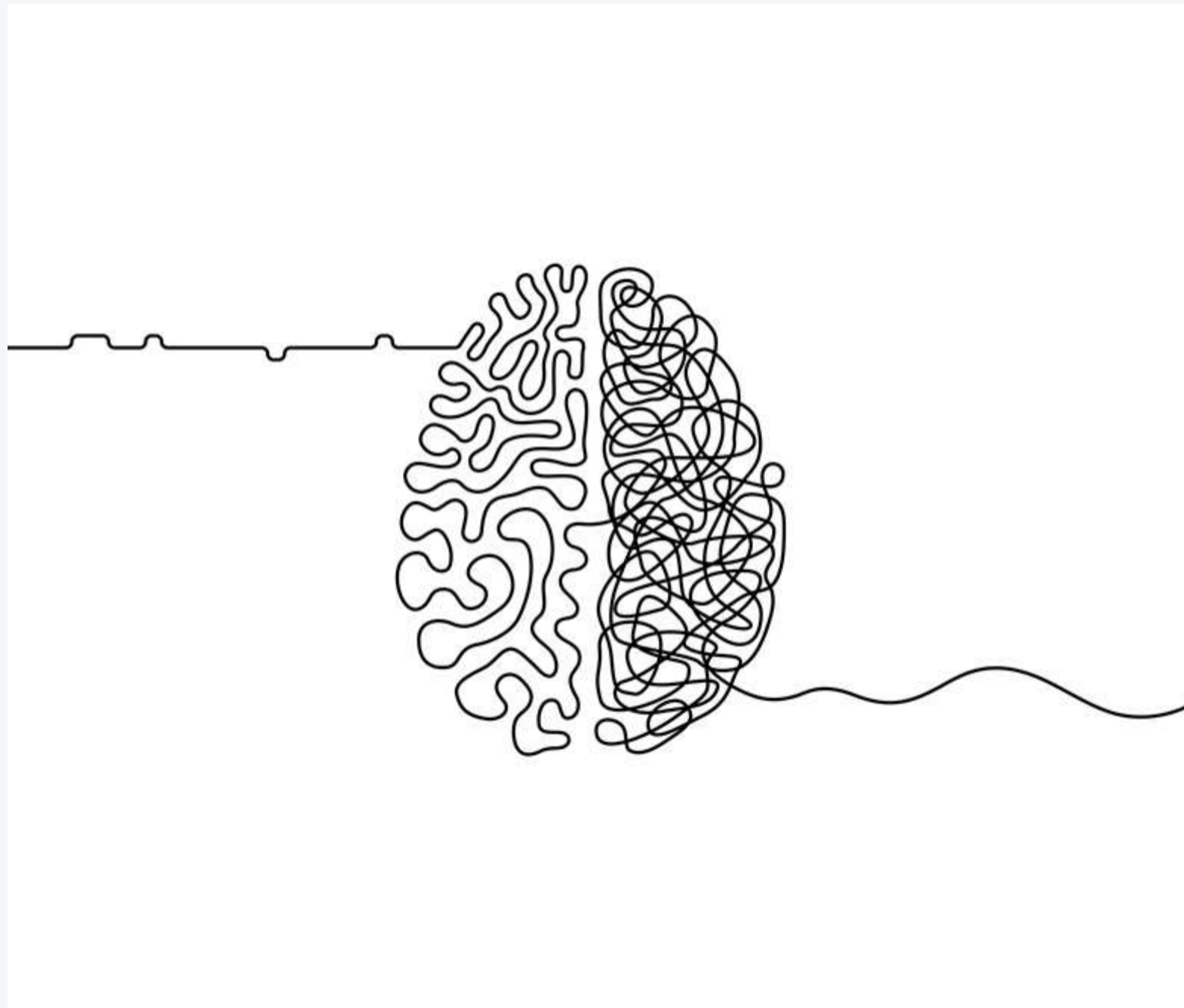


'BRAIN MAGIC': IMPROVING SINGING THROUGH MOTOR MEMORY

Nicola Harrison

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The Embodima protocol created by singer, coach and lecturer, Nicola Harrison, uses a combination of images and gestures to create lasting 'motor memory', coordinating the muscles needed to produce the right sound



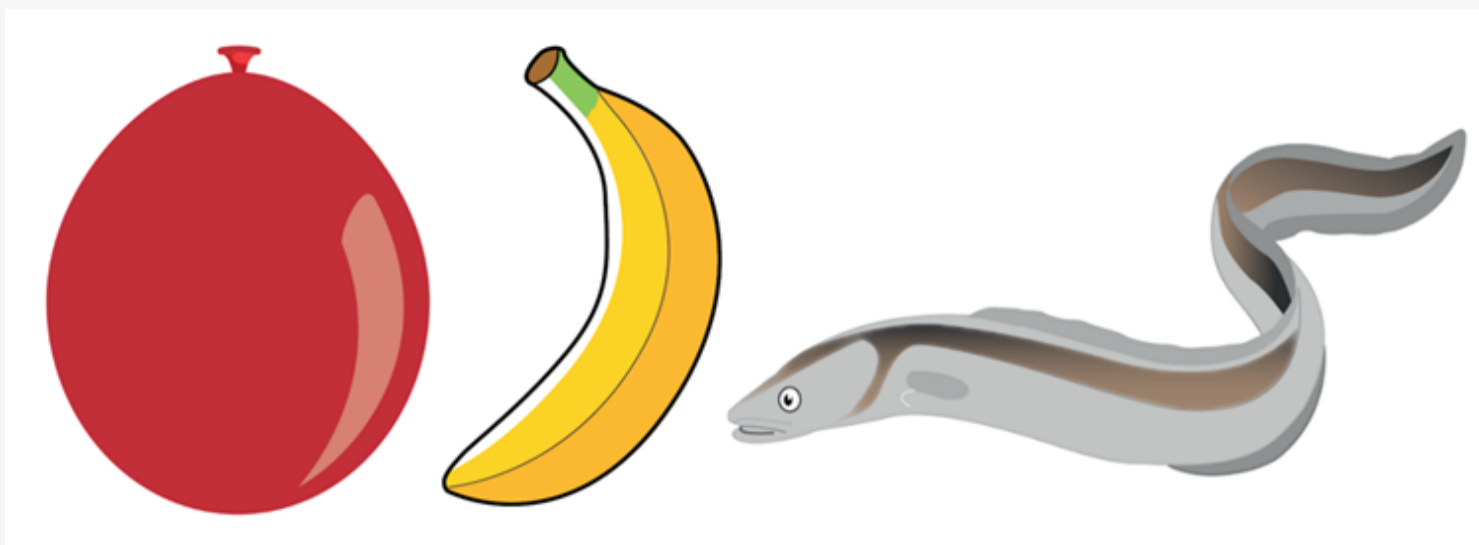
The Embodima technique stimulates the motor areas of the brain with a 'neuro prompt' © Adobe Stock

What do a balloon, a banana, and a conger eel have in common? They are all part of **Embodima™** a new imagistic motor training protocol for singers created by **Nicola Harrison**, singer, vocal coach and lecturer in singing at Pembroke College Oxford.

Using imagery and gesture to activate the correct muscle systems for every vocal task, Embodima creates an immediate effect in a singer's sound and in the way that sound is produced. It also creates and stores in the brain an immediate and lasting memory of that motor pattern. Harrison, who undertook extensive research in the creation of Embodima, says, 'singing is a complicated internal dance and Embodima is the choreography for that dance. It's a system of anatomy-based learning that can be described as kinaesthetic motor imagery - an image of a movement that is felt.

'Many of the muscles of singing are not under our conscious control and cannot be controlled individually, so it's a challenge to co-ordinate incredibly complex muscle systems effectively in order to manage a range of complicated tasks including: singing legato, coloratura and executing wide and complex intervals.

'Each time we learn a song we create a motor memory of it – and it is very important that those memories are set down correctly from the outset. As all singers know, it is quite a task to undo poor habits and relearn songs that have previously been learnt incorrectly.'

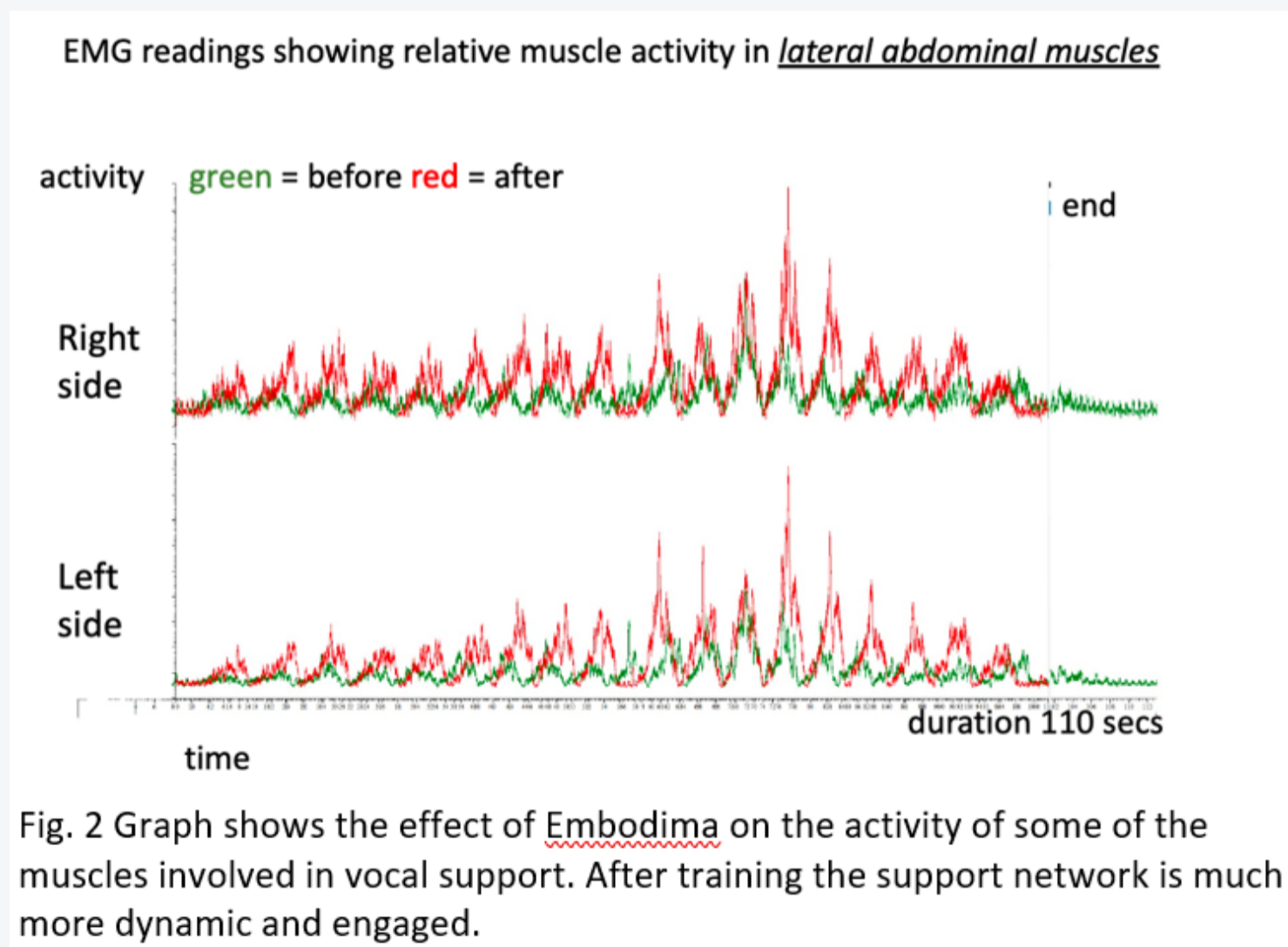


What is motor memory?

By 'motor memory' we mean a movement pattern that is laid down in the brain. It is sometimes erroneously referred to as a 'muscle memory' which is confusing as muscles have no memory. Motor training is used extensively in sport, medicine, instrumental playing and dance, but for it to work effectively in singers we need to coordinate the muscles of multiple systems, such as muscles of face, neck, larynx, pharynx tongue, chest, trunk etc. Motor memories in singers cannot be created by focusing on individual muscles or even muscle groups, so we need to train the whole system together to truly embody the sound.

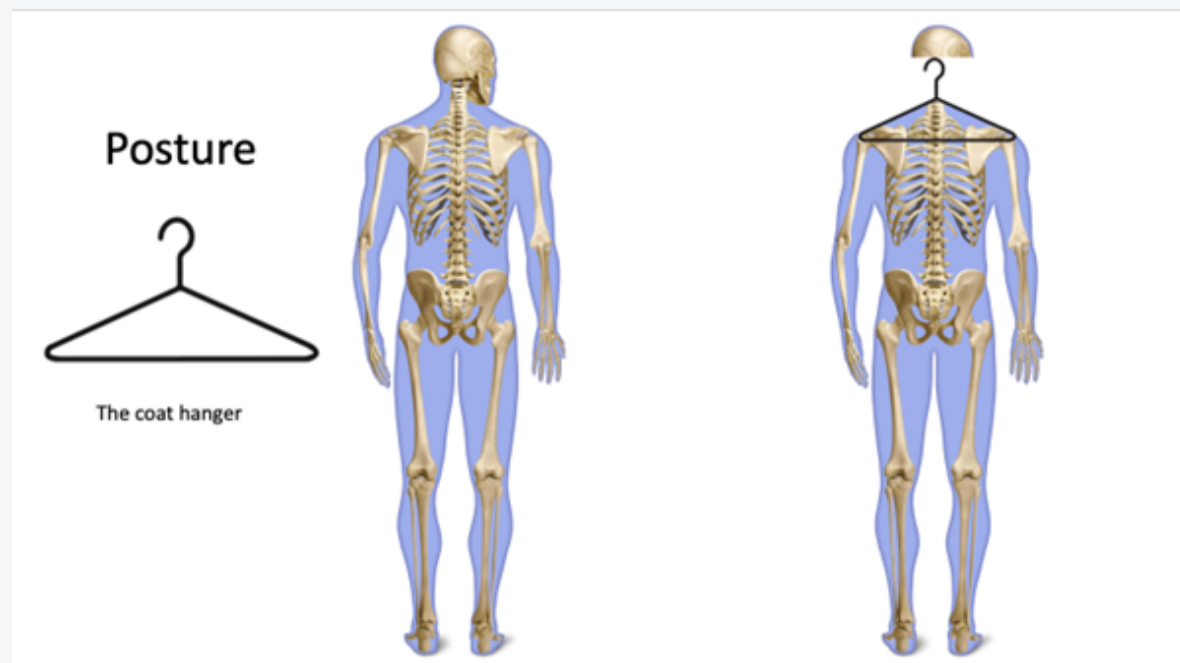
What is Embodima?

Developed by Harrison specifically for singers, Embodima helps the brain create immediate, effective and lasting motor memories in the singing body. This is achieved through stimulating the motor areas of the brain with a 'neuro prompt.' This takes the form of an image which is combined with a gesture that mimics the movement of the image, so that the image is seen and felt in the body. The singer is shown the image and taught the accompanying motor gesture, and the brain responds instantly by effortlessly activating the correct muscle systems. Nicola enthuses, 'it's brain magic!'



This imagistic form of learning is very different from the metaphors used by vocal teachers of the past. Each Embodima image evolved gradually, based on more than a decade of research, development and testing, through which the actions of muscles, directions of muscle fibres and inter co-ordinations of multiple systems together were mapped. These were then distilled into a series of 38 simple motor images collated in the Embodima workbook. With extensive training in anatomy herself, Nicola worked alongside neuroscientists and anatomists Dr Damon Hoad (University College London) and Dr Alan Watson (University of Cardiff) with whom she co-wrote *A Singer's Guide to the Larynx*. They were part of the extensive testing period in which more than 100 singers - from You can find out more about the science behind Embodima [here](#).

A simple image for postural correction



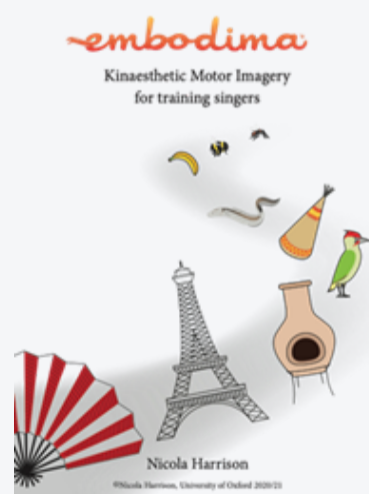
The coat hanger is a map of the shoulder girdle. If we imagine the coat hanger positioned in our body as shown, with the hook at the neck, we can see that we have our own 'coat hanger' right there in the skeleton. The brain recognises the shape of the coat hanger within the body and in response to seeing that image, the singer's shoulders are gently taken back and dropped, the chest is opened out for better breathing and the arms are able to hang freely from the shoulder joint (represented by the edges of the coat hanger).

For singers this image is essential for alignment and healthy vocalisation but it is also useful for computer users or when driving to correct a habitually slumped posture.

Who can benefit from Embodima?

Embodima is an excellent method to include when teaching beginners because good vocal technique can be laid down from day one. Harrison also offers 'motor check-ins' for professional singers who want to work on issues in their technique. Embodima helps to cut out overthinking, enables vocal rehabilitation for damaged or strained voices, and improves singing technique and articulation. In all, Embodima embodies the voice, building a strong physical and emotional basis from which to sing.

Harrison also offers a teacher training course for working with singers of all styles and levels. The next Embodima teacher training courses are on 14 January 2023 and 21 January 2023. Singer check-ins are always available. Enquiries can be made via Harrison's [contact page](#).



Nicola Harrison is a singer, researcher and vocal coach based at Pembroke College, Oxford. She has authored three books on singing as well as co-authoring the anatomy book *A Singer's Guide to the Larynx* with Dr Alan Watson. She is an Arts Council funded performer and director with specialisms in performance, languages, text and dance as well as training across multiple disciplines, both medical and artistic.



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