Standardization of Mexican trigrams¹

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The present paper reports an attempt to standardize a large number of consonant-vowel-consonant trigrams on a sample of Spanish speakers. A total of 92 National University of Mexico students gave "Yes" or "No" responses to each of 987 trigrams in response to questions about whether or not the trigram looked or sounded like a word. The number of "Yes" responses for each trigram was used to define its meaningfulness and this number varied from a low of 3 to a high of 90. Internal consistency and comparisons with other studies suggest that the reliability of the ratings was high.

The present paper is concerned with the standardization of a group of 1,000 consonant-vowel-consonant trigrams for use in human research in Mexico. The list of trigrams is presented elsewhere (Young & Webber, 1968), but it is not readily available to English speaking research workers. While many standardized lists of adjectives, nouns, or nonsense syllables exist in English (cf. Underwood & Schulz, 1960), to our knowledge no such list exists in Spanish. Experimental psychology is a rapidly developing area in Mexico and South America and a need was seen to exist for such standardized materials. It was for this reason that the present research was done.

The method of standardization in the present study was similar to that developed by Archer (1960). Basically, the Archer technique was to ask the S if the trigram in question looked like a word or if it could be used in a sentence. The percentage of affirmative responses determined the association value of the trigram and the higher the association value the greater the assumed meaningfulness.

Method. The Ss employed in the present study were 92 students enrolled in introductory psychology courses at the National University of Mexico. The Ss were not selected for their language ability and for this reason some of them may have been able to speak a language other than Spanish. As a control measure the Ss were instructed to think only in Spanish so as to avoid the possible confounding effects of rating trigrams in several languages. The Ss were run in two groups of 40 and 52 each in a classroom during a regularly scheduled 50-min class period. Each S was given a booklet containing 1,000 trigrams randomly selected from Archer's list of 2,480 trigrams. The trigrams were arranged in random order in two columns of 20 each on each of 25 pages. In addition there was a practice page at the beginning of the booklet containing 15 practice trigrams. Beside each column of trigrams was a column headed "Si" ("Yes") and a second column headed "No." The S, given instructions adapted from those Archer used, was asked if he thought the trigram looked like a word or if he could use it in a sentence. If the answer was "Yes" he should put a check beside the trigram in the "Si" column, if not he should put a check beside the trigram in the "No" column. The Ss were told to look and rate each item in a 2.5-sec period (a somewhat longer time was given during the rating of the 15 practice trigrams). After this time a ticking metronome signaled the S to go on to the next trigram. After 480 trigrams were rated the Ss were given a single 2-min rest, and after this the ratings continued until all 1,000 were rated.

To control for possible changes in association value as a function of practice or fatigue, the order of the 25 pages was randomly varied from one S to the next. The order of items on a page remained constant, however, for all the Ss and the practice page always came before any of the others. The E remained in the classroom during the entire time the experiment was in progress. This was done to maintain motivation and to be sure the Ss rated the trigrams at the proper speed.

Results and Discussion. Of the original 1,000 trigrams four were lost, four were typed incorrectly in the test booklet and five were duplicated in the test booklet leaving a total of 987 trigrams. The frequency of the "Si" responses was determined for each of the 987 trigrams and the range of scores varied from a low of 3 (TIY) to a high of 90 (COL, GAS, LIZ, SOR, and VER) out of a possible 92. All intermediate values except 89 were represented.

It will be recalled that five trigrams were duplicated in the test booklets. Some indication of the reliability of the ratings can be determined through a comparison of the rankings of these duplicated pairs. An intraclass correlation was found to equal .985, $df = 3$, $p < .01$. None of the duplicated pairs were on the same page in the test booklet and the possibility that the individual trigrams were remembered and given the same rating should be reduced somewhat. Clearly, the ratings were reliable and apparently represent variations in rated meaningfulness.

The ratings were also correlated with those obtained by Archer (1960). This correlation was found to equal .61, $df = 985$, $p < .01$. The high correlation between the ratings of the Mexican and Archer samples apparently reflect the communality between the English and Spanish languages. That is, CVC combinations which are meaningful in Spanish also tend to be meaningful in English and this reflects, perhaps, the similarity in the structure of the two languages.

The letter Y is not commonly used as a vowel in Spanish while it is in English. There were 165 of the trigrams employing Y as a vowel and the correlation between the Mexican and Archer ratings were computed for the Y trigrams as well as for the 822 trigrams not using Y as a vowel. The correlations for the Y and non-Y trigrams were .60 and .57, respectively, again showing considerable agreement between the Mexican and Archer ratings. The mean ratings for the Y and non-Y trigrams were 21.93 and 49.66, respectively, with $F = 237.63$, $df = 1/985$. It is apparent that the trigrams employing Y as a vowel were given lower M ratings. Interestingly enough, a similar difference of 34.62 and 57.16 (out of a possible 100) was found in the Archer ratings of the same items indicating that trigrams employing Y as a vowel in English, where this is relatively common, also have lower M values.

Mexico has a large number of non-Spanish place names, having inherited many of these from the original Indian inhabitants. It was anticipated that familiarity with these Indian names, many of which differ considerably from Spanish language structure, would influence the ratings of various trigrams. We were unable to find any evidence that this was the case. Thus, it would appear that these ratings would be equally valid for Spanish speakers in Latin America and Spain as well as in Mexico and that little if any distortion of the M values took place because of the familiarity of the Ss with Indian place names.

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NOTES

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