

# HOW THE BREATH INSPIRES

**BVA Study Day**, Sunday 23rd September 2012,  
Baden Powell House, London

Report by Deborah Hudson

**I had been greatly looking forward to this latest BVA study day and as soon as I entered the hall, I realised I hadn't been alone. Not only was it extremely well attended but the day had also attracted many non BVA members.**

The first speaker was Alan Watson, Senior Lecturer at the Cardiff School of Biosciences at Cardiff University and author of "The Biology of Musical Performance". His illustrated talk was about the mechanics of breathing and how we breathe for optimum musical performance. The talk was to explain what is currently known, rather than to prescribe how we ought to be breathing. Dr Watson started by explaining the workings of the lungs, how they are structured and what prompts the urge to breathe in and out.

He then went on to explain the workings of the diaphragm and the external intercostal muscles for the in-breath. Quoting



*Ed Blake*



*Alan Watson*

Janice Chapman's acronym SPLAT (Singers Please to Loosen Abdominal Tension when breathing in), he explained how important it is that the belly is allowed to relax outwards on the in-breath thus allowing the diaphragm to flatten and provide more space for air. I was particularly pleased that Dr Watson elucidated the meaning of the term "diaphragmatic support". He says it is used, quite incorrectly, to refer to the creation of the out-breath. In reality the out-breath is driven by the inner intercostal and the transversus abdominis muscles. We can to some extent control the diaphragm, and we were to see graphic illustrations of all this later in the day.

We learned about the differing amounts of air volume needed to perform different tasks and also that height is often a good indicator of vital lung capacity. Chest shape does come into the equation but on the whole taller people really do have bigger capacity. This led him on to discuss sub-glottal pressure and the difference between 'normal' breathing and that needed to sustain projected sound. He used the description "respiratory breaking" for that gentle but constant stream of air pressure generated by slowed down exhalation we use for singing. Posture was discussed, including the old-fashioned light bulb posture or the inverted pear. Is it better or worse to hold the chest high throughout when it would naturally fall on the out-breath? The answer seems to be that for optimum performance the delayed falling of the chest is probably the best solution.

The next speaker was Ed Blake, Physiotherapist and Director of PhysioEd in London. We learned about the problems of muscle tension dysphonia which occurs particularly among dancers. The hypothesis was that perhaps the dysphonia was caused by a resistance to high pressure on the larynx. Ed took us round the muscular system of the abdomen and explained how everything connected together and to the diaphragm. Ultrasound experiments appear to describe the

use of the TVA muscle as the primary driver for singers. However, in dysphonic clients the internal oblique muscles play a disproportionate role. This appears to imply that there is an imbalance of muscle use which puts too great a pressure on the larynx. Once again we were reminded of the importance of relaxing the TVAs on the in-breath. I had not heard of Tech Neck (or indeed I-pad shoulder!) before but I certainly knew the symptoms. The official title is sternocleidomastoid clamp and as I type this, I am all too conscious of my neck poking forward to look at the screen (must get some specs!). Neck tension creates a shortening of the muscles and the larynx rises. Laryngeal manual therapy is used to free the muscles so that the folds can be elongated again. In essence, Ed Blake's important work seemed to me to focus on re-establishing a comfortable and aligned posture along with breathing habits that can withstand the stresses of stage life.

Alan Watson returned to the stage to describe further details of his research. He took as his starting point some of the 20th Century singing manuals that have influenced current teaching. He felt that many were inaccurate, often confusing and very anecdotal. At Cardiff, he has made it a point actually to test hypotheses, and, with the help of volunteer singers, to try and find out what is really going on. We learned that tensions in the trapezius muscles can have a negative effect on the voice, and, interestingly, that latissimus dorsi muscles are used in deep inhalation and exhalation particularly for held notes. For further information refer to *Journal of Voice* 2012, vol. 26 (3) e95 – e105.

The afternoon began with a talk "Don't Forget to Breathe" by Jeanette Nelson, Head of Voice at the National Theatre. The focus of the talk was on how actors had somehow to maintain the spontaneous, naturalness of speech and physical performance (to make it credible) within the artificial context



*Jeanette Nelson's workshop*

of the theatre and its associated pressures. We were guided through a first day of rehearsals and then through the rehearsal process, encountering along the way all the various difficulties that actors have to face. We learned that breath holding caused by stress can easily become a pattern, so that many actors are working with insufficient breath with which to project the voice. This in turn causes stress and thus becomes a vicious circle. The actors' dilemma seems to be that while a raised chest and straight posture is good for voice projection, it is not very natural. I think this is a problem that all stage performers now encounter as the old "stand and deliver" style has long since been abandoned. Jeanette Nelson also emphasised the importance of listening. Such a skill she says can be developed to a degree where the listener actor can actually use the time to breathe properly. I think you see this sometimes in children, mouth open, eyes wide waiting for the next bit of the story. I found this talk on the practicalities of the actors' life very thought provoking and helpful.

Tea was followed by a workshop session. I attended Ed Blake's "Abs in Action" workshop where brave volunteers sang while their muscles were scanned with a portable ultrasound. The results were fascinating – particularly the opera singing where the obliques and transversus muscles were working at equal strength.

Overall, the day seemed to me to emphasise the importance of balancing the body and breathing technique and then extending that natural process into one suitable for performance. Importantly, this can be different for every individual. The science is there now to watch what we do and comment on it. It isn't prescriptive – unlike some singing manuals. The trick for those of us who teach singing is to find the way in which to bring out our students' musical potential and balance that with their personal physicality and the needs of performance. It's a constantly changing challenge but the science is there to help us along the way. I feel very grateful for that.



*Ed Blake's workshop*

*continues*