PROTOCOL ANALYSIS OF THE PROCESS OF TRANSCRIPTION

J. Fokes and Z.S. Bond
Ohio University, Athens, Ohio, USA

ABSTRACT
In the first experiment, the phonetic transcription of three undergraduate students was subjected to protocol analysis to determine whether proficient vs. mediocre transcribers used different strategies. A second experiment compared the transcription strategies used by two students early and again later in their training.

INTRODUCTION
In spite of its importance, the process of learning to transcribe phonetically has received little empirical attention. We investigated the hypothesis that proficient vs. mediocre students apply different strategies when faced with a transcription task and that student strategies change with practice. Protocol analysis [1], a procedure devised to investigate problem solving, was adapted to discover strategies used in phonetic transcription.

EXPERIMENT I
Three undergraduate students in introductory phonetics, one earning an A (LF), and two who were less skilled (LD, ST) transcribed a 170 word passage. They were instructed to talk their thoughts out loud while transcribing. All their comments were recorded. They reported no difficulty in verbalizing and found it to be quite natural.

Student comments were written as protocols. Analysis yielded the following classification which represents the expected FLOW of the process of transcription:

1) SCAN: preliminary reading of a sentence or phrase.
2) RECOMBINATION: grouping previously transcribed material with new material.
3) FOCUS: attention in the attempt to transcribe a unit: phrase; word; partial word; syllable; consonant; or vowel.
4) METHOD OF ATTACK: repetition of a unit; blind repetition with no variation; systematic repetition with changes in pronunciation; memory aids or other devices for transcription; orthographic cues.
5) DECISION: exit, final unit uttered signifying completion of transcription; evaluation, comments about transcription.

LF, the proficient student, completed the transcription in 15 min. with 34 errors. The mediocre students required more time: LD required 30 min. with 154 errors and ST 37 min. with 94 errors.

Analysis of the protocols showed three systematic differences between the proficient and the mediocre transcribers: 1) their initial approach to the task, 2) the primary units on which they focused during transcription, and 3) the method of attack.

LF scanned upcoming phrases before attempting to focus on a unit for transcription. This preliminary scan was rarely used by the other two transcribers.

LF used combing more than twice as often as LD and ST. LF read lengthy phrases such as "By way of introduction, I'd like..." Almost all LF's efforts were preceded by some type of scans before focusing on a unit for transcription. In contrast, both LD and ST limited their recombinations to two or three words, and sometimes even partial words.

Initially, the students focused on a unit and subsequently experimented with the details of the unit. They differed in the size of the unit for focus. LF dwelt on relatively large units such as phrases or words. LD initially focused on words but quickly fragmented words into syllables and vowels. When LD did focus on words, she selected short words such as the, to or have while LF concentrated on multi-syllabic words such as united, immigrant, or introduction. ST typically focused on segments or syllables. The numerical differences of units of focus are given in Table 1.

Table 1. Units of focus selected in transcription.

<table>
<thead>
<tr>
<th>Phrase</th>
<th>Word</th>
<th>Word-part</th>
<th>Syllable</th>
<th>Vowel</th>
<th>Consonant</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>73</td>
<td>70</td>
<td>15</td>
<td>37</td>
<td>5</td>
</tr>
<tr>
<td>LD</td>
<td>14</td>
<td>80</td>
<td>12</td>
<td>83</td>
<td>60</td>
</tr>
<tr>
<td>ST</td>
<td>16</td>
<td>46</td>
<td>27</td>
<td>116</td>
<td>67</td>
</tr>
</tbody>
</table>

Table 2. Methods used in transcription.

<table>
<thead>
<tr>
<th>Repetition</th>
<th>Blind-rep</th>
<th>Sys-rep</th>
<th>Mem aids</th>
<th>Orthography</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF</td>
<td>68</td>
<td>9</td>
<td>144</td>
<td>26</td>
</tr>
<tr>
<td>LD</td>
<td>59</td>
<td>75</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>ST</td>
<td>25</td>
<td>103</td>
<td>24</td>
<td>7</td>
</tr>
</tbody>
</table>

In a few instances, LF focused on smaller units but with considerable recombining, as in the following sample:

51. by way of introduction
52. [Intro\d\k\j\n]
53. by way of [Intro\d\k\j\n]
54. [Intro\d\k\j\n]
55. [Intro\d\k\j\n]
56. [\j\n]
57. [Intro\d\k\j\n].

LD initially focused on words and then fragmented the word into smaller and smaller units:

88. [Intro\d\k\j\n]
89. [Intro\d\k\j\n]
90. [\j\n]
91. [\d\k]
92. [\j\n].

ST rarely focused on words as units but instead attacked syllables and sounds. It was sometimes difficult to determine just which word she was working on:

196. [pra]
197. [pra]
198. [pra]
199. [pra]
200. [\b\d\j\n].

ST's transcription of problems contained two vowel errors as might be expected from her piecemeal approach.

After selecting a unit for focus, the subjects employed a METHOD of attack.
In conclusion, we believe the observed significant associations among factors such as employment status, education level, and the number of hours worked per week have contributed to the higher levels of stress experienced by those in the lower income bracket. It is important to note that these findings are based on a sample of 1,200 individuals, and more research is needed to further understand the complex interplay of these factors on mental health outcomes.

REFERENCES