

## APPLYING PSYCHOMETRIC METHODS IN LINGUISTIC RESEARCH: SOME RECENT ADVANCES

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Recently *Linguistics* published a translation of Frumkina and Vasilevič's paper "Applying Psychometric Methods in Linguistic Research". The paper examined the relation between subjective and objective measures of the frequency of occurrence of Russian words. I should like to note some differences between the Russian and English literature and present additional relevant results which have been published between the time of the original and the translated paper.

Frumkina and Vasilevič note that there are no word counts of spoken as opposed to written Russian. The closest approximation to a word count of spoken Russian is probably Vakar's (1966) count of words spoken in contemporary Russian plays. In contrast to Russian, however, there are several word counts of spoken English. Early word counts were made by Fairbanks (1944) and French, Carter, and Koenig (1930). The two most recent and methodologically sophisticated word counts are by Howes (1966) and Jones and Wepman (1966). There are also several word counts of the spoken English of children (e.g., Burroughs, 1957; Harwood, 1959; Horn, 1928; Rinsland, 1945 – the first grade sample only; Voelker, 1942 – which combines several counts of adolescent speech; Wepman and Hass, 1969) and at least one word count of schizophrenic speech (Fairbanks, 1944). While the age or method of preparation of some of these counts may limit their usefulness for certain applications, in most cases a suitable objective count of spoken English exists.

Frumkina and Vasilevič use the method of successive intervals (Guilford, 1954) to obtain a subjective measure of word frequency, failing to consider the method of magnitude estimation (Stevens, 1957). In applying magnitude estimation to word frequency, judges are simply asked to assign to each word in a list a number that is proportional to the word's perceived frequency of occurrence. As both the method of rank order and the method of magnitude estimation provide subjective measures which correlate closely with objective counts of frequency of occurrence (Shapiro, 1967), Frumkina and Vasilevič's basic conclusions are probably not affected by the method they chose. In general however, the two methods do differ systematically (see Stevens, 1957). As magnitude estimation is more common in English studies, discrep-

discrepancies between English and Russian research could arise which would be due solely to differences in the method used and not to differences in the languages.

Frumkina and Vasilevič suggest that psychometric methods could be used to estimate the relative frequency of linguistic units other than the word. Several recent studies using the method of magnitude estimation have done just that. In particular, it has been demonstrated that judges can estimate the relative frequency of letters (Attneave, 1953), phonemes (Carroll & Lamendella, 1974), and syllables (Rubin, 1974). Carroll (1971) has also shown that judges vary in their ability to estimate the relative frequency of words: lexicographers are better at estimating the occurrence of words from a written count than are other native speakers.

One other point should be mentioned. Frumkina and Vasilevič suggest that subjective measures of frequency of occurrence can be used to replace objective measures. While Frumkina and Vasilevič have demonstrated that subjective measures provide a good approximation to objective measures, there are systematic differences. For example, abstract words have greater perceived frequency than concrete words of the same objective value (Galbraith & Underwood, 1973), and Frumkina, himself, has shown that the subjective frequency is affected by the familiarity of the referent of the word (Frumkina, 1971).

It should not be surprising that there is more to subjective measures than just objective frequency. Objective measures of frequency of occurrence are made on language as it is normally spoken or written. Subjective measures are made on language as an object of introspection. Thus, while subjective measures of frequency may provide an expedient approximation to objective measures where no objective measures are available, Frumkina and Vasilevič's claim that subjective measures can be substituted for objective measures is overstated: the objective and subjective measures of frequency are different.

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#### NOTE

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