

**Comment on Patel, A.D. (2003). Rhythm in language and music: Parallels and differences. *Annals of the NY Academy of Sciences*, 999:140-143.**

On p. 142 of this paper, the nPVI (normalized pairwise variability index) is described as a measure of variability. For example:

“The nPVI allowed us to do this, as it measures the relative variability in a set of durations and can be applied to event durations in language (e.g. vowels) and in music (e.g. musical tones).”

However, as can be observed from the equation for the nPVI (available in refs 9,10, and 11 of this paper), it is more accurate to speak of the nPVI as a measure of *contrast* than of variability, as it quantifies the durational *difference* between neighboring measurements in a series. The distinction is worth making because variability and contrast can be decoupled. For example, the following two sequences have the same numbers and exactly the same variability, but the amount of durational contrast between successive elements is much greater in the second sequence:

50 50 50 50 50 100 100 100 100 100

Coefficient of variation (std/mean) = 0.35; nPVI = 7.41

50 100 50 100 50 100 50 100 50 100

Coefficient of variation (std/mean) = 0.35; nPVI = 66.67

Thus the “pairwise variability index” should be perhaps be called the “pairwise contrastiveness index”.

Given this discussion, the main point of the section starting on p.142 of this paper is that the greater durational contrast between successive vowels in English vs. French speech is reflected by the greater durational contrast between successive notes in English vs. French instrumental musical themes.

- ADP, Feb 10, 2004