



Cello

We All Need a Little Support

by David Carter

I am a fledgling student of T'ai Chi, the ancient Chinese form of exercise that combines flexibility, meditation and martial arts. In T'ai Chi the whole body supports and balances the motions, which are performed slowly and gracefully, much as a string player might practice a shift. I struggle with getting my hands and feet (!) in the right place, with keeping my balance during the "kick" section and with remembering the sequence of movements. Even with my beginner's perspective, however, I can appreciate the whole body's role in giving power to the movements.

Using the whole body has obvious connections to string playing, especially lower string playing, where a lot of power is called for. I believe motions that are supported by large muscle groups are more efficient and less fatiguing than when smaller muscles are used. For example, a rapid detaché in the middle of the bow could use a forearm stroke without allowing the upper arm to balance and react to the motion, but it would be not only clumsy, but also tiring. Similarly, a vibrato motion that uses only forearm-based rotation (turn the doorknob) is tiring compared a motion that uses the whole arm (shake the milk carton).

The photographs help illustrate a spot where the support often breaks down — the wrist joint. If the large back muscles support the upper arm, which

in turn support the forearm, the forearm must support the hand. Elementary! A sharp angle at the wrist joint, causing a lack of support, should be avoided at the frog or tip in the bow arm, and likewise the left wrist during extensions or in shifting up beyond 4th position.

In the bow arm, a forte dynamic is easier to sustain with the unified hand and forearm. As the photo (below left) shows, the fingers curl to help this, and the thumb should remain as flexible as possible. In some cases, such as certain colors of piano dynamic, it might be appropriate to "suspend" the hand, creating the angle at the wrist (below right). The crucial difference is that the piano stroke bears very little weight, and so does not need to be supported by the larger muscles.

In the left hand, the forearm generally supports the hand. In extensions, I believe the forearm moves with the second finger (right top photo). This helps the left thumb remain flexible and assists vibrato. The forearm's support avoids the awkward hand position in the right lower photo. The only situation where it seems impossible to avoid such a sharp wrist angle is in thumb position, playing octaves in the lower positions. (For an excellent article on this subject, see *That Famous Ounce* by Barbara Thiem and David Greene in *The American String Teacher*, Winter 1993.)

Studying T'ai Chi has been an



Flexible hand in extension



Awkward extension, lacking forearm support



Bow hand playing forte (left), suspended for piano (right)



eye-opening (and humbling) experience for me; it has reinforced my belief that the whole body can lend flexibility and support to string playing, and it has given me a new level of respect for the adult beginners of the string world.

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