

All Together Now!

Oscillations of Heart Rate and Respiration Synchronized During Poetry Recital

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Teachers—leading your students in reciting poetry may not be simply a path to improved memory, classroom harmony, and artistic expression. It may also be a path to improved health.

Researchers in Germany led 20 healthy subjects in an experiment that demonstrated a possible physiological basis for the therapeutic effects of reciting poetry, in this case the hexameter verse of *The Odyssey*. They compared spontaneous breathing, controlled breathing, and breathing during the recitation of hexameter verse with corresponding heart rhythms. Hexameter verse is verse in which a line of poetry contains 6 alterations between stressed and unstressed syllables. Researchers used a translation of *The Odyssey* that was faithful to the meter of the original Greek. Subjects walked rhythmically throughout each trial, whether or not they were reciting poetry, raising and lowering their arms to facilitate air exchange during breathing; a researcher accompanied them, leading them in recitation. Heart rate and breathing synchronized significantly better during recitation of hexameter poetry than they did spontaneously or when breathing was controlled without speech. And here we have a beautiful image of science at work—twenty people walking in a circle, speaking Homer, flapping their arms, with electronic measuring tools attached to their nostrils and chests.

Synchronization between breathing and heart rate is believed to have a healthful or salutogenetic effect, possibly increasing oxygen uptake in arterial blood, increasing blood flow in the brain, lowering blood pressure, and calming (or activating, depending on heart rate) mood. Further, psychosomatic effects may increase resistance to disease and increase flexibility with regard to maintaining

balance or homeostasis among different physiological processes in the body.

Previous research on cardiac patients has demonstrated that roughly 6 breaths per minute—a significantly lower breathing rate than normal, spontaneous breathing—have the most beneficial effect. Although breathing may be controlled at roughly 6 breaths per minute without recitation or speech—by counting or using a metronome, for example—heart rate did not synchronize with breathing here as well as it did during recitation. More important, reciting hexameter verse naturally controlled breathing at around the optimal 6 breaths per minute while raising heart rate to more than 80 beats per minute, higher than for spontaneous breathing or for controlled breathing.

Other forms of artistic and religious speech—prayer, repeating a mantra—may have similar effects.

The physiology of the effect demonstrated in this experiment is not well understood and will be explored in future research.

The full article as printed in the *Journal for American Physiology* can be found at: www.waldorfresearchinstitute.org