Cello

Strategies for Working on Ear Training and Intonation

by Teresa Richardson

Pablo Casals said that intonation is a "question of conscience."[1] I tell my students regularly that "conscience" involves two steps: 1) noticing that the pitch is off, and 2) taking action to fix it. The following ideas address ways to work on ear training and to develop students' ability to complete both of these steps. (Thanks to several of my colleagues for contributing!)

I love to talk about intonation as a multi-sensory experience. Yes, pitches are heard with our ears, but accurate intonation is also something you can feel. The cello is such a physical instrument, and the resonance of accurate pitches, most notably ringing pitches matching open string notes, can be felt in the body and under the fingers. Introducing first finger D on the C string is exciting for beginners who can *see* both the A and D strings spinning with sympathetic vibrations! I find myself relying more on my senses of touch and sight when the volume level in an ensemble is too loud for me to hear myself. After discussing how accurate intonation can be heard, felt and seen, it can be entertaining to have a student imagine what great intonation might smell or taste like. How about roses, or freshly baked bread!?

Tuning

Naturally, working on intonation is only effective with an instrument that is in tune. It is important to remind students to always tune the instrument before practicing. The skill of tuning is itself an ear training exercise.

Singing

Singing is an integral part of ear training. If a student is uncomfortable singing, it helps to sing along with them (safety in numbers!), or have them hum or even play a kazoo! During an activity called body solfege, teacher and student stand facing one another and simultaneously with both hands tap their: feet (do), then shins (re), knees (mi), thighs (fa), hips (sol), shoulders (la), head (ti), and then put hands in the air (do) while singing the notes of an ascending scale. Using body solfege for any of the pieces in the first half of Suzuki Book 1 is a favorite singing exercise of mine because of the visual representation of higher versus lower pitch.

I often have students try to match my sung pitch, or repeat my pitch(es) or phrase with their voice. If a student is uncomfortable singing, I bring levity to the situation by singing in a comical manner. I have my students sing note names while playing the pitch exercises in *I Can Read Music Book 1* by Joanne Martin. If it is difficult for them, I sing along to reinforce the pitch. A popular exercise among fellow teachers is to have students play a few notes in their repertoire leading up to a problematic pitch or interval, and then have them sing the pitch or interval rather than playing it. The student must hear the pitch in their head to be able to sing it.

The concept of hearing music in one's head is called *audiation*. Audiation is a term coined by Edwin Gordon "to refer to comprehension and internal realization of music, or the sensation of an individual hearing or feeling sound when it is not physically present."[2] It seems to me that the ultimate goal of ear training with students would be for them to develop a strong sense of audiation.

Piano

Piano accompaniment provides an excellent foundation for intonation, assuming the piano is tuned, the cello is tuned to the piano, and the pianist is solid. The Suzuki book recordings are performed at polished tempi that are often too fast for students who wish to play along. The app "Amazing Slow Downer" slows down any piece without changing the pitch! Using the app makes playing along with the piano accompaniment tracks more accessible to students who have trouble keeping up with the recorded tempi.

I have found it valuable to have students themselves play scales and arpeggios on the piano since it is a wonderful visual aid. Sharps, flats, whole steps, half steps, pitch direction, intervals and chords are illustrated clearly on the piano. I also introduce natural/harmonic/melodic minor scales, major/minor/diminished/augmented triads and arpeggios, and occasionally different modes or the whole tone scale (for advanced students) on the piano.

Resonance

My favorite go-to intonation strategy, a popular one with many teachers, is playing ringing tones. The cello is magnificently resonant on all A's, D's, G's and C's (pitches matching open strings), and E could be said to be an honorary ring tone. The student plays a ring tone and then stops or lifts the bow while keeping the fingers down to see if the ring continues after the bow has stopped. It can be fun to count how many seconds the ringing lasts. Another name for this idea is "cello feedback:" the cello will let you know when your fingers are in the right place! Students smile when we talk about how ringing tones make the cello feel happy. David Holmes says that he likes how the creation of ringing tones also involves having a beautiful bow tone. Naturally, a bigger tone produces greater resonance. Arpeggios and tonalization exercises are perfect for working on ringing tones. I remind my students that I would rather have them play with a beautiful tone and miss a note than play timidly with great intonation. Beyoncé once wisely said, "If you liked it, then you shoulda put a ring on it."[3]

Listening

When I have students set annual "cello resolutions" each January, most of them admit that listening is the number one area

1 Blum, David. *Casals and the Art of Interpretation*. Berkeley and Los Angeles, CA, University of California Press, 1977.

2 Gerhardstein, R. C. (2002). *The historical roots and development of audiation: A process for musical understanding*. In Hanley, B. & Goolsby, T.W. (Eds.) "Musical understanding: Perspectives in theory and practice." [Canada]: *Canadian Music Educators Association*.

3 Beyoncé quote from the song *Single Ladies—Put a Ring On It* from the album *I Am... Sasha Fierce* 2008 Columbia Records

that needs improvement. We all know that students who listen frequently to their repertoire tend to learn pieces faster and more accurately. Regular exposure to music of various styles at home, in the car, and at concerts is also important to developing a musical ear.

Active listening drills can be a lot of fun. Here are six examples:

- Freezing on a unison pitch and noticing how there are audible "beats" that disappear when both players match exactly can be fascinating for students.
- While the teacher plays a passage, the student can use a buzzer or raise their hand when they notice an out of tune note (and then switch roles).
- Susan Crawford likes to play two notes, or slightly different versions of the same pitch, and have the student guess if the second note is higher or lower. She also has students guess if they hear a "step" (half or whole step) or a "skip" (larger interval).
- Andrea Glass plays a game she calls "secret cello messages." With her back turned, she plucks three open strings for a beginning student who then repeats the same pattern on their cello while singing the note names (and then switches roles). More advanced students play this game with fingered pitches and longer sequences.
- I enjoy an exercise in which I play a piece in unison with the student, and upon saying "switch," we play out of tune on purpose, creating hilarious cacophony! The next time I say "switch," we go back to playing in tune. It may appear counterintuitive to have students play out of tune on purpose, but the redeeming factor of this game is the repeated intention of returning to playing in tune.
- The task of having students transpose pieces and finger patterns is beneficial because it develops the sense of relative pitch.

It is commonplace for students to play a note out of tune and then quickly adjust the pitch. One of the most common strategies I use to curb this habit is what I call the "go back a note method." I remind them that practice makes permanent, and if a pitch is consistently adjusted, the act of adjusting will continue to occur. I ask the student to freeze on an out of tune pitch, say whether it is sharp or flat, then go back a note and play it again, deciding this time if it is sharp, flat or in tune. Practicing in this way secures accurate pitches and distances while eliminating adjustment, or "gray area" in regard to pitch location.

While having a student work on a scale or passage with the "go back a note" method, I have made a few interesting observations that have changed the way I teach intonation. The first is that some students look at me or a parent expectantly for an answer regarding whether the pitch is flat, sharp, or in tune. Students who expect intonation direction to be dictated need to continue developing confident independence and critical listening skills. The second thing that I have noticed is that, once students feel independently confident with this task, they can be surprisingly picky, to my amusement! Lastly, I have observed that students who are *told* whether they are sharp or flat tend to overcorrect in the opposite direction simply in an effort to please, without listening and thinking themselves. Therefore, I have largely stopped telling my students if they are sharp or flat. I bring their attention to a spot that sounds "off" and ask leading questions until they figure out why. Playing detective is engaging and teaches them the skills they need to work independently at home.

In my own practice, I use the voice memo app on my phone to record myself. I encourage my advanced students to use this tool as well. While it can be hard to listen to oneself, recording might be the single best way to learn to listen objectively.

Harmony

I feel that it is important for each lesson to have a good balance of the following: 1) teacher playing in unison with the student as reinforcement, 2) teacher playing in harmony with the student to provide context and work on ensemble, and 3) student playing solo to for the teacher to observe the student's ability to execute independently. Each approach addresses intonation from a different angle. Playing in harmony is especially important, as harmony provides context and a reference point on which to base intonation. For example, the first largo movement of Eccles *Sonata in G Minor* needs to be played with harmony for the student to truly understand the tension of the rising chromatic phrase.

Drones

Drones create a constant, tonic home base for tuning. A student can create their own drone by playing the melodic line on one string while also playing an open string, double stop style. A drone pitch could alternatively be produced by the teacher or a chromatic tuner. The album *Cello Drones for Tuning and Improvisation*, available on Amazon, Apple Music and Spotify, contains cello drone tracks on all twelve chromatic pitches. Improvising over a drone helps students understand concepts of harmonic tension, stability, and the role of pitches as they lead back home to the tonic.

Double Stops and Intervals

- Rick Mooney's *Double Stops for Cello* is a great introduction to double stops and intervals.
- Andrea Glass plays scales with her students not only in thirds, but in fourths, fifths, sixths, or even seconds or sevenths!
- Familiar songs that start with intervals, like *Happy Birthday* for a major second or Wagner's *Bridal Chorus* for a perfect fourth, are common memory devices for learning intervals.
- Playing intervals as double stops helps determine hand spacing. Inversely, Rebecca Parker-Downs enjoys playing double stop passages as duets with students to work on pitch by isolating each line.
- I like to have students play the pitches between intervals and write the intervals into their music.
- When I observed Mimi Zweig's violin group classes many years ago, she played intervals on the piano and had the students identify and sing them. Beginning classes started with identifying only minor seconds and octaves. When the students seemed to understand, she would add another interval until eventually all the intervals were learned.

I hope these ideas will spark inspiration and have students smiling while playing beautifully!

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