

# WORD STRESS IN GEORGIAN

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## ABSTRACT

Word stress in Modern Georgian, the language spoken in the Soviet Republic of Georgia in the USSR, is known to be weak in nature, in fact is not certain that there is stress in Georgian. An experiment was conducted to test words in isolation, in phrases and in complete texts to see if there were any common denominators. The parameters examined here were pitch and duration. For each phonological word, FO measurements found a single peak for the whole word; correlations between words in text and in isolation were fairly consistent, though not uniform. Greater duration fell either in the syllable with the FO peak or in the initial syllable. The results indicate that although stress in Georgian is weak, it is clearly a word level phenomenon.

## 1. INTRODUCTION

One of the more confusing questions for the student of Georgian is the placement of stress. Although this may be elementary for languages with fixed stress on some syllable of the Phonological word, for example Czech, where it is always on the first syllable, or for languages with mobile stress where for the most part it has to be learned, the question of stress in Georgian is one that is almost avoided. Part of the reason for this lies in the fact that it is not certain that there is stress in Georgian. Or if so, there is no consensus as to its location. In all the varying opinions about Georgian there is agreement on one point, that stress is weakly dynamic and has melodic tone. Because it is weak, it tends to defy both description and analysis. This paper takes as its point of departure two questions of import for stress in

Georgian: (1) Is there a word level stress (or is it phrase or sentence level)? (2) If there is, then how is it implemented in Georgian?

The structure of the paper will be as follows. I will first review literature on the subject as it is useful to be fully aware of the variety of views there are available in stress in Georgian. Having done this, I will proceed to look at some data from a study examining minimal pairs of words representing two environments -- within the flow of continuous speech, here a read text, and the same words read in isolation.

## 2. LITERATURE

Starting with the most impressionistic, we have two descriptions: 1) "Die Betonung gleicht dem geglatteten Meer nach dem Sturm." [1]; 2) "...wie murmelndes Wasser läuft die georgische Rede hin." [2]. These would imply that there is a significant lack of perceptual cues with which to identify stress. This may well be true at the most impressionistic level where not much attention is focussed on the physical aspects of perceptual cues, but at a slightly more conscious level, there do seem to be enough cues to generate varying opinions on the nature of stress in Georgian.

As regards duration, a common indicator for stress in language, some sources say that vowels are of equal duration throughout the word, irrespective of the length of the word. These sources seem to focus more on the melodic nature of Georgian. Others however indicate that in addition to the melodic structure, duration may have a place in determining the place of stress. Tschenkeli [3] in his grammar indicates a

	I. Stress Placement			II. Primary vs. Secondary Stress			III. Intonation Stronger		
	pnu	apnu	init	pnu	apnu	init	yes	no	no comment
Vogt 1939			✓				✓		
Tschenkeli 1958			✓				✓		
Cikobava 1967		✓		—	No comment	—	✓		
Marr and Briere 1931	✓	✓			*				✓
Rudenko 1940	✓	✓			*				✓
Robins and Waterson 1952	✓	✓						✓	
Zgenti 1964		✓		—	No comment	—	✓		
Shimoniya 1978			✓						✓

function of duration and Japaridze, a Georgian phonetician who has done work on perception, comments on the perception of Czech by Georgians. He proposes an element of duration as Georgians hear Czech (a language which has constant phonetic stress on the initial syllable, phonemically long and short vowels) as stressed in syllables with long vowels.

Table 1 [3]-[10] gives a summary of Georgian stress as described by various views proposed in grammars and articles. What is interesting is that in addition to the differences expressed among the works, there also seems to be a lack clarity within a given description.

## 3. PROCEDURE

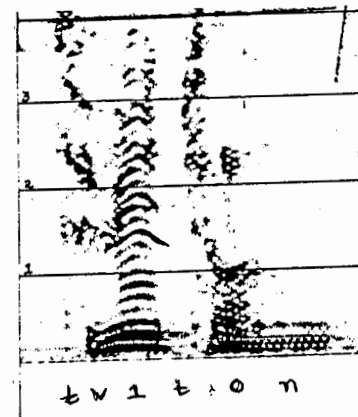
The speaker was male speaker of the literary norm as judged by colleagues at Tbilisi State University. He pronounced the sets of words in isolation, and in paragraphs, presented to him in a random order. A practice session was conducted in order that he be familiar with the words and his task. The speaker was cautioned to read at a set pace and to observe a fixed distance from the microphone. Each word was read thrice in each environment for a total of six tokens per word across environments.

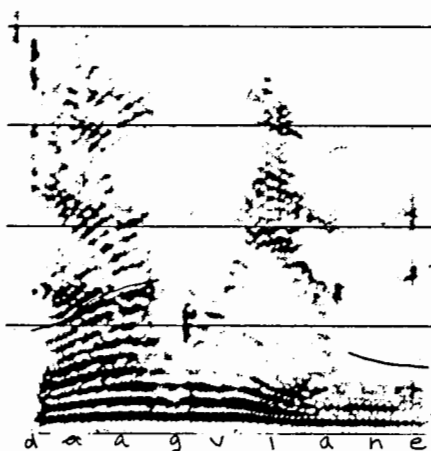
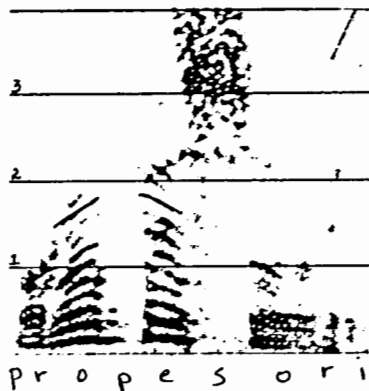
Recordings were made in a soundbooth using a Marantz superscope cassette PDM 350 and a superscope condenser microphone. Broad and narrow band spectrograms were made of the tokens on a Kay Digital spectrograph. Fundamental frequency F0 was measured by tracing the 10th harmonic in the narrow band spectrograms. Duration

measurements were taken from the broad band spectrograms.

## 4. RESULTS

Correlations of duration and pitch for words in isolation and in a text were fairly consistent, though not uniform. The greater duration measurements fell either in the syllable with the F0 peak or in the initial syllable. There was only one peak in a word and the peak, taking the duration of any word as a whole, seemed to be a third of the way into the word from the onset of the word.





## 5. REFERENCES

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From these results one can infer that stress, though weak is a word level phenomenon. Further, the acoustic tiggers for stress would seem to be a combination of duration and rising F0.