

Eye Dominance and String Playing: Does It Matter?

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More than 20 years, ago a *Reader's Digest* article explained that dominance pertains not only to a preference for hand use but also to eyes and feet. This article sparked my theory that eye dominance might affect the head position of a string player. Years of experimentation have led me to suggest that string teachers should take eye dominance into account when teaching. Prepare a blank sheet of paper and keep your instrument handy in order to try these experiments yourself.

WHAT IS EYE DOMINANCE?

Just as people are right-handed or left-handed, they can be right-eyed or left-eyed. Even when you think you are looking at something with both eyes, one of them often takes precedence.¹ One way to test eye dominance on a basic level is to cut a 3/4-inch diameter hole in the center of a piece of paper. Hold the paper with both hands, arms fully extended. Focus on an object through the hole and slowly bring the paper toward your face, keeping the object in view. You probably will take the paper directly to one or the other of your eyes. Repeat this exercise, then try the experiment again but take the paper to the opposite eye. Notice if you lost sight of the object for a second.²

On violin and viola, the head naturally balances with the left arm. Without the instrument in your hands, experiment by imitating a violin hold and changing your head angle. When your head tilts to the right, your left elbow will rotate away from your body. Tilt your head to the left and the elbow naturally comes closer to the body.

As you take up the instrument itself, keep your left eye closed, forcing yourself to be right-eye dominant. With your jaw on the chin rest, your head will be in a position that allows the cervical vertebrae to continue in a straight line up from your spine, even with your head turned slightly to the left. With the left hand in first position, check to see that you can see all four strings at the bow contact point and down the fingerboard. You probably can see all four strings without a right or left tilt to the vertebral axis.

Repeat this exercise with your right eye closed, forcing left-eye dominance. If you place your head in the same straight position of the cervical vertebrae, you might discover that you cannot see all four strings. The top string is hidden behind the second string.

Notes

1. See Hannaford, 1997 and 1995.
2. Eye dominance has long been taken into account in sports like archery and target shooting. See "Determining your Dominant Eye" at <http://archeryweb.com/archery/eyedom.htm> (8/10/2004).
3. Recent vision research shows that eye dominance can change when the relative image size is larger through the right or left eye or with a change in horizontal eye position. See Banks, Ghose, Hillis.

Experiment to see what modifications are necessary in order to see all four strings. You may find yourself doing what many students do: tilting the head far to the right or left, or perhaps moving the chin over to be even with the tailpiece.³

This head-tilting solution produces a whole-body imbalance. Tension in the unbalanced left arm impacts fingering, shifting, and facility, ultimately impacting the right-arm tone production. When moved to the center, the chin puts pressure on the tailpiece and can cause variance in the string tuning and intonation. This phenomenon becomes especially apparent immediately before a large shift, as weight on the left thumb is transferred to the jaw/shoulder hold.

Experiment again, holding or pretending to hold a cello or bass. Close the right, then the left eye, while placing your left hand even with your eyes. In this case, with the left eye open, you can see what the left hand is doing without turning your head. When using only your right eye, your hand is visible only if you turn your head to the left, move your hand further forward (as if the cello were placed almost straight up and down), or if the hand is moved to upper positions. Taking this into consideration, we begin to understand why children have a tendency to pull the cello neck away from their bodies when they play—especially if they are right-eye dominant visual learners. They are just trying to see. Granted, cellists usually play with binocular vision (using both eyes) so the effect may not be as dramatic until other objects of visual concentration are added, such as the music stand or conductor.

Watch your students play, noticing their head postures. No matter how carefully you have taught them, each performer's body tendencies dictate what he or she ultimately does when playing. Try the paper test. Most of my crooked-headed violinists have turned out to be left-eyed. Many right-eyed cellists have an overwhelming desire to pull the neck to the

left, away from their bodies. These position variations are caused by the simple wish to see what is happening. Add to this mix our directives as teachers to "watch your bow contact point" or "check your finger placement," and you can imagine the difficulties we inadvertently create.

The same theories seem to apply to guitar. Students who turn their heads far to the left to see what they are doing with their left hands are strongly right-eye dominant, which has an effect on guitar angles, spine twisting, and left-hand facility.

Imagine the effect of left-/right-eye dominance on harp, which is played to the left. Complicate the situation by adding a music stand placed to the right of the strings and hands. Some students are able to adapt quite easily. For others, knowing the effects of eye dominance might help to provide some answers, slight position adaptations, and perhaps more patience and understanding.

SOLUTIONS

Center chin rests help solve the visual problem for violinists and violists. For many years there has been a center chin rest that fits on full and 3/4 violins and violas. More recently, a chin rest adapted for small instruments has become available. This chin rest attaches to the left of the tailpiece but has a large cup that extends far to the right. This gives students the possibility of moving their chin positions toward the center until they can see all four strings, still maintain correct cervical position, and not affect the tuning of the instrument by the chin pushing on the tailpiece. There is no bump on these chin rests, so children find them comfortable. Of course, some teachers argue that center chin rests may lead to other problems in the upper positions, but creating correct spine position and body balance is an important basis for decision making and long-term healthy playing.

For beginning cellists, a small square of adhesive Velcro in a first position thumb

spot will help the children get a feel that they are in the right place and encourage them not to move the neck of the cello away from their bodies in order to see their left hand.

Left-eyed violinists and violists are more comfortable working on the middle two strings, as their visual dilemma is caused by the highest string. Classroom heterogeneous methods generally start players on the middle two strings, so the head angle problem may not show up immediately. Right-eyed cellists are more comfortable working in fourth position, bassists in "middle position." Some newer method books offer the option for bassists to begin in lower or middle position. Consider eye dominance as a factor when choosing which position to use.

ORCHESTRA SEATING

Eye dominance plays a huge role in one's comfort level when playing in orchestra. The best case scenario is when players can line up their dominant eye, the music, and the conductor in a relatively straight line of vision. The worst case scenario is when those three points create a zigzag. Performers tend to line up their eye with the music, making the conductor superfluous. Even continual admonitions from the conductor to watch do not lead to much improvement, but rather can result in a higher level of tension for the player. Because of the zigzag angles, watching the conductor could require memorization of whole sections of the music with the

potential for getting lost reading the music.

We often ask students to share stands. We often seat them in orchestras through audition. Students are creative when trying to solve the problems these two situations present. Have you ever noticed concertmasters sitting with their knees facing the audience? Those students were attempting to align the left eye, music, and conductor.

Allowing beginning orchestra students to play with individual stands gives each student the opportunity to line up eye, music, and conductor while keeping good posture. Although a bit cumbersome, this also encourages students to mark their own music during rehearsals. Taking eye dominance into consideration when setting up stand partners can reap results and improve an orchestra's sight-reading ability.

EXPERIMENT!

Eye dominance seems to affect string playing. Any aspect of a person's physiology that can potentially disrupt the flow of whole body balance and correct muscle use deserves serious consideration. Recognizing the effects of eye dominance and being able to offer practical solutions to problems can have positive consequences on students' playing comfort and efficiency. Experiment with your orchestras and students. For me, this tiny bit of information has reaped huge benefits.

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