumph.

Their similarity is reflected in their J-trees, shown in Figure 2. A comparable construction survives in modern sentences like

Let me down, you big bully!

and

I want out of this mess.

which parallel in form and meaning their verb-predicate paraphrases

Let me go, you big bully!

and

I want to forget this mess.

Hybrid predicates like these seem to support the assertion by Bryant and Aiken (1940, pp. 33-37) that the "nonsentence" (verbless statement) was
the ancestor of the modern verb sentence.

Verbless statements occur in most of the seven dependent statement environments as well. The comment statement, which is referentially superordinate to the main clause but functionally subordinate, is exemplified in a sentence like the following:

What's more amazing, he had never seen the music.

Here is an example of a substantive statement:

Students high on drugs was the first item on the agenda.

That the subject of the sentence is the condition of students being high, not some particular group of students, is reflected in the singular form of the verb, was. Similar to this statement environment is the noun-complement environment.

Their eye-for-an-eye mentality is a real impediment to peace.

The ad-complement environment is the setting for a construction traditionally known as the nominative absolute:

He walked down the street whistling, a loaf under each arm.

Relative verbless statements are the most common of all. They correspond to the simple adjectival, adverbial and prepositional modifiers. They can modify practically any category, for example:

Noun Head: Who are wearing the white hats on this issue?

Noun Head: The cars on the showroom floor are all sold.

Verb Head: The ball rolled into the street.

PV Head: She dances very gracefully.

SV Head: Fortunately, no one was hurt.

The other two statement environments--verb-complement and quantifier-complement--are theoretically possible, although they have not been substantiated to date.
IV. FINITE, NONFINITE, VERBLESS CLAUSES

It may be useful to relate the junction formalism to a more widely known approach to grammar. Such a reference is provided in Quirk and Greenbaum’s Concise Grammar of Contemporary English (1973). Quirk and Greenbaum describe three kinds of clauses: finite verb clauses, nonfinite verb clauses and verbless clauses (pp. 310-13).

There is a direct correlation between their finite verb clauses and JG verb statements. Their verbless clauses have two counterparts in Junction Grammar. One is to JG verbless statements (SW's), as, for example, in

Dozens of people, many of them former students, sent notes of condolence.

The other counterpart is to JG verbless predicates (PW’s). This is the case with objective complements--

They voted her an honorary member.

and other verbless (or non-verbal in common JG terminology) participles (Lytle '978, pp. 7-21)--

They found the hunter dead.

(See the J-tree in Figure 3.)

![Figure 3. V-Level Verbless Participle](image)

In Junction Grammar, nonfinite verb phrases are embedded to a noun or adjective head. As a result nonfinite verb constructions are merely special cases of corresponding verbless constructions. Quirk and Greenbaum’s nonfinite verb clauses, then, have the same JG reflections as the verbless clauses. Some correspond to JG verbless statements. They occur in the same statement environments that were listed before:

Independent: Alledged Sniper Arrested
Comment: He doesn't have a snowball's chance in hell, to put it bluntly.

Substantive: Women performing manual labor was unthinkable in those days.

Noun-Complement: You won't need your sign "Boy Wanted" anymore, sir.

Ad-Complement: They watched the play numbly, their victory hopes dashed.

Relative (Participial Modifier): The plane landing on runway 3 has the president on board.

Some nonfinite verb clauses correspond to JG verbless predicates, again with objective complements--

What mother wouldn't want her children spared from the heartaches of life?

and verbal participles--

He stopped talking, overcome with emotion.

Often, casting a new light on old problems reveals new solutions. Junction Grammar appears to have some powerful tools for dealing with verbless statements. Similar phenomena, the similarities inherent in all statements and all predicates, to name one example, are given similar representations. Disparate phenomena, the difference between verb-based and non-verb-based statements, to name another, are given distinctive representations which reflect their differences. In Junction Grammar, the affinities and polarities of verbless statements are manifest in a straightforward, descriptive analysis.
REFERENCES


--------. "977. "The Evolution of Junction Grammar." Junction Theory and Application, 1, 1, Fall.

--------. "978. "An Analysis of Non-Verbal Participles." Junction Theory and Application, 2, 1, Fall.


In the Mayan language Cakchiquel, there are several different ways to form an adjective. The grammars of the language have only partially displayed the full array of Cakchiquel adjectives, and have seldom attempted any semantic discussion of them.

The purpose of this paper is to present all the Cakchiquel adjectival forms and discuss their semantic interrelationships.

For the purpose of this explanation, I have categorized Cakchiquel adjectives into four basic classes: (1) regular, (2) distinctive, (3) emphatic, and (4) stative.

I. REGULAR

The regular adjectives are found in both attributive and predicative positions. They are the most frequently used adjectives and carry with them no special semantic meaning.

Flurality is generally inferred from the context of the sentence, although it may be specified by the insertion of the distributive particle taq between the adjective and the noun:

iżel winéq (evil person or people)
iżel taq winéq (evil people)
kow ab'ēx (hard rock or rocks)
kow taq ab'ēx (hard rocks)

In addition, there are two adjectives in this class which have a special plural form:

<table>
<thead>
<tr>
<th></th>
<th>singular</th>
<th>plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>large</td>
<td>nim</td>
<td>nima'q</td>
</tr>
<tr>
<td>small</td>
<td>č'uti'n</td>
<td>č'uti'q</td>
</tr>
</tbody>
</table>

II. DISTINCTIVE

Distinctive adjectives occur in attributive position, and are formed by adding a suffix of either -a or -i (see table I). The semantic consequences of the distinctive adjectival form in opposition to the regular adjectival form can be explained
using the theory of markedness. This notion of markedness implies that in a given opposition, one form is the unmarked, or general form, and the other is more marked, or specific. The distinctive adjectival form in Cakchiquel has a more restricted lexical meaning than the regular form. A nim xay, for example, is a big house, whereas a nima xay is some special kind of big building, such as a courthouse. The distinctive form of the adjectival root c'ut (small) is restricted in meaning, such as in c'uti te'ex (aunt). In some cases, the distinctive form may function as a diminutive, often showing endearment, such as the -ito or -ita suffixes in Spanish; a c'uti ačin is an "hombrecito".

When modifying colors, the distinctive form reflects a change in the tone or hue of the color: sēq is white, while saqa is silver; q'eq is black, and q'eqa is jet black; kēg is red, but kaqa is crimson; rēś is green/blue, but raša is jade; q'en is yellow, while q'ana is gold.

<table>
<thead>
<tr>
<th></th>
<th>Regular Adjective (unmarked)</th>
<th>Distinctive Adjective (marked)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>nim</td>
<td>nim-a</td>
</tr>
<tr>
<td>Small</td>
<td>c'ut [i'ʃ]</td>
<td>c'ut-i</td>
</tr>
<tr>
<td>White</td>
<td>sēq</td>
<td>saq-a</td>
</tr>
<tr>
<td>Black</td>
<td>q'eq</td>
<td>q'eq-a</td>
</tr>
<tr>
<td>Red</td>
<td>kēg</td>
<td>kaq-a</td>
</tr>
<tr>
<td>Green</td>
<td>rēś</td>
<td>raš-a</td>
</tr>
<tr>
<td>Yellow</td>
<td>q'en</td>
<td>q'æn-a</td>
</tr>
<tr>
<td>Ripe</td>
<td>c'eq'</td>
<td>c'eq'-a</td>
</tr>
<tr>
<td>Old</td>
<td>ri'x</td>
<td>rix-a</td>
</tr>
</tbody>
</table>

Roman Jakobson has shown that marked forms are usually more complex or longer than unmarked forms. We would therefore expect distinctive Cakchiquel adjectives to be phonetically more complex than regular adjectives.

Notice that c'uti'n (small) takes the -i suffix, while the others take the -a suffix. To explain this, I would like to take the theory of markedness one step further to show hierarchies among adjectival pairs. Nim (large) and c'uti'n (small) are at opposite poles of an adjectival pair — large in opposition to small. In the pairs big/little, deep/shallow, and wide/narrow, the first member is the unmarked, or general adjective, and the second is more marked or restricted. The unmarked item in the pair tends to be more frequent than its marked counterpart and tends to carry
a more basic meaning. For example, when asking about the size of an object, we would normally ask how big it is and not how little it is. "Big" is the unmarked item. It tends to be more frequent than "little", and has a more basic meaning than "little." When referring to a body of water, we would ask how deep it is, and not how shallow it is, unless, of course, we were emphasizing its shallowness, in which case we would be using the adjective in a marked or restricted sense. Therefore, we would expect nim (large) to be the unmarked, and more frequent in Cakchiquel, and ħ'uti'n (small) to be the more marked. In April 1979, I presented a paper at the Deseret Language and Linguistic Society symposium wherein I used the theory of markedness to explain the use of the -a' and -i' plural noun markers in Cakchiquel. I concluded that a was the general, or unmarked, and i was the more marked. If this distinction of marked/unmarked holds true in Cakchiquel adjectives, we would expect a to continue to be the unmarked, and i to be the more marked. Hence, we would expect that the stem nim- (being the unmarked adjective) would take the -a suffix in the distinctive form, and likewise ħ'ut- (being the more marked adjective) would take the -i suffix.

III. EMPHATIC

Emphatic adjectives occur in attributive position, as do distinctive adjectives, and are formed by adding one of two suffixes: -alëx or -ilëx (see table II). The semantic consequence of this form is that the adjective is more emphatic. An uq ašın is a good man, while an uqilëx ašın is a very good man.

We may continue to apply the theory of markedness in explaining the alternation of the a and i which we see surface again in the -alëx and -ilëx suffixes. If the i is the more marked of the two, we would assume that it carries with it a more restricted lexical meaning. The adjectives shown in table II all take the -ilëx suffix because of the semantic value inherent in this form. That is, uqilëx is VERY good, iqelilëx is VERY bad, and sašilëx is VERY thin. Being an extreme, all adjectives of this class have a more restricted usage and are found in more specialized cases. We would therefore expect them to take the i (ilëx) more often than the a (-alëx). The only emphatic forms, in fact, which ever take the -alëx suffix are those which also have a distinctive form of the suffix -a (see table III).
Table II

<table>
<thead>
<tr>
<th>Regular</th>
<th>Emphatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>good</td>
<td>uq</td>
</tr>
<tr>
<td>bad</td>
<td>iqel</td>
</tr>
<tr>
<td>thin</td>
<td>saš</td>
</tr>
<tr>
<td>thick</td>
<td>pim</td>
</tr>
<tr>
<td>acidic</td>
<td>č'ém</td>
</tr>
<tr>
<td>cold</td>
<td>tew</td>
</tr>
<tr>
<td>slick</td>
<td>liq'</td>
</tr>
<tr>
<td>clean</td>
<td>č'axč'ox</td>
</tr>
<tr>
<td>humble</td>
<td>č'uč'ux</td>
</tr>
<tr>
<td>hard</td>
<td>k'ayew</td>
</tr>
<tr>
<td>skinny</td>
<td>b'aq</td>
</tr>
<tr>
<td>fat</td>
<td>ti'ox</td>
</tr>
<tr>
<td>crazy</td>
<td>moš</td>
</tr>
<tr>
<td>just</td>
<td>čox</td>
</tr>
</tbody>
</table>

Table III

<table>
<thead>
<tr>
<th>Regular</th>
<th>Distinctive</th>
<th>Emphatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>large</td>
<td>nim</td>
<td>nim-a</td>
</tr>
<tr>
<td>white</td>
<td>sæq</td>
<td>sæq-a</td>
</tr>
<tr>
<td>black</td>
<td>q'eq</td>
<td>q'eq-a</td>
</tr>
<tr>
<td>red</td>
<td>k'eq</td>
<td>k'eq-a</td>
</tr>
<tr>
<td>green</td>
<td>rēš</td>
<td>rēš-a</td>
</tr>
<tr>
<td>yellow</td>
<td>q'ën</td>
<td>q'an-a</td>
</tr>
<tr>
<td>ripe</td>
<td>čeq'</td>
<td>čaq'-a</td>
</tr>
<tr>
<td>old</td>
<td>ri'x</td>
<td>rix-a</td>
</tr>
</tbody>
</table>

The a from the distinctive form influences the formation of the emphatic adjective. The box in table IV illustrates this condition.
In the upper right box, we see the influence of the pure -ilëx suffix that we would expect from the semantic quality of the emphatic adjective. We also see another influencing factor in the lower left box. This is the a carrying through from the distinctive adjectival form. Because of this dual influence, we find that either suffix can and does exist in these cases.

Those adjectives which do not have a distinctive form of the suffix -a can only take the suffix -ilëx in the emphatic form. Moreover, since -ilëx is the more dominant of the two suffixes, representing the emphatic semantic value of this adjectival form, it is taking over the place of the less frequent -alëx.

IV. STATIVE

The fourth class of Cakchiquel adjectives I will call stative. Statives can be realized in Mayan grammar as transitive verbs, intransitive verbs, and adjectives. This paper focuses on the adjectival form, which in this case describes the state or position of the object being modified. Table V shows the four stative adjectival forms.
Table V

For verbs with vowels a,e,i,o:

<table>
<thead>
<tr>
<th>Sample verb: -xeq-</th>
<th>(to spread out)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less intense</td>
<td>xeq-el</td>
</tr>
<tr>
<td>more intense</td>
<td>xeqex-ik</td>
</tr>
</tbody>
</table>

For verbs with vowel u:

<table>
<thead>
<tr>
<th>Sample verb: -xup-</th>
<th>(to be face down)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less intense</td>
<td>xup-ul</td>
</tr>
<tr>
<td>more intense</td>
<td>xupux-ik</td>
</tr>
</tbody>
</table>

The first form is the most common and is the past participle of the verb with which it is associated. It consists of the stem of the verb and a suffix of the form vowel+l (the vowel being the same as the vowel in the stem):

<table>
<thead>
<tr>
<th>verb</th>
<th>singular</th>
</tr>
</thead>
<tbody>
<tr>
<td>to get wet</td>
<td>-č'eq-</td>
</tr>
<tr>
<td>to hang</td>
<td>-č'eq-</td>
</tr>
<tr>
<td>to grind</td>
<td>-pač'-</td>
</tr>
<tr>
<td>to twist</td>
<td>-šot-</td>
</tr>
<tr>
<td>to lean</td>
<td>-luk-</td>
</tr>
</tbody>
</table>

The plural of the first form consists of the chiastic stem of the verb, plus the suffix -ox (except where the vowel in the singular form is a, then the suffix -uč is added to the regular verb stem).
The second, and more intense, adjectival forms are made by adding the suffix -ik to the singular and the suffix -eq to the chiastic stem to form the plural.

In this paper I have appealed to tradition, gleaning pieces here and there from the works of Cakchiquel grammarians of the past. Unfortunately, the great insights of these ancient masters have been largely left in the shadows. In a recent book by Roman Jakobson, he states that in modern linguistic research, the inquirer must "gain a widened scope and deeper insight by familiarizing himself with questions and working hypotheses raised in linguistics of the near and remote past and by testing them on the rich materials gathered and accumulated since." Such a renewal is fruitful in giving a unified view of the adjectival forms of the Cakchiquel language.
FOOTNOTES

1 The following minimal pairs should clarify the point here: č'uti tata'ax (uncle), č'uti'n tata'ax (small father); č'uti k'axol (nephew), č'uti'n k'axol (small son); č'uti mi'al (niece), č'uti'n mi'al (small daughter).

2 Consider the hierarchy of these degrees of adjectives: high/higher/highest. As they become progressively more marked, they also acquire more phonetic complexity. This is also true with male/female and author/authoress. See Jakobson, Roman, "Quest For the Essence of Language," Selected Writings II. Mouton: The Hague, Paris, 1971, p. 352.


A brief summary of the conclusions of that paper:

Cakchiquel nouns may be pluralized with the addition of one of two suffixes: -a' or -i'. Using the notion of markedness to explain the use of these two suffixes would imply that a hierarchical relationship exists between the two poles of the opposition -a' vs. -i': -a' being the unmarked, or general plural marker, and its oppositional counterpart, -i', the more specific form. The marked suffix -i' carries with it an additional unit of specific semantic information in contrast to the unmarked suffix -a' which remains neutral. In this opposition, both the -a' and the -i' share the notion of plurality, but the -i', being the more marked of the two suffixes, often signals some deviation from the norm, and is always found in more restricted contexts.

5 Chiasmus also appears in Cakchiquel verb forms and has the same effect of intensification.


7 Ibid.

In this paper I use a general probabilistic method for describing linguistic behavior. In this approach I first define the CERTAINTY of a rule as the probability that two randomly selected occurrences of the rule have the same outcome. The certainty of a system of rules is then defined as the weighted sum of the certainties of each rule in the system. Given these definitions, it can be shown that a CORRECT description is a system of rules for which certainty is maximized. Each rule in a correct description is HOMOGENEOUS in behavior (that is, all the subrules of a homogeneous rule behave no differently from the rule). Finally, I define an OPTIMAL description as a structured system of rules that uses the least number of rules to correctly describe behavior. Optimal descriptions can be used (1) to classify regularities according to their degree of similarity, (2) to distinguish exceptional behavior from regular behavior, and (3) to predict the order in which rules should be learned so as to minimize uncertainty as quickly as possible.

The main purpose of this paper is to apply this method to several different types of morphological alternation in the verbal system of Finnish. In particular, I will deal with two questions: (1) What is the optimal presentation of Finnish morphological relations so that a person learning the language can minimize morphological errors as quickly as possible? (2) Which inflectional forms are the most helpful in predicting other inflectional forms?

In order to answer these questions from a probabilistic point of view, we must consider the frequency of Finnish words. In this paper estimates of word frequency are based on Pauli Saukkonen's Suomen kielen taajuus sanasto. As a consequence, infrequently occurring verbs play only a minor role in the analysis. In addition, it should be noted that Saukkonen gives only the frequencies for separate lexical entries, so that the frequencies of individual forms are not directly determinable. Saukkonen's statistics can be used to determine the frequencies of the verb paradigms in Finnish, but these statistics may not always reflect the relative frequencies of certain inflected forms -- especially when an inflected form is not fully productive. For this reason, I will deal in this paper with only fully productive inflectional forms.

To begin with, let us consider how we might optimally predict the imperfect stem from the present stem. There are nine different alternations between the present stem and the imperfect. Given these possible outcomes, we split up the contextual space of the present stem into as few contexts as possible, simultaneously requiring that each context be homogeneous in behavior. In other words, our description must be correct. For each context we specify the alternation that occurs most
frequently in that context -- that is, we do not attempt to predict the less frequent alternations that a word might take. For instance, although lähteä has two possible imperfect forms (lähti and läksi), the rules in this paper will account for only the most frequent form, lähti.

The optimal contextual space can be best represented in terms of a Venn diagram:

```
PRESENT STEM + IMPERFECT

<table>
<thead>
<tr>
<th>context</th>
<th>alteration</th>
<th>freq.</th>
<th>rank</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-C{lunate VJ}</td>
<td>V-i</td>
<td>57951</td>
<td>1</td>
<td>muistaa, lukea, toimia</td>
</tr>
<tr>
<td>-a(V)C₁</td>
<td>a-oi</td>
<td>3744</td>
<td>4</td>
<td>kasvaa, antaa</td>
</tr>
<tr>
<td></td>
<td>tV-si</td>
<td>66</td>
<td>14</td>
<td>taitaa</td>
</tr>
<tr>
<td></td>
<td>tV-si</td>
<td>1890</td>
<td>7</td>
<td>myöntää, ymmärtää, sisältää</td>
</tr>
<tr>
<td>V-i</td>
<td>11</td>
<td>16</td>
<td></td>
<td>yltää</td>
</tr>
<tr>
<td>V-i</td>
<td>8</td>
<td>17</td>
<td></td>
<td>kyntää</td>
</tr>
<tr>
<td>V-i</td>
<td>3</td>
<td>18</td>
<td></td>
<td>sortaa</td>
</tr>
<tr>
<td>tV-si</td>
<td>411</td>
<td>11</td>
<td></td>
<td>tuntea</td>
</tr>
<tr>
<td>tV-si</td>
<td>419</td>
<td>10</td>
<td></td>
<td>tietää</td>
</tr>
<tr>
<td>tV-si</td>
<td>177</td>
<td>12</td>
<td></td>
<td>löytää</td>
</tr>
<tr>
<td>tV-si</td>
<td>102</td>
<td>13</td>
<td></td>
<td>pyytää</td>
</tr>
<tr>
<td>tV-si</td>
<td>60</td>
<td>15</td>
<td></td>
<td>huutaa</td>
</tr>
<tr>
<td>Ø-i</td>
<td>14353</td>
<td>2</td>
<td></td>
<td>sanoa, kuulua</td>
</tr>
<tr>
<td>A-si</td>
<td>5832</td>
<td>3</td>
<td></td>
<td>huomata, pudota, poiketa</td>
</tr>
<tr>
<td>V:-Vi</td>
<td>2760</td>
<td>5</td>
<td></td>
<td>saada, jäädä</td>
</tr>
<tr>
<td></td>
<td>=</td>
<td>2751</td>
<td>6</td>
<td>uida, voida</td>
</tr>
<tr>
<td>V,V-V,i</td>
<td>x y y</td>
<td>800</td>
<td>8</td>
<td>tuoda, viedä</td>
</tr>
<tr>
<td>Äy-Ävi</td>
<td>467</td>
<td>9</td>
<td></td>
<td>käydä</td>
</tr>
</tbody>
</table>
```

(cf. appendix at end of paper for explanation of symbols)
This diagram tells us several important facts about the forms of the Finnish imperfect. First, the general contextual space is split into seven main rules, six of which are general rules and one is based on a single lexical form, käydä. Main rules are represented by rectangles, exceptions by circles. Only the first of these main rules is non-homogeneous -- that is, it is the only one that contains subrules that behave differently from the rule itself. Of the seven exceptional rules to this first rule, five are lexical and two are general. And both these general exceptions also contain lexical exceptions. In all, there are 18 rules in the optimal description of the imperfect. We refer to the total number of rules in a description as its complexity.

Comments: (1) The context -ä(V)Cla occurs instead of the more general context -Cunround Vj(V)C.a since no examples like virkkaa (virkka-virkkoj) are found in Saukkonen. (2) The general exception -ä(V) Cla takes precedence over the -SdtA exception (e.g. antaa (anta-antoi) rather than anta-*ansi). This preference is represented in the Venn diagram by letting the preferred context overlap the other.

Finally, we may rank the rules of the description in terms of frequency. This ranking defines the order in which these rules should be learned so as to minimize error as quickly as possible.

One important problem in any morphological analysis is to determine which inflectional forms are the most helpful in predicting other inflectional forms. For example, consider the question of whether it is easier to predict the present stem from the infinitive form (the dictionary form) -- or, vice versa, to predict the infinitive form from the present stem. Let us first determine the complexity of predicting the present stem from the infinitive. If we ignore for the moment the problem of gradation, we see that there are nine possible alternations. The optimal description for predicting the present stem from the infinitive contains 14 rules:

<table>
<thead>
<tr>
<th>context</th>
<th>alternation</th>
<th>freq.</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-VÄ</td>
<td>A-∅</td>
<td>43877</td>
<td>sanoa, lukea, toimia</td>
</tr>
<tr>
<td>-SdA</td>
<td>SdA-SdA</td>
<td>29830</td>
<td>mennä, purra, vaihdella</td>
</tr>
<tr>
<td>-dA</td>
<td>dA-∅</td>
<td>6778</td>
<td>uida, saada, arvioida</td>
</tr>
<tr>
<td>CCfront</td>
<td>hdä-ke</td>
<td>1563</td>
<td>tehdä, nähä</td>
</tr>
<tr>
<td>-stA</td>
<td>stA-se</td>
<td>1279</td>
<td>päästä, nousta</td>
</tr>
<tr>
<td>S[Shigh</td>
<td>stA-kse</td>
<td>64</td>
<td>juosta, syöstä</td>
</tr>
</tbody>
</table>

(diagram continues on next page)
Comment: The symbol [ADJ] means that the verb is morphologically derived from an adjective (e.g. pienetä from pieni and selvitä from selvä). However, for some verbs this morphological relationship may be obscure, especially when the corresponding adjective is infrequent or the phonetic relationship is unclear: e.g. loitota (from loitto), huveta (from hupa), or edetä (from the stem ete- [cf. eteen, edellä]).

But the main source of difficulty in predicting the present stem from the infinitive involves the question of gradation. We are required in certain contexts to predict the strong grade from the weak grade – that is, we need to use what might be called (from a historical point of view) REVERSE GRADATION.

**REVERSE GRADATION.**

- [voiceless stop] - [geminate voiceless stop] mitata-mittaa
- [geminate sonorant] - [sonorant][homorganic stop] verrata-vertaa
d - t todeta-totea
ų.V - ų.kV huoata-huokaa
ų: - ųkV koota-kokoa
ųhje - ųhke puhjeta-puhkea
ųLje - ųLke herjetä-herkeä
ųhV - ųhkV uhata-uhkaa
ųLV - ųLkV pelätä-pelkää
Amazingly, we can predict the gradation very well. Only two places cause a lot of difficulty:

<table>
<thead>
<tr>
<th>context</th>
<th>gradation</th>
<th>freq.</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>80608</td>
<td>joutua, kokeilla, pysäköidä</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>3549</td>
<td>upota, langeta, koota</td>
<td></td>
</tr>
<tr>
<td>yes*</td>
<td>517</td>
<td>hiljetä, rohjeta, levitä</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>2122</td>
<td>hallita, kyyditä, harkita</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>497</td>
<td>korvata, siivota, avata</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>91</td>
<td>kiivetä, ruveta, hävetä</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>2</td>
<td>kivetä</td>
<td></td>
</tr>
<tr>
<td>yes*</td>
<td>288</td>
<td>tavata, kaivata, luvata, levitä, kelvata, evätä, turvota, kivuta</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>995</td>
<td>haluta, seurata, palata</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>161</td>
<td>pelätä, karata, hylätä, keretä, perata</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>154</td>
<td>kohota, vihata, tuhota</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>38</td>
<td>uhata</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>9</td>
<td>tallata, narrata (cf. verrata, vallata)</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>2</td>
<td>niisata (cf. huoata, seota)</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>2572</td>
<td>kuunnella, jaella, puhallella, kierrellä</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>163</td>
<td>arvella, kävellä, palvella</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>32</td>
<td>varjella, viljellä</td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>16</td>
<td>rangaista (cf. aukaista, natista)</td>
<td></td>
</tr>
</tbody>
</table>

complexity: 30

* In those cases where we depend upon a morphologically related adjective to predict the form of the present stem, we can also use the adjective form to predict the gradation: e.g. rohjeta-rohkene (cf. rohkea); levitä-leviä (cf. levehä).

Thus the total complexity in predicting the present stem from the
infinitive is $14 + 30 = 44$.

On the other hand, predicting the infinitive from the present stem is really quite simple:

**PRESENT STEM $\rightarrow$ INFINITIVE**

<table>
<thead>
<tr>
<th>context</th>
<th>alternation</th>
<th>freq.</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>$-CV$</td>
<td>$\emptyset$-A</td>
<td>43877</td>
<td>sanoa, kuulua</td>
</tr>
<tr>
<td>$-VS_{d}e$</td>
<td>$S_{d}e-S_{d}A$</td>
<td>29830</td>
<td>mennä, kuunnella, purra, tulla</td>
</tr>
<tr>
<td>$-V$</td>
<td>ne-tA</td>
<td>482</td>
<td>parata, pienetä</td>
</tr>
<tr>
<td>$[\text{fr}ont \tilde{V}]ke$</td>
<td>tse-tA</td>
<td>2122</td>
<td>mainita, ansaita</td>
</tr>
<tr>
<td>$[\text{high V}][\text{mid V}]kse$</td>
<td>ke-hdä</td>
<td>1563</td>
<td>nähdä, tehdä (cf. hakea, kokea, lukea, tukea, pukea)</td>
</tr>
<tr>
<td>$-VV$</td>
<td>se-stA</td>
<td>1279</td>
<td>nousta, aukaista</td>
</tr>
<tr>
<td>$-V$A</td>
<td>kse-stA</td>
<td>64</td>
<td>juosta, syöstä</td>
</tr>
<tr>
<td>&amp;</td>
<td>$\emptyset$-dA</td>
<td>6778</td>
<td>saada, tuoda, uida</td>
</tr>
<tr>
<td>&amp;</td>
<td>A-tA</td>
<td>5821</td>
<td>huomata, pudota</td>
</tr>
</tbody>
</table>

complexity: 9

(Note: exceptions to the first main rule all end in $e$)

**GRADATION**

<table>
<thead>
<tr>
<th>context</th>
<th>gradation</th>
<th>freq.</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>no</td>
<td>82925</td>
<td>merkitse-merkitä, aukaise-aukaista, epäile-epäillä</td>
</tr>
<tr>
<td>$-CVS_{d}e$</td>
<td>yes</td>
<td>3054</td>
<td>kuuntele-kuunnella, kykene-kyetä</td>
</tr>
<tr>
<td>$-V$</td>
<td>yes</td>
<td>5821</td>
<td>putoa-pudota, tapaa-tavata</td>
</tr>
<tr>
<td>$\tilde{V}A$</td>
<td>yes</td>
<td>16</td>
<td>rankaise-rangaista</td>
</tr>
</tbody>
</table>

complexity: 4

Thus the total complexity in predicting the infinitive from the present stem is $9 + 4 = 13$. We therefore conclude that the present stem of the
verb is much more helpful in predicting the inflectional verb forms of Finnish than the infinitive is.

Sometimes it is advantageous to consider more than one base in predicting another form. Consider, for instance, the conditional stem. If we are restricted to using only one form to predict the conditional, the best form would be the present stem. The present stem requires seven rules to describe the formation of the conditional stem:

<table>
<thead>
<tr>
<th>context</th>
<th>alternation</th>
<th>freq.</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-COA</td>
<td>Ø-isi</td>
<td>26210</td>
<td>muista-muistaisi, selviä-selviäisi</td>
</tr>
<tr>
<td>-i</td>
<td>Ø-si</td>
<td>5646</td>
<td>ui-uisi, toimi-toimisi</td>
</tr>
<tr>
<td>-ä</td>
<td>E-isi</td>
<td>37662</td>
<td>luke-lukisi, tunte-tuntisi</td>
</tr>
<tr>
<td>[round V]</td>
<td>Ø-isi</td>
<td>14368</td>
<td>sano-sanoisi, kuulu-kuuluisi</td>
</tr>
<tr>
<td>kay</td>
<td>ky-kävisi</td>
<td>467</td>
<td>kay-kävisi</td>
</tr>
<tr>
<td>V</td>
<td>V:visi</td>
<td>6663</td>
<td>pelkää-pelkäisi, myy-myvisi, saa-saisi</td>
</tr>
<tr>
<td>[high V][mid V]</td>
<td>V:visi</td>
<td>800</td>
<td>tuo-toisi, vie-veisni</td>
</tr>
</tbody>
</table>

But if the present stem does not end in a stressless low vowel, then the conditional stem can be simply derived from the imperfect stem by adding si. If we take advantage of this close relationship between the imperfect and the conditional stem, we get a description of the conditional which involves only four rules:

<table>
<thead>
<tr>
<th>context</th>
<th>alternation</th>
<th>freq.</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-COA</td>
<td>Ø-isi</td>
<td>26210</td>
<td>muista-muistaisi, halua-haluaisi</td>
</tr>
<tr>
<td>-Ä:</td>
<td>A:-Aisi</td>
<td>3903</td>
<td>huomaa-huomaisi, avaa-avaisi</td>
</tr>
</tbody>
</table>

(2) If the present stem does not end in a stressless low vowel, use the imperfect stem as the base form:
There is some evidence for this relationship between the conditional and the imperfect. Consider, for instance, the occurrence of the analogical form laksisi in dialects where the historical laksi has been retained. Similarly, some speakers of Finnish accept tunsisi as a possible conditional form for tuntea. The form tuntisi is exception only when derived from the imperfect.

By combining these results, we derive a system of optimal relationships for the Finnish verb. We observe the primacy of the present stem in such a system.

![Diagram showing the relationship between present stem, infinitive, imperfect, and conditional forms.]

APPENDIX: Explanation of Symbols

- **C** consonant
- **C₀** any number of consonants, including none
- **C₁** at least one consonant
- **V** (short) vowel
- **V:** long vowel
- **V_x, V_y** indexed vowels
- **A** (short) low vowel (a or å)
- **S_d** dental sonorant (l, n, or r)
- **L** liquid (l or r)
- **primary stress**
- **unstressed**
- **syllable boundary**
- **( )** optionality
- **∅** the null symbol
- **'** identity
The recent interest in searching for one's roots has had other manifestations in other times and in other places. Sometimes highly nationalistic persons have even sought the roots of their nation through the study of its oral traditions. Such was the case when Elias Lönnrot traveled the hinterlands of eastern Finland in the early 19th century, collecting the oral poetry which then provided a rich body of literature to support claims of a glorious past, and gave reasons to look forward to an equally glorious future. His people were, after all, not Swedes; they could never be Russians; they insisted on being independent Finns. Many of his countrymen saw his compiled Kalevala as evidence of their independent greatness. After all, how many nations numbering less than four million inhabitants had produced their own epic which they felt worthy to occupy a place on the world's bookshelf next to those of the Greeks.

The Kalevala still occupies a place on the bookshelves of nearly every Finnish home and in the curriculum of every Finnish school. Translations into English are available, but the names are not translated, even though understanding their meanings often adds substantially to appreciation of the text. This paper, therefore, is simply an attempt to supply for English readers the meanings of the names of the major Kalevala characters.

The dominant figure in the epic is Väinämöinen, an old, steady bard, born of the maiden of the waters already in his advanced years, able to achieve dominion over his adversaries by the power of the word—his recitations, incantations, and singing. His name contains the base väinä, meaning a wide, deep, calmly moving river, and a suffix moinen, meaning "like that depicted by the base," an apt name for the major hero who is often viewed as stern, aged, steady, and powerful.

In the early part of the Kalevala, Väinämöinen's power is challenged by the youthful Joukahainen who soon finds himself humiliated by being sung into a swamp. To gain his freedom he offers his sister to Väinämöinen for a wife. Later, to avenge this indignity, and the subsequent death of his sister, Joukahainen sets out to shoot Väinämöinen with a bow and arrow. The Finnish term jouši means "bow," so it is tempting to conclude that the name Joukahainen is derived from that root, but there is no good evidence for such an etymology. Some scholars have felt the term to be cognate with a Lappish term meaning snow or ice; others have felt it to be common with the dialect form joukea, meaning "large in stature," but the best evidence points to it coming from joutsen, meaning "swan," a plausible reference to the form of the bird in which Joukahainen existed "primitively." The hainen suffix has the same meaning as the moinen suffix in the name Väinämöinen. Thus Joukahainen most probably means "swanlike." Although
It is appealing to think of Joukahainen as a Bowman (jousimies); we must consider such explanation folk etymology.

Joukahainen's sister, who met death rather than wed Väinämöinen is drowned in the sea, but one day while on the lake, Väinämöinen catches her in the form of a fish. She slips away from him and reveals her true identity, but try as he might, Väinämöinen is unable to retrieve her from the deep. Her name is Aino. In some versions of the poem she is Anni tytti, aino tytti. Lönnrot chose to call her simply Aino, derived from the adjective ainoa, meaning "only," referring possibly to her being Joukahainen's only sister. It is perhaps also an appropriate name for Väinämöinen's lost hope for marriage.

Although he loses in love with Aino, Väinämöinen recovers quickly and sets off to woo the maiden of the North. There he encounters the dominant female figure in the epic, the "Pohjolan Emäntä," or hostess of the North (the title loses in translation). She is the person who places the conditions on marriage to the Maiden of the North. She is also the one who does battle to recover the sampo (talisman) when it is taken by Väinämöinen's group. She is depicted as a witch whose powers rival those of Väinämöinen's. In some poems she also has powers of flight. Her name is Louhi, a word that means a rocky ledge or crag. Her profile in Gallen Kallela's famous painting "Defense of the Sampo" would seem consistent with her name, but it probably has more significance than that. There are many variations of the name which have suggested many meanings to those who have studied them. To some it is associated with the word lovi, meaning not only a gap or chasm in the earth, but also a trance into which a shaman could fall. Others consider the name to be of Scandinavian origin (floghndraki), associated with the idea of a "witch of the wind." Still others see a connection with the notions of lightning and flying fire. The interpretations of the name Louhi seem to be as enigmatic as the figure herself.

One of the conditions for marriage to the Maiden of the North is that a sampo be forged for Louhi and her north land. Väinämöinen turns to Ilmarinen, the blacksmith who forged the firmament, to accomplish the task. The name Ilmarinen comes from one of the oldest Finno-Ugric names for a god. Cognates of the base, ilma, meaning "air" also appear in the religious vocabularies of other Finno-Ugric languages. The association of his name with his early task of forging the firmament is clear; in some poetry the name also refers to the god of the wind. The suffix rinen most probably contains two suffixes: ri and nen. The ri is a common nominal suffix meaning agent, or practitioner of a trade. It is commonly used in deriving proper names as well. The final nen is a ubiquitous suffix denoting proper noun or diminutive.

The hero next to Väinämöinen in power of the word is Lemminkäinen, whose name is an old, Baltic, man's name, a diminutive form from the word lempi, meaning love, or favorite. The name is fitting, because Lemminkäinen is depicted as a fickle charmer of women. He is also identified with at least two other names: Kaukomieli and Ahti Saarelainen. Such other names apparently come from the compilation of converging variants of poems dealing with the same figure and themes. The name kaukomieli consists of kauko meaning "far away," and mieli, meaning "mind." The resulting connotation suggests one being afflicted with wanderlust, unable to settle...
down to the important cares of the moment. As the reader follows the
adventures of Kaukomieli, he learns the name is justified. In one of his
escapades he offends an old cattle herder who takes revenge by killing
him. His body is chopped into pieces and thrown into the river of
Tuonela. His mother commissions Ilmarinen to forge a large rake with
which to retrieve his body parts, and with supernatural ointments and
incantations puts him back together again better than he was before (an
image of the resurrection). Once conscious, Lemminkäinen's primary con­
cern is still with girls. His other name, Ahti Saarelainen, refers
primarily to his residence on an island: saari(saare) means "island," and
lainen means "resident of." The name Ahti is a variant of Ahto, meaning
"the god or spirit of the sea," the Finnish Neptune or Poseidon.

The herder who killed Lemminkäinen was Märkähattu, which means literally
"wet hat," (märkä + hattu). He is known by other names in other versions,
but in this case the meaning probably derives from the ceremonial sprinkling
of a herder as he would leave for the first time in the spring to herd his
cattle.

In the beginning of the Kalevala, we read of how Pellervoinen sowed the
trees and the grains. His name is derived from pelto, meaning "field;"
we also see it related to the term pellava, "flax."

Kullervo is the most tragic character in the Epic. Being deprived of a
normal childhood, ruining everything he puts his hand to, and finally in
ignorance defiling his sister, he commits suicide. In all of this tragedy
he captures the reader's sympathies. His name apparently comes from the
word kulta meaning gold (sometimes a term of endearment). The analogy
with Pellervoinen, or Pellervo, from pelto—thus Kullervo from kulta is
quite convincing.

As Väinämöinen builds a boat from the chips of a spinning spindle and hopes
to get it into the water without touching it in order to win the hand of
the Maiden of the North, he lacks some of the secret words necessary to
complete the work. He goes to the one person who can provide them, Antero
Vipunen, the great giant who lies in the earth. Väinämöinen enters his
mouth, descends to his stomach, and causes substantial distress to the
giant in order to persuade him to tell the words. The name Antero prob­
ably comes from the Catholic Saint Andreas, who became the patron saint of
fishermen. The name Vipunen, meaning "little lever" possibly comes from
an early misinterpretation of paintings showing Saint Andreas and the
slanting Greek Orthodox cross on which he was crucified. The early Finns
are thought to have interpreted the cross as a kind of lever, and Saint
Andreas as the saint associated with it—thus, Antero Vipunen. Such
interpretation is not final, but it is credible when one considers other
early misinterpretations of Christian paintings.

Readers of the Kalevala also encounter the name Untamo, referring to a
great sorcerer who lives under the ground and possesses important words
for doing great feats. His name derives from the word uni, meaning
"sleep," an appropriate name for the character who gives information
as though from the dead. We see the nominal suffix on his name in other
words such as kuutamo, meaning "moonlight."
The influence of Christianity on the names in the Kalevala is most clearly shown in the final poem. In it we read a fascinating pagan interpretation of the birth of Christ. Marjatta (Mary) conceives from a lingon berry that speaks to her, climbs her body, enters through her mouth, and descends to her stomach. She can find no one who will let her use a sauna in which to give birth to her child. Among those who deny her a place is Ruotus (Herodes), whose wife assures her that there is no sauna for the likes of her in Saraja (probably from Karelian Jorosalmi, meaning Jerusalem). Accused of being a whore she denies it and proclaims that her son will be greater than Väinämöinen. Sometime after the child is born in a stable, he disappears but is eventually found in a swamp. He is brought to be christened, but the priest wonders if the fatherless child should be allowed to live. Väinämöinen studies the matter and decides that the babe should die, but the babe rebukes him for his bad judgment. The old priest christens the babe King of Karelia, and Väinämöinen, grossly offended, departs with his boat into the sunset, leaving his songs and kantele (the musical instrument he had fashioned from the jawbone of a pike) as an inheritance to the people. He predicts that they will still need him once again to provide a new sampo and a new kantele. His departure symbolically represents the end of the pagan era, and so far as we know, he has not returned.
Notes

1. William A. Wilson, Folklore and Nationalism in Modern Finland (Bloomington, Ind, 1976), pp. 3-66.

2. For further discussion on this attitude and the expression coined from it, Wilson suggests that the reader see Liisa Castrén, Adolf Ivar Arwidsson isänmaallisena herättäjänä, Historiallisia Tutkimuksia, no. 35 (Helsinki, 1951), pp. 160-61.


5. Aimo Turunen, Kalevalan Sanat ja Niiden Taustat (Lappeenranta, 1979), p. 75-76.

6. Ibid., pp. 15-16.

7. Ibid., p. 185.

8. Ibid., p. 186.

9. Ibid., p. 65.


12. Ibid., p. 12.


15. Ibid., p. 139.

16. Ibid., p. 22.

17. Ibid., p. 359.

18. Ibid., p. 287.

19. Ibid., p. 296.

Postscript

Practical considerations preclude notes on all primary sources used by Turunen. Such sources are noted, however, in his text on the pages given.
RELATIONAL INVARIANCE IN LANGUAGE

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[play tape] We recognize these as different renditions of the theme of Beethoven’s Fifth Symphony. Though the four notes be played in different keys, on different instruments, and at different speeds, we perceive them to be the same “tune”. Through all these different versions is a common denominator, something invariant. What is it that is invariant? Certainly not the acoustic signal in an absolute metrical sense. What is invariant are the relations — both “vertical” (paradigmatic) and “horizontal” (syntagmatic). The vertical relation held invariant is that the last note is a major third lower than the first three notes, which are of identical pitch. The horizontal relation held invariant is that the first three notes are eighth notes and the last is a half note. Often one criterion by which we judge the quality of a particular rendition of a musical composition is how faithfully the specified invariant relations are reproduced (see Jakobson 1971b:551-553).

I wish to show examples of invariance as the respected scientific principle that it is and show that invariance is important in language even though some linguists may disregard it.

During the seventy-five years from 1841 to 1916 invariance in algebra, geometry, topology and physics was exhaustively investigated. Mathematicians Boole, Cayley, Klein, Lie, Sylvester and hundreds of PhD candidates devoted years to the study of algebraic invariance. E.T. Bell, who includes a 48-page chapter on invariance in The Development of Mathematics, gives this colorful definition of invariance (Bell 1945:420): “Invariance is changelessness in the midst of change, permanence in a world of flux, the persistence of configurations that remain the same despite the swirl and stress of countless hosts of curious transformations.” For example, in Euclidean geometry a triangle may be translated or rotated without changing any of its dimensions or internal relations (see fig.1).

![Fig.1](image-url)
In other words, the dimensions and internal relations remain invariant under transformations of translation and rotation. Topology goes one step further to study what remains invariant in the triangle under transformations free of metrical constraints, i.e. when the triangle can be "stretched" in any way as long as none of the lines connecting the points that were vertices are "cut" (see fig.2).

Chemistry and biology offer still other examples of invariance. Water exists in three general states; ice, liquid water, and steam. The chemical invariant that underlies these different states is represented by the formula H2O. The relation between one oxygen atom and two hydrogen atoms that creates water remains invariant in the different contextual variations of ice, water, and steam. If water is subjected to conditions that break up the relation between the oxygen and hydrogen, we no longer have water. Chemists can understand and explain the behavior of water because they know its chemical invariant. Invariance is also fundamental in the biological sciences. Botanists classify certain plants as legumes if they possess the properties by definition invariant to legumes. In fact, classification of any kind is based on the recognition of a property (or properties) invariantly present in the objects classified together. G. W. Scott Blair states that "a physical property has really no significance unless it is invariant to changes in its defining elements, since it is only through such an invariance that it comes to be isolated as an independent concept" (Blair 1950:231). According to S. S. Stevens, "the scientist is usually looking for invariance whether he knows it or not" (Stevens 1951:20).

Some of the most impressive examples of the recognition and explanation of invariance come from physics. Sir Isaac
Newton (1642-1727) discovered that the falling of objects to the ground, the apparent motions of the sun and the moon, and the ebb and flow of the tides are just contextually different manifestations of one invariant property of matter -- gravity. He gave the mathematical formula which accounts for and predicts the details of gravitational attraction between bodies in space. Newton's laws of motion propose simple principles that underlie many apparently different phenomena in motion. According to Einstein, "Newton's aim was to find an answer to the question: Does there exist a simple rule by which the motion of the heavenly bodies of our planetary system can be completely calculated, if the state of motion of all these bodies at a single moment is known?" (Einstein 1927:201). In other words, Newton was looking for invariance.

A century and a half after Newton's death Faraday and Maxwell showed that light, electricity, and magnetism are just contextual variations of electromagnetic energy and can all be accounted for by principles common to all forms of electromagnetism. Once again invariance was discovered in apparently different phenomena. Like Newton, Faraday and Maxwell gave mathematical formulas to describe electromagnetic phenomena accurately.

Einstein's famous formula E=mc^2 announces mass and energy as mere contextual variants of each other. In his general theory of relativity (1916) Einstein incorporates the invariance covered by Newton's law of gravitation into the more universal principle of equivalence in which the effects of gravitation and the effects of acceleration are just variations of a more general principle. In the special theory of relativity (1905) Einstein demonstrated that there is no absolute motion but only motion relative to a given frame of reference. Neither, according to Einstein, is there absolute length nor absolute time, these being potentially different for observers in different frames of reference. In other words, Newtonian invariance of motion, length, and time is relative to the frame of reference of the observer.

What we have here is not the negation of Newtonian invariance but the widening of the scope of that invariance. Newton's laws show invariance in a number of frames of reference. Einstein generalizes beyond Newton's laws to be able to show invariance in more frames of reference than Newton does. From the more general point of view of Einstein's laws, some of Newton's invariants become contextual variations of other phenomena. The motivation for expanding the reach of invariance is that doing so increases our power of explanation. As Paul Hedengren says, "We judge the existence of an object by its explanatory usefulness" (Hedengren 1981).
Einstein further demonstrated that there is an invariant relation between space, time, and matter, which he summarized as follows (Pasachoff 1978:115): "It was formerly believed that if all material things disappeared out of the universe, time and space would be left. According to the relativity theory, time and space disappear together with the things." I understand Einstein to mean that time and space do not exist without matter [1]. James R. Newman interprets Einstein's work as a quest for invariance (Newman 1961:332): "Einstein spent his life searching for what is changeless in an incessantly changing world. He searched for unity in multiplicity. In his model of physical reality, space, time, energy, [and] matter are bound together in a single continuum."

We see, then, that invariance is a more familiar concept than we might have supposed and furthermore that it pervades all scientific endeavor. Progress in science is closely correlated with discovering "new" invariants or expanding old ones. With respect to the laws postulated by the scientist, we can agree with S. S. Stevens that "the wider their limits of invariance, the more useful they become, for in his scientific account of humanity the scientist seeks measures that will stay put while his back is turned" (Stevens 1951:21).

One kind of invariance that has become quite fashionable in linguistics in the past couple of decades is interlingual invariance, popularly known as language universals (Jakobson 1971b:571; van Schooneveld 1977b:2). Some characteristics that have been discovered to be universal or nearly so in human languages are: two opposing classes of words, nouns and verbs [2]; two syntactic functions, subject and predicate; the grammatical category of number, with the basic distinction of singular and plural; and the category of person, with the basic distinction of impersonal (third person) and personal forms (which distinguish first and second person) (Jakobson 1971b:581-582).

Let us turn now from interlingual invariance to intralingual invariance. A classic example of such invariance is the phoneme [3]. If you listen carefully to the /p/ sound in the words "pit", "sip", "play" and "pray" you can notice slight differences in the sound of the /p/. Despite these differences, English speakers perceive the /p/ in those four words as "the same sound." On the other hand, the words "pit" and "bit" are recognized as different words solely because /p/ and /b/ are perceived as different sounds. As ordinary speakers of English, we feel the differences between /p/ and /b/ to be significant (because they distinguish differences in meaning), and we say that they are "different sounds." In contrast, we feel the differences in pronunciation of /p/ in different words to be insignificant and we probably were not even aware of thes
before they were pointed out to us. Linguists call the differences in English between /p/ and /b/ "phonemic" differences, as opposed to the merely "phonetic" differences between the different /p/s. Roman Jakobson characterizes "phonemic analysis" as "a study of properties [that are] invariant under certain transformations" (Jakobson 1971a:472).

An important fact about the phoneme is that it does not exist in isolation but is always part of a system of phonemes within a given language. Just as Einstein said that there is no absolute motion but only motion with respect to a particular frame of reference, Saussure said that there is no absolute invariance of an individual phoneme but only invariance in the relation of that phoneme to the other phonemes in its system (Saussure 1916:111-120; Jakobson 1971b:420-423; Jakobson & Waugh 1979:13-18, 80-84, 92-117). Take for example the phonemes /p/ and /b/ in English. The words "pit" and "bit" can be distinguished whether you talk normally, shout, whisper, speak with food in your mouth, etc. The relation between /p/ and /b/ remains invariant in different contexts even though the actual pronunciation of say /p/ itself differs in those contexts. Of course, the /p/ is also pronounced differently by different people, yet all recognize it as the same phoneme because of its relation to the rest of the phonemes in their system.

Let us now consider this phonemic invariance from an acoustic point of view and use the vowels /a/, /u/, and /i/ as our examples. Since a spectrometer registers the most minute acoustic differences, the pronunciation of /a/ by different people, or even by the same person in different contexts, will show up as different on the spectrograph (see fig.3).

![Fig.3.](image-url)
The same is true of the vowel /i/ (see fig. 4).

Fig. 4.

and the vowel /u/ (see fig. 5).

Fig. 5.
However, if we look at the relations between /a/, /i/, and /u/, we see that despite the metrical acoustic differences in isolated phonemes, there is invariance in the relations between these three vowels (see fig. 6, from Skelton 1970:135).

Fig. 6.

Saussure's prediction of invariance in the relations between phonemes but not in individual phonemes is confirmed by acoustic evidence supplied by the spectrometer (4). Relational, or in other words topological, invariance successfully explains the structure of the phonemic system, while metrical absolutism does not. According to E.T. Bell, "it seems not altogether fantastic to imagine that a few centuries hence the qualitative habit of thought will have superseded the quantitative in the growing parts of mathematics. Certain indications in science, and many in mathematics, point to the analysis of structure as the mathematics of the future." Stated roughly, it is not things that matter, but the relations between them; and if topology with its spacial visualizations of intricate relations between abstract 'objects' has made possible a rudimentary but still difficult analysis of relations, it may be the germ of the mathematics of the future" (Bell 1945:466-467).


When we speak of invariance in speech sounds then, we refer to invariance in the system of relations between individual
speech sounds in a given language. Since the invariance necessary for comprehension is in the relations of the speech sounds to each other and not in the acoustic signal of an individual speech sound itself, we can understand the same word spoken under very different circumstances. Verbal communication depends on this invariance for success. The phonemes is a good example of the fact that invariance and contextual variation do not exist without each other. Every utterance of a particular phoneme is different and yet that phoneme can carry out its communicative function because of the invariance it possesses.

When we leave the phonemes and go to the higher (i.e. more complex) linguistic units, e.g. morpheme, word, phrase, clause, sentence, and discourse, the picture of invariance changes because these units have meaning. Invariance at these levels is the invariance of meaning associated with a given combination of phonemes. Charles S. Peirce declared that every linguistic sign has a general invariant meaning, which is "all that is explicit in the sign itself apart from its context and circumstances of utterance" (Peirce 1960:5.474; Jakobson 1980a:35-37). Roman Jakobson's description of the Russian case system is a cogent argument for invariance of meaning in morphology (Jakobson 1971b:23-71,154-183). Jakobson shows the general invariant meaning for each of the cases in Russian. For example, although the genitive may have contextual variants such as the so-called "genitive of negation" and "genitive of possession," the genitive case also has an invariant meaning underlying all of its uses. Referring to the invariant as the "general" meaning and to the contextual variants as the "particular" or "combinatory" meanings, Jakobson says:

"The question of general meanings in case systems belongs to morphology while the question of particular meanings belongs to syntax, since the general meaning of a case is independent of its environment, while its particular meanings are defined by various combinations of surrounding words involving both their formal and their real reference. We may say that the particular meanings are combinatorial variants of the general meaning" (Jakobson 1971b:35). "All the specific combinatorial meanings of any case can be reduced to a common denominator. In relation to the other cases of the same declensional system every case is characterized by its own invariant general meaning, or value ("valour") to use Saussure's term" (Jakobson 1971b:156).

Other linguists that have studied invariance of meaning in lexical and grammatical morphology are Dwight Bolinger, William Diver, Erica Garcia, Talmy Givon, Anna Hatcher, Joan Hooper, Otto Jespersen, Robert Kipfer, C. H. van Schooneveld, Sandra Thompson, and Linda Waugh (see Bolinger 1977:20). For example, in his book entitled Meaning and Form Dwight Bolinger discusses the invariant meanings of the
words any, some, not any, no, it, there, of, do, remind, and others, as well as infinitives, imperatives, and word order. In the preface of the book Bolinger states that this book "reaffirms the old principle that the natural condition of language is to preserve one form for one meaning, and one meaning for one form" (Bolinger 1977ix).

We have discussed two basic types of invariance in language -- invariance of sound and invariance of meaning. Invariance of sound is invariance of relations in a system of phonemes. Invariance of meaning associated with a given linguistic form is a characteristic of the linguistic units of a higher order than phonemes. Bolinger considers the "one-form-one-meaning" principle to be a "universal" and he points out that "it has exceptions, but as with all universals the exceptions are imbalances that a language tends to eliminate; we can no more live comfortably with precise synonymy than with the conflict of homonyms" (Bolinger 1977:9).

One common objection to invariance of meaning is supposed homonymy. Homonyms are reputed to be words with different meanings that share the same form. Let us look at three examples in English of such "homonyms": bachelor, table, and pen. Jakobson lists the major variant meanings of bachelor as (1) unmarried man, (2) lowest academic degree, (3) knight serving under the standard of another king, and (4) fur seal without mate during breeding time (Jakobson 1973:49). He recognizes that the referents are different, but the referents must not be confused with the word itself. The word has an intrinsic general meaning that can be applied to the different referents. Jakobson says "all the bachelors have the following in common: they are all adult beings but in one aspect incomplete: (1) adult man, but unmarried; (2) academic degree, but the lowest; (3) knight, but without a banner of his own; (4) adult seal, but without a mate during breeding time" (Jakobson 1973:50). The word table likewise has an inherent meaning that can be applied to referents as different as picnic table, aluminum table, multiplication table, and water table. Table means, as Waugh puts it, a flat surface on which things can be placed or arranged (Waugh 1979:131; Robertson 1977:1). Imagine this conversation between two linguists, one skeptical of invariance and the other convinced of it. "The three words pronounced pen as exemplified in 'ball-point pen', 'pig pen', and 'pen' meaning penitentiary are homonyms, are they not?" "Perhaps, but there is a semantic notion common to them all, the idea of containment or control and the prescribed or controlled exit from the containment or release from the control. In all three cases something is under control by means of the pen, and if it gets out of the pen in some way other than the prescribed way the result is 'messy'.' "Well, you may be right there, but that invariant meaning is too abstract to be useful in linguistics. It's
more productive to view the three pens as homonyms." This view of abstraction as unproductive or impractical contradicts the experience of science, whose progress is equated with increasing ability to explain phenomena by means of significant generalizations.

In Einstein's eyes abstraction is a powerful tool in the hands of the scientist. He writes that "before Newton there was no comprehensive system of physical causality which could in any way render the deeper characters of the world of concrete experience" and he points out that "today we are so accustomed to forming conceptions which correspond to ... [Newton's laws] that we can hardly realize any longer how great a capacity for abstraction was needed" to formulate them (Einstein 1927:201-203). Einstein emphasizes that "Western thought and research and practical construction" are firmly rooted in Newton's abstractions (ibid.) [italics added]. Today these abstractions are lauded for their beauty, simplicity, and practicality. In his search for invariance, Einstein makes even more abstract abstractions than Newton does. These abstractions might have seemed laughable if the predictions they made had not been verified. No one laughs at the atomic bomb. We venerate Newton and Einstein for their successful abstraction of invariance from contextual variation. Why not recognize the greatness of Saussure, whose predictions of invariance in speech sounds have been likewise verified? We cannot dismiss invariance with the charge of being abstract. I suspect that many in Newton's day could see no practical applications of his laws of invariance; today we take them for granted. Let us not disregard invariance in language just because we cannot yet see what such knowledge will lead to. Invariance is useful, productive, practical, powerful to the degree that it increases our ability to explain and predict linguistic phenomena.

Let me reemphasize the relational nature of invariance in language. Linguistic invariance is not metrically absolute. Both the invariance of sound and that of meaning are relational, or topological. Bell sees topology as the mathematics of the future, and Jakobson states that the topological approach is the only way to adequately account for linguistic phenomena. Edward Sapir concludes a paragraph on Einsteinian relativity and linguistic relativity with this sobering admonition to linguists: "What fetters the mind and benumbs the spirit is the ever dogged acceptance of absolutes" (Sapir 1949:159).

I have titled this paper "Relational Invariance in Language" instead of "Relational Invariance in Linguistics" because I think that although relational invariance is in language, it is not yet sufficiently in linguistics. When we wonder "Why bother with invariance in linguistics?" let us consider "What explanatory power would chemistry have if chemists did
not know that both ice and steam consist of H2O?" If invariance is so important in all the sciences, why is it not important in linguistics? A handful of linguists have asserted the importance of invariance in language and consequently in linguistics, but unfortunately they remain relatively unknown or ignored by the linguistic community at large. I am confident that when linguists take relational invariance seriously to the degree that physicists, mathematicians, and other scientists have, we will have equally impressive results.

NOTES

1. Compare this with Jakobson: "there is no signatum without signum" (Jakobson 1971b:260) and "in grammar there is no conceptual opposition without a corresponding formal distinction" (Jakobson 1971b:586).

2. In Sapir's terminology nouns classify their referents as "existents" and verbs classify their referents as "occurrents". (See Sapir 1949:123 and Jakobson 1971b:581.)

3. The term "phoneme" was first proposed by A. Dufrice-Desgenettes in 1873, endorsed by Louis Havet in 1874, and used by Saussure in 1878 in his book on Indo-European vowels. Baudouin de Courtenay and Kruszewski adopted this term in 1880 to mean a meaning-discriminating speech sound that exists in a system of such sounds in a given language (e.g., /p/ and /b/ are phonemes in English because they distinguish words like "pit" and "bit"). Baudouin de Courtenay coined the term "morpheme" in 1878 by analogy with "phoneme". The term "allophone", widely used in post-Bloomfieldian linguistics, was coined by Benjamin Lee Whorf. (See Jakobson 1971b:396-397,405,407,409.)

4. On the relational invariance in the phonological distinctive features and the spectrographic evidence of it see Delattre 1968 and Jakobson & Waugh 1979:80-95.

BIBLIOGRAPHY


Early in our century the Russian formalists, with their emphasis on the form of the work of art as the locus of artistic value rather than the content, pointed out that translating a book from one language into another was in effect to produce an entirely different book. The short stories of O. Henry translated into Russian, no matter how faithfully, were quite different in meaning than the O. Henry read in the United States. The problem was not just a linguistic one—that of finding the correct Russian equivalents of American expressions—but a cultural one as well. The meaning or meanings of a text are to some degree determined by its cultural context. In the words of Victor Shklovsky, one of the more prolific of the Opyaz faction of the Russian Formalists, "The work of art arises from a background of other works and through association with them. The form of a work of art is defined by its relation to other works of art, to forms existing prior to it." In other words, a story by O. Henry would mean one thing when it is part of a tradition which includes Mark Twain and Edgar Allen Poe and something quite different if perceived in a tradition including Pushkin and Gogol.

Looking at literary tradition from another perspective Hugh Kenner has noted that it is a procedure which allows something to be expressed in a context which would not normally permit it. As an example, he cites Pope's translation of the Iliad; which "moves along in the most decorous rhymed couplets and is full of people disembowelling one another. If you could somehow detach Homer's name and reputation and simply offer it as an 18th-century poem, you'd find it a most extraordinary piece of surrealism: every obvious assumption of 18th-century society is ignored. But his translation is protected by the name of Homer. This is part of the role that translation plays in letters: it provides templates that permit outrageous things to occur. It allows people to break out of a set of assumptions in which they are otherwise likely to be trapped—assumptions implicit in the language, assumptions of the conventions that go with the literature of a language."

Ugo Foscolo's translation of Laurence Sterne's A Sentimental Journey Through France and Italy reflects both these views of translation: on one hand, Viaggio Sentimentale di Yorick Lungo la Francia e l'Italia is a very different text from Sterne's original; on the other hand, he made use of Sterne to introduce something new and different (if not outrageous) into the Italian Literature of his time, and to "break out of a set of assumptions" on which the Italian litterati were trapped.

One senses a kind of embarrassment among Italian critics and literary historians to deal with this translation: and not because it's bad—indeed, those who have written on it usually go out of their way to prove how in lexical and stylistic felicity it is even better than the original—but simply because it is a translation. Why would such an
imposing literary figure as Ugo Foscolo, one of the most original and influential writers of his time, resort to translating? Foscolo sometimes evinced the same kind of embarrassment in his letters to his friends. "Farewell," he writes in one, "I'm getting back to the Sterne. And did you know that often he makes me very angry?

No, no, I have not been made by Mother Nature to be a servant ever; and isn't translating a kind of servitude for school girls? Anyway, soon I will have finished and recopied him; and if it doesn't please me I will let him sleep and will dedicate myself to the tragedies."

Furthermore, Foscolo spent a long time at this slave labor that went against his nature. Although published in 1813, Foscolo had begun to translate it in 1805. By 1807 he had apparently completed a version which did not satisfy him. So, he set about redoing the whole thing, and it was another six years before he was able to bring it to a satisfactory completion.

In other letters Foscolo claimed that with his translation he would give the public something new and original. And by such a claim he seemed to mean first that it would be something different from the original text of the Sentimental Journey, and second, that it would be something very new for the Italian reading public. In other words, Foscolo would have been in agreement with both Shklovsky and Kenner: in transposing Sterne's text from its original literary context to the Italian literary tradition he was altering Sterne; but in introducing such foreign material into an Italian context he was also altering that context, challenging that tradition and the set of assumptions that went with it. Ultimately then, despite Foscolo's complaints that as he was translating he was merely being servile to another text, the translation itself, once it was published, managed to be servile neither to Sterne's original, nor to the assumptions of the Italian literary tradition, assumptions which Foscolo could not have ignored as easily in his "original" works.

However, the translation did not seem to have much of an impact on Italian Literature, possibly because it was too "new". It was not and never has been one of Foscolo's more widely read works. But since Foscolo is a major figure in the history of Italian Literature, scholars have been compelled to be aware of, and show respect to, all his writings, down to the most banal personal or business correspondence. This means that the translation has not been ignored, at least not completely yet. The scholars who have dealt with the translation itself have been very few. Most critics only look at it as an indication that Sterne influenced Foscolo and then move on to consider how that influence affects his other works, those works which can be attributed only to Foscolo. Those few who have studied the translation itself closely, have limited themselves to a stylistic comparison of Foscolo's and Sterne's language. It's not too surprising that at the hands of these Italian critics Foscolo should come out ahead in such comparisons. The findings usually are that his words are more expressive, his syntax more elegant, his rhythm more balanced, and so on. In fact, in the most recent such study, Studi su Laurence Sterne ed Ugo Foscolo,
Vincenzo Tripodi, 1978, the conclusion reached is that by the careful use of diminutives, archaisms, amplification, and punctuation Foscolo manages not only to improve on the original but to express completely different things in his translation.

There is undoubtedly some truth to such claims—not the claims that Foscolo's version is better, but that his stylistic choices do affect the meaning of the text. However, on the whole I find them greatly exaggerated, and unconvincing. In fact, the translation itself, sentence by sentence, is very faithful to the original. I say the "translation itself" because there's more to Foscolo's book than just the translation. And it is this "more" which makes of it a radically different text from Sterne's, and not his stylistic choices.

Foscolo frames the fiction of Yorick's travels through France within a fiction of his own. An anonymous editor claims to have received the translated manuscript from one Didimo Chierico, an enigmatic character living a self-imposed exile in France. The manuscript consists not only of the translated text, but also of Didimo's notes to it, explaining certain points to his Italian readers, taking issue with others; sometimes reprimanding Yorick. At the end of the book, after the translation of Sentimental Journey, is appended a Notizia inforno a Didimo Chierico (Notice concerning Didimo Chierico). In sixteen paragraphs, or short chapters, similar in length to those of Sentimental Journey, the editor gives a sketchy account of the eccentric behavior and beliefs of this Didimo, whom he encountered for only a brief time during his travels in France. The editor presents Didimo as an interesting but bizarre character whom he can't really figure out. He tells the reader that he will just report those of Didimo's words and actions which he knows and leave it for the reader to figure them out. Among such words and actions would be included the manuscript of the translation from Sterne.

The presence of these two other voices, which are superimposed on Yorick's, alters the textual strategies considerably. The reader's work in processing the text, which is complicated enough in Sterne's work, is made even more complicated here. Yorick/narrator's voice reaches the reader filtered through, and thus altered by, two other voices: that of the ambiguous Didimo, and finally that of the anonymous editor who claims ignorance of what it all means but deems it important enough to publish. It's the role of the reader in the two texts which makes them so fundamentally different. In the end the difference amounts to this: Sterne's text asserts the power of the reader over the text; Foscolo's text denies this power to its readers. The textual strategies in Sterne force the reader to take over the signifying function in the text; while the textual strategies in Foscolo make sure that it's the text that retains control of the reader's responses, or at least denies the reader the autonomy he had in front of Sterne's text.

A Sentimental Journey could be read as an allegory of reading and writing, where travel is a metaphor for reading, if we understand "reading" as the ability to seek out, receive, and process new information.
"Writing," on the other hand, would be the ability to formulate and impart information, the ability to make authoritative pronouncements. Seen in this key, Yorick's journey amounts to a refutation of his own, and possibly man's, ability to write, that is to state truths authoritatively; and a confirmation of his own, and man's need to read, that is to learn and derive meanings from the world, rather than impose them.

The book opens in medias res, at the end of a conversation, as Yorick makes an authoritative and presumptuous pronouncement, which is immediately challenged by his interlocutor:

"--They order, said I, this matter better in France--
--You have been in France? said my gentleman, turning quick upon me with the most civil triumph in the world.--
Strange! quoth I, debating the matter with myself, That one and twenty miles sailing, for 'tis absolutely no further from Dover to Calais, should give a man these rights--I'll look into them: . . ."4

This scene sets the pattern for the whole book: no sooner does Yorick/character state a belief, conclusion, or resolution than it is challenged, proven to be unjustified, and he is left to continue his travels, momentarily humbled, but never defeated, resolved to learn more before he speaks; or to insist on our metaphor, to read more before he writes.

But of course, he is writing. Yorick/narrator is writing his memoirs, giving an account of Yorick/character's adventures and misadventures. Does this mean that after his journey he now has the necessary authority to be a writer instead of a reader? Not really, because the distinction between Yorick/narrator and Yorick/character is not always maintained. There is a symbiosis between the two of them whereby one seems to learn from the other. Yorick/narrator continues his travels as he writes about them, and continues to learn from them: he continues to be a reader even as he is writing. Shortly after arriving in Calais a spirit of good will overwhelms Yorick. The second chapter ends with these words:

"When man is at peace with man, how much lighter than a feather is the heaviest of metals in his hand! he pulls out his purse, and holding it airily and uncompress'd, looks round him, as if he sought for an object to share it with--In doing this, I felt every vessel in my frame dilate--the arteries beat all chearily together, and every power which sustained life, perform'd it with so little friction, that 'twould have confounded the most physical precieuse in France: with all her materialism, she could scarce have called me a machine--
I'm confident, said I to myself, I should have overset her creed.

The accession of that idea, carried nature, at that time, as high as she could go--I was at peace with the world before, and this finish'd the treaty with myself--
--Now, was I a King of France, cried I--what a moment for an orphan to have begg'd his father's portmanteau of me!"5
The feelings and the words belong to the narrator as well as the character here. However, in the very next chapter a Franciscan monk enters the restaurant seeking charity, and all he gets from Yorick is a severe and cruel tongue lashing on the evils of living off other people's earnings. The juxtaposition makes the narrator realize first how empty and unjustified the words of good will had been; but later Yorick/character comes to the same realization and feels the same shame. Narratively his realization follows, but chronologically, of course, it precedes; which suggests that the narrator has not really learned anything, or doesn't remember it if he did, but has constantly to relearn the lesson.

There is an extraordinary moment in Sentimental Journey where the roles of the narrator and the character are completely reversed. About six or seven pages into the text we find the Preface to the book. Yorick/character has been left alone to consider what carriage he wishes to procure for his travels. While waiting for the proprietor to return he enters a Desobligeante and decides to write the preface to the book which he intends to write about his travels, that is the book we are now reading. The chapter which follows consists of that preface, written by Yorick/character in which Yorick/narrator is only a future project, an imagined character in a projected book. But even more significant is that at the end of this chapter the last word is not given to either Yorick/character or Yorick/narrator but to a couple of bystanders who happen to overhear the last words of Yorick's preface. Yorick has been writing, and apparently talking out loud, about the advantages and disadvantages of travel. He concludes in a rhetorical flourish, asking his countrymen why they should want to travel at all:

"--But there is no nation under heaven abounding with more variety of learning--where the sciences may be more fitly woo'd, or more surely won than here--where art is encouraged, and will so soon rise high--where Nature (take her all together) has so little to answer for--and, to close all, where there is more wit and variety of character to feed the mind with--where then, my dear countrymen, are you going--"6

At which point he is answered by two real Englishmen standing outside the carriage:

"--We are only looking at this chaise, said they--Your most obedient servant, said I, skipping out of it, and pulling off my hat--We were wondering, said one of them, who, I found, was an inquisitive traveller--what could occasion its motion.--
--'Twas the agitation, said I coolly, of writing a preface--"7

So not only is Yorick/character's preface yanked back into Yorick/narrator's énoncé or discourse, but both are appropriated and somehow questioned by the two travellers. The preface had ended by exhorting Englishmen not to travel. But the Englishmen Yorick would dissuade turn up as travellers, and as part of the same chapter which contains
the preface. Their intrusion thus negates what has just been asserted in that very preface.

The position of the preface within the book rather than before it is strategic. It appears to be less accommodating of the reader, apparently ignoring his presence and making no attempt to situate him at the beginning, or give him any background information. In effect, however, this works to make the reader define his own role in the text; and that role turns out to be a dominant one. The irony in the text always ends up being wielded by the reader against Yorick and his discourse. The preface is the place where a narrator establishes his authority, gives guidelines and ground rules to his readers--tells them how to read. By the time the preface is presented here it is too late, the reader has already established his dominant role over Yorick and his discourse, and is not about to relinquish it. Throughout the book it is the implied author, and not the narrator, who is in cahoots with the implied reader. Their conspiracy at the expense of narrator and character serves to magnify the reader's role in the text. Its meanings ultimately depend on him, the reader—not on what is said, but on how he interprets what is said.

Things are quite different in Foscolo's text. There the reading and interpretation of Sterne's text is taken over by Didimo. Although Yorick's preface remains where it is in the original, Didimo opens the book with his own preface, wherein he tells the reader about Yorick and Sterne, what they're like and what they mean. He is not going to give his readers the same free reign that Yorick did: he will guide their reactions. At each point of ambiguity or irony in the text where Sterne's reader would be given room to exert his free power of interpretation there is a note from Didimo telling his readers how to react, how to interpret.

The implication is that Didimo doesn't have the same faith in his readers that Sterne has. He can't trust them to come up with the right meaning. But if that's the case, why choose to translate a text which gives such an important role to the reader in the first place? Paradoxically, by translating Sterne's book, Foscolo seemed to want to stress the importance of the reader's participation in the literary text; but by enveloping it in another discursive layer—that of Didimo—he seemed to deny his own readers that participation.

But perhaps Didimo's voice is not there to deny participation to the Italian reader so much as to recognize the fact that the Italian reader who can participate in the text had not yet been formed.

Ian Watt, in The Rise of the Novel, has shown how the development of the bourgeois novel in 18th-century Britain paralleled the development of the bourgeois reading public. A centralized democratic form of government and things like free schools, lending libraries, inexpensive editions of books assured novelists like Fielding, Richardson, and Sterne that they had a reading public on whose competence they could rely.

No such assurance was possible in Italy at the beginning of the 19th-century. The peninsula was highly fragmented and most of the small
states were under foreign domination. The official or bureaucratic languages tended to be French or German, and most people tended to speak their particular dialects, which for the most part, were very different from standard Italian, which really existed only in literature. And literature was really the province of only a handful of litterati.

The problem for someone like Foscolo and other writers of his time was that they were not satisfied with that state of events. Italian intellectuals were inspired by those same ideas of the Enlightenment and the French Revolution that had excited all of Europe: democracy, progress, education of the masses. But to accomplish such goals they needed a country and they needed Italians, neither of which existed yet. Foscolo was therefore writing for a reading public that wasn't there. The choice of Sterne's text suggests the need and desire for such a public to exist; the presence of Didimo indicates the frustration that it did not.

Thus the thrust of Sterne's text is both retained and modified. Foscolo's text ends up stating the opposite of Sterne's text in what it says about the society for which each was written. And yet, Sterne's message is also retained to suggest new possibilities. The translation thus both altered the original, in support of Shklovsky's claims, and served to challenge the conditions of the tradition into which it was introduced, in confirmation of Kenner's claims about the iconoclastic function of translation.

Footnotes
5. Sterne, p. 4.
I should state at the outset that this paper will be of a more theoretical nature than most. I am not saying that I have not drawn the ideas from reasonable evidence and data, but rather I do not feel that one would be any more convinced by my meager statistics. I have found them reliable to my satisfaction; I believe a simple, careful examination will convince others that they do have merit. I do not apologize for this, but think it only fair to inform you in advance. I present these ideas here to all for their consideration.

The Bell Curve, or Gaussian Curve, is a common means of showing distributions of characteristics among biological organisms. It demonstrates that for any given characteristic, the majority of a group will align themselves in an average range with dramatic decreases in either direction away from this common area.

This distribution is so well known and applied in the world around us that it has come to be known as the "normal curve," or simply "the curve," indicative of its profound impact and acceptance. Needless to say, it finds its way into education, as well as numerous other fields.

Perhaps its application in the education field is so well known because it and its devastating consequences come within the experience of all who are students. Though scorned by many educators, the curve is an accepted method of grading for numerous professors. Students characteristically despise it, and why not since it labels more than two-thirds of them as average or worse. (And who in this age of excellence wants to be labeled as average?) It might not be too far off to claim that this distaste for it arises from the fact that, to the satisfaction of most, it has been proven true (And how the truth hurts!).

At any rate, the truth of it does not seem to be challenged, but rather the moral implications of using it.

Present applications by teachers are generally limited to grading of an individual test, and in some cases, for the total class grade as well. In these cases, the curve is usually plotted along a grading scale that goes from zero to one hundred, with grades assigned along that scale so that the center of the curve falls in the "C" range. (See Figure 1)

In such a case, we are supposedly measuring the degree of competence in the subject matter being offered. In a language class we have been measuring a characteristic of language ability.

The scope of the measurement does not seem to effect the distribution.
for we find a normal distribution in a single case (one test or in a larger one (the class).

Now if this holds true in both of these limited areas of the characteristic, one of which is a smaller segment within the other, it logically follows that the same should hold true for greater areas or even the entire characteristic. If it is in truth a scientific fact, and I don't hesitate to call it a physical law of science, then its application should be universally true.

We can extend the curve to show the entire language ability. In this case, zero will represent no language ability and one hundred will show "perfect fluency." We assume that in the same way that a class or test grade is plotted, the output of students through an entire language learning experience can likewise be plotted.

To plot any given group on this scale we pick an arbitrary time universal to all students. We will choose as our occasion the termination of the language learning experience. That is, at the time of language study termination each student will fall somewhere between the point zero and one hundred on the grading scale.2

Since this is an extension of other applications of the curve, we expect the distribution to maintain a bell shape. In other words, the majority of the students terminate their study when they are in the average fluency range.3

Now supposing that the result is a Bell Curve, what does that show?

By using this graph of the entire language ability, we can plot the relative progression of a beginning student through the levels of language learning. This may be of benefit to us in that we may expect (because of the odds) our student to terminate his learning at this stage and we may try to prevent it. However, the possibilities are much more far reaching than that. Many other things can be predicted; this is only the tip of the iceberg or the hint of the gold vein. Naturally, the limitless possibilities for its use extend far beyond just the education field.

Let's look more closely at this misunderstood asset. Why do people fall into the Bell Curve? Why does a majority always cluster near the center of the curve?

By monitoring the actions and attitudes of students as they move up the levels and into the average range, perhaps we can find out some specific reasons for this occurrence. However, the most revealing investigation will be looking at students at the time of termination of the language study. This is to be expected since the emotions of the student are more candid and less guarded than at other points along his progression.

In looking at the students who stopped their progression at this point, we find that students in this area discontinued their pro-
gression due to a feeling of accomplishment, because they have reached a level of "necessary fluency."

Now we find that not only can we determine things about this average range, but about each part of the curve. Each has its own characteristics, often different from every other part of the curve. The curve can then be broken down into these different areas, according to its characteristics. In other words, the situations encountered in language learning are different according to the particular level of progression.

A simple analysis indicates three basic areas on the curve. (See Figure 3) One is the center of the progression and the other two are before and after the average range.

Sometimes the differences between these curve areas are dramatic. For example, students in the beginning or end of the progression will be more apt to cease their study due to discouragement.

Since the situations of each level in the process are different, the teaching and learning methods may be different. In fact, they will often require completely different methods and strategies for maximum results.

To analyze in detail the many different teaching methods and examine which would be best at which particular level would be another complete discussion. Hopefully this will be a topic of future research. Let me just mention, however, a few examples of some of the more obvious ones.

Probably the most exciting one is the role of culture learning in this process. Since culture and language are so interrelated, and since the integration of culture seems to encourage quick language acquisition, culture learning should have an important place in our process. The curve characteristics indicate that the most beneficial time, or the time in the language progression when cultural adaption will most facilitate language learning, will be in the second area or level. In fact, as one goes through the transition stage, the emphasis can and should become quite acute. The value of culture as a learning tool remains throughout the entire progression, but the results increase dramatically in the second level as the language first begins to really open up to the individual and he feels a sense of "language excitement."

One equally dramatic idea I feel would be the use of student-teachers in the first two areas of the progression. Students in one area become assistant teachers under the direction of the teacher for the students in the level just below them.

Another important possibility seems to be the behavioristic approach. This approach need not be totally incorporated into any of the process, depending on the teacher's personality, but it would seem well to have the second level teaching more behavioristic in comparison to the other
areas of the graph.

One aspect which is quite obvious to teachers is a gradual shift in the emphasis from more of a group learning structure to an individualized structure. As the student progresses, more of the responsibility of his growth should be placed on him. The pressure needs to become great enough to push him beyond the average range. However, the beginning classroom seems to benefit from more of a group atmosphere without the intense personal pressure, a "we're all in this together" type of feeling. A natural part of this would be the gradual reduction of classroom size as the students progress up the levels.

In summary then, there are two major ideas. 1) The majority of the students quit their language progression in the average ability range, and, deduced from this observation but independent of it is the more important one, 2) that the analysis of the areas of language progression yield evidence to help us properly teach advancing students.
1 Some credit for this antagonism must be given to the improper application of the curve. Many feel, and justly so, that it pits student against student causing frustration, contention, and education for the average, among other things.

2 A physical example for this, since established mental ones are so hard to come by, would be the height of a segment of the population. Studies can be made for the respective ages, or a cumulative one for the height at the time of death. In the latter case, the age will be different for each person. Age does not become a significant factor. Likewise, in a study of language termination, the time factor is not significant so long as we have one common occasion.

3 I was first intrigued by such a possibility when I heard of a study done by what was then the LTM with the L.D.S. missionaries. In the course of that study they noticed something that I believe many have suspected, the interesting "leveling off" phenomena. (See Figure 2) The missionaries who had been in the field for a certain amount of time progressed to a certain level in language ability and then seemed to level off, that is they didn't progress beyond that point. I was intrigued by this idea, and so while in the mission field I investigated. At one time I was language zone leader, meaning that I was working with fourteen missionaries on their language acquisition. From the limited data they provided, I concluded that there was such an occurrence.

From that and other observations, I began to feel that there was a connection between leveling off and language termination, both being a form of discontinued progression. I felt that as many missionaries fail to continue progression, so many students of language cease their study while in the average or "necessary fluency" range.

Since this would be a universal rule, it should not be confined to language; it should be true among all fields.

4 It should be mentioned that in general the change taking place as one moves from one area into another will be gradual. This then will make two areas of transition between the major levels of the curve. Very few of the changes occurring in language progression will be sudden. The closest might be the "enlightenment" one feels when he begins to understand the language, when the door seems to have opened.

5 It may be wise, because of the difficulty of instantly changing one's style of teaching (from one hour to the next, or from one day to another), for a teacher not to teach more than one level at a time.
STANDARD GRADING CURVE
(for a group)

Figure 1
"LEVELING OFF PHENOMENA"
(for an individual)
(progression plotted against time)
"EXPANDED BELL CURVE"
(for a group)
(note time is not plotted)
Interest in various aspects of American Sign Language has been growing rapidly during the last few years. My interest was kindled when a deaf student enrolled in my ESL grammar class several years ago at Brigham Young University. I was amazed that she encountered problems with the English language which were similar to ones the other students in the class found. Actually it had not occurred to me that English was not her native language. Now, nearly five years later, I have been able to take a closer look at this idea: that much of the deaf population are indeed faced with learning English as a Second Language.

American Sign Language

American Sign Language is the primary means of communication used by much of the deaf population in the United States and parts of Canada. It is commonly called ASL or Ameslan. With the exception of William Stokoe (1960), not much research had been carried out with ASL until the early 1970's. In fact, it has only been during the past decade that linguists have considered Ameslan an independent language and have begun to make detailed investigations into the properties of the language.

There still remain, however, many misconceptions about ASL. Quite often it is assumed that Ameslan is simply a visual representation of English. However, this is not the case. For example, this meaningful sequence in ASL:

FINISH TOUCH SAN FRANCISCO?

has the English equivalent of "Have you been to San Francisco?" While it is true that American Sign Language does differ from English, it must be mentioned that there are artificially created sign languages that use a combination of some ASL lexical items and English word order such as Signed English, Seeing Essential English, and Signing Exact English (Anthony, 1971; Gustason, Pretzing, and Zawalkow, 1972).

Although ASL is not based on a spoken language, it is a false assumption that sign language users can communicate universally among themselves. Just as there are many different oral languages, there are many different sign languages which have developed and which are constantly changing. An American Sign user would have a difficult time communicating to someone from the deaf community of England, or China, or Japan. However, because of greater historical ties in the development of ASL, an Ameslan user could converse a bit easier with someone using French Sign Language (Markowicz, 1977).
An obvious characteristic of sign language is its iconicity or pano-mimic quality. For example, these signs are very iconic:

* baby  
* eat  
* telephone

While it is true that many ASL signs are iconic in nature, abstract concepts as well as concrete ones can be expressed:

* love  
* believe

A love song, a drama, a poem, a technical paper, or a lecture can all be communicated effectively in ASL, including emotional or scientific content.

* Illustrations from O'Rourke, 1973.
As mentioned earlier, American Sign Language was not considered an autonomous language until a few years ago (Belugi, and Klima, 1975; Siple, 1978). In 1960 however, Stokoe did start the movement with his studies which presented the idea that ASL signs could be described in terms of three components: location, handshape, and movement. These components were roughly analogous to phonemes of an oral language. The following are minimal pairs:

* candy     apple
  signs contrasting only in hand shape

* summer    ugly
  signs contrasting only in location

* chair     train
  signs contrasting only in movement

*Illustrations from Klima and Belugi, 1979.
Along with this type of phonological description, research is now being conducted into the syntactic properties of ASL. Studies show that ASL has a basic subject-verb-object word order, but that word order is freer in ASL than in English, especially when the verb is intransitive or when the subject and object are not interchangable (Fischer, 1974, 1975). The inflectional system of ASL is realized not in the combinations of separate morphemes as in oral languages, but rather in the modification of signs in terms of location, number, manner, size, and shape (Fischer, 1974). For example, to show plurality, a sign is repeated. Past is indicated with a motion towards the back of the person; future is indicated with a forward motion:

\begin{center}
\begin{tabular}{c}
\textbf{* past} \\
\includegraphics[width=0.3\textwidth]{past.png}
\end{tabular}
\begin{tabular}{c}
\textbf{future} \\
\includegraphics[width=0.3\textwidth]{future.png}
\end{tabular}
\end{center}

In addition, to these modifications, non-manual signals such as body movement and facial expressions may also help to clarify syntactical relationships and meaning (Fischer, 1974).

**Current Research in Morpheme Acquisition**

Now researchers are not only investigating the structure of ASL, but also the acquisition process. During the past decade, language researchers have been interested in the study of grammatical morphemes in language acquisition. It began with Brown's longitudinal study (1973) of three hearing children learning their first language. He described the rate of oral language acquisition in terms of the mean length of an utterance counted in morphemes. He found that despite the difference in age when language began, the rate of increase was very similar in each child. Other studies in ASL acquisition as a first language have been conducted. Of course, in order to keep the studies parallel to other first language acquisition studies, deaf children learning ASL from deaf parents had to be found. Studies show that hearing children begin to babble at about six months. Deaf children at this age "babble" also—with their hands. At age one, hearing children begin to produce one-word utterance—deaf children produce single signs. Between the ages of 18 and 24 months, hearing children produce two-word strings; deaf children during that same period produce two-sign strings (Siple, 1978).

*Illustrations by O'Rourke, 1973*
Based on this evidence Bellugi conducted research similar to Brown's, involving a deaf child, Pola, acquiring ASL as a first language from deaf parents. Her results (Figure 1) show a similar rate of increase in language acquisition (Siple, 1973).

![Figure 1](image-url)

**Figure 1.** Mean length of utterance for Pola compared with that of three hearing children acquiring English from Brown's study (Siple, 1978).

Brown also found that with all the children, certain morphemes such as *ing* and plural seemed to be acquired earlier than others such as the possessive form "s". There seemed to be a similar acquisition order common to all the children. De Villiers and de Villiers (1973) confirmed Brown's findings with a cross-sectional study.

Then Dulay and Burt (1973, 1974, 1975) conducted parallel research in second language acquisition with children. They also found a "natural order" of acquisition, although the order was not identical to results found in first language research. The idea of a natural order was extended to adult second language learners in a study done by Bailey, Madden, and Krashen (1974) and again a natural order seemed to be present. Others have since conducted further investigations and have concluded that this order seems to appear when the focus is on communication rather than on form (Krashen, 1978).
The Study

Based on these research results, an hypothesis was formed: that if English is a second language for the deaf, an order of acquisition of grammatical morphemes similar to other orders for second language learners would be found.

The subjects in this study were 18 deaf students ranging in age from 13 to 22. They were asked to write as much as they could in five minutes about a picture. They could describe the picture or write a story about it. The object was to focus their attention on communication rather than on form.

Initially, nine morphemes were scored, but two of them (auxiliary and possessive) were eliminated because of infrequent use by the subjects and accurate conclusions could not be made. The morphemes scored are given in Table 1.

Table 1
The Seven Morphemes Scored

<table>
<thead>
<tr>
<th>Morpheme</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cop (copula)</td>
<td>The woman is afraid.</td>
</tr>
<tr>
<td>Ing</td>
<td>The dog is standing.</td>
</tr>
<tr>
<td>Pal (irregular past)</td>
<td>He heard the dog.</td>
</tr>
<tr>
<td>PaR (regular past)</td>
<td>She yelled help.</td>
</tr>
<tr>
<td>3rd (person sing.)</td>
<td>He lives in the house.</td>
</tr>
<tr>
<td>Plu (plural)</td>
<td>The kids played.</td>
</tr>
<tr>
<td>Art (article)</td>
<td>The kids played.</td>
</tr>
</tbody>
</table>

As in other studies (Dulay and Burt, 1974; Bailey, Madden, and Krashen, 1974) usage was determined by the ratio of correctly formed and used functors to the obligatory occasions. A correctly used functor was given 1 point; a misformed functor was given .5 point; and a missing functor was given 0 points. For example:

- They cats. No functor--0 points
- They is cats. Misformed functor--.5 point
- They are cats. Correct functor--1 point

Results

Table 2 shows the results of this study as compared with Brown's, and de Villiers and de Villiers' first language studies and other second language studies.
Table 2

<table>
<thead>
<tr>
<th>Strong-Krause</th>
<th>Brown '73 1st language</th>
<th>de Villiers '73 1st language</th>
<th>Dulay and Burt '73</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cop</td>
<td>1. Ing</td>
<td>1. Plu</td>
<td>1. Plu</td>
</tr>
<tr>
<td>2. Plu</td>
<td>2. Plu</td>
<td>2. Ing</td>
<td>2. Ing</td>
</tr>
<tr>
<td>7. 3rd</td>
<td>7. Cop</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[a\text{BMK '74}\]  \[b\text{Krashen '77a}\]  \[c\text{Krashen '77b}\]

<table>
<thead>
<tr>
<th>Writing</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ing</td>
<td>2. Ing</td>
<td>1. Ing</td>
<td></td>
</tr>
<tr>
<td>2. Cop</td>
<td>2. Plu</td>
<td>2. Cop</td>
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<td>5. PaI</td>
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<td>6. 3rd</td>
<td>6.5. PaR</td>
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<td>6.5. 3rd</td>
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</tbody>
</table>

\[a\text{Bailey, Madden, and Krashen, 1974}\]
\[b\text{Krashen, 1977a}\]
\[c\text{Krashen, 1977b}\]

Table 3
SPEARMAN RANK CORRELATIONS

<table>
<thead>
<tr>
<th>First Language</th>
<th>Second Language</th>
<th>Brown</th>
<th>de Villiers</th>
<th>Dulay/Burt</th>
<th>BMK '74</th>
<th>Krashen '77</th>
<th>Krashen Writing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>-.01</td>
<td>.365</td>
<td>.70</td>
<td>.671</td>
<td>.786</td>
<td>.671</td>
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<td></td>
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<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>p&lt;.025</td>
<td>NS</td>
</tr>
</tbody>
</table>

As clearly indicated by the correlation results (table 3), this study with ASL students learning English did not correlate well with the first language studies. In fact, there was -.01 correlation with Brown's results. ASL students tended to correlate much higher with second language studies. Although only one study (Krashen, 1977) correlated significantly (p .025, one-tailed test), the others (Dulay and Burt, BMK, Krashen, 1977) barely missed the significant level.

The results of this study do tend to confirm the idea that ASL users do indeed learn English as a second language. It seems that this would indicate that more attention needs to be given to the language of the
Because of the unique mode of communication, great insights into both first and second language acquisition as well as language itself and its possible universals can be gained. Certainly those involved in research into language and language learning, can no longer ignore the study of American Sign language and those who use it.

REFERENCES


IMPLICATIONS FOR LINGUISTIC COMPETENCE IN RECENT APPROVED MODIFICATIONS IN THE MISSIONARY DISCUSSIONS

C. Eric Ott
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Steven R. Wright
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Recently the Council of the Twelve of the Church of Jesus Christ of Latter-Day Saints approved a modification in the use of the Uniform System for Teaching Families which should affect the teaching approach used by LDS missionaries in a significant way. The Uniform System, commonly referred to as the "discussions", is a series of eight lessons designed for teaching families or individuals about the LDS Church and its beliefs. In the past these lessons have been learned verbatim by missionaries and presented essentially word for word in the teaching process.

As a result of the recently approved modifications, missionaries are now assigned to memorize only the key doctrinal portions of the discussions and are authorized to present other sections in their own words. Discussion presentations will still be carefully structured and will follow the sequence outlined in the Uniform System. However, such elements of the discussions as testimonies, questions, scriptures, and reviews will no longer need to be memorized word for word.

Subsequent to the policy change in the use of the missionary discussions, the Missionary Training Center began development of a training approach consistent with the approved modifications. Our purpose here is to describe this new training approach and report on progress to date in implementing it. We will give particular attention to the challenges faced by missionaries who must cope with the new teaching approach in the context of a foreign language.

THE APPROVED MODIFICATIONS

We would now like to describe in more detail the recent changes in the use of the missionary discussions. Please refer to Exhibit 1, which is an example of the discussions as they now appear.

The bold lines on the sheet are doctrinal explanations taken word for word from the previous version of the discussions. These sections are memorized and presented word for word. The lines in lighter print instruct the missionary to do certain things in the lesson, such as bear his testimony or ask questions to assess understanding. These portions are personalized and are presented in the missionary's own words. Sample sentences illustrating how the personalized sections might be presented are given in parentheses, but their use is entirely optional.

With the discussions in this new format, a teacher or companion can check for mastery of the discussion material by putting check marks in the boxes at the left and totaling the score to see if it equals or exceeds the mastery score at the bottom of the page.
Areas of Special Emphasis

The new approach to the discussions includes increased emphasis on the learning of basic gospel doctrines and teachings, memorization of important scripture references to be used in teaching, and the acquisition of important teaching skills.

Exhibit 2 lists some of the specific gospel doctrines and teachings which the missionaries learn. They do not memorize these points, but are tested on their understanding of them. This particular list of teachings accompanies the discussion segment shown in Exhibit 1. A similar set of gospel teachings has been prepared for each concept of the discussions. Altogether, the missionaries are exposed to approximately 400 of these doctrinal points.

Some of the doctrinal points are accompanied by supporting scriptures. (See Exhibit 3.) Missionaries are required to learn at least one scripture reference for each of these selected points. For example, a missionary should not only understand that faith must be accompanied by works, but should also be able to find a scripture to support that point. Approximately 100 scripture references are learned by the missionaries.

Missionaries are also taught to use examples and illustrations to enhance their teaching. Suggested examples (or similar ones of the missionaries' own choice) are incorporated into the personalized section of the discussions to help clarify or highlight important points. Some of the examples used in the discussions are shown in Exhibit 4.

Throughout the training, emphasis is placed on a variety of teaching skills, such as: (1) asking questions to assess understanding, acceptance, and commitment; (2) using scriptures effectively; (3) using appropriate examples; (4) expressing empathy and love; (5) inviting the investigator to pray; (6) restating reservations; and (7) bearing effective testimony. These skills are taught as principles which may be applied over and over again in the teaching process.

Advantages of the New Approach

The modified approach to learning the discussions has several proposed advantages:

(1) Because of a significant decrease in the amount of material to be memorized, missionaries should enter the mission field with better mastery of the discussions.

(2) Missionaries should be better equipped to understand and deal with investigators' concerns and teach with more spirit and spontaneity.

(3) Missionaries should be more confident in their knowledge of gospel doctrines, scriptures, appropriate examples, and other useful teaching tools.
THE TRAINING PROGRAM

One of the most exciting things about the modified approach to the missionary discussions is the new focus it provides to the training process. Our new thrust in training at the Missionary Training Center emphasizes the development of effective teaching skills rather than simply memorizing the discussions.

Specific training activities include: (1) memorizing the doctrinal (bold print) sections of the discussions and learning to present them fluently and naturally; (2) developing appropriate expressions of testimony, examples, and questions for the personalized sections of the materials; and (3) learning to assess investigator reactions and deal appropriately with investigator responses.

Each of the content areas (i.e., gospel teachings, scriptures, examples, discussions, and teaching skills) receives attention in the training process. The missionaries are evaluated regularly on their progress in each area and a careful record of progress is maintained.

Implications for Training in Foreign Languages

Obviously, some very important questions arise relative to the implementation of the modifications in the discussions and the associated training program with missionaries learning foreign languages.

At least two of these questions are:

(1) What, if any, will be the effect of this change on the communicative competence of missionaries learning a foreign language?

(2) Can missionaries learning a second language at the Missionary Training Center be taught to present major portions of the discussions in their own words and deal effectively with investigator responses in teaching situations?

Our assumption concerning these two important questions was that missionaries could reach an acceptable level of linguistic competence within the expectations of the new approach. It was anticipated that this approach would result in greater flexibility in linguistic expression, increased listening comprehension, and improved interactive skills.

THE STUDY

As of March, 1981, the Approved Modifications in the use of the Uniform System and the corresponding training program had been implemented with all English-speaking missionaries at the Missionary Training Center, and some aspects of the program were also being used with foreign language missionaries. However, at the time of this writing, the implementation of the full program, with its emphasis on the total teaching experience and heightened expectations of linguistic competence, has not been attempted in the foreign language area. Consequently, questions about
the feasibility of training missionaries at the Missionary Training Center to actually teach (as opposed to simply reciting discussions) in a foreign language are still largely unanswered.

Fortunately, some information has been gathered. We will describe the results of an initial pilot study utilizing the complete program in Spanish. Before doing that, however, it will be helpful to define more specifically the expectations of the new training program and describe the test used to measure those expectations.

The Missionary Performance Test

The Missionary Performance Test (MPT) is the instrument used to measure the teaching ability of LDS missionaries. It is, as the name suggests, a performance test, which means that the missionary is required to actually participate in a simulated teaching experience, as opposed to, say, a paper and pencil test. It is also a criterion-referenced test (Popham, 1978), meaning that the items on the test are representative exemplars of a carefully specified domain of behavior and are selected so as to measure the respondent's mastery of that domain.

The "domain" referenced by the MPT is a complex one and includes the ability to present memorized or other previously-learned material from the missionary discussions, relate clarifying examples and stories, locate and use relevant scriptures, explain key doctrinal concepts, and use effective teaching skills. The behavior inherent in the domain is interactive in nature. That is, it includes listening to and dealing with investigator responses rather than simply presenting the gospel message. A meaningful level of language competence is a clear prerequisite to the successful mastery of this domain.

In short, the Missionary Performance Test is an attempt to get at and evaluate the kind of total teaching ability which was described earlier as the goal of the new training approach. A sample item from the MPT is found in Exhibit 5.

Design of the Study

In February and March of 1981 one group of missionaries learning Spanish at the MTC was trained using the new training approach. The group included six elders and two lady missionaries.

The program for the missionaries in this experimental group was centered around the Missionary Performance Test, and all missionaries in the group were tested with this instrument twice during their last week of training.

In preparation for the performance activity, the missionaries were involved in language training (the standard MTC program but with added emphasis in some areas), learning the missionary discussions with the approved modifications, learning approximately 20 examples and stories and 100 scripture references, gaining an understanding of about 400 specific gospel teachings and doctrines, and acquiring sixteen specific teaching skills.
Results

While the study was formative rather than summative in nature and was not designed to determine whether the new approach should be used with missionaries learning second languages at the MTC, the initial results were encouraging. Two general observations are worth noting here.

First, in spite of special emphasis on skill areas not usually required of missionaries at the MTC, the missionaries in the pilot group showed no evidence of slippage in the traditional MTC competencies. Final scores on the FSI Oral Proficiency Test were above the average scores for Spanish missionaries, and discussion learning results were also well above average.

Second, the missionaries were, for the most part, able to perform the tasks required of them on the Missionary Performance Test. Some areas of weakness were noted, and linguistic expression was often somewhat ragged and unrefined, but the missionaries were usually able to present the discussion material, comprehend basic investigator responses, and provide suitable follow-up responses in Spanish.

More research is needed, of course, and additional experimentation is planned as soon as needed revisions have been completed. Still, it has been exciting to see missionaries, working with a new set of assumptions and expectations, learn to cope and communicate in ways that we have not seen before. We are optimistic at this point that the new emphasis in missionary training will result in our sending out in the future missionaries who are more competent linguistically and better prepared to teach.

REFERENCES

EXHIBIT 1

SAMPLE DISCUSSION MASTERY SHEET

DISCUSSION D: ETERNAL PROGRESSION

CONCEPT D-2: MORTALITY IS A PROBATIONARY PERIOD DURING WHICH WE PREPARE TO MEET GOD AGAIN.

- Picture of parents with baby. (D-6)
- Let's talk for a moment about the importance of having this physical body.
- God is a God of love, and seeks that which is best for each of us.
- Therefore, he provided a plan for us to become more like him.
- To gain the wisdom that God has, we needed many experiences, particularly since there are many things we could not learn or do as spirits in the premortal life.
- A spirit cannot feel physical pain or suffering, and learn by experience what pain is.
- Neither can a spirit be baptized or married, nor experience the pain and joy of having children.
- To obtain experiences like these, we have come to this earth and received physical bodies.
- A second reason we came to earth was to develop faith in God.
- Our Heavenly Father wants all of his children to have faith in him.
- Obviously, if we are to have faith in him, we must learn to trust him and have confidence in his promises to us.
- Alma 32:21 (Faith is a hope in things which are not seen which are true.)
- Give an example to show what faith is. (There is a story told of a father....)
- Assess understanding of what faith is. (From what we've said, what is faith?)
- In our premortal life, we walked primarily by sight:
  - Picture: "In this life we walk by faith.” (D-7)
  - In this life we walk primarily by faith.
  - Our Heavenly Father made it possible for us to live by faith by placing a veil of forgetfulness over our minds, thus causing us to forget our premortal life.
  - Therefore, we live not by memory, but by faith.
  - God measures our love and faith in him by how well we keep the commandments.
  - Picture: “If ye love me, keep my commandments.” (D-8)
  - He told his disciples that if they loved him, they would keep his commandments.
  - Picture: “As we keep the commandments our faith grows.” (D-9)
  - As we keep the commandments, our faith grows and we prepare to live with our Heavenly Father in his kingdom.
  - No one can ever be saved in his kingdom without showing his faith by obeying the Lord’s commandments.
  - Assess understanding of the fact that living the commandments shows our faith. (Mr. Brown, how can you show your faith in God?)
  - Bear testimony of the importance of keeping God’s commandments.
  - The most important thing we can do in this life is to keep his commandments.
  - In fact, obeying God’s commandments is the only way we will ever be truly happy.
  - The importance of our message is that as you and your family keep the commandments of God, he will prepare a place for you in his kingdom.
  - Each of you, your wife, your children, and you, will be judged and rewarded according to your own works.

SCORE (31 total points, 26+ mastery)
1. In keeping with God's plan, each of us has come to earth to receive a physical body.

2. While on this earth we are separated from the presence of God the Father.

3. We came to this life to be tested to see if we will keep God's commandments while we are separated from His presence.

4. When we enter mortal life we no longer remember our premortal life so that we can learn to develop faith.

5. This life is the time for men to prepare to meet God.

6. We develop faith by being obedient when God is not near.

7. Faith is a hope and belief in things not seen which are true.

8. Faith must be accompanied by works.
1. This life is the time to prepare to meet God. Alma 34:32-34; Alma 12:24.

2. Faith is a hope and belief in things that are not seen, but which are true. Alma 32:21; Hebrews 11:1; Ether 12:6.

1. *To show why it is necessary to come to earth.*

If you wanted to teach your son to ride a bicycle, there are many things you could do to help teach him. You could tell him how to do it. You could have him read books about how to do it. You could even show him. But before he ever learns to ride a bicycle, he is going to have to get on the bike and try to ride it himself. This life is like learning to ride a bicycle. We couldn’t learn to become like God just by watching him and listening to him.

2. *To show what faith is.*

There is a story told of a father who was digging a well when his little four year old girl came to bring him his lunch. The father told her to jump down into the hole and join him. She could not see him and could not be completely sure that he was there and that he would catch her, but because she trusted him, she jumped. This kind of trust is called faith.

3. *To show why faith must be accompanied by works.*

Suppose that you were a carpenter, and I came and asked for some advice on how to build a table. Later on you came to inspect my work and discovered that I had disregarded your suggestions. How much faith would you say I had in your advice? In the same way, we show our faith in Christ by doing what He says.
MISSIONARY PERFORMANCE TEST SAMPLE ITEM

DISCUSSION H: OBEDIENCE TO THE LORD'S COMMANDMENTS BRINGS HIS BLESSINGS

CONCEPT H·4: OBEDIENCE TO THE WORD OF WISDOM BRINGS BOTH PHYSICAL AND SPIRITUAL BLESSINGS.

Picture of family in garden (H-11)
El apóstol Pablo se refirió a nuestro cuerpo como el templo de Dios, y dijo que debíamos conservarlo limpio y digno de recibir el Espíritu del Señor.
En tiempos modernos, el Señor ha revelado más sobre este tema y ha declarado que los hombres con frecuencia dan a su cuerpo substancias que lo dañan y lo profanran.
El Señor nombró en particular algunas de estas substancias, entre ellas el tabaco, las bebidas alcochílicas, el café y el té.
También quedan incluidas las drogas perjudiciales.
¿Acostumbran usar usted o su familia cualesquiera de estas cosas que acabamos de mencionar?

TOMO CAFÉ, Y FUMO TAMBIÉN.
Hemos aprendido que los mandamientos de Dios son manifestaciones de su amor por nosotros.
Sabemos que el Señor verdaderamente estaba expresando su amor por nosotros cuando reveló que ciertas substancias no son buenas para nuestros cuerpos.
La obediencia a este mandamiento nos trae la bendición de mejorar salud física.
Tal vez de mayor importancia es el hecho de que nuestros cuerpos permanecen puros y dignos de recibir el Espíritu del Señor.
D&C 39:13-21 (Those who keep the Word of Wisdom will be blessed.) (Vamos a leer...
Picture "Salud, Sabiduría, Fuerza. Mayor "200"

Este mandamiento, conocido como la Palabra de Sabiduría, nos promete cuatro bendiciones importantes si somos obedientes:
(1) Salud; (2) sabiduría, (3) fuerza, y (4) protección.
Assess understanding of what the Word of Wisdom is. (¿Qué es la Palabra de Sabiduría?)

SIGNIFICA QUE NO DEBEMOS FUMAR O TOMAR.
Señal testimony of the Word of Wisdom. (Yo sé que...)
Assess acceptance of the Word of Wisdom. (¿Puede usted aceptar este mandamiento de Dios?)

1. Did the missionary ASSESS ACCEPTANCE of the Word of Wisdom? Yes No

FLASH CARD: CONFIRM

Assess commitment to obey the Word of Wisdom. (¿Obedecerá usted este mandamiento?)

NO SÉ. PARA MÍ, SERÍA DIFICIL DEJAR DE FUMAR. NO SE SI PUEDO HACERLO, ELDER.

FLASH CARD: GIVE AN EXAMPLE

FLASH CARD: INVITE TO PRAY

2. Did the missionary CONFIRM your statement that eating well, exercising, and taking care of our bodies is a good thing to do? Yes No

3. Did the missionary GIVE AN EXAMPLE to help overcome fears about not being able to obey the Word of Wisdom? Yes No

4. Did the missionary INVITE YOU TO PRAY for help in living the Word of Wisdom? Yes No

When the Lord finished creating the world, He set aside a day of the week as a day of rest and worship.

He gave us instructions about what we should do on this day.

D&G 59:9-10 (We should go to the house of prayer on the Sabbath.) (Vamos a leer...)

Through the prophet Joseph Smith, the Lord revealed that the day of rest should still be observed.

He gave us instructions about what we should do on this day.

D&C 59:9-10 (We should go to the house of prayer on the Sabbath.) (Vamos a leer...)

Through the prophets of modern times, the Lord has instructed us to attend the meetings of the Church and study the gospel with our families on the Lord's day.

We should not participate in activities that would hinder the spirit of the day of rest, such as going to the movies, field days, and sports.

We should avoid going shopping on Sundays and reduce home chores to a minimum.

Through understanding what activities are appropriate for the Lord's day.

5. Did the missionary explain that the Sabbath day has been on Sunday since the resurrection of Christ? Yes No

IR A LA IGLESIA, LEER LA BIBLIA. PERO, DÍGAME ALGO. EN SU IGLESIA EL DÍA DE REPOSO ES EL DOMINGO, ¿VERDAD? BUENO, YO TENGO UN AMIGO QUE ES MIEMBRO DE OTRA IGLESIA, EL DICE QUE EL DÍA DEL SEÑOR ES EL SÁBADO, QUE ASÍ ERA EN LA BIBLIA. SI EL SÁBADO FUE EL DÍA DEL SEÑOR EN EL TIEMPO DE MOÍSES, ¿CUANDO SE CÁMBIO A EL DÍA DOMINGO?

PICTURE OF FAMILY STUDYING TOGETHER (H-14)

Se manifestarán en su familia las bendiciones de mayor amor y unidad al asistir a las reuniones de la Iglesia y estudiar juntos las Escrituras.

De esta manera se prepararán para prestar servicio en el reino del Señor, así como para su venida.

Comprenderemos que muchas personas piensan que descansar el día del Señor significa participar en actividades recreativas.

Algunos creen que es un día para terminar algún trabajo incompleto.

Sin embargo, el Señor no pudo haber sido más explícito cuando dijo: "Seis días trabajaráis y haráis toda tu obra; mas el séptimo día... no haráis en el oceo alguna..."

El sermón del líder sobre el cumplimiento de las Escrituras

Posibilities of keeping the Sabbath day holy (Creer que es importante observar el día del Señor)

Assess commitment to keep the Sabbath day holy.

NO PUEDO DECIRLE QUE SI. COMO SABEN UDS, TRABAJO MUCHO. SEIS DIAS DE CADA SEMANA YO TENGO QUE TRABAJAR PARA PONER PAN EN LA MESA. EL DOMINGO ES EL ÚNICO DÍA EN QUE PUEDO DECANSAR UN POCO. AHORA, SI TENGO QUE IR A LA IGLESIA, ¿COMO PUEDO DECANSAR?

FLASH CARD: PROMISE SPECIFIC BLESSINGS

6. Did the missionary SHOW EMPATHY about having to work so hard. Yes

7. Did the missionary PROMISE SPECIFIC BLESSINGS from going to church? Yes

8. Did the missionary PRESENT at least 31 elements from the discussion?
Over the years my students and I have disagreed about certain word combinations. While I have insisted that they write these combinations as two words, some students have consistently spelled them as combined words. My students have, as nearly as I can tell, ignored the slashes I have conscientiously supplied between the elements of unorthodox combinations, and my question, "One word or two?" You could say that I have had a lot of trouble with one combination. You could also say that I have not had a lot of impact on the tendency to spell it as one word.

Recently, however, I have begun to look at the problem differently. My wife is a member of a national committee working on a beginning braille reading series, and when she returned from her most recent committee meeting, she reported that the spelling of a lot as one word had been discussed. Eric P. Hamp, the University of Chicago linguist, a member of the committee, had said, "Well, of course, it really is one word." After I recovered from his pronouncement—"I had, after all, been slashing away at that combination for over thirty years"—I began thinking how a lot differed from the usual combination of the article and the noun. First, it does not take the expected adjectives that the noun would take. Although the OED lists two adjectives, great and good, as possible modifiers, I do not encounter those adjectives in student writing. Both "a great lot" and "a good lot" have an old-fashioned sound to me, and my students shake their heads over their use. Second, the one modifier I do encounter in student writing is the emphatic adverb awfully, in the combination "an awfully lot"; sometimes they write "an awful lot," which I feel is incorrect.

My attention to the combined alot made me more aware of the other combinations students were writing, and I began to make a simple tally, with surprising results. (I am sorry now that I did not take more pains and put down the exact sentences in which the combinations occurred.) I knew before I began that students confused the a while in a phrase such as "for a while" with the single word, the adverb, awhile, and that the combined alright, spelled with a single 1 (apparently an imitation of the adverb already, I had always carefully explained to my students) had made its way into semi-respectability in the dictionaries. The Oxford American Dictionary classifies it as an "incorrect" form; the most recent edition of The Random House College Dictionary as "nonstandard"; and Webster's New Collegiate as a variant spelling, quoting Gertrude Stein in its citation.

However, as I made my tally, I was surprised at the number of combinations I encountered in a couple of weeks of checking student papers, ranging from freshmen compositions to those of English majors in their senior year. Some papers were from students applying to law schools and to graduate schools in English. I was even more surprised by the imbalance I discovered between the tendency to combine words into a single form and that to separate words we have come conventionally to spell as single words.
Students combined twenty words. In addition to *alot* and *awhile*, three other words were combined with the article—*aday*, *alittle*, and, most surprisingly to me, *anannual*. I found, as one would expect, *alright* several times as a single word, but also *afterall*, *anymore*, *atleast*, *dueto*, *eventhough*, *inbetween*, *infront*, *infavor*, *infact*, *inspite*, and *nolonger*. Three words were made up of nouns in combination: *roothead*, *schoolchair*, and *studentbody*. Only six words which we usually spell as combinations were separated: *alltogether* (for *altogether*), *beforehand*, * housewife*, *nowadays*, *daysover*, and *whenever*. I tried not to select a combination or a separation which looked as if it were merely a careless slip of the student's handwriting. Some handwriting made it difficult to determine if the combinations were intentional; I did not use examples from those students. The combination *infact* appeared twice in a single composition, once carefully hyphenated as it was broken at the end of the line.

When I had collected about a dozen combinations, I began to see interesting implications and to talk with my colleagues about what I was seeing, and the more combinations I have collected and the more I have studied them, the more I have come to see a pervasive pattern in the combinations and a kind of undeniable logic to most of the formations.

Four of the six words conventionally combined which were written as separate words are extremely common, appearing often in student writing: *altogether*, *housewife*, *overtake*, and *whenever*; one, *nowadays* appears less often in student writing, and the final one, *beforehand*, is rare in my experience. These are not recent combinations. *Housewife* has been spelled as a combination since 1225, and the two most recent combinations, *beforehand* and *nowadays* have been written as single words since before the turn of the century. Only one of these appears in a two word combination, *when ever*, as in the question "When ever did I do that?" But each of the word units appears as a single word individually often, probably much more often than in combination. Unless the student who separated them were proofreading carefully for word combinations, he could easily overlook these errors.

If we take the sentence that I just wrote as an example, we can see the problem the student faces. I wrote *proofreading* and *overlook* as single-word combinations, of course, but I wonder how many students proofreading a paper would notice if they were not combined. More of them would certainly notice the failure to combine *over* and *look*, because of the many possible combinations of *over* with verbs, nouns, adjectives, and adverbs. *Proofreading* could pose more of a question for the student, because *proof* has few combinations. *Webster's Third* lists eleven two-word combinations with *proof*, six single-word combinations (including both *proofread* and *proofreader*), and one hyphenated combination. The student who wrote *overtake* as two words, as well as the several who wrote *whenever* as two words, must have been either careless or extremely poor proofreaders. They must have seen these words repeatedly in combination.

If we consider the three noun combinations students wrote, however, we realize that the problem is even more complex than it first seems. One might assume that the longer the word had been in the language, the more likely it is to have combined with other nouns, appearing as two words or as hyphenated words, and finally as single-word combinations. The word
school seems to follow that pattern. A borrowing from Latin into Old English and appearing in combinations as early as Middle English, it combines readily with a number of other nouns to produce single-word combinations, such as schoolmaster, from the 13th century; schoolhouse, from the 15th, schoolboy, from Shakespeare's time; and schoolgirl, from the early 19th century. The OED gives school-book as a hyphenated word rather than the modern single word, and school board, from the late 19th century, as two words. School board, of course, is still written as two words today; however, 20th century combinations, not listed in the OED, include schoolbag, schoolchild, schoolteacher, schoolwork, and schoolyard. Yet modern dictionaries give as two-word combinations school age, school bus, and school year. Whatever rule the combinations are following, it is a highly complex one.

The student who wrote schoolchair as one word seems to have been making up a word, but unless he looked in a dictionary he would have had difficulty knowing whether he should combine the nouns into a single word or write them as two.

Both of the other base words the students improperly joined to other nouns are also old words in English. Root, an Old English borrowing from the Scandinavian, combines with few words. It would understandably have fewer possible combinations than a word such as school, but the OED lists only four hyphenated combinations with other nouns, some of which have disappeared from every-day English, such as root-end, root-leaf, and root-weed. The hyphenated root-stock of the OED is given as a single word in Webster's Third, where it is joined by rootstalk and rootworm. However, root borer and root weevil are given as two words as are root beer, root canal, root crop, and root disease. Two combinations which do not appear in the OED are given as hyphenated words in Webster's Third, root-bound and root-hardy. A writer would be relatively safe not to combine root with other nouns, but he could not know this as a result of a general rule of word combinations.

A writer would be even safer not to combine the third noun, student, a Middle English borrowing from the Latin or the French, with another noun. The OED lists only studentship, student plus the suffix ship, as a single word combination, a word rarely found in American English, but it does list other possible hyphenated combinations: student-days, student-life, student-monk, student-pastor, and student-song. With the present tendency to use either the single-word combination or two words, it is not surprising that these forms have disappeared, although we might expect those which have remained in use to have moved to single-word combinations, such as student days and student life. However, not only are these written now as two words but also the modern additions to the language such as student body, student council, student lamp, and student teacher.

We can draw only one major conclusion from this, perhaps overelaborate, discussion of the problem of combining nouns: no simple rule to aid the student can be formulated; either the student must have a good visual memory or recourse to a dictionary as he composes.

In the past I have sometimes said that students making combination errors lack a word sense, but I have reached a conclusion that they, for the most
part, possess a good "word sense" but have a weak visual memory. I see no basic difference between rootworm, one word, and root weevil, two; and little difference in the stress of the second element in studentship, one word, and student body, two.

Nor do students lack a word sense when they join words other than two nouns. Many of the words joined by students in their writing—in fact, almost all of them—have a basic one-word meaning, or if they lack that one-word meaning, they clearly represent a single concept. Professor Hamp might say that each of them also is a single word. With these combinations, just as with the noun combinations, the student must have that good visual memory or recourse to his dictionary.

We can first dispose of a couple of exceptions. One of these is the surprising annual. It does not fit the pattern which most of the other words follow. The two words do not express a one-word meaning, and another word may easily be inserted between the article and noun: "a true annual," "a hardy annual," or even "a purple annual." Also the often improperly joined awhile does not fit the pattern of the other joined words. We say "a little while" or "a long while." But although it does not follow the pattern of the other words, it has an interesting history. While is an Old English word, and the adverb awhile appeared as early as the 13th century, but its earlier version, the two-word combination one while, appears as early as Beowulf. Even more interesting than its longevity in the language, is the early appearance of the form which the OED terms "improperly written together when there is no unification of sense," our old friend "for awhile" written as two words. That form first appeared in 1489 in Caxton's writing. Other examples are given through the 19th century in the OED, and any teacher of composition can add to the list from the latest batch of themes.

The common problem with alot is of much more recent origin. Although lot in the sense of a marker or object for settling disputes, a meaning which survives in our modern "casting lots," is an Old English word, the meaning for lot of "a great many" or "a great deal" is a relatively new one, being first noted by the OED in 1812. In the OED it is listed as colloquial and is so classed as recently as Webster's Second and by The American College Dictionary of 1966. (In later editions of The Random House Dictionary, it is classed as "Informal.")

Notice how most of those words that the students joined have a single-word meaning: alot is equivalent to much or many, although we could argue that it needs the of to complete its meaning in an expression such as "a lot of people," but in its final position in a sentence such as "He laughed a lot," it carries the complete meaning of the single word much, or perhaps often; aday is equivalent to daily; alittle, to some; due to, because; eventhough, to although; inbetween seems no different from between; infront clearly means ahead; infavor, favoring; infact, actually; inspite, despite; anymore has a sense of now in many sentences; and after all can carry the meaning of finally. This leaves only atleast and no long. Both of these combinations seem to me to carry a single impression. At least, which several students wrote as a single word, is one word in German, Swedish, and Finnish, although I was told recently that it is three words in Russian.
Indeed (note the single form, written as two words from 1330 until 1600), I have seen only one of these forms in print, with the exception of alot, which seems to be the preferred spelling used in our university paper; that word is anymore. On a recent weekend it appeared in a nationally syndicated comic strip, in an editorial in the Provo Herald, and in a television advertisement announcing that "Smith's isn't just a food store anymore." Seeing anymore written as a single word led me back to the dictionary. Neither the Random House Dictionary nor its college edition lists the form. Webster's Third, Webster's Collegiate, and Webster's New World approve the single-word combination for use with a negative expression. "We can't find those anymore." These three dictionaries would approve the word in the television commercial, "not just a food store anymore," but not in the other examples I saw in the newspaper nor its use in student writing. In the cartoon it appeared at the beginning of an expression, as it does in "Anymore we call him Bill." In the editorial it appeared in a positive assertion also, "We have to be careful of people who make such statements, anymore."

All of these words are units of expression; other words do not usually intervene between them. I think of two exceptions in addition to alot. In opposition to the awfully which we use with a lot, we use very with a little, "a very little," and we use largely or mainly with due to, "due mainly to." The student, however, clearly thinks of these words as single units and does not remember how they are printed. The combinations are not just random joinings.

My investigation has led me to be more sympathetic to the students' problems and to be aware of the strong tendency to join words rather than separate those we have joined for some time. I am not arguing that all these word combinations are on the verge of acceptance, that we have more words such as alright and anymore ready to appear in the next editions of our college dictionaries. I am saying that even though we do not approve of these spellings, which we may encounter once or twice a day, we could at least understand the logic of our students, who may be a little, or alot, out in front of the rest of us in spelling practices. Perhaps we must all use the dictionary, or preferably more than one—all of this year's editions—before we slash such words anymore.
HOW GENERIC ARE THE
MALE GENERIC PRONOUNS?

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Myth

Long afterward, Oedipus, old and blinded, walked the roads. He smelled a familiar smell. It was the Sphinx. Oedipus said "I want to ask one question. Why didn't I recognize my mother?" "You gave the wrong answer," said the Sphinx. "But that was what made everything possible," said Oedipus. "No," she said. "When I asked, What walks on four legs in the morning, two at noon, and three in the evening, you answered, Man. You didn't say anything about woman." "When you say Man," said Oedipus, "you include women too. Everyone knows that." She said, "That's what you think."

Was the Sphinx right in her skeptical reply to Oedipus' assumption that everybody knows that man includes woman? The same assumption is made by many--but do we use the words man and he in all cases where a generic word is appropriate or are these words relegated to only certain cases where a male subject seems most appropriate?

The problem is illustrated in the title to my paper: A few days after the program was printed and distributed, a friend of mine came up to me and pointed out an error in my title: "It's not a male generic pronoun--it's a masculine pronoun." I was embarrassed to admit that I hadn't been aware of the difference between male and masculine in that sense. She said that man referred to the male half of the species and that masculine was an arbitrary gender distinction between words. In using the phrase, "male generic pronouns," I unknowingly created an oxymoron, for anything that is truly generic, cannot be male--which brings us to the question: can he be a true generic and do we use it as such?

Language as a metaphor for human existence uses male-dominant metaphors--when we speak of the average, the hypothetical or the general human being, we use masculine words to describe it. Man is the unmarked word, woman is the marked. Our use of man when describing human experience, leaves the feminine image obscure, almost invisible and certainly unspoken.
Even if we change the word *man* to *human*, we are merely forestalling the problem until we need to use a pronoun. Mary Orovan described the problem this way:

> Even if we manage to avoid words like "man" and "mankind" and use *human* and *humanity*; or citizen, person, parent or other neutral words, we are still tied to the masculine pronoun... As a citizen, he is entitled to vote... Whether it's merely ambiguous or patently instuling, using *man* instead of *human* is always distorted and damaging! The insidious thing is that woman can be included in man, or not, at the whim of the writer --or reader. Usually she merely remains invisible; out of sight, out of consciousness.

This is a two-pronged problem: either women are invisible in our speech, or they come across as a special case: as Butler and Paisley termed it, "English allows women two choices: to be a linguistic variant or to be ignored altogether."

Simone de Beauvoir described the idea of the linguistic variant in the title of her book, *The Second Sex*. In the introduction, she explains the otherness concept of woman:

> Man represents both the positive and the neutral, as is indicated by the common use of man to designate human beings in general; whereas woman represents only the negative.

The fact that we use gender qualifiers in words like *lady doctor*, *woman athlete*, *lady plumber*, suggests that a woman in any of these occupations is a deviation from the norm and that her gender puts her in a separate category from other, that is "real" doctors, athletes and plumbers. The suffixes *-ette, -ix, -ess* in words like * usherette, exeqtrix, and poetess*, besides indicating the femaleness of the subject, also carry connotations of frivolousness, low prestige, littleness, confinement and cuteness. Alleen Pace Nilsen studied words which had feminine counterparts such as *waitress, governess, aviatrix, majorette* and *poetess*. The study indicated that, in almost every case, with the addition of the feminine suffix, the word suffered a drop in prestige.

With the addition of a qualifier or a suffix, women are assigned to a special case; and, as Nilsen's study indicated, the case is not so special as we would like to think. Women are aware of the diminutive, frivolous qualities of these endings, and many women are beginning to resent their use. I attended a symposium last summer, and I heard Linda Sillitoe speak before a group where many historians were present. The person who introduced her, calling attention to her many accomplishments, noted that she was a writer, journalist and poetess. She accepted the introduction graciously, but then added, "I consider the term poetess in the same way that many of you would consider the term historiette."
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Even if we manage to avoid words like "man" and "mankind and use human and humanity; or citizen, person, parent or other neutral words, we are still tied to the masculine pronoun . . . As a citizen, he is entitled to vote . . . Whether it's merely ambiguous or patently insulting, using man instead of human is always distorted and damaging! The insidious thing is that woman can be included in man, or not, at the whim of the writer --or reader. Usually she merely remains invisible; out of sight, out of consciousness.

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Another problem with the connotation of feminine words is their suggestive nature. It could be that I've heard one too many dirty jokes or that I've been privy to too many double entendres with sexual innuendo, or it could be that language has been dominated by males and reflects their way of looking at things. I'm not sure. I just know that I don't want to be called a *freshwoman* even if it is my first year of school. And when I finish my thesis—please don't tell people that I have a *Mistress* degree or that I'm a *professional*. But if my alternative to that is to be a *laywoman*, it seems that I have not real choice in the matter as far as my reputation is concerned. And if I finally reach the point where I'm so respected that people want to address me by a title, well—you can call the men *sir*, but don't call me *madam*!

Men have no problem knowing whether they're the subject of a sentence, for when they hear the word *man*, it's certain that they're included. Women can't always make the same assumption. Often they have to suspend judgment until the sentence is completed or until several sentences are completed to know whether they've been included. Sometimes it becomes very confusing, especially when a writer swings from generic use of *man* to the specific use of *man* as in the following sentence: "Man is entitled to life, liberty, and the pursuit of happiness—and to marry the woman of his choice."\(^6\)

To be fair, I need to mention that there are occasions when *man* means woman and definitely *not* men. I can think of a few occasions. A New York Assemblyman is responsible for such usage: "When we get abortion law repeal, everyone will be able to decide for himself whether or not to have an abortion." Another is from an insurance policy: "If the employee becomes pregnant while covered under this policy, he will be entitled to ..." And then there is a couplet by Mary Orován: "Man has two sexes, Some men are female."\(^9\)

If we find these usages humorous, it means that we're seeing *man* used in an unexpected way. *Man* and *he* don't trigger images of women.

To study which pronouns are used in which contexts, I designed an informal survey which I administered to undergraduate and graduate students and to faculty members at BYU. I constructed sentences with generic subjects. Four of these subjects were traditionally male-related, four were traditionally female-related, four were neutral and four had indefinite pronouns.

If *he* were a true generic and included *she* explicitly, rather than implicitly, it could be used for sentences like, "Every nurse should care for his patients' feelings." and even "A good mother watches out for his children's safety." Of course I wasn't surprised when such was not the case with my findings.

Not only were people reluctant to use *he* in speaking of traditionally female subjects, they declined to use *he* for words like *everyone*, *someone*, and *anyone*, even though *he* is the current grammatically sanctioned choice, at least for formal usage.
The survey indicated the men tend to use the words he, him, and his more liberally than do women. A greater percentage of women than men used either neutral or parallel language, especially where the subject was neutral or female-related. Both sexes used almost exclusively the word their for sentences with indefinite pronouns. For example, "If anyone calls, tell them I'll be back." The second most popular response here was the masculine pronoun.

I don't believe my statistics reflect accurately what happened here as long as I group my questions according to these categories. Different words in each category produced different results. For example, the same student might feel good about writing he or she when speaking of a nurse or an elementary school teacher, but that same student, will write she when the subject is a homemaker. In fact, only one student wrote he or she in response to the homemaker question.

I did not expect some of the responses that I received, but they were helpful in illustrating how students avoided having to decide the gender of a subject. Some students repeated the subject: "After a citizen has registered to vote, chances are that the citizen will indeed vote." Others omitted the pronoun: "A child should learn to respect parents' opinions early in life."

One point that my survey makes is that there are cases where he is not the preferred generic pronoun. Certainly this is true in cases where the subject is expected to be female. Of course, there is a difference in how strongly the gender of the subject is felt. Homemaker received more feminine pronoun responses than did elementary school teacher. Electrician received more male pronoun responses than did pharmacist. Although some students found adequate to describe more neutral subjects such as student or child or teenager, a significant number used parallel language or neutral language.

My conclusion is that if he is a generic, it is a limited generic, not only in the contexts in which it can be used, but in its interpretation as well. Since he is so closely related to males and to our concept of what is male domain, then the perceived male-ness of the subject influences its use more so than does the generic quality of the subject. An area for research would be to ascertain whether a word is male- or female-related and how strongly that male or female image is felt.

I am not saying we should eliminate all generic usages of he; that would present another problem: How will the next generation view literature of the past where the writers have honestly used words like man and he to include all humankind? In a sense, by insisting on neutral pronouns and parallel language, we may be erasing women from much of the world's literature. Before, the feminine image may have been obscure—but I fear that her obscure image is in danger of being obliterated altogether.
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Still, if we continue to insist that everybody knows that he means she, we are failing to recognize women. We are like Oedipus in the poem I used to introduce my talk. When he responded with the word man to the Sphinx's question, he indicated his failure to recognize women. Small wonder, he could not later recognize his mother. The title of the poem is "Myth," which I think is the poet's judgment on our assumption that when we say man and he everybody knows we mean women too. Not only is this assumption a myth, but it shows lack of precision in both language and thought.


7 Quoted in Gershuny, "Sexist Semantics," p. 31.


'Disadvantage' is a word of some importance in our society. In a land where equal opportunity is considered to be of major worth, inherent disadvantage is not only untenable, but unjust as well. 'Disadvantage' is defined as: "1. absence or deprivation of advantage or equality. 2. the state or an instance of being in an unfavorable circumstance or condition. 3. something that puts one into an unfavorable position or condition." (Random House College Dictionary, 1975) Equal opportunity implies a lack of disadvantage. If we as human beings desire a society in which all human beings are provided with all of their needs, we must create conditions such that no members of that society will be placed at a disadvantage because of the circumstances of their birth.

Unfortunately, there is no nation on earth in which there are no disadvantaged subgroups. Even in the United States, where equality is the professed ideal, there is no area of the country that is totally lacking in its share of the disadvantaged. If we as a nation are not to be considered hypocritical by our neighbors, we need to be doing all that we can to alleviate this problem.

Perhaps one of the most cruel forms of disadvantage is cultural, and the seeds of this disadvantage are often carried in language. It has been well established that there are certain markers of speech which convey information about the speaker such as social class, age, sex, and ethnicity. Not only do markers carry this information, they also serve as cues which influence the listeners as they judge the personal worth and abilities of the speaker. In the case of nonstandard speech, this judgment is usually negative and serves to place the speaker at a social disadvantage; and in such a situation, those who are concerned with spreading social equality must act to remove this disadvantage.

There are two major schools of thought regarding cultural disadvantage. The first is the 'deficit theory'. In this model, the culturally disadvantaged are viewed as being in some way cognitively deficient. This deficiency prevents the people of the cultural minority from learning certain of the skills which the dominant culture values, or only permits them to learn a less complete version of these skills. On the other hand, the 'difference theory' contends that each of the cultures (both the dominant group and the disadvantaged group) have comparative skills of equal sophistication. It is just that the two groups are different, and the dominant group considers the subordinate group to be inferior (and unfortunately, the subordinate groups often agree). According to the first hypothesis, the skills of the disadvantaged group are in fact less adequate, while in the second, skills that are in reality completely adequate are considered inferior. (Wiggins, 1976; Giles, Bourhis and
Linguists and anthropologists have traditionally propounded the difference theory, and this theory is finding more and more acceptance in other circles.

The result of cultural disadvantage is a person who cannot fit well into the dominant culture of his society. This person has been placed in a position of lesser potential in relation to his peers who are not so disadvantaged. It is to be hoped that as both cultures become more enlightened, they will work together to improve the situation. We are becoming more able to cope with the linguistic aspect of cultural disadvantage, but we are still faced with the problem of how to alleviate the situation.

An obvious solution is simply to teach the culturally disadvantaged to speak the standard dialect. But removing this barrier to equality is not so simple as it might seem on the surface. There are important cultural concepts which are embodied in language, and forcing a person to change his language means depriving him of one of his most important bases of identity. Is it fair to do this, when there is no indication that one culture is better than another?

Even should it be decided that this were the best course to follow, it would be impossible to implement it. People have a tendency to cling to their primary language and dialect very tenaciously. Labov has found that speakers with a high frequency of stigmatized factors in their own speech show a strong tendency to downgrade others for their use of the same features. Yet they show no signs of altering their own speech patterns. "Why do people not conform to the normative values they express?" (Labov, 1972 quoted by Ryan, 1979, p. 146) Ryan proposes that "the value of language as a chief symbol of group identity is one of the major forces for the preservation of nonstandard speech styles or dialects." (1979, p. 147) For these people, the security of belonging to a social group is of greater value than the promise of advancement offered by a risky change in language patterns.

It may not even be advisable or necessary to attempt to form all language to a perfect standard. Each of us knows from personal experience that even members of the dominant culture speak in a manner which is individually characteristic. We are able to identify the voices of our friends and relatives easily, even when we are unable to see them. Therefore, it seems obvious that while one does not speak in a rigidly prescribed manner when using the standard dialect, there are certain underlying characteristics which mark it and set it apart from other dialects of the same language.

Here, again, we encounter some difficulty. How are we to isolate and identify the specific characteristics which invoke cultural discrimination from the other parts of speech which vary among cultures? The traditional method of comparing dialects is to record samples of each and then compare, tabulating the frequency with which the patterns under study occur. However, this method does not account for the many other variables which can affect language usage. It is also incapable of isolating a cause/effect relationship. Because of these limitations, several other methodologies have been developed. Scherer (1979) identifies three of them: 1) the encoding of specific source states via role playing, 2) semi-naturalistic studies of group interactions, and 3) the systematic manipulation of voice and speech cues. As most of my information comes from studies of these types, I will briefly describe each.
The 'state encoding approach' entails using a subject or actor to portray a speaker role differing from his own. The recordings of these portrayals are then either analyzed themselves for alterations in speech patterns from the subject's normal patterns, or they are rated according to the accuracy of the role portrayed. For example, an actor with a white, middle-class background might be asked to portray the role of a black student on his first visit home from college (or it could be a black actor portraying the role of a white businessman at a cocktail party). The role play would be recorded on tape, along with the actor's normal speaking voice. The speech sample would then be analyzed to determine the amount of accommodation to the new role or the accuracy of the portrayal. An advantage of this approach is that there is only one person portraying two roles, thus the researchers can compare 'outsider' versions of particular dialects with the actual dialects themselves, as well as determining which aspects of speech the subject associates with the new dialect. A disadvantage of this type of research is that stereotype versions of a dialect may have little resemblance to the actual dialect, and this variable must be controlled for.

The 'interactional approach' consists of a situation which may be either partially or totally true-to-life. Subjects are placed in this semi-naturalistic situation in such a way that they must interact with each other in the capacity of the assigned roles. When the activity is completed, the subjects then rate their own performance and that of their fellow subject in the context of certain specified characteristics. These ratings and the transcript or recording of the proceedings are then analyzed together to extract the pertinent information. For example, a group of subjects from a high socio-economic status (SES) group might be told to act as if they were factory workers at a union meeting deciding whether or not to go on strike. The verbal accommodations these people would make would then be analyzed to isolate the salient characteristics. The advantages and disadvantages of this design are similar to those above.

It is interesting to note that after many of these studies, the subjects would deny any linguistic accommodation or alterations in the context of their speech as a result of their assigned roles when the purpose of the experiment was explained to them during the debriefing session. At times they even went so far as to accuse the experimenter of faking the tapes when the phenomenon was pointed out to them. This is evidence that the perception of and accommodation to vocal cues of social status must not be conscious.

The third experimental approach is called 'cue synthesis' or 'cue manipulation'. In this method, recordings are made of volunteers speaking about a variety of topics in their normal voices. Certain features of the voice can be altered systematically through the use of sophisticated computers and synthesizers. These recordings are then rated by judges who are unaware of the purpose of the experiment. Generally the judges are asked to determine certain of the personal characteristics of the 'speaker'. These characteristics could range in anything from kindness to competence, attractiveness to monetary worth. By analyzing the characteristics varied and the attributions they receive, the experimenter can determine what vocal qualities elicit which type of judgment. A variation of this design which uses either bilingual or bidialectal speakers and allowing each subject to be his own control is called the 'matched guise' experiment. This is a very strong design which allows for statistical control and cause/effect inferences. Most of my data is due to this type of study, with supporting evidence coming from each of the first two designs.
It has by now been fairly well documented that social status can be accurately determined through vocal cues. Brown and Lambert (1976) have reviewed some of the studies completed previous to their own. Putnam and O'Hearn recorded over 100 samples of speech from American Blacks of all social classes and of many regional dialects. They then had white college students from the Washington, D.C. area rate the speakers according to social class. Their ratings correlated .80+ with the Warner social status scores originally used to classify the speakers. Harms repeated the study with the same tapes but using judges from the midwest, and obtained similar results. Hart and Brown report that when the verbal content is held constant and the judges hear only the vocal or phonological aspects of the speech samples, they give much more extreme ratings to the speakers on social status scales with greater inter-judge agreement. This indicates that vocal qualities are the primary channel through which information about social competence is transmitted. In 1967 Ellis determined that "most of the information about social status is contained in the vocal aspects of speech." (quoted by Brown and Lambert, 1976, p. 240)

Robinson has hypothesized that:

"if features of speech are to serve as discriminating markers for interpersonal behavior, then their efficiency will be greater the earlier in any interaction the signs become evident, the more salient these signs are, and the more invariant their occurrence is across a range of contexts." (ibid, p. 10)

He has also pointed out the fact that since "valid judgements of SES can be made after hearing only short extracts of speech [there is a lack of any necessity to make counts of features across extended corpuses]." (ibid, p. 241) The only feature of speech which is readily apparent in such short speech segments and which is also generally invariant is the vocal aspect. Therefore, in order to determine how attributions are made according to speech style, it is the vocal aspect of speech which we should study.

Perhaps at this point I should define the terms 'vocal' and 'verbal'. 'Verbal' refers to the content of the speech samples, while 'vocal' refers to all of the other, phonological aspects of the samples. What can be recorded in a transcript then, is verbal, and all of the descriptive information is vocal (i.e. intonation, pitch, tone, etc.). As Brown and Lambert put it, "verbal is what is said, and vocal is how it is said." (1976, p. 246) Therefore, when Ellis demonstrated that status cues are carried in the vocal aspects of speech, he showed that with the content held constant, the judges were still able to determine accurately social status.

In 1976 Brown and Lambert published a study which had been conducted to determine which specific characteristics were involved in the transmission of social status information. In this study they used a group of 20 French Canadian speakers of various social classes. These speakers were recorded as they read a short passage from the book The Little Prince. Thus holding content constant so the variation would only be phonological, they insured that the ratings would be on the basis of these vocal qualities alone. They had 90 French Canadian boys attending 3 different schools in separate areas of Quebec rate the speakers on social status. The ratings of the judges correlated at a level above .80 with the actual SES of the speakers. In a second study using only English speaking judges, Brown and Lambert found
that the correlation between judged SES and actual SES was about .67 with the mistakes being reasonable. (Both inaccurately judged speakers had attended college but were in the low SES group.)

Table 1

Mean social status and adjective ratings received by white-collar speakers (Groups A and B) as compared with blue-collar speakers (Groups C and D) when rated by French-Canadian judges and English-speaking judges

<table>
<thead>
<tr>
<th>French-Canadian judges</th>
<th>(1) Mean</th>
<th>A + B Mean</th>
<th>C + D Mean</th>
<th>(4) F</th>
<th>English-speaking judges</th>
<th>(1) Mean</th>
<th>A + B Mean</th>
<th>C + D Mean</th>
<th>(4) F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Judged social status</td>
<td>.67</td>
<td>3.3</td>
<td>4.8</td>
<td>...</td>
<td>1. Judged social status</td>
<td>.47</td>
<td>3.0</td>
<td>4.2</td>
<td>...</td>
</tr>
<tr>
<td>2. Intelligent - pas intelligent</td>
<td>.57</td>
<td>3.3</td>
<td>4.8</td>
<td>...</td>
<td>2. Intelligent - not intelligent</td>
<td>.43</td>
<td>3.1</td>
<td>4.5</td>
<td>...</td>
</tr>
<tr>
<td>3. Sûr de soi - pas sûre de soi</td>
<td>.58</td>
<td>3.7</td>
<td>5.1</td>
<td>...</td>
<td>3. Confident - not confident</td>
<td>.45</td>
<td>3.0</td>
<td>4.5</td>
<td>...</td>
</tr>
<tr>
<td>4. Beau - laid</td>
<td>.50</td>
<td>3.8</td>
<td>4.8</td>
<td>...</td>
<td>4. Good-looking - ugly</td>
<td>.47</td>
<td>3.1</td>
<td>4.0</td>
<td>...</td>
</tr>
<tr>
<td>5. Ambitieux - sans ambition</td>
<td>.55</td>
<td>3.4</td>
<td>4.4</td>
<td>...</td>
<td>5. Ambitious - unambitious</td>
<td>.50</td>
<td>3.2</td>
<td>4.0</td>
<td>...</td>
</tr>
<tr>
<td>6. Actif - passif</td>
<td>.47</td>
<td>3.3</td>
<td>4.3</td>
<td>...</td>
<td>6. Active - passive</td>
<td>.44</td>
<td>3.1</td>
<td>3.9</td>
<td>...</td>
</tr>
<tr>
<td>7. Soucieux - fade</td>
<td>.47</td>
<td>3.0</td>
<td>3.6</td>
<td>...</td>
<td>7. Sincere - insincere</td>
<td>.50</td>
<td>3.3</td>
<td>3.8</td>
<td>...</td>
</tr>
<tr>
<td>8. Grand - court</td>
<td>.50</td>
<td>4.0</td>
<td>4.6</td>
<td>...</td>
<td>8. Tall - short</td>
<td>.23</td>
<td>4.0</td>
<td>4.5</td>
<td>...</td>
</tr>
<tr>
<td>9. Faible - pas faible</td>
<td>.54</td>
<td>3.3</td>
<td>3.8</td>
<td>...</td>
<td>9. Dependable - undependable</td>
<td>.50</td>
<td>3.1</td>
<td>3.7</td>
<td>...</td>
</tr>
<tr>
<td>10. Poli - impoli</td>
<td>.46</td>
<td>3.6</td>
<td>4.1</td>
<td>...</td>
<td>10. Polite - impolite</td>
<td>.51</td>
<td>4.7</td>
<td>4.1</td>
<td>...</td>
</tr>
<tr>
<td>11. Volontaire - secréte</td>
<td>.41</td>
<td>4.6</td>
<td>4.1</td>
<td>...</td>
<td>11. Tolerant - severe</td>
<td>.50</td>
<td>3.9</td>
<td>4.1</td>
<td>...</td>
</tr>
<tr>
<td>12. Courageux - faiblard</td>
<td>.36</td>
<td>3.9</td>
<td>4.3</td>
<td>...</td>
<td>12. Courageous - cowardly</td>
<td>.40</td>
<td>3.4</td>
<td>3.8</td>
<td>...</td>
</tr>
<tr>
<td>13. Libre - injuste</td>
<td>.30</td>
<td>3.5</td>
<td>4.2</td>
<td>...</td>
<td>13. Just - unjust</td>
<td>.45</td>
<td>3.3</td>
<td>3.9</td>
<td>...</td>
</tr>
<tr>
<td>14. Attribuable - détestable</td>
<td>.35</td>
<td>3.1</td>
<td>3.3</td>
<td>...</td>
<td>14. Likeable - unthinkable</td>
<td>.60</td>
<td>3.4</td>
<td>3.7</td>
<td>...</td>
</tr>
<tr>
<td>15. Noble - pas noble</td>
<td>.22</td>
<td>3.5</td>
<td>3.8</td>
<td>...</td>
<td>15. Sociable - unsociable</td>
<td>.41</td>
<td>3.2</td>
<td>3.9</td>
<td>...</td>
</tr>
<tr>
<td>16. Courtois - pas courtois</td>
<td>.08</td>
<td>4.6</td>
<td>4.3</td>
<td>...</td>
<td>16. Sense of humour - straight-faced</td>
<td>.40</td>
<td>4.2</td>
<td>4.3</td>
<td>...</td>
</tr>
<tr>
<td>17. Gentil - pas gentil</td>
<td>.08</td>
<td>3.4</td>
<td>3.4</td>
<td>...</td>
<td>17. Kind - unkind</td>
<td>.50</td>
<td>3.4</td>
<td>3.8</td>
<td>...</td>
</tr>
<tr>
<td>18. Religieux - pas religieux</td>
<td>.18</td>
<td>4.0</td>
<td>3.9</td>
<td>...</td>
<td>18. Religious - unreligious</td>
<td>.10</td>
<td>4.2</td>
<td>4.0</td>
<td>...</td>
</tr>
<tr>
<td>19. Fort - faible</td>
<td>.23</td>
<td>3.6</td>
<td>3.8</td>
<td>...</td>
<td>19. Strong - weak</td>
<td>.19</td>
<td>4.6</td>
<td>4.6</td>
<td>...</td>
</tr>
<tr>
<td>20. Courageux - faible</td>
<td>.08</td>
<td>4.4</td>
<td>3.7</td>
<td>...</td>
<td>20. Happy - sad</td>
<td>.24</td>
<td>4.7</td>
<td>4.4</td>
<td>...</td>
</tr>
</tbody>
</table>

Notes:
1. The column labelled "\( \omega \)" (column 1) gives an estimate of the amount of variance that is predictable as compared in an \( \omega \) statistic (Hays, pp. 324-9). Although the means and the \( F \) apply only to the AB vs CD comparison, the \( \omega \) applies to the \( F \) test for all four means.
2. In interpreting the means (columns 2 and 3) a rating of one is the highest possible rating on the trait listed and a rating of seven is the lowest. When the pattern of more favourable ratings (low numbers) going to the higher social level is reversed, an \( \omega \) is placed between the two mean in the comparison.
3. The entries in the column labelled "\( F \)" (column 4 for the data from each study) give the significance level of the difference between means from the planned comparisons \( F \) test (Hays, 1963, pp. 459-62). One star (*) indicates \( p < .05 \), (**) indicates \( p < .01 \), and (***) indicates \( p < .001 \).

(Taken from Brown and Lambert, 1976, p. 42) To compute the correlation coefficient us '\( \omega \)', the square root of the '\( \omega^2 \) in the table.)

Putnam and O'Hearn, mentioned earlier, report that the major cues used by their listeners to identify social status were "inclusion of abherent vowel and diphthong allophones, consonant articulation and the degree of sophistication of vocabulary and sentence structure." (ibid, p. 239) In 1970, Frender, Brown and Lambert compared the speech styles of lower SES French Canadian boys who were doing poorly in school with that of their peers who were doing well. They report that those who were doing well were judged to have higher-pitched voices; a greater variety in their intonation patterns; more appropriate intonation patterns; and a more rapid, confident style of speech. This indicates that even children are at least subconsciously aware of these vocal characteristics and will try to imitate those which they hear adults use. Robinson suggests that the five salient features used to determine social status are: pronunciation, prosody, endemic grammar, greetings, and lexical preferences. (1979, p. 240)

Perhaps the ability to determine social status of the speaker upon only hearing short segments of speech would not be so important, if this ability
were not also used as a means of enforcing cultural discrimination. In our society, 'lower class' speech styles are used to label the speaker as inferior, and thus to place him at a disadvantage.

Edwards brings the subject of disadvantage to the classroom. He says, "Disadvantaged children are those whose home background and early socialization are such as to make the transition from home to school difficult." (1979, p. 22) This inherent disadvantage of the child is compounded by the reactions of teachers and other educators to 'disadvantaged speech'. Specifically, the speech of a child, although not necessarily indicative of the child's academic potential, may be such that the teachers will form a lower expectation of the child's performance. In the past, a regular difference between children of different SES levels has been a difference in performance on verbal ability measures. Lower class children perform worse on measures of verbal (in contrast to non-verbal) intelligence scores in comparison with their upper class peers. "Since educational success depends largely on verbal intelligence, lower class children are therefore handicapped, relatively." (Frender, Brown and Lambert, 1970, p. 2)

Generally, since these measures of verbal intelligence have been conducted in the standard dialect, a dialect with which lower class children may be unfamiliar, these tests also contribute to the inaccurate judgments of ability on the part of teachers. As in other such instances, these expectations can lead to a self-fulfilling prophecy cycle in which the child will not progress because his teacher is of the opinion that he cannot do so. And the teacher's opinions will be justified by the child's lack of progress.

This tendency of people to be shaped by the expectations of those around them has sometimes been called the 'pygmalion effect'. But since the problem is endemic to our school and social system, I feel it would be more appropriately labeled the 'pygmalion syndrome'. And as with any other endemic 'disease' a cure is necessary before the society can be considered to be healthy and progressing.

In order to test his hypothesis, Edwards conducted a study of teacher reactions to disadvantaged speech, and then had each teacher rate his/her own confidence in the reactions made. The speakers in this study were 40 children, 20 from a low SES area in inner-city Dublin, and 20 from the surrounding middle SES areas. The language of the two groups was not linguistically compared, as a prior study of these variables had already been made. Instead, these tapes were played to 14 teachers-in-training at a local college. These students were asked to react to the recorded speech samples on the basis of variations in vocabulary, fluency, and pronunciation. The judges also reacted to and formed impressions of the children on the variables listed in Table 2. After making each judgment the student teachers were asked to rate their responses on a confidence scale. It was found that 'disadvantaged' children were rated lower on almost every variable, and that the judges were highly confident that their judgments were correct. (Edwards, 1979, table from p. 29)

There is some evidence that these judgments may be somewhat due to personal experience with members of the group being 'judged'. But many times the quality ascribed to the entire group is representative of only a small portion of it.
Table 2  The rating scales

1. Child's general vocabulary is probably: Very good...:...:...:... Very poor*
2. Child sounds: Disadvantaged*...:...:...:... Not disadvantaged
3. Child's general speaking ability is probably: Very good...:...:...:... Very poor*
4. Child's family is probably: Low social-status*:...:...:...:... High social-status
5. In general, child can probably communicate the gist of a story: Very well...:...:... Very poorly*
6. Child sounds: Very intelligent...:...:...:... Not very intelligent*
7. Child's general writing ability is probably: Very good...:...:...:... Very poor*
8. Child sounds: Very unsure*...:...:...:... Very confident
9. Child seems to enjoy reading: Very much...:...:... Very poor*
10. Child sounds: Very enthusiastic...:...:...:... Very unenthusiastic*
11. Child sounds: Very reticent to speak*...:...:...:... Very eager to speak
12. Child is: Very fluent...:...:...:... Very difficult*
13. Child is probably a: Very good student...:...:...:... Very poor student*
14. Child sounds: Very unhappy*...:...:...:... Very happy
15. Child's pronunciation is: Very good...:...:...:... Very poor*
16. Child's general reading ability is probably: Very good...:...:...:... Very poor*
17. Child's accent is: Very good...:...:... Very poor*

*The end of the scale given a value of 1 in the scoring procedure.

As Robinson says:

"Sometimes it is assumed that those people who are prepared to assess SES on minute extract of speech are using 'stereotypes' of doubtful validity. On the evidence presented here this is not so; among the samples studied, judgments of identity made have been generally both reliable and valid." (1979, p. 238)

Robinson has also noted that "in education we have seen that teachers make inferences to educationally relevant attributes on the basis of the accents and prosodic features of children's voices... . These inferences do not represent inaccurate or arbitrary judgments so much as exaggerations of real but lower correlations." (1979, p. 245) The problem we have is that while it is fairly easy to establish social status on the basis of speech cues, it is not the same thing to assign personality characteristics on the basis of those same cues. And in may cases the personality characteristics ascribed to people of subordinate groups are unfounded for the majority of the group members.

It is highly disturbing to me that teachers would feel so confident about rating a child's abilities according to speech cues. This kind of pre-judging tends to place the child in a mold from which he will not escape for the rest of his life.

Frender, Brown and Lambert are among those who have been concerned about this phenomenon. And they have tried to isolate the main features of speech which listeners use to classify a speaker's language as being of a lower prestige variety. They point out that "a lower class youngster's style of speech may mark... him and thus adversely affect his opportunities to better himself in various situations, including the school environment." (1970, p. 14) Some of the characteristics that they have isolated as significant follow: "upper class in contrast to lower class speakers are more articulate and accurate in their pronunciation; use more intonation; sound more confident and self-assured; stumble less over words;" and have more of a standard accent. (1970, p. 3) In talking about disadvantaged speech they say, "if these features of speech are passed on
to children, one would expect the perceptions and judgments of teachers to be influenced even in their evaluation of the child's school performance, making the lower class child 'the victim of an educational self-fulfilling prophecy." (1970, p. 9)

It is now the task of the educator to overcome this pygmalion syndrome. In his play, "Pygmalion", George Bernard Shaw presents a situation in which Eliza Doolittle, a woman of obvious cultural disadvantage, is taken in by an English linguist, Professor Higgins, and is changed into a gentlewoman through linguistic training. But the linguistic training is not the only cause of Eliza's transformation. It is also due to a large extent to the treatment Eliza received at the hands of Colonel Pickering. It was this treatment which taught Eliza the cultural mores she needed to know in order to become a gentlewoman. In our case, the solution is not so easy. There are a great many 'Eliza Doolittles' out in society, and it would be impossible to provide linguistic training to all of them, not even considering the fact that many would refuse to change.

But there are cases in which this disadvantage has been overcome. For example, in the Anacostia Preschool Program in Washington, D.C. children were taught to be fluent both in the standard dialect and in their Black English dialect. This was accomplished through encouragement by the teachers without any form of judgement or disparagement: The method was simply to have the teachers work with the children in the natural preschool environment. The children came to admire the teachers and to imitate them in many areas, including language usage. There was no pressure to make the children use the standard dialect in all situations, and they eventually came to use each dialect in its appropriate situation. In this way the educational disadvantage of the children was reduced without forcing them to relinquish their own ethnic identity. (Covington, 1976) I am very much in favor of such programs, and I hope to see more developed in the near future. I also believe that there are more ways than one to combat the pygmalion syndrome, with proper support and funding, they will be developed.

To summarize, we can see how 'disadvantage' in speech can lead to disadvantage in education. And disadvantage in education can then lead to further disadvantage in all the socially-determined aspects of adult life. But it has been shown that it is not necessarily a lack of intelligence which hinders the speakers of low-prestige dialects, nor even a non-standard linguistic system; but rather the attitudes of society towards non-standard groups which have been attached to linguistic variations and markers, and which act to retard advancement. If this factor could be overcome even in a small degree, it would mark a great advance for our society. Perhaps one of the best places to begin is with the children. "Realizing that getting ahead in life is dependent on success in school, and that socially deprived children are generally poorer school performers, it follows that the chances of the less fortunate children could be improved if those factors that are known to affect school performance ... could be effectively modified." (Frender, Brown and Lambert, 1970, p. 1) If we but take the first step, it is likely that further programs such as community-sponsored cultural interchange programs and adult bidialectal education programs (for members of both the dominant and subordinate groups) will soon follow. Now is the time for the first step.
BIBLIOGRAPHY


Frender, Robert, Brown, B.L., and Lambert, W.E. "The Role of Speech Characteristics in Scholastic Success." The Canadian Journal of Behavioral Science. (Volume 2, Number 4) pp.299-306. (I have a pre-publication copy of this reference, which is why page numbers differ.)


also:


Computers and other electronic machines have already been shown to be useful tools in translation, provided that the computer system is appropriate to the type of translation. No existing computer system can produce fully-automatic high-quality translations. Computers are currently used only as tools to increase the effectiveness of human translators. For example, Canadian weather forecasts are translated from English to French daily by a computer system developed at the University of Montreal. The computer translates about 80 percent of the sentences of the forecasts and sends the rest to human translators. Two Provo firms are marketing machine-assisted translation systems designed primarily for technical translation. These systems produce a draft translation of an entire text and then present the text to a translator who corrects and revises it with a word processor.

A word processor does not translate, but it does allow a text to be revised and corrected without retyping the parts which are already acceptable. Even literary translation can be assisted by modern word processing equipment. The human translator does all the translating, but the translation is typed using a word processor instead of a typewriter. Then the translation can be revised without retyping the entire text. This saves time and avoids the introduction of new errors while correcting old ones. It would probably be correct to claim that computers can be useful in all types of translation.

However, a translation tool can be used inappropriately. The Canadian weather forecast system would not be useful for literary translation. A literary translator draws on a very large vocabulary (well beyond 20,000 words) while weather forecasts can be covered almost exhaustively by about 1,000 words. Literary translation is highly creative. Weather forecast translation is rather boring.

This paper will discuss a type of translation called "standard text" translation. Then various machine aids to translation will be considered, including a new type of translation aid called a "suggestion box" system, which might be appropriate for standard text translation.

I. STANDARD TEXT TRANSLATION

Typically, a translator specializes in one or more pairs of languages and translates a different text at each translation session. The source and target languages may remain fixed but the text varies endlessly. In fact, if the text is too repetitious, as in weather forecasts, the work becomes terribly boring.
In standard text translation, a relatively stable set of texts in one source language is translated into one target language after another. A well-known example of standard text translation is Bible translation.

The Bible has been translated into over 1,600 languages. There are approximately 4,000 languages in the world. However, the speakers of the 300 most common languages comprise over 90% of the world's population. Thus less than 10% of the world's languages cover more than 90% of the world's population. (Statistics obtained from the LDS Translation Division.)

Standard text translation therefore differs significantly from other types of translation in that standard text translation involves a standard text going into many target languages while most other types of translation involve many different texts going into standard languages. It should not be surprising that translation aids for standard text translation might be different from those appropriate to other types of translation.

Another example of standard text translation is the work of the Emerging Languages section of the LDS Church Translation Division. There is a standard package of materials which is translated in preparation for missionary work in a given language area. These materials are intended to accompany a Bible translation already done by some Bible Society and includes selections from the Book of Mormon, missionary pamphlets, organizational handbooks, etc. After these basic materials have been translated, the second phase of translation begins as needed and another relatively fixed set of texts is translated. To date there are approximately 40 languages into which the translation of even the basic texts has been completed. It is unclear how many translations must be completed before the LDS message can be said to be available in "every tongue." But the author feels that "every tongue" means at least 250 languages and perhaps 10 times that. In any case there is a mammoth task in standard text translation ahead of the LDS Church.

II. MACHINE AIDS FOR STANDARD TEXT TRANSLATION

The remainder of this paper will consider various ways in which machines might be useful in standard text translation. The discussion will consider some well-known aids: concordances, word processing, dictionary maintenance, and full-translation. Finally, a new aid called a "suggestion box system" will be proposed. A suggestion box system includes word processing and a new twist on dictionary lookup but does not attempt to do as much as a full-translation system.

A. Concordances

A concordance is a well-known tool for detailed study of a text. The meaning of a word or phrase can often be illuminated by studying all its occurrences in a text in their respective contexts. In standard text
translation, there are often words and phrases which have no established equivalent in the target language. Choosing translations for such words and phrases is a challenging and important task because a precedent is often set which will endure for better or for worse. The author proposes that for certain texts a concordance could be very useful in studying the meaning of a term and selecting a translation for it.

B. Word Processing

Word processing is an effective aid to many types of translation. The major benefits are the ability to revise a translation without retyping it and the possibility of photo-typesetting of the text without a manual typesetting step. However, applying word processing to standard text translation is particularly difficult because many target languages are involved, each with a different alphabet. Word processing equipment is available which will handle several Roman alphabets. Of course, non-Roman alphabets such as Cyrillic and Arabic present another level of difficulty. A word processor can certainly be designed for a particular non-Roman alphabet, but a problem arises when the same word processor is expected to be useful for many different alphabets. Problems include the changing of key caps, arrangement of the keyboard, letters which are too intricate to be represented in a small matrix of dots, and letters whose form is changed by surrounding letters and diacriticals. It may also be difficult to obtain high-quality printed output in many languages on the same word processing system. Of course, if the target language is non-alphabetic (like Chinese) then using word processing becomes much more difficult still. If a translation is done on location in a less developed area, it may also be difficult to obtain service and stable power for a word processing system. Nevertheless, word processing is advancing, becoming more flexible and less expensive and, in the author’s opinion, will become an important machine aid in standard text translation.

C. Dictionary Maintenance

A word processing system can be extended to include a dictionary look-up capability. In technical translation, a word processor could be linked to a terminology bank contributed to by other technical translators of the same subject matter. In standard text translation, a similar possibility exists. If several translators are translating the same text into the same target language they need some system to keep their use of terminology consistent with each other. Whether the dictionary is consulted directly through a computer terminal or whether the computer is used to maintain current dictionaries which are consulted on paper or microfiche, the computer can help maintain consistent terminology without the publishing delays associated with traditional typeset dictionaries.

D. Full Translation

A considerable distance beyond word processing and dictionary
maintenance is a full-translation system which includes a complete dictionary and grammar and produces complete translations ready for post-editing. A full-translation system involves an enormous investment in linguistic analysis and programming, and it is questionable whether such an investment is justified in standard text translation.

E. A Suggestion Box Aid

So far, this paper has defined standard text translation and considered several ways in which machines might be useful in the translation of standard texts. It was proposed that since the source text is rather stable, it would be worthwhile to produce a concordance of it as a reference work for the translator. It was also proposed that it would be helpful to have machines for word processing, including dictionary lookup and maintenance. It was then proposed that the development of a full-translation system might not be appropriate in standard text translation.

Assuming that a full-translation system is too ambitious and costly for standard text translation, one may ask whether there is a machine aid which goes beyond word processing and dictionary maintenance without requiring a large investment in development before being useful. The rest of this paper discusses one such intermediate aid. This aid will be called a "suggestion box system." In the suggestion box approach, it is assumed that the source text is available in machine readable form. Any text important enough to be translated into several languages will probably already be in machine readable form and at any rate it need only be done once. The suggestion box system reads the source text a segment at a time. As each segment is read into the computer, the program identifies the words and looks them up in the suggestion lexicon. Then the program presents to the translator the segment of source text and, to the side, suggestions, i.e., suggested translations for selected words and phrases. The screen of the computer terminal is divided into several areas. One area contains a segment of text to be translated and a second area of the screen (called the "suggestion box") contains the computer's suggestions. A third area is a working area where the translator enters the translation, and a fourth area accepts translator commands which maintain the computer's dictionary of potential suggestions. As each new segment of text is presented to the translator it is accompanied by a list of suggestions in the "suggestion box." The translator examines the source text and the suggestions. Bad suggestions are ignored and good suggestions are incorporated into the translation.
1. An Example of Using the System

For example, consider the following segment of text:

"My dear brothers and sisters, the stake president has asked us to pay our fast offerings."

This segment contains several phrases which might have been previously entered into a suggestion lexicon. The common greeting "my dear brothers and sisters" might be stored with its French equivalent "mes chers frères et soeurs". The phrase "the stake president" might be stored with its standard equivalent "le président de pieu". And the phrase "fast offerings" has a standard translation of "dons du jeûne". When the segment of English text is presented to the translator, the computer automatically scans the English segment for words and phrases that are in the suggestion lexicon. For the segment being considered, the computer might find suggestions for the three phrases mentioned above. The following information would be presented to the translator:

<table>
<thead>
<tr>
<th>Source text</th>
<th>&quot;Suggestion Box&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>My dear brothers and sisters,</td>
<td>#1:mfs Mes chers frères et soeurs</td>
</tr>
<tr>
<td>the stake president</td>
<td>#2:pp le président de pieu</td>
</tr>
<tr>
<td>has asked us to pay our fast offerings.</td>
<td>#3:oj dons du jeûne</td>
</tr>
</tbody>
</table>

This display includes the English source text in a column on the left with suggested translations for three common phrases. The abbreviations are mnemonics consisting of the first letters of key words in a suggestion.

Assuming that all three suggestions are acceptable, the translator might enter the following for a translation:

:mfs, #2 nous a demandé de payer les :oj.

The example shows that either the suggestion name or the suggestion mnemonic can be used as abbreviations.

This abbreviated line would then be immediately expanded by the suggestion box system to a full translation:

"Mes chers frères et soeurs, le président de pieu nous a demandé de payer les offrandes du jeûne."
If the translation were from French to English, the translator might enter the line:

:Mbs, :sp has asked us to pay our :fo.

and see it expanded by the computer into:

"My dear brothers and sisters, the stake president has asked us to pay our fast offerings."

2. Advantages and Disadvantages of Possible Extensions

Clearly, this system saves keystrokes for the translator. On the other hand, the translator must scan the suggestions and decide which ones to use.

The author's hope is that after a period of adjustment, a translator could feel comfortable using a suggestion box system and be more productive using it than using just a word processor. A suggestion box approach could also increase consistency in the use of terminology. Of course, when a suggestion box system is first used on a new target language it will be only a word processor. No suggestions will appear on the screen until they are entered by a translator into the suggestion dictionary. So the system is at least as helpful as a word processor, and it is potentially much more useful. Since the translator has some control over the suggestion dictionary, the translator enters only those words and phrases which have consistent equivalents and which become boring for human translators to write out in full each time they occur.

Repeated, consistent retrieval of well-defined words and phrases is something computers are very good at. They do not get bored or tired. The suggestion box approach does not at first expect the computer to handle the difficult aspects of translation, as a full-translation system does. So a suggestion box system can be used with no development time beyond that needed to set up word processing capabilities in the target language at hand.

A suggestion box system need not stop with suggestions which are presented on the screen exactly as they appear in the suggestion dictionary. Each suggestion is based on a word or phrase appearing in a segment of source text. The source segment and the abbreviated translation can be examined by the computer to produce a guess as to appropriate inflections for the target language suggestion. The guess may be right or wrong. If it is right, the translator can save more time because the suggestion will not need to be edited for inflectional suffixes after it is inserted into the translation. A suggestion box system could perhaps even be extended to the point where the system suggests translations for whole clauses or even some entire sentences. An important point is that the system is useful even without a large investment in machinery and programming and yet can be expanded as resources are available.
Of course, there is also a disadvantage of the suggestion box approach compared to simple word processing. Some translator time is required to evaluate the suggestions and it is conceivable that more time would be spent evaluating the suggestions than would be saved by using them. The effectiveness of the system can be maximized by entering into the suggestion dictionary mostly phrases rather than single words. It seems clear, for example, that it would be easier and faster to enter "#6" into a translation than to enter the standard translation of "The Church of Jesus Christ of Latter-day Saints."

The suggestion box approach allows for considerable flexibility. With the exception of certain entries flagged as standard translations approved by some official committee, the translator could modify the suggestion lexicon at any time and immediately see the results as the modified suggestion lexicon is consulted on subsequent segments of text.

A natural extension of the system would be to have the computer print out the suggestion lexicon in the form of a glossary. Thus the system also becomes a dictionary maintenance tool.

If careful quality control is needed, then, after a document is translated, the system could automatically produce a bilingual concordance of the source and target texts. A bilingual concordance can be an effective tool in evaluating consistency of terminology in a translation.

3. Origin of the Suggestion Box Approach

The idea for the suggestion box approach to translation aids was developed in discussions of possible translation aids for Emerging Languages. Special thanks are due to Jill Peterson, Jared Burt and several others at the BYU Language Research Center. The suggestion box approach is based on three other translation aids: the "least lookup" aid (simple dictionary access for a word specified by the translator), the "extended lookup" aid, and the "expansion code" aid. The "extended lookup" aid was proposed several years ago by Eldon Lytle and others at the BYU Language Research Center. The idea of an "extended lookup" was for a computer to consult an extensive dictionary and provide a word for word translation of a text as a reference for a translator. This approach, as described, may include too many suggestions to be effective.

The idea of including a short code in the translation (e.g. #3) which the computer then expands into a word or phrase can not only save time but can also reduce the tedium that can be a part of translation. The idea of expanding codes came from a translator aid called an expansion code system. The expansion code system was implemented at BYU by Olivia Rojas, Steve Richardson, and others. In this approach, the translator enters short codes which are looked up in an expansion dictionary and expanded into full words or phrases. For example BYC might expanded into Bishop's Youth Council.
In the expansion code approach, the computer does not look up any words or phrases on its own initiative. The translator instructs the system to look up an entry by including an expansion code in the translation. The expansion code approach is certainly effective and useful, but it is inherently limited to the expansion of certain codes. A suggestion box system, on the other hand, is more extensible. A simple suggestion box system is very similar to an expansion code system in that the codes entered by the translator refer to fixed entries in a dictionary. However, an expansion code system could be extended by including some of the processing involved in a full-translation system. Then the system might suggest the translation of some entire clauses, if the clause matched some pre-defined format. The suggestion box approach differs from an expansion code system or a least lookup system in that the suggestions are retrieved automatically instead of upon the specific request of the translator. The suggestion box approach also differs from extended lookup. In extended lookup all the words are looked up and no provision is made for incorporating them into the translation except by typing them out. A suggestion box system differs from a full-translation system in two ways. First, it is useful from the beginning while a full-translation system is not useful until it has an extensive dictionary and grammar. And second, it can easily avoid the most unusual and difficult constructions by simply not providing translations for them. In a full-translation system, everything needs to be handled or else the translation may not be good enough to post-edit.

In summary, the suggestion box approach combines features of the expansion code approach and the extended lookup approach and allows for expanded capability at any time, yet providing useful aid immediately.

4. Future of the System

In the author's opinion, a suggestion box translation aid represents a good division of labor between machine and human -- letting the computer handle the repetitious aspects, thus freeing the human to spend more energy on the creative aspects.

A suggestion box system could even be used by a translator-secretary team -- even if they are separated by a great distance. The first text would be translated by traditional manual means and the secretary could enter the translation and enter suggestions in the dictionary for recurring phrases. Then the next document to translate could be sent with suggestions printed out, derived from the translators first document. The translator could then write out the translation and refer to good suggestions by code and request further suggestion entries for the next document. This could save translation time and text entry time, and increase consistency of spelling and wording in fixed expressions.

An experimental suggestion box translation aid is now being programmed by Jared Burt. The author invites comments concerning the suggestion box approach and invites all interested parties to develop
their own variation of the system. In the next few years, the author hopes to implement suggestion box translation aids on several computers and develop the systems to the point where they can be tested by professional translators doing serious translation. Then, a future paper will evaluate the success or failure of the suggestion box approach to translation. The suggestion box approach is one new idea which may or may not turn out to be useful. But the author is certain that other new ideas will appear and computers will be more and more used in translation, as they are in so many human activities.

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Automated Language Processing Systems, Inc., Provo, Utah

Weidner Communications, Inc., Provo, Utah
CULTURE SHOCK: HELPING OUR STUDENTS ADJUST

Neil J. Anderson
Brigham Young University

A businessman from Japan arrived here at BYU a year ago to study English as a second language. Having studied English in Japan for seven years he felt that it would be an easy adjustment. The first few months of his experience were exciting. The United States was a beautiful, friendly country. He enjoyed being with Americans and other foreign students.

There were periods of adjustment but during his ninth month here this student, who appeared to have adjusted, went into the critical stage of culture shock. He suddenly disliked American food and his roommate didn't allow him to play his guitar, which for this student was important. He stopped attending classes at the ELC and completely withdrew from social activities.

This student's experience is not atypical. Many foreign students experience a similar period of adjustment. Understanding culture and culture shock with its symptoms will help us assist students like this businessman adjust to their educational experience here in the United States.

Philip Bock offered a helpful definition of culture: when he said that "culture, in its broadest sense, is what makes you a stranger when you are away from home. It includes all those beliefs and expectations about how people should speak and act which have become a kind of second nature to you as a result of social learning." (Bock, 1970).

Everett Kleinjans further defines culture as "a set of ways of communicating which can be learned somewhat as a language is learned" (Kleinjans, 1975).

Culture and language are inseparable, especially when the language is learned in its host environment. Language is a part of the total behavior of man and his behavior, in turn, influences his language. Effective language teaching is characterized by an awareness that language is itself an integral part of the behavior system of a people, and at the same time a means for the expression and summing up of this system or culture (Herscovici, 1976).

Before a teacher can create the proper atmosphere for language instruction he/she must be aware of the process of aculturation. In 1954, a cultural anthropologist, Kalervo Oberg, introduced the concept of culture shock (Oberg, 1954). He defined culture shock as "a mental
illness" that when suffered "the victim usually does not know he is afflicted" (Oberg, 1954).

Culture shock is precipitated by the anxiety that results from losing all one's familiar cues. These cues include the thousand and one ways in which we orient ourselves. It is caused in part from the inability to communicate.

When we as teachers in the multicultural classroom understand culture shock, we will be better prepared to help our students adjust. Helping them to realize that a period of adjustment is a challenge but that as they become more familiar with the language and customs their cultural conflict will pass.

Oberg identified four phases of culture shock. Phase I is characterized by excitement and fascination toward the new culture. Many have referred to this phase as the "honeymoon" stage (Oberg, 1955; Intercultural Communication, 1976). You are pleased with the politeness of your hosts, living conditions, the language is so "real," it is exciting. Many people in this phase see others from their own culture in a different stage of culture shock and wonder why they are having such a difficult time adjusting when they seem to have adjusted in only a few days. This stage may last anywhere from a few days to a few weeks, sometimes longer.

When the honeymoon is over the critical phase of culture shock begins. The second phase is characterized by rejection of the language, the food, the people, everything dealing with the host culture. It is in this stage that Oberg refers to the concept of "mental illness." This stage is also characterized by complaints about the host culture and blaming everything on them. This phase can last up to six months. If it lasts longer the person usually returns home.

As you gradually begin to adjust to the language and customs you move into the third phase. It is easier to understand the host culture although you may never fully accept it. This third phase is referred to as the adjustment phase.

The fourth phase is often referred to as "biculturalism." You feel completely comfortable in both the host culture and your own.

It is interesting to note that almost anyone who goes abroad will pass through the four phases of culture shock in one form or another. Some have a longer period of adjustment than others. You may pass through these phases, although it may be less severe, every time you encounter a new cultural experience. You do not become immune to culture shock.

Working at the English Language Center has given me an interest in the study of culture shock and its effects on students. We know very little about the effects of culture shock. The literature is largely descriptive and anecdotal (Warner, 1976).

In order to better look at the effects of culture shock, a culture shock questionnaire was prepared and administered to seventy-four
students in the English Language Center during January of 1981. The subjects ranged from a few weeks to one year in length of time here in the United States. There were eight language backgrounds represented: Finnish, French, Indonesian, Japanese, Kpelle, Spanish, Swedish and Serbo Croatian.

The questionnaire consisted of thirty-eight items dealing with six cultural areas: (1) language, (2) interpersonal relationships, (3) societal attitudes, (4) systems and processes, (5) sexuality, and (6) climate. The students rated on a five-point Likert scale (one being very hard and five being very easy) the difficulty of adjustment of the thirty-eight items. The items and cultural areas were obtained from Intercultural Communicating a resource book on intercultural communication. There were two open-ended items on the survey soliciting information from the students as to what they felt was the most difficult adjustment for them. Language use and pronunciation were listed most frequently as their most difficult adjustment. Also solicited was information as to advice that they would give to someone from their country who was preparing to come to the U.S. to study. No one piece of advice was repeated significantly. Not eating too much, studying hard, and not imposing your culture were a few of the items given. (See appendix A for a copy of the questionnaire.)

Results

The thirty-eight items were combined into six major areas and a t-test of independent means was calculated comparing the results by language group and by the length of time the students had been in the United States.

Table 1 shows the six areas as the students rated them with respect to difficulty of adjustment. (Language being the most difficult and systems and procedures being the least difficult.)

Table 1

Difficulty of Adjustment in Cultural Areas

|---------------------|----------------------|-----------------------|--------------------|---------------------------|--------------------------|

The two major language backgrounds represented were Japanese and Spanish. A t-test of independent means was calculated to determine if there was a statistically significant difference in adjustment of Japanese versus Spanish speaking students. Table 2 gives the results of the t-test.

Table 2

<table>
<thead>
<tr>
<th>Area</th>
<th>t-value</th>
<th>level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language</td>
<td>2.753</td>
<td>.01 level</td>
</tr>
<tr>
<td>2. Sexuality</td>
<td>2.359</td>
<td>.05 level</td>
</tr>
<tr>
<td>3. Societal Attitudes</td>
<td>.099</td>
<td>not significant</td>
</tr>
<tr>
<td>4. Climate</td>
<td>.966</td>
<td>not significant</td>
</tr>
<tr>
<td>5. Interpersonal Relations</td>
<td>.363</td>
<td>not significant</td>
</tr>
<tr>
<td>6. Systems and Procedures</td>
<td>.920</td>
<td>not significant</td>
</tr>
</tbody>
</table>

The areas of language and sexuality were statistically more difficult for the Japanese students to adjust to than the Spanish speaking students.

A second t-test was calculated to determine if there was a statistically significant difference between two groups divided by the amount of time spent here in the U.S. The subjects were placed into group 1 if they had been here three months or less and group 2 if they had been here four months or more. There were exactly fifty-three students that fell in each group. Table 3 shows the results of this t-test.

Table 3

<table>
<thead>
<tr>
<th>Area</th>
<th>t-value</th>
<th>level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language</td>
<td>.9391</td>
<td>not significant</td>
</tr>
<tr>
<td>2. Sexuality</td>
<td>.1859</td>
<td>not significant</td>
</tr>
<tr>
<td>3. Societal Attitudes</td>
<td>.6979</td>
<td>not significant</td>
</tr>
<tr>
<td>4. Climate</td>
<td>5.0821</td>
<td>.001 level</td>
</tr>
<tr>
<td>5. Interpersonal Relations</td>
<td>1.1943</td>
<td>.10 level</td>
</tr>
<tr>
<td>6. Systems and Procedures</td>
<td>.3434</td>
<td>not significant</td>
</tr>
</tbody>
</table>
The results of this particular survey suggest that the climate and interpersonal relations were areas more difficult to adjust to for the students who had been here three months or less.

Conclusion

Knowing where our students are in their cultural adjustment will help us to assist them in passing from one phase to another. Our goal as teachers should not be to eliminate culture shock for it can be beneficial to be culturally shaken up. Nor should it be our goal to get our students to phase four of biculturalism. Some foreign students get to a phase four then do not want to return to their own countries because they want to stay here in the U.S. Thus they defeat their purpose of learning English.

As teachers in a multicultural and multilanguage classroom we should be aware of the stages and symptoms of culture shock. Helping our students realize they will pass through these phases will help them in their adjusting situations. Students can learn things they can do to help themselves and their classmates pass through the phases.

Developing a cultural awareness in the minds of students and teachers is important. Ina Corinne Brown has stated what our purpose should be:

It does not matter how culturally diverse we are so long as we agree on certain basic values, one of which must be respect for one another's cultural differences. Our problem is how to live together, not how to become alike (Brown, 1963).
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Calhoun, Theodore Warner

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Herscovici Nurit

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1976 Language and Intercultural Research Center. Provo, Utah: Brigham Young University.

Oberg, Kalervo

Saville-Troike, Muriel

Seelye, Ned A.

Steele, Mark A.
## Appendix A

<table>
<thead>
<tr>
<th>Item</th>
<th>VERY HARD</th>
<th>HARD</th>
<th>AVERAGE</th>
<th>EASY</th>
<th>VERY EASY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learning what people like to talk about</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Knowing how to act toward police</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Learning what is offensive to people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. Understanding American art</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. Understanding American men</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. Understanding American women</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Knowing how to recognize approval or disapproval</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. Understanding when people talk fast</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. Understanding jokes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. Learning how close to stand when talking to another person</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Understanding how people in the U.S. feel about other nations or cultures</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Understanding attitudes about money and success</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Adjusting to the cold weather here</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. Understanding American adults</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. Understanding American students</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. Understanding American religions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. Understanding the pronunciation of Americans</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. Learning how to ask for a date</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. Knowing what to do on a date</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. Knowing how much things should cost</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. Learning how to greet people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. Learning how to use banks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. Ordering food at a restaurant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. Understanding American shopping plazas</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. Understanding old American women</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26. Understanding the American family</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Question</td>
<td>Very Hard</td>
<td>Hard</td>
<td>Average</td>
<td>Easy</td>
<td>Very Easy</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>-----------</td>
<td>------</td>
<td>---------</td>
<td>------</td>
<td>-----------</td>
</tr>
<tr>
<td>27. Understanding American movies</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28. Registering at the ELC</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29. Adjusting to American clothing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30. Understanding the educational system</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31. Understanding American names</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32. Competition in the schools</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33. Getting help when sick or in an emergency</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34. Getting others to understand my English</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35. Adjusting to American friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>36. Adjusting to American faces</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37. Understanding American history</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>38. Understanding American fathers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>39. What one thing did you have the most difficulty adjusting to?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

40. What would you tell someone from your own culture or country to help them prepare to come to this culture?

The statistical starkness of the U.S. decline of language learning is concluded by this quote (and it applies to all levels of language use):

> Language is a key to opening minds and attitudes. To speak, read, write, and understand another language is the beginning of understanding other people....[Yet] while it continues to be relatively easy to get appropriations for bombers and submarines and nuclear weapons, we move much less swiftly, if at all, on measures that contribute to real security—a world of adequate communications and cultural understanding which together could eliminate, or drastically reduce, the need for those...weapons. (Emphasis mine.)

A majority of US citizens are cited as believing a foreign language should be offered in elementary through secondary schools. The editor concludes, in Simon’s words, “The question is not one of national resources. The question is one of national will.”

Few seem to disagree with such a philosophy, but it continues to remain a philosophy for the most part. Why? Since the tragic language and cultural breakdown that catalyzed the holocaust of Hiroshima there have been ups and downs in language-learning emphasis. The "Cold War" focus of the 1960’s did some good. The Carter (President's) Commission on Foreign Language and International Studies seems to have done, so far, even less. What does the future hold, given the necessary security of which Rep. Simon writes? That security applies to personal as well as national levels.

It seems that, as ever, our theories far outdistance our capability to use them wisely. Language acquisition studies, methodologies, and new frontier explorations in human understanding have exceeded our ability to keep up. (A 1/4 million $ study done by this author and colleagues found that the entire amount of the contract could have been spent on xeroking available articles on language indicators of meaning! And that was in 1976 -- five years ago when we had so much less accessible to us! Remember, that was the copying, not the analyzing or use of the data.)

Rep. Simon wrote of language being only a key for opening minds and attitudes...as the beginning of understanding of other people. He gave more emphasis to adequate communications and cultural understanding. Could it be that our keys have been ineffectual, comparatively, for opening minds and attitudes because we have done less than we should in attaining or acquiring adequate communication and cultural understanding abilities -- as outcomes of our language learning designs, and thus have inhibited what we in reality should be enhancing?
Challenges of translators are also cited by Rep. Simon as integral to the dilemmas facing us in the U.S.A. We have translations and we have TRANSLATIONS. Adequate communications and cultural understanding seem to be the difference. Simon's examples are somewhat exotic but do give focus to his statements about our "learning languages" but sometimes not being able to communicate in critical situations.

Dr. James Bostain, Senior Scientific Linguist at the U.S. Foreign Service Institute wrote not long ago that,

Language is always accompanied by other signal systems, but the other signal systems are not always accompanied by language. In fact, most communication is non-linguistic. We need to be more conscious of the non-verbal signals we use among ourselves and of the fact that not all people use the same signals to indicate the same message. Because our education system is so language oriented, many people believe that language is the primary signal system; but, in fact, it is not.

If there is the combining of other signal systems with language to make communication more complete, what are these? What is their impact?

In last year's Deseret Language and Linguistic Society conference, this author presented a brief condensation of work being done on an "Intercultural Grammar" system to determine answers to questions posed above. It was found, by literature search, interviews, and some empirical explorations, that there are literally hundreds of "languages" or communicational signal systems. It is not our purpose here to review these. They are available for study. The point is that the impact of language learning for use, that is, for interaction with other people, may be more than we have felt it to be, and this is possibly one concern which "powers that be" might seek about language acquisition as being of significance. Disturbing? Possibly; but, in a challenging way. Questions can be useful if useful answers are sought.

Research activities during the past year have led some of us through a maze of theories as to why our "communication" may be less than it has been thought to be. People do communicate and do it well; they use language and do it well. Then why the disparities in what we seem to need and what we obtain support to achieve? Obviously there are many possible responses to such a query, particularly for "language."

One we have found to be of sufficient impact on studies of human interaction — which spirals out of language skill — is that of the rapidly developing science of "synergy" (or, "synergetics," "synergic power," etc.): sufficient in the degree that it gives new insights as to why human understanding and interaction have not received the attention they deserve in support of language acquisition and use.

Synergy as a concept — working together for mutually beneficial purposes in which the whole is more than the sum of the parts — has been around as long as language learning has. The result is, of course, mutually satisfactory language use. But, there are less than satisfactory circumstances, as when people are unnecessarily confused or offended because of inadequate or inappropriate "language," whether it is verbal, non-verbal, para-verbal, or combinations of these signal systems.
Meaningful research which explores combinations of signal systems is still uncorrelated. Where are the studies that give us some clues to situational language use that combines the verbal, non-verbal, and para-verbal signals as composites? Excellent work being done on language acquisition, translation skill development, non-verbal and para-verbal nuances, and even on sociolinguistic and psycholinguist aids still is isolated. Is that a major factor in determining why former Senator Fulbright would write, less than two years ago, that "Our linguistic and cultural myopia are losing us business, friends, and respect in the world"?6

This too-long prologue may have raised more questions than it has probingly sought to answer. It portrays some of the frustrations of molding research into solid systems that provide broad-based support to the development of useful cultural communication signal systems which include but are not exclusively "language."

Rep. Simon wrote of opening minds and attitudes. The recently developing scientific explorations into synergy and its overlapping disciplines (deontology, public relations, exchange of sense comprehension, etc.—numbering into the hundreds!) suggest considerations which have yet to have major application in language studies and use. Four must suffice here:

**Language Challenge**

1. How determine when our conveyed feelings actually "fit" with theirs, or when what we express is appropriately perceived -- and vice-versa? Is it not essential to understanding to know this?

2. To achieve understanding, through empathy, there is a definite need to deal ably with the differing beliefs, attitudes, and values. How identify those that are most critical, in order to bring about a synergy via acceptable language use? What are the significant "starting points"?

3. When can we be able to "mix" our realities, so as to be understood? (Cp. such quotients are "us" vs. "them," "acceptance," "good.")

4. If we want to convey certain meanings and anti-pathy occurs, what "language" must be used to assuage apprehensions, etc.?
These are but samples of philosophical propositions which need to be considered to build synergic relationships. Put in other ways:

1. When I think I am understood, am I misunderstood? How do I know?

2. When what I think is valued (by my or someone else's expression) is discounted, what do I next say -- particularly in a distinct cultural environment which requires appropriateness (as in greetings, apologies, etiquette, business rapport, etc.)?

3. If I accept what another says as my being accepted when in reality I am being judged, in what ways can I understand how to convey my apprehension when I find out the disparity?

4. If what I think is culturally acceptable is not so to others, and ignorance or politeness does not allow for full understanding of the dilemma possibly posed, how can I rectify the situation with essential "language"? (If, of course, change is desirable or needed.)

5. When I seem to be freely communicating with others and they feel I am somehow exploiting them, in what manner can I tailor my next expression to get "back on tract" -- if I can even determine this?

This can be shown graphically: (Craig, p. 54.5)

**FULL MODEL OF POWER TRANSACTION.**

The same model is applicable to both competitive and cooperative situations.

A study of this process, where synergic power is not intended to be either domination or permissiveness, demonstrates that "language" can be used "with" people, not "against or over" them. This also is seen in a WIN-WIN model, which conveys the idea that the communication process deals adequately with attitudes, values, beliefs, and behaviors of all concerned in a way that understanding, in its fullest sense, can be achieved and applied. (Craig's model is on p. 126.)
A practical example in acquiring "language" skill may help us investigate the synergic experience (or dysergic experience, if counterproductive).

Suppose I am taught to say "I do not understand" in the Tongan language. "'Oku 'ikai ke mahino kiate au." Adding the para-verbal, am I also taught how to say this without seeming overly frustrated (as if I am to respond politely to say, my teacher)? Or sarcastic? Or offended? Adding the non-verbal, do I shake my head for emphasis, or raise my eyebrows to give the necessary signal for quandry? Can I use this phrase when asked a question by a chief, or the king himself?

Without a helpful "map" to follow, my simple language expression can turn into diplomatic fiasco in some instances (albeit the Tongans are quite forgiving!) or an awkward embarrassment in others, (neither desired).

A synergic language experience would be WIN-WIN, where all of us in the process would have accurate thoughts and feelings transferred, building, in effect, a "bridge of understanding." That is one of the usual goals of language acquisition and use. It is not always achieved as we would like. Some of the "reasons" are lack of synergy; or, in other words confusion or offense. How then do we deal with this concern? The expansive number of situations, variations, nuances, circumstances, and dysnergies (when a lose-lose situation is in effect) are overwhelming.

Our study, in preparation of our Intercultural Ready Reference, yielded over 1200 potential "miscommunicators" in content, context, communication modes and codes, and cultural distinctions of possible messages. Yes... somewhat overwhelming. We asked, as far as we know, many of the "right questions" but often obtained ineffective answers. Citing from more than 200 current "best sellers" in education, research, and popular use, we found over a thousand examples, from more than 100 countries or cultures, demonstrating what has been only sporadically treated above.
These challenges can be accepted as "straw-persons" or as real and solvable problems. In response to Rep. Simon, Sen. Fulbright, and others' statements, there is likely good purpose is seeking solutions rather than being overly myopic culturally and linguistically.

What then is to be done? Continuing with standard language acquisition and communication and interaction skills (such as interpersonal public relations or media development) is essential. Going beyond this, we recommend searching out new language-based, communication-oriented, and human-understanding focused studies of all essential related disciplines.

At our research center, we are now processing responses to an INTERACTION DIRECTORY which has as a goal the consolidation of as many as possible of the "best ideas" of others who are in the "international and intercultural" fields — all of which in some ways require excellence in language use. We have selected about 2500 from more than 30,000 current associations, societies, interest groups, and other institutions which interact with distinct peoples of our world. These are a "starter" for studying, learning, and becoming acquainted with "all good books, and with languages, tongues, and people." (D&C 90:15.) We look for synergic developments to occur. None of the disciplines has a corner on "language."

Recent conferences, such as of the International Communication Association; the Society for Intercultural Education, Training, and Research; the Society for Cross-Cultural Research; the Linguistic Society of America; the American Translators Association — have yielded some helpful insights as to how language and culture, people and people, systems and approaches, disciplines and practice can work together to solve miscommunications.

A review of current data banks (DIALOG, SRI, BRS, etc.) indicates a very broad new look at language, communication, understanding, and other synergic interactions. These are "bench-marks" only, as so much yet needs to be searched and researched for practical use throughout the world, to achieve the cultural understanding cited by Rep. Simon.

Another encouraging field of investigation is growing out of missionary and related religious research. It is the basis for the author's personal development of what is now called "SYNERGIC ANALOG" solutions to many of the quandries raised in this paper. There is not necessarily anything new being discovered, only potentially more focused applications.

A survey of missiological literature shows considerable work being done on solving others' problems while solving "ours." That is, there is more being investigated as to predispositions, expectations, environmental and contextual life-styles, circumstances, and attitude-sets today than ever before, in relation to communicability of messages.

A synthesis of these approaches are what I call "SYNERGIC ANALOGUES." Simply stated, they are realistic, yet-to-experience (rather than only an anthropological or linguistic review) oriented keys to understanding. An illustration:

Suppose we want to communicate the idea of "peace" in the sense of not only the absence of war but the ideal working together of peoples. How can this be understood in Ireland (English!), or Korea (Korean) or El Salvador (Spanish) by varying factions? Synergic analogues are "starting points" common to both (or all involved) parties in the conflict. Rather than speaking of differences, similarities are used as the base for understanding.
In any dysergic (non-productive or negative) interaction, there is someone in a no-win situation. Synergic analogues seek out, present, and give a communication or interaction process-base for overcoming the dysergies, in a full win-win situation. It may seem unlikely that language or communication can do much in war situations, national or interpersonal. One of the basic problems, studied in synergy approaches to missionary work, better business, peace attempts, and the like is that, as Roger Fisher has so aptly stated, "We do not attempt to solve their problems while solving ours." His illustrations of the Iranian crises point out the normal reluctance to strive to use language which is non-confrontive or communication which is more than one-sided (which I call "unication"). Again, attitudes may be getting in the way.

As Robert T. Oliver long ago suggested,

If we would communicate across cultural barriers, we must learn what to say and how to say it in terms of the expectations and predispositions of those with whom we want to communicate.

When we get a "match" of expectations and predispositions, we get a synergic analogue. Such statements as, "Oh, now I see, and agree," "Why didn't you say that in the first place," "I can buy that," and "I'm sure we can work it out," exemplify the possible occurrence of "things or ideas that can work together" -- or, synergic analogues.

Without attempting to go into more detail for the present, it should suffice to say that there are not found to be many problems which cannot be overcome where there are mutually beneficial rewards acceptable to those involved. This is substantially so in conversations, negotiations, interpersonal experiences, or even in other-language literature which is appreciated. Such are synergic analogues, and attitudes.

The proposal is that further investigation into what "really works best" may be far more productive than what myriad dilemmas cannot be breeched because of complexities. Synergic analogues are potentially quite helpful "maps" from which we can start our intercultural grammar explorations — where we learn to say and do and feel as we and they can best understand and interact in new language/culture situations.

Those who might want a religious look into such possibilities are referred to Don Richardson's new text (due out in May) "Eternity in Their Hearts." His demonstration of synergic analogues is of great importance, from my vantage point, in seeking to resolve some of the "language" problems which now face us. It is a catalytic text. Others like it have been cited above -- and appear in bibliographies of the authors referred to.

There are increasing numbers of frontier thinkers who deal with some form of synergic analogues in most of the disciplines we are now investigating. Each has something to contribute, to provoke or evoke.

Models appearing now in print (such as the two cited before) are beginning to give meaning to some of the forces which "languages" have not yet adequately inculcated into their learning-processes. Why? Time will tell. It could be that we have been too narrowly focused in our own disciplines to bring about synergy with others to whom we can offer much in return. Our "maps" or "keys" for understanding can be significantly contributory to theirs. Synergic principles can count.
As a classic example of how language, culture, communication, context, and content merge, and for your broad-based literary appetite, I can recommend Don Richardson's *Peace Child*. A more academic but inclusive necessary-reading is Edward T. Hall's *Beyond Culture* -- which I feel is "must reading" for anyone serious about appropriate language and culture education, training, research, and day-to-day use.

And I commend any who would like, to explore with us new applications of synergic analogues, in our contacts, resource texts, and newly developing theories. As the song says, "We've only just begun."

This has been but a cursory glance at a potentially highly impactful interaction process which involves language in the most basic and profound manners. It presupposes that the "foreign" can become "familiar" and that people can synergetically bring about what they mutually desire. Is not that, after all, one of the significant purposes for language, linguistics, and related people-oriented work and living and play in which we are all engaged? Then.....? (A series of working hypotheses upon which this brief paper is based is available from the author.)

References


3Deseret Language and Linguistics Proceedings, 1980. (See also 1978 and 1979 proceedings for related references.)


7See 4 above.

8See references in 4 above, and models in the appendix.

9*TODAY'S MISSION*. Premiere Issue. P.O. Box 675, Carpinteria, Calif. 93013. See articles by and about Don and Carol Richardson; books.


12 Cited from Intercultural Ready Reference. See above. Refer to section on Significant Quotes for contextual aids. This is from his text, Culture and Communication, which proposes many rhetorics.


15 Two books being reviewed at the time of preparation of this paper give significant impetus to ideas presented herein. The first is Mary Ritchie Key's The Relationship of Verbal and Nonverbal Communication. Mouton Pub., 1980. (In the Contributions to the Sociology of Language series ed. by Joshua A. Vishman. No. 25.) The other, by Ashley Montagu and Floyd Matson, is The Human Connection. New York. McGraw-Hill, 1979. Both of these are academic yet in the popular reading genre. They deserve critical scrutiny. As samples of a number of excellent texts now appearing, they will be added to the Resources section of our Intercultural Ready Reference. This will be edited for public sharing within a year.

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The greatest ally of understanding is the reality of understanding.

The greatest enemy of successful language use is its own illusion.

Synergy is most often serendipitous.

If for every complex challenge there are many simple solutions -- and they are invariably somehow wrong, then it may be wise to seek complex simplicities.
The Concordant Principle of Translation
and the New German Book of Mormon

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In the announcement of the new translation of the Book of Mormon in the Stern (September 1980), we find the following statement of the translation department:

The translator has tried very hard to render theological and doctrinal expressions consistently (konsequent), for example, not using Buße tun, bereuen and bekehren more or less arbitrarily when English in each instance has the word repent. In section 43 of the Doctrine and Covenants, the word appoint appears five times in six verses (2-7). The translation currently in use—certainly in adherence to the literary requirements of our century—has five different and therefore confusing words (berufen, verordnen, betrauen, bestimmen and auserkiesen), even though the first translation of 1876 has the word berufen in all five instances.

I construe this to be a declaration of adherence to what has been called elsewhere the "concordant" principle of translation. I would first like to explore this notion briefly and then exemplify it with examples from the 1980 translation of the Book of Mormon into German. The advent of concordances of the Bible (at first by hand and nowadays by computer) has permitted the location of all the occurrences of a given word in the biblical text and thus the careful study of its meaning in various contexts. The advantages of such concordances are of course considerably enhanced if they are exhaustive, reliable and readable. Translators of the Bible also find them a very useful tool for insuring the consistency of a translation.

The concordant method of Bible translation was pioneered over a period of fifty years by A. E. Knoch and resulted in the publication of the Concordant Literal New Testament (1944). He and his adherents also produced a German version entitled Konkordantes Neues Testament (n.d.), which includes a very useful Stichwort-Konkordanz arranged according to the "standard, exclusive" rendering in German with its Greek counterpart and it includes a notation at the end of the entry showing how often Luther used a given word to translate the Greek word. For example: Greek ἄρχων is translated by Luther 16 times as Markt and 11 times as Flecken, but it is concordantly translated by the word Dorf in the German Concordant New Testament. May we note in passing that the King James translation has village 17 times and town 11 times. It is evident from the material cited that neither Luther nor the translators of the King James version felt constrained to follow the concordant principle of translation.

Knoch and his group expanded the notion of concord between the source
language and the target language to include elements of Greek grammar and vocabulary derivation. It is clear that such a method would produce a consistent, uniform, literal translation, but at the same time, formulations in the target language might be difficult to understand. Wilhelm Michaelis in his Übersetzungen, Konkordanzen und konkordante Übersetzungen des Neuen Testaments (Basel 1948) discusses the concordant rendering of the Hebrew Old Testament into Greek by Aquila. Michaelis admits that it might be a useful tool for someone who was able to compare it with the Hebrew original but that in many instances it was incomprehensible to the Greek reader (p. 199). Literal translations have also been made, for example, Piscator (1679) and Junckherrott (1732). Michaelis feels that no subsequent translation has quite had the same degree of literalness as Aquila's. We must conclude, however, that a concordant translation jeopardizes intelligibility. Michaelis also puts his finger on the faulty underlying assumption of the concordant method, namely, that every word in the source language can and must have only one counterpart in the target language. Unsophisticated computer translation programs are, of course, based on this principle. Even the most linguistically naive must admit that every language has many words that have multiple meanings. In the extreme case, of course, this is true for every word in every language. In an ideal concordant translation, every meaning of every word in the source language would correspond consistently to a separate, distinct word in the target language, a circumstance which rarely if ever exists, even among speakers of the same language. Stated a little differently: Words for "the same thing" in two languages are not "equal to each other" unless basic meanings and connotations both correspond—and they hardly ever do.

Let us now turn to an example from the German translation of the Book of Mormon in order to see how well the meanings of English and German match up. A footnote in the publication announcement presents a justification for using Umkehr in place of the more traditional Buße as a translation for the English repentance.

In contradistinction to Luther's time, the word Buße nowadays means primarily 'an imposed burden or penalty, a type of punishment.' This meaning is not at all present in English repentance which rather signifies 'a turning away from (Abkehr) one's present evil way of life and a return (Rückkehr) to a better one.' In the case of the word Umkehr, we do not think of the penance imposed by a priest or minister for sins committed nor of a financial penalty or a catalog of fines for punishable offences, but we do think of the necessary change of attitude which is consonant with the second principle of the gospel of Jesus Christ.

An examination of the meanings of repentance in English dictionaries and our own intuition tell us that one part of the explanation is incorrect. English repentance does imply a turning away from sin out of penitence for past wrongdoings or an abandoning of sinful purposes. It does not imply a return to a better way of life but rather the amending of one's life.
For the meaning of the German words Buße and Umkehr, let us turn to some modern German lexical works. Of seven recent German dictionaries, only one (Mackensen, Deutsches Wörterbuch, 1977) lists the penance-or fine-definition first: Strafe 'punishment, penalty, fine,' Schadenersatz 'compensation.' Pekrun (Das deutsche Wort, 1966) lists the following sequence of definitions: Besserung 'amendment, reformation,' Strafe 'punishment,' Vergeltung 'repayment,' sittliche Bekehrung 'moral conversion.' The other five list the religious meaning first - although not always entirely separate from the meaning of penance - and the meaning of punishment or penalty is listed last, sometimes with the notation that this meaning occurs in Swiss legal German. The word Umkehr (from umkehren) does not have the moral religious meaning listed at all in three of the six dictionaries (Pekrun, Schüler-Duden 1970, Der Sprach-Brockhaus 1972). For instance, Der Sprach-Brockhaus lists: die Umkehr 'Wendung zurück' (a turning back), 'Beginn des Rückwegs' (the beginning of the way back). Even though recent dictionaries are sometimes not as up-to-date and accurate as one would like, the examination of these dictionaries, at the very least, shows that the basic meaning of Buße is 'repentance' with a somewhat archaic religious connotation and not 'penalty or fine' as suggested in the footnote of the announcement. I believe that the word repentance also has an archaic, religious flavor about it and matches up favorably with the meaning of Buße. Our examination has also shown that the basic meaning of Umkehr is 'a turning back, a return' and not a 'moral conversion.'

Another piece of evidence concerning the basic meaning of these two words can be gleaned from the number of compound words formed with each portion of the meaning. I found 18 compounds of Buße associated with the meaning 'repentance' (bußfertig 'penitent', unbußfertig 'impenitent,' etc.) but only six associated with the meaning of 'penalty or fine' (Bußgeld 'executory damages,' bußfällig 'punishable (offence),' etc.). On the other hand, the word Umkehr has 20 compounds associated with 'reversal, inverting, inverse' (Umkehrfilm 'reversal film,' Umkehrfunktion 'inverse function,' etc.) and not a single one associated with the meaning 'repentance.'

Let us now turn to another source of information about the rendering of religious concepts in German. In order to understand the validity of this source, we must look briefly at the language of the English Book of Mormon. It is very much indebted to the style of the King James Bible, not only because it contains several chapters of Isaiah and Matthew as well as numerous other scriptural passages, but because its entire fabric is woven from expressions and images reminiscent of the authorized version: mine everlasting covenant, lifted up at the last day, save it be that..., in the gall of bitterness, cry unto the Lord, a broken heart and a contrite spirit, in sackcloth and ashes, cut off from the presence of the Lord, a great stumbling block, the only Begotten of the Father, the land of promise, a chosen people, etc. These stylistic similarities provide us with a source of comparable expressions from biblical German that could be used in a German translation of the Book of Mormon, that is, the renderings of biblical phrases in German translations of the Bible can provide authentic traditional formulations of phrases and images for inclusion in the German Book of Mormon. We turn now to an examination of German translations of the Greek μετανοεῖτε in recent translations of the New Testament in Acts 2:38. They are listed
in order of frequency with a very literal translation opposite.

1. tut Buße  1. do, make improvement, betterment
2. bekehrt euch  2. beturn yourselves
3. kehrt um  3. turn back, turn around
4. ändert euch  4. change, alter yourselves
5. bereut  5. rue, regret
6. stellt euch um  6. change yourselves around
7. ändert euren Sinn  7. change your thinking
8. ihr müßt anders werden  8. you must become different
9. sinnet um  9. think through (it)
10. stellt euch innerlich um  10. rearrange yourselves inwardly
11. ihr müßt völlig neu anfangen  11. you must begin completely anew
12. ihr müßt notwendig euren vorigen Grundsätzen und Sitten Abschied geben  12. you must necessarily say goodbye to your previous principles and morals

In my opinion, the only translation which sounds a little strange is sinnet um, which seems quite obviously an attempt to imitate the formation of the Greek μετὰ 'with, after, behind' plus νοεῖν 'perceive, understand, consider, think, imagine.' It is used only in the German Concordant New Testament where it has a literal gloss in parantheses (nachher-denken) in the concordance. I was unable to find the verb umsinnen in any modern dictionary, including Grimm's. It did appear in two older works; however, Adelung (1801) notes that it is used only as a regional variant of herumsinnen and Campe (1811) gives the following definition and example: umhersinnen, hin und her sinnen, um das Rechte oder etwas Befriedegendes zu ersinnen, auszusinnen: Ich habe recht Tange umgesonnen, jedoch vergeblich. None of this is part of what is necessary for the meaning in Acts 2:38. It seems to have been newly coined for use in the concordant translation with a meaning something like 'think differently, or change your thinking.' The English concordant translation, by the way, has repent and not one of the more modern colloquial equivalents such as change your views, turn from sin, amend your lives, let your hearts be changed.

The two translations of the New Testament which I believe are the model for the use of Umkehr and umkehren in the German translation of the Book of Mormon show some inconsistency and uneasiness about using them in other types of constructions, for instance in Matthew 11:21 they would have repented in sackcloth and ashes. The Einheitsübersetzung uses Bußetun (man hätte dort in Sack und Asche Buße getan) even though it has umkehren in Acts 2:38. Wilckens translation has sich bekehren (längst hätten sie sich in Sack und Asche bekehrt)
The compound adjectives Bußfertig and unBußfertig are retained in the new translation because there are no acceptable alternatives with umkehren. The word Buße is used in one verse where the word repentance can be construed to have the additional meaning of 'penance or punishment': Mosiah 23:9 dies verursachte mir schwere Buße (English: which caused me sore repentance; older German translation: was ich sehr bereuen mußte). However, another verse with the phrase sore repentance was translated unconcordantly in Alma 27:23 weil ihnen ihre Umkehr schwer zu schaffen machte (English: because of their sore repentance; older German translation wegen ihrer aufrichtigen Buße). The verb abkehren is used to translate repent in 3 Nephi 15:22 and Ether 15:3, probably as the result of an oversight after the decision had been made to use umkehren plus von, even though other translations of the New Testament sacrificed consistency and used less confusing constructions with abkehren or sich bekehren. The problematical construction in the perfect tense with the auxiliary sein is used in 3 Nephi 7:25 (daß sie umgekehrt waren), relying on the context to reinforce the meaning 'they had repented' instead of the more likely reading 'that they turned back.' These minor deviations from a concordant translation (retention of Bußfertig and unBußfertig, the substitution of abkehren, use of a problematical construction umgekehrt waren) are really of little consequence compared to the innovation resorted to when the basic meaning of umkehren 'return, turn back' collides with the secondary meaning 'repent' as in 3 Nephi 18:32 but what they will return and repent (and come unto me). The older translation of the Book of Mormon has vielleicht werden sie umkehren, Buße tun (...und sich zu mir wenden). The new translation could not use umkehren for both (ob sie nicht umkehren und umkehren), which would not make any sense at all, neither could it merely substitute something else for the basic meaning (ob sie nicht zurückkommen und umkehren) which could be understood to mean 'they will come back and return.' In place of these unacceptable translations, it uses the following innovation: ob sie nicht zurückkommen und Umkehr Üben (und... zu mir kommen). So far, I have not been able to locate this substitute for umkehren 'repent' in any dictionary, but I believe I can show some additional reasons for its creation besides the necessity to avoid the basic meaning of umkehren and reinforce the weaker
meaning 'repent.' In my opinion, it is based on the following: 1) similar constructions already present in German (Geduld, Barmherzigkeit üben 'exhibit, show or practice patience, mercy/Rache üben 'take revenge'), 2) combinations of a noun plus an auxiliary almost void of lexical meaning (Opfer bringen 'to sacrifice,' Hilfe leisten 'to help' as well as the rejected Buße tun 'to repent'), 3) the word for 'penance, penitential good works' (BuB-übung(en), 4) the insight gained from translating verses such as Alma 26:22 he that repenteth and exerciseth faith. If one can exercise faith, then of course one ought to be able to exercise or show repentance. The innovation (Umkehr üben) is used at least a dozen times. In Helaman 13:33, likewise, it is used to avoid o daß ich nur umgekehrt wäre, which leans heavily toward 'if I had only turned back' instead of the intended 'o that I had repented' (o daß ich Umkehr geübt...hätte).

A second type of problem for the concordant translation of the Book of Mormon arises from the fact that expressions in the King James Bible were not translated concordantly from Greek into English. The Greek adjective αἰώνιος is translated as eternal (life) 29 times and as everlasting (life) 13 times: John 3:15 eternal life, John 3:16 everlasting life (both from the Greek αἰώνιος αἰώνιον), Luther and most other German translators use ewig in both of these verses and elsewhere. The translator of the Book of Mormon is now faced with the decision of following the English and choosing a standard exclusive equivalent for everlasting and eternal or of following the traditional German biblical rendering of ewig for both. The concordant rendering of English everlasting as German immerwährend and English eternal as German ewig is the result. This decision ignores virtually all German biblical tradition. Its ramifications are far reaching. For English everlasting Father, everlasting covenant, everlasting life, everlasting joy, everlasting inheritance, everlasting gospel, everlasting hills, everlasting punishment, and everlasting destruction we now have immerwährender Vater, immerwährender Bund, immerwährendes Leben, immerwährende Freude, immerwährendes Erbe, immerwährendes Evangelium, immerwährende Hügel, immerwährende Strafe, and immerwährendes Verderben, even though the vast majority of German bible translators have ewig in each of these expressions. We were spared the impossible - von immerwährend zu immerwährend as a translation of from everlasting to everlasting. Instead, the unconcordant translation von Unendlichkeit zu Unendlichkeit 'from infinity to infinity' was substituted (Moroni 7:22). Though some bible translators did occasionally translate untraditionally (Glück, das nie endet for ewige Freude and die auf unabhänige Zeit dauernden Hügel for die ewigen Hügel), not one used the adjective immerwährend. I do not believe that we should require German readers of the Book of Mormon to abandon 500 years of biblical tradition for the sake of a concordant translation based on English, especially since references in the Book of Mormon will refer them to verses in a Bible which will have these traditional formulations: Immerwährender Vater (2 Nephi 19:6)/Vater in Ewigkeit, Ewigvater (Isaiah 9:5), meinen immerwährenden Bund (D & C 1:15)/meinen ewigen Bund (Isaiah 24:5), immerwährende Freude (2 Nephi 8:11)/ewige Freude (Isaiah 35:10), als immerwährendes Erbteil (D & C 57:5)/das... ewige Erbe (Hab 9:15), mein immerwährendes Evangelium (D & C 27:5)/ein ewiges Evangelium (Rev 14:6).
I have tried to show the following:

1) that the Luther and King James versions of the Bible are not translated concordantly,

2) that the basic meaning of German Buße is 'repentance' and not 'penalty or fine,'

3) that the meanings of German Buße, Buße tun match the meanings of English repent, repentance better than German Umkehr, umkehren,

4) that there is not a standard exclusive equivalent for 'repent' in the German translation of the Book of Mormon,

5) that the concordant principle forces the creation of awkward and difficult constructions (Umkehr üben),

6) that the concordant principle inevitably encounters problems and cannot be adhered to strictly without impairing intelligibility,

7) that the recent translation of the Book of Mormon into German suffers to the extent that it ignores German biblical tradition and relies on a concordant translation from the English.
"Instant Asia" is the catch phrase which the Singapore Tourist Promotion Board uses to entice tourists to visit Singapore. The Board is able to use this phrase because among the two and one-third million people who live in the island city-state of Singapore are large numbers of people representing the Chinese, the Malay-Indonesian, and the Indian races and cultures of Asia. Approximately 76% of Singapore's population is Chinese, 15% is Malay, 7% is Indian and 2% represents other races and cultures. (Richardson 1978: 31) Such cultural diversity offers the western tourist the opportunity for exotic experiences, but it also presents serious challenges to a government trying to achieve political unity amid that linguistic, racial, ethnic, cultural, and religious diversity. Language policy is probably the single most important aspect of the effort by the Singapore government to modernize the country, to unify the people, and to establish some kind of national (Singaporean) identity, as opposed to identity as a Chinese, a Malay, or an Indian.

Language planning is a very complex process, stretching far beyond merely linguistic matters. Governments which establish language policies must consider the relevance of economic variables and interests... the relevance of social variables and interests (for example, the attitudes towards language and towards users of a language and the motivational links that relate sociolinguistic systems to other social phenomena...); the relevance of political variables (such as the expression of vested interests through problems of language); and the relevance of demographic and psychological variables.) (Rubin 1971:xvi)

Historically the role of the government in the United States in dealing with language policy has not been a significant one; however, in the past few years Congressional action and Supreme Court decisions dealing with language have concerned many. Some fear that policies are being established that threaten the melting pot theory in our country's development or that some decisions concerning bilingualism threaten to foster a separatist mentality among our citizens. In contrast to our experience, in third world countries, language policies are often among the most important that a government must deal with.

Despite the complexity of the linguistic situation in Singapore and the economic, social, and other variables present in language use in the country, the government has been remarkably successful in establishing and carrying out a firm national policy of bi-lingualism. Each Singaporean is strongly urged to learn English in addition to his native language.
Actually the language situation in Singapore is more complex than the above analysis of the population indicates. Of the 76% of the people who speak Chinese, very few speak Mandarin Chinese as their native language. Several dialects are spoken by the Chinese—Hokkien, Cantonese, and Teochew being the three most used dialects. The Indians mostly speak Tamil—a Dravidian language spoken in Southern India. But there are also significant numbers of Hindi and Punjabi speakers. All the Malays and Indonesians share in common the Malay language; the remaining 2% are mostly English speakers from the United Kingdom, America, Australia, and New Zealand. In effect then, the government's bilingual policy means that the Chinese must become at least tri-lingual, because the bilingual combinations the Government approves are Mandarin-English, Malay-English, and Tamil-English. Most Chinese learn one of the dialects at home (often picking up Malay and other dialects with their friends), and study Mandarin and English as second languages in the schools. All Singaporeans are encouraged to learn English. As one Singaporean educator has noted:

... English is promoted for its utilitarian functions and for its role in the development of a supra-ethnic Singapore identity, the ethnic languages are encouraged for cultural foundation and for the retention of traditional values. Here we find a dilemma between modern progressiveness and traditional values, between supra-ethnic identity and ethnic-cultural rooting... between instrumental association and sentimental commitment—all entangled in the language issue. (Kuo 1977:27)

The reasons for the choice of English as the dominant language are partly historical. Singapore was a British colony from 1819 when Raffles claimed it for the British crown until 1959 when it gained its independence as a part of Malaysia. Political and racial differences allowed the island to remain a part of Malaysia only until 1965, when it became an independent republic. For obvious reasons, during colonial times English was the dominant and prestigious language. When independence was achieved, The Republic of Singapore Independence Act of 1965 provided that "Malay, Mandarin, Tamil, and English shall be the four official languages in Singapore." (Malay, as a matter of political expediency, was established as the national language.)

In effect government policies attempt to create a multi-racial, multi-cultural society which is essentially an English language state with Chinese (Mandarin), Malay, and Tamil used to preserve the traditional cultures. The Prime Minister of Singapore, Lee Kuan Yew, has often emphasized the political, economic and social reasons for making English the language of government and commerce in the country. "We keep the English language for purposes of modern-day life. It provides continuity of administration, law, the sciences and technology, the way of the future." (Josey, 1976:313) In practice, since Singapore gained its independence, English has become the dominant language in the country. It is the language of the government bureaucracy; it is the language of the courts; it is the language of finance and trade; and socially it is the most prestigious language in the country.

The government, which is a freely elected government, has defended its decision to make English the dominant language in an Asian, mostly Chinese,
country primarily on the grounds that use of the English language will enable this small nation more rapidly and effectively to become modernized. Singapore has achieved wonders in commerce and industry in the past two decades. With an honest, pragmatic, somewhat authoritarian government leading the way in working with industry, labor, economists, financiers, and others it has developed the fourth largest port in the world, established a position as a major financial and banking center in Asia, earned a reputation as having a disciplined, productive labor force, and achieved the second highest standard of living (second to Japan only) in Asia. The city of Singapore is a clean, modern city. There are no slums; 65% of the population live in public housing built in the last fifteen years.

The streets are swept and the garbage is collected each day. A high standard of sanitation and hygiene is maintained. Pure water flows from the taps of the city and it is possible for tourists to eat not only in the restaurants in the big tourist hotels (which dot the landscape of the island) but also at the many hawker stalls which are everywhere throughout the city. Medical care in the city ranks with the best in Europe and America. The public housing estates and the family planning programs sponsored by the government have often been cited as models by the United Nations and envied by other third world countries. (Indeed, Singapore has been so successful in its modernization program that numerous international organizations no longer consider it as a "developing" but as a "developed" nation.) The Prime Minister attributes much of the success in Singapore's modernization to the people's ability to use English:

> English has provided a neutral instrument all racial and dialect groups can learn to use with no unfair bias. English has given us direct access to the knowledge and technology of the industrialized West. Without the continued use of English, Singapore would not have secured a new base for her economy, and brought up to date her role in the international and regional economy. ("Lee on Urgent..." 1977:14)

Although Singapore had been phenomenally successful in achieving modernization, its progress toward achieving national unity has been more difficult. Language can be an emotional issue. A person's language is a significant aspect of his culture. With 75% of the population being Chinese with a deep commitment to the Chinese language and Chinese culture, the government recognized the problems inherent in proposing that English, a Western language and the native language of only 2% of the population, become the dominant language of the country. "If you make the Chinese feel that the Chinese language and culture will disappear, or worse, that the Government is suppressing it, there will be an explosion," the Prime Minister accurately noted in a speech in the early 1970's. (The Best of Times 1980:36)

In its efforts to persuade its citizens that English should be learned by all, government spokesmen have stressed that the motivation was instrumental—that for the individual, English was the language of good jobs; that for the nation the language provided access to the knowledge of science and technology and a higher standard of living. Citizens were urged to become effectively bilingual. However, much patience has been exercised in encouraging citizens to learn English. The government persuaded the governing board of the only Chinese university in Southeast Asia, Nanyang University, to switch to English over a ten year period. Parents enrolled
their children in English medium schools only as they were convinced that it would be to their advantage to do so. However, the language policy has been divisive in the short run.

The "English educated" and the "Chinese educated" separated into two groups. Stereotypes of the two groups grew in the country. Government leaders in public speeches often referred to these two groups; they were frequently mentioned in the mass media. One writer noted that

The difference is so great that the English-educated are believed to possess different personality characteristics from the Chinese-educated. . . . With the English language playing a dominant role in Singapore, it is common concern among parents with Chinese educational background that the Chinese educated are being assimilated or "corrupted." Typical comments from them—which may or may not be valid—regarding the English-educated are that they are naive, proud, selfish, immature, and unstable, with no respect for parents and elders.

The stereotype in fact is so well accepted by the Chinese-educated community that being English-educated has come to mean being out-going, care-free, fun-seeking, irresponsible and even hedonistic. In contrast, being Chinese-educated implies shy, introvert, withdrawn, but 'diligent, hardworking, and mature personality. (Kuo 1977:26)

Again and again in my association with the Chinese-educated students at Nanyang University in Singapore, I heard them describe their English-educated brothers and sisters and friends in terms of this stereotype.

In the long run, however, it is anticipated that the English language will be a unifying force. The "neutral" English language provides a way for the people to identify themselves not as Chinese, Malay, or Indian, but as Singaporean. The statistics reporting enrollment in schools seem to promise that the role of English in building a national identity will be significant. In 1968, 45.3% of the Chinese students enrolling in the elementary schools of Singapore enrolled in Chinese language schools, with 54.7% enrolling in English medium schools. ("Lee: Aspiring. . . ." 1977:6) In 1980 only 17% of the Chinese students entering elementary school enrolled in Chinese language schools; 83% enrolled in English language schools. (Ho 1981) During the 1960's Malay students shifted from 50% in Malay language schools and 50% in English schools to almost 100% in English medium schools. Indian students have traditionally enrolled in English schools. Two studies conducted during the 1970's reveal that English speakers tend to think of themselves more as Singaporeans and less as Chinese, Malays, and Indians than do students who had been educated in their native languages. (Llamzon 1977:37)

Also a Singapore dialect of English seems to be developing. The former Singapore Representative to the United Nations once commented,

The litmus test . . . is when one is abroad, in a bus or train or aeroplane and when one overhears someone speaking, one can immediately say this is someone from Malaysia or Singapore. And I should hope
that when I'm speaking abroad my countrymen will have no problem recognizing that I am a Singaporean. (Tongue 1974:7-8)

The Singapore-Malaysia "dialect" of English was described in a small book published in 1974 entitled The English of Singapore and Malaysia by R. K. Tongue. Singaporeans often feel self-conscious about their use of English, but it is conceivable that such English could be accepted as the standard in somewhat the same way that a Filipino standard of English seems to be emerging in the Phillipines.

If the government's goals are realized, not only will most Singaporeans share in common the English language, but they will take pride in sharing a particular (accepted) dialect of that language. Mr. Lee Kuan Yew voiced this hope when he predicted "gradually we shall have a population which will react instantaneously, laugh, and cry and be angry together at the same time. We will share a common language--nearly." (Richardson 1978:32)

Perhaps the most challenging aspect of the impact of language policy on Singapore life is its impact on the cultures of the people. What kind of person will this bilingual Singaporean be? As suggested above, Singaporeans have been keenly aware of the dangers of importing Western values and lifestyles along with the language. Hippyism, the drug culture, violence, western attitudes toward sex, permissiveness, and materialism have constantly been inveighed against by government leaders. Speeches lauding the "Ideal Singaporean" and decrying the "Phoney Singaporean" periodically make the headlines in both the Chinese and English language papers in Singapore.

A German scholar, in the year Singapore became an independent republic, forcefully pointed out the danger.

The main result of English education--if it is not coupled with a fairly thorough Chinese education at home or elsewhere--is the uprooting of the Chinese humanistic tradition. The English education--even if it lasts for thirteen years--usually remains superficial. . . . Spiritually these Chinese are adrift on the waves of material comfort without having any fixed cultural or moral standards. . . . Physically and emotionally they are Chinese; but culturally and spiritually they are neither Chinese nor English nor Malay. They do not know themselves what they are. (Quoted by Kuo 1977:25)

Government officials, particularly the Prime Minister, have been very much aware of this danger of deculturization. On one occasion, after reaffirming the need for English as the language of modernization in order to gain material things, Mr. Lee noted that there is

The other part of man, his culture, his values, his accumulation of wisdom in cultivated living over hundreds and thousands of years. It was embodied in folklore, in proverbs, in aphorisms, in literature. "And if you yank a man out of his cultural milieu, and you are unable to get him to take root in a completely different milieu, then he is lost betwixt and between." Lee said he had seen the products of deculturised people: they were
enervated. They lost their drive, their thrust, their confidence.
(Josey 1976:313-314)

With this danger in mind, the government's policy has followed an old Chinese saying:

Chinese learning as foundation.
Western learning for use.

Policy has strongly stressed the need to be bilingual with a thorough knowledge of the native language: "We want to give our children the best combination of languages for their future--Chinese, or mother tongue, for their ethics, values on work, and discipline in an orderly society, and English for access to new knowledge for jobs," stated the Prime Minister. (The Best of Times 1980:29)

By enacting stern laws against drug sale or use; establishing heavy penalties for ownership or use of guns; publishing edicts that people with long hair or grubby clothes will be considered last for jobs, waited on last in all public offices; and by carefully monitoring the material appearing in the mass media, many negative western influences have been minimized in Singapore. But keeping such things out of the society is perhaps an easier task than maintaining the traditional values represented by the home languages of the people or creating a new Singaporean identity. With a tremendous scientific, technological, commercial revolution going on in the country, many of the traditional patterns of culture and religion are being abandoned by the younger, English-learning Chinese, Malays and Indians. Whether it will be possible for the older values of hard work, respect for elders, discipline, and so forth, to be retained is a question that will be answered only as the youth of the country mature and assume positions of power and influence in Singapore society. The character of the "new" Singaporean can not yet be predicted with confidence.

It should perhaps be noted here in concluding that language policies have, for the most part, been formulated and defended on the basis of political, economic, and social needs. Pedagogical concerns have not played a prominent part in shaping the policies. Over the past fifteen years various approaches have been tried, numerous false starts have been made in attempting to implement the policies in the school room. It now appears that increasing attention will be given to pedagogical concerns, if not in formulating the policies, at least in establishing time frames for carrying them out and in setting goals for all citizens to achieve.

Though remarkable progress has been made in the modernization of Singapore and significant strides have been made in achieving national unity, there are yet a number of questions about what the "new" Singaporean will be. The pride, the uncertainty, the uneasiness, the mixed feelings about language and identity felt by many are expressed by a Singapore poet Lee Tzu Pheng in a poem she titled "My Country and My People." I should like to conclude by reading some lines from that poem:
"MY COUNTRY AND MY PEOPLE"

My country and my people
are neither here nor there, nor
in the comfort of my preferences,
if I could even choose. . . .

I came in the boom of babies, not guns,
a 'daughter of a better age';
I held a pencil in a school
while the 'age' was quelling riots
in the street, or cutting down
those foreign 'devils',
(whose books I was being taught to read).
Thus privileged I entered early
the Lion City's jaws.
But they sent me back as fast
to my shy, forbearing family. . . .

They built milli-mini-flats
for a multi-mini-society.
The chiselled profile in the sky
took on a lofty attitude,
but modestly, at any rate,
it made the tourist feel 'at home'.

My country and my people
I never understood.
I grew up in China's mighty shadow,
with my gentle, brown-skinned neighbours;
but I keep diaries in English.
I sought to grow
in humanity's rich soil,
and started digging on the banks, then saw
life carrying my friends downstream.

Yet, careful tending of the human heart
may make a hundred flowers bloom;
and perhaps, fence-sitting neighbour,
I claim citizenship in your recognition
of our kind.
My people and my country,
are you, and you my home.
(Thumboo 1976:161-162)
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Ho Ah Chuan, Personnel and Training Manager, The Straits Times, in a letter to the author dated March 16, 1981.


Every year thousands of LDS missionaries return home from foreign lands, marry and begin rearing their families. Additional thousands of church members move to areas where a language other than their mother tongue is spoken. These individuals, along with their spouses, are faced with the peculiar problem of deciding which language or languages they will use in interacting with their children.

Many of these parents would like their children to become bilingual but they fear that exposing them to two languages may have negative effects on their cognitive, linguistic, or social development. Other parents, especially those who speak the second language non-natively, are concerned about the unnatural relationship they might have with their children if they attempt to communicate with them exclusively in the second language.

Some couples have attempted to expose their children to a second language only to find that it is difficult to be consistently in the use of the second language. Others have been able to use the second language fairly consistently, but have become discouraged when their children reached a certain age and peer influence became so overwhelming that their children stopped speaking the second language with them.

In this paper I shall examine the validity of these parents' concerns regarding the possible negative effects of exposing their children to a second language in early childhood. Then I shall discuss several different strategies parents have used to develop bilingualism in their children and shall review the relative effectiveness of each.

**Bilingualism and Cognitive Development**

The relationship between bilingualism and intelligence has long been a concern to students of bilingualism. Studies investigating this relationship date back to the early part of this century and extensive reviews of the literature have been written by a number of authors including Peal and Lambert (1962), Arsenian (1937), Darcy (1953) and Macnamara (1966).

Early studies tended to find that bilingualism correlated negatively
with intelligence as measured in a variety of ways and in a variety of contexts. Bilinguals were generally observed to perform more poorly than monolinguals on tests measuring verbal intelligence, while performing on a par with them on tests of non-verbal IQ. More recent investigators have identified methodological defects in those earlier studies which render their results questionable.

In the early 1960's Peal and Lambert (1962) began a study to investigate the monolingual-bilingual problem in a Canadian setting with expectations of finding bilingual deficits as the literature suggested, but instead they found that bilingualism may favorably affect intelligence. Specifically they found that English-French bilinguals had significantly higher non-verbal and verbal IQ scores than did monolinguals matched for socioeconomic background. An important follow-up study by Ainsfeld (1964) with the same group of subjects confirmed these results.

Since the early 1960's a number of carefully controlled studies from around the world have confirmed the Peal-Lambert conclusions. Balkan (1970), in a major study in Switzerland, tested bilinguals and monolinguals aged 11-16, who were matched for performance on a general intelligence test and matched for socioeconomic status. His bilinguals scored significantly higher than the monolinguals on tests of numerical aptitude, verbal flexibility, perceptual flexibility and general reasoning. He concluded that bilingualism was probably responsible for the bilingual children's demonstrated superior abilities in certain abstract skills even though they were matched with the monolinguals on measures of general intelligence.

Ben-Zeev (1972), studying Hebrew-English bilinguals aged 5-8 in New York and Israel, investigated a hypothesis derived from Piaget's theory of cognitive development. She proposed that bilingual children undergo certain intellectual conflicts earlier than monolinguals, and in the process of resolving these conflicts, develop higher levels of intellectual development earlier. Her hypothesis was supported by findings that bilinguals showed earlier development of concrete operational thinking and superior cognitive flexibility.

Ianco-Worrall (1972), in a study involving 4-6 year old English-Afrikaans bilinguals, found that bilinguals came to a realization of the arbitrary nature of name-object relationships 2 to 3 years earlier than monolinguals. This ability has been frequently mentioned in the literature as being important to the intellectual development of children.

Another recent study by Scott (1977) of French-English bilinguals in Montreal offers some of the most conclusive evidence to date of the positive effects of bilingualism on cognition. Subjects were all monolingual English-speaking participants in a French immersion program matched for IQ and socio-economic background with monolingual French and monolingual English-speaking controls. Data was collected over a period of seven years. Bilinguals scored significantly higher
on tests of divergent thinking than did their monolingual counterparts.

The studies cited in this review offer strong support for the hypothesis that bilingualism has a positive effect on cognitive functioning. There are no recent studies in the literature which suggest the contrary. It would seem, therefore, that the concern of parents that fostering bilingualism in their children might have negative repercussions on their cognitive development is unjustified. On the contrary, if children achieve a sufficient degree of proficiency in two languages, parents might expect this to result in improved cognitive functioning.

### Bilingualism and Social Development

In recent years there has been a growing concern on the part of parents and educators regarding the effects of bilingualism on self concept and personality development. This is particularly true in societies where the children's native language and culture lack prestige. Most early views regarded these effects as primarily negative. The bilingual's personality was believed to be "... characterized by conflict of values, identities and cultural outlooks" (Segalowitz, 1977).

While this view may have been partially true of linguistic minority children in societies where their native language and culture suffered from low prestige, there is no evidence that such effects are attributable to bilingualism per se. As a matter of fact, the little research available that has been conducted on personality and social adjustment among bilinguals whose native language and culture are not subordinate, indicates no such negative effects.

Aellen and Lambert (1969), for example, examined the effects of mixed French-English parentage on the personality and social adjustment of children. Using semantic differential questionnaires administered to children of monolingual French, monolingual English and mixed French-English parentage, they found that the children of mixed parentage were not significantly different from the other two groups on variables of ethnic identification, identification with parents, self esteem and stability.

More recently Genesee, Tucker and Lambert (1975) conducted a study examining the effects of bilingual schooling on social skills. The Subjects were three groups of English-speaking children in grades 1, and 2. Group one attended a unilingual English school, group two participated in a partial immersion program in French, and group three was in a total immersion program in French. Subjects were required to explain how to play a game to two different listeners, one blindfolded and the other not blindfolded.

There were no significant differences in the number of rules mentioned
by monolinguals and bilinguals to each listener. The two immersion groups mentioned more about materials of the game to the blindfolded group than to the seeing listeners, while the monolinguals did not. Genesee, et al., interpreted this as evidence to support the hypothesis that children educated in a second language would be more sensitive to the communication needs of listeners than children educated in their native language.

It appears, then, that bilingualism per se is not likely to have negative effects on children's personality and social development. Being a member of a minority culture, immersed in a majority cultural environment may create problems in social adjustment for a child, particularly if the minority culture is socially subordinate, but such problems have not been observed in children from the majority culture who learn minority languages.

Bilingualism and Linguistic Development

Perhaps the greatest concern of bilingual parents regarding the fostering of bilingualism in their children has been with linguistic development. It is almost a universally accepted fact among working class linguistic minorities that learning the vernacular of the parents will interfere with the normal linguistic development of the child in the majority language. It is common practice in the Southwest, for example, for parents who speak little or no English to prohibit their children from speaking Spanish at home. Likewise, in Paraguay, Guarani-speaking parents often punish their children for speaking Guarani at home. The assumption in both cases seems to be that the child cannot adequately learn both languages and thus to learn the minority language will put the child at a disadvantage in the majority language school system. While it is wise on the part of parents to be concerned about their children's learning of the majority language, such punishment can have negative effects on their children's cognitive and linguistic development as well as on their socio-emotional well being.

Early researchers on the effects of bilingualism on language development suggested that bilingual children typically did not control either of their languages as well as unilinguals did. Macnamara (1966), in a monumental study of bilingualism in Ireland, for example, found that Irish-English bilinguals performed more poorly in English than did monolingual English speakers, and more poorly in Irish than the monolingual Irish speakers. Unfortunately his study, as many of the other early studies, failed to control for the socio-economic background and degree of bilingualism of the children.

More recently, research has shown that in some particulars bilinguals do perform more poorly than unilinguals on measures of language development. In other areas, however, they seem to surpass their monolingual counterparts. Taylor (1974), for example, hypothesized that children exposed to two languages from infancy would acquire
their first words at the same age as monolinguals, but that their vocabulary growth would take place more slowly. His rationale was that due to the difficulty of discriminating the conditions under which one label occurs rather than the other, the bilinguals would experience greater difficulty in acquiring the higher order concept that "all concepts have labels."

A number of research studies have confirmed his predictions regarding the onset of first words and the slower vocabulary development in bilinguals. Doyle, Champagne and Segalowitz (1978) examined the effects of the one parent:one language strategy on the bilingual development of children in Canada and found that Taylor's predictions were supported by the data, but in addition they found that the bilinguals scored significantly higher on a measure of expressive language. In syntactic development, the bilinguals tended to do less well, but the differences were not significant.

Ben-Zeev (1977), in another study of Hebrew-English bilinguals, aged 5;4 to 8;6 in the United States and Israel, found that the bilinguals scored significantly lower on a measure of English vocabulary, but they demonstrated "more advanced processing of verbal material, more discriminating perceptual distinctions, more propensity to search for structure in perceptual situations and more capacity to reorganize their perceptions in response to feedback" (p. 1109). In a similar study reported earlier, Ben-Zeev (1972) found no significant differences between bilinguals and unilinguals in their ability to analyze syntax.

While Taylor's predictions regarding retarded vocabulary development in bilinguals were confirmed by these studies, his explanation of these phenomena may be in error. In both of the studies cited above, vocabulary development was measured with the Peabody Picture Vocabulary Test. Bilinguals' performance on the test was measured separately for the different languages. No attempt was made to examine items which may have been known in one language but not in the other. Ben-Zeev (1977) noted that "bilinguals usually have to learn two different labels for any given referent, one from each language. Therefore any particular label from one language or the other had occurred with less frequency in his experience and is less well learned." If the investigator had examined the number of different items recognized by the bilinguals in both their languages, the bilinguals might have known as many items as the monolinguals.

Whatever the situation with vocabulary development, bilinguals have not been shown to develop more slowly than monolinguals in any other area of language. As was mentioned earlier, the Doyle, et al. study showed no significant differences in syntactic development between the two groups. Likewise Ben-Zeev (1972) found no significant difference between monolinguals and bilinguals in their ability to analyze syntax.

It seems, therefore, that parents' concerns about retarding their
children's linguistic development in the majority language by promoting their development of a second language is ill founded.

PARENTAL STRATEGIES

In a recent article on parental strategies for language interaction in bilingual families, Schmidt-Mackey (1977) identifies four different patterns of interaction: 1) strategies of person in which each interlocutor in the child's environment always addresses the child in the same language, 2) strategies of place in which a particular language is always spoken in a particular environment or environments, 3) strategies of time, topic, and/or activity wherein boundaries for the use of each language are set in terms of time, the particular topic being discussed, or the activities in which the speakers are engaged, and 4) strategies of alternation in which speakers use two or more languages concurrently.

Strategies of Person

By far the most common interaction pattern reported in the literature is the so-called one person:one language pattern. This pattern obtains in all situations where a child is obliged to interact with two different monolingual speech communities or where bilinguals consciously choose to restrict their interaction with the child to a particular language.

The prevalence of this pattern is probably due in large part to the feeling among many educated people that language mixing or code switching is undesirable and to be avoided. In a study of bilingualism in children, Doyle, et al. (1978) found that there was a high correlation between the use of the one person:one language strategy and the education of the parents.

The earliest mention of this strategy in the literature was made by Ronjat, who published a study in 1913 of his son, Louis', bilingual development in German and French. Upon the recommendation of Maurice Grammont, Ronjat spoke to the child only in French while his wife spoke to him only in German. Maternal grandparents, who often stayed with the Ronjats, spoke to Louis only in German, while paternal grandparents spoke to him in French. Servants, maids and cooks, who were replaced periodically, at times spoke German and at other times, French. Frequent trips were made to the country and to visit relatives where Louis was exposed to many different people, some of whom spoke only German, others only French, and others presumably both. Little mention is made of the children in Louis' environment, with the exception of one little girl who apparently was bilingual also. Louis met her when he was about two and a half years of age, and they spoke French together at first. Later they would speak German together or sing in German to attract the attention of passersby. Later they spoke together almost exclusively in German,
except when other children were present who didn't speak German.

During the first two years of Louis' life, he spoke more German than French. This was apparently due to the fact that his father was the only French speaker with whom he had consistent interaction and his father was presumably at work much of the time (Ronjat, 1912, p. 5).

After about 20 months of age, however, Louis began being exposed to a great deal more French through visits to French-speaking relatives, visits to Paris, and through contact with newly hired French-speaking caretakers. After the age of two, his dominance began to change and by age three, French was his stronger language.

Although few details are given of Louis' linguistic development during his fourth and fifth years, there were apparently additional switches in dominance caused by changes in his environment.

Louis attended primary and secondary schools in French, and thus eventually became dominant in French in academic and technical vocabulary, but continued to prefer German literature (Schmidt-Mackay, 1977).

Ronjat attributed the success of his child's bilingual development to the strict one person:one language strategy employed by him, his wife, the grandparents, servants and friends. There seemed to have been other important factors involved, however. First of all, there were apparently numerous bilingual people in Louis' environment, even some children. Likewise the frequent visits made by Louis and his mother to relatives who spoke one language or the other undoubtedly influenced his development. Also the fact that at least one child with whom he had frequent contact spoke both languages cannot be dismissed as an important factor.

The next in-depth case study of a child's bilingual development via the one person:one language strategy was begun in the United States about three decades after that of Ronjat. In this case, Leopold (1939) spoke to his daughter (Hildegard) only in German, while his wife spoke to her only in English. Leopold makes little mention of the other people in Hildegard's world except to say that he was the lone speaker of German (Leopold, 1954).

During the first two years of her life, Hildegard's linguistic development was characterized as an amalgamation of the two linguistic systems. By the end of the second year, her English had begun to dominate. During her third year, her English sentence patterns progressed with "astonishing rapidity" while her German syntax was "stagnant" (1954, pp. 26, 27). By the end of her fourth year her language was decidedly English with occasional intrusions of German words. She spoke English to her father even though he addressed her in German.

At the end of her fifth year, the Leopolds moved to Germany for six
months. For the first month Hildegard was left alone with German speakers. During that time she became "completely fluent" in German and her English receded. She was "unable to say more than a few very simple English sentences after these four weeks" (1954, p. 27). By the end of six months, she had straightened out most of her problems with German pronunciation and syntax.

Upon her return to the United States, the adjustment process was reversed. At first she was unable to say more than a few words in English. After a few days she could converse, and after two weeks she had regained fluency in English with some interference from German.

After a month, English and German were "in balance," and after four months she had difficulty speaking German. By the end of six months, she had overcome her reaction to the new linguistic environment and had begun to speak both languages fluently. During her seventh year, her bilingualism became more complete, but English continued to develop as her dominant language.

Leopold observed that the natural tendency for both children and adults is to operate with one language system unless bilingualism is cultivated with effort (1954, p. 30).

This observation, I think, reflects the experience of many parents who have not been as fortunate as the Leopolds in cultivating bilingualism in their children. While the one person:one language strategy may help motivate children somewhat during their early years and perhaps again in later years, there seems to be a period of time during which the influence of peers is overwhelming (James, 1981). It is apparent from Leopold's study that the six-month stay in Germany had a tremendous impact on Hildegard's bilingual development. As a matter of fact, Leopold's younger daughter, Karla, whom he also observed in much less detail over a period of several years, never developed fluency in German, even though he spoke to her in German as he did with Hildegard.

Another interesting case study in which the one person:one language strategy was employed is that of Fantini (1974). Both Fantini, whose first languages were English and Italian, and his wife, whose native language was Spanish, spoke to their son, Mario, exclusively in Spanish. They also insisted on speaking Spanish at home with their bilingual friends. In addition, the Fantinis had monolingual Spanish-speaking nursemaids living with them for much of Mario's early life. Thus, the language of the home was almost exclusively Spanish.

Mario's paternal grandparents spoke English and Italian and his first exposure to English came through visits from them. During the early part of his third year, Mario began attending an English-speaking nursery school where, for the first time in his life, he had no access to Spanish speakers for a large portion of the day. For most of his third year, he attended various preschool programs where he was exposed to English for a large portion of each day. During his fourth
and fifth years he spent only about six months total attending preschool and kindergarten. The remainder of the time was spent at home or on extended visits to Mexico and Bolivia. At the age of six, when Mario began the first grade, his dominant language was definitely Spanish, but he was fluent in English.

Fantini makes a point of the fact that a consistent separation of languages was maintained throughout Mario's early development; Spanish was consistently spoken with parents, maternal grandparents, Spanish-speaking friends and maids, while English was spoken with paternal grandparents, schoolmates, and English-speaking friends. Fantini makes no mention of any conflict in Mario's choice of language due to peer influence, except to say that when he began nursery school, he sometimes attempted to use English words at home. On such occasions his mother insisted that he use Spanish. This relative lack of peer influence must be due in part to his frequent trips to Spanish-speaking areas, as well as to his continued interaction with monolingual Spanish-speaking individuals in a monolingual English-speaking community.

As can be seen from the foregoing examples, the one person:one language strategy by itself does not produce bilinguals with equal proficiency in both languages. Typically, children develop both languages until about two and a half or three years of age (or the age at which they begin to have extended social contact with children their own age) and then they begin to exhibit a preference for the language of their peers. At that point, if the other language is to continue to develop normally, additional influences appear to be necessary.

The strengths of the one person:one language strategy lie in two areas: 1) it exerts a certain amount of pressure on the child to interact in both languages, especially until the child finds out that the parent with whom he or she is interacting understands the other language; and 2) it is relatively easy to maintain a consistent pattern of exposing the child to a particular language.

The single greatest difficulty with the strategy seems to be the influence of the peer speech community on the child's willingness to continue to interact with his parent in another language, particularly where the child knows that the parent can also speak the language of his peers. While this phenomenon has not been carefully studied, it appears to have presented a barrier to bilingual development in most of the diary studies.

Strategies of Place

There are two different interpretations given to the notion of strategies of place. Both of these overlap considerably with the strategies of person. One involves physically moving to an area where a second language is spoken while maintaining the original home
language, or it involves sending the child to a school or other location where the second language is spoken. In this strategy, the one person:one language is maintained, but often outside the immediate family environment. The Fantini study is an example of this overlap.

Typically the family is immersed in a second language environment and both parents speak to the child in the language of their former place of residence.

There are numerous studies of this interaction pattern in the literature (Kenyeres, 1938; Valette, 1969; Chamot, 1973; Tits, 1948; and Burling, 1959). One of the most detailed of these is that of the Kenyeres (1938), who studied the bilingual development of their daughter Eva in French and Hungarian. Born in Budapest, Eva spoke only Hungarian until her family moved to Geneva when she was seven. Her initial reaction upon arriving there was one of rejection of French. After six months, however, French became her dominant language and she began to resist speaking to her parents in Hungarian. Upon her return to Hungary at the age of nine, Eva went through an adjustment period similar to that which she had experienced earlier. Within a few months, however, Hungarian began to dominate and she only spoke French with her parents.

The strength of this strategy lies in the fact that parents are able to take advantage of peer influence and the environment to assist the child in the development of the second language. Unless the family is able to move back and forth between the two environments until the child has reached adolescence, however, the parents run the risk of having the child not maintain the first language. A major disadvantage, of course, is the fact that most families cannot move abroad whenever they wish.

Many parents who are unable to move to an area where a second language is spoken choose to send their children to a school where the second language is the medium of communication. Examples of this strategy are abundant. Most countries of the world have private schools where children of the wealthy are sent to be educated from infancy or adolescence in a second language (Fishman, 1976). These schools often serve the children of foreign service personnel from the countries in whose language they are conducted. Also in many countries long-term residents of foreign descent (particularly Jewish) have established schools where their children can acquire or maintain the language of their forefathers (Fishman, 1976; Spolsky, 1978).

In recent years, a number of "total immersion" programs have been established in the public schools in Canada and the United States where children are educated in a second language. One of the earliest of these was studied by Peal and Lambert (1962). Children of English-speaking parents were sent to a school where bilingual teachers spoke to them entirely in French. Results showed that the children acquired fluent, but not native-like, French without suffering any loss of achievement in academic areas.
The most successful of these public and private school programs with regard to language achievement are those in which children acquiring a second language interact with children who speak that language natively.

One obvious advantage of the immersion school program approach is that the parents do not have to be fluent in the second language. Also the fact that their children are socializing with peers in the second language provides added incentive for rapid language development.

A principal disadvantage, of course, is that such programs are not always readily available and when they are available, they are often expensive.

Strategies of Time, Topic and Activity

There are no case studies in the literature of parents employing strategies of time, topic or activity at home. These strategies seem to be limited to school programs. There are numerous bilingual school programs where the particular language used is determined by the subjects to be taught or time periods assigned to that language. The Dade County bilingual program for Cuban refugees is an example of this approach (Mackey, 1977). Children were taught for half a day in Spanish and the other half of the day in English. This approach has been shown to be quite effective when consistently maintained.

Informally, several people have reported to me having attempted to utilize this strategy in their homes. My own family attempted to employ it for a period of time. We established a rule of speaking Spanish every day from the time we got up until I left for work and the older children left for school.

The greatest problems with this strategy are consistency and motivation. It is difficult to always remember to speak the appropriate language during the predetermined time, and it is difficult to keep the children motivated to go along with the arbitrarily imposed rule.

Strategies of Alternation

The most controversial strategy identified by Schmidt-Mackey is that involving the alternate use of two or more languages. The major objection to this strategy seems to be that it makes it difficult or impossible for the child to identify the separate codes and thus results in language mixing.

It has long been believed that the alternate use of two languages with children not only resulted in language mixing but that it retarded linguistic and cognitive development and confused the child. Two
recent studies have compared the development of bilingual children whose parents spoke to them alternately in two languages with that of parents who maintained a strict one person:one language pattern. In the first study, Bain (1976) examined the cognitive development of 48 children aged 22-24 months, 15 of whom had experienced the one person:one language interaction pattern, 17 had experienced the indiscriminate use of two languages, and 16 were unilingual. Although the data indicated a trend in favor of the one person:one language group, as compared with the other two, differences were not significant. In a similar study, Doyle et al. (1978), examining the effects of this strategy on vocabulary development, found "no suggestion in the data that complexity of conditions under which the two languages occur affects ability to learn lexical items."

While these studies must be interpreted cautiously, they suggest that the current use of two languages in interaction with children does not affect adversely their cognitive and linguistic development.

It would seem, however, that the alternate use of two languages would compound the social and psychological problems of motivating the child to use a second language not used by his peers.

Summary

In summary, then, becoming bilingual at an early age does not appear to have negative consequences for intellectual, linguistic nor social development. Strategies of person and place seem to have some practical advantages over time, topic and activity in that consistency appears to be more easily maintained and the impetus for overcoming language suppression due to peer influence seem to be greater.

REFERENCES


