

Occasional singers sing more proficiently when linguistic information is reduced*Magdalena Berkowska (1) and Simone Dalla Bella (1, 2)**1 University of Finance and Management, Warsaw**2 BRAMS laboratory, Montreal, Canada*

Singing is quite natural for humans. It is a universal form of vocal expression and a group activity which is thought to promote group cohesion (Mithen, 2006). Accordingly, recent studies have shown that the ability to sing proficiently is widespread in our culture. Occasional singers are as proficient as professional singers (i.e., they sing in tune and in time), when producing a well-known melody (e.g., “Sto lat”) at a slow tempo (Dalla Bella, Giguère, & Peretz, 2007). In previous studies occasional singers were asked to sing a melody with lyrics from memory. This task is quite loaded in memory demands, since it requires memory retrieval of both musical information (i.e., pitches and durations) and linguistic information (i.e., the lyrics). Here we examined whether singing proficiency in occasional singers is enhanced when memory demands are reduced, by asking participants to sing on a syllable as compared to singing with lyrics. Thirty-nine occasional singers were asked to sing well-known melodies from memory (e.g., “Sto lat”) and to imitate these melodies after they were presented at a slow tempo. The melodies were sung with lyrics and on the syllable /la/. Sung renditions were analyzed with an acoustically-based method yielding objective measures of pitch and temporal accuracy. Occasional singers sang more in tune and more in time when they imitated the melodies than when they sang them from memory. The results revealed increased accuracy (e.g., fewer pitch interval errors or contour errors) when occasional singers produced melodies on the syllable /la/ as compared to singing with lyrics in both the production and the imitation task. These difference may result from enhanced memory retrieval of musical information, and/or from focusing attention to melodic information which led to increased accuracy in producing pitch intervals and contour. Reduced temporal variability when singing on a syllable is probably the consequence of producing the same linguistic unit (i.e., one syllable) as compared to different syllables when singing with lyrics (i.e., different articulation times likely increase temporal variability).

Dalla Bella, S., Giguère, J-F., & Peretz, I. (2007). Singing proficiency in the general population. *Journal of the Acoustical Society of America*, 121, 1182-1189.

Mithen, S. (2006). *The Singing Neanderthals*. Harvard U.P. Cambridge, MA.