



CHAMBER MUSIC

Working with the Infinite Onion

by Tom Rosenburg

Here's a riddle for you: I am like an infinite onion. There is always another layer of me for you to peel back and you might feel like crying the entire time. I am also like doing the dishes. There is always another meal to eat and that means there will always be more dirty dishes for you to clean... forever! What am I??

The answer is: Intonation!!

Great intonation in a chamber music ensemble is one of the most difficult technical aspects to achieve for any group striving for excellence. It often requires a lot of rehearsal time, can test anyone's patience, and all your hard work can seemingly disappear on stage, even for professional ensembles. I would like to explore the reasons it can be so tricky and complicated, and also offer ideas on how a student ensemble can begin to tackle this thorny subject.

There are many reasons that good intonation should be high on the list to spend at least some time working on during most rehearsals. When a group is playing in tune, the entire sound of the group will be greatly enhanced. It also means that all members of the group are employing a very high level of listening. A group that is playing beautifully in tune together is also probably doing a lot of other things really well too!

Have your students try this simple demonstration of how perfect intonation will improve the sound of their instrument. Have them play a fingered G natural one octave above the open G string using a full sound with a slow bow speed. As they slightly adjust their finger, they will be able to both see and feel the open G string below it vibrate "sympathetically". When it is really spot-on in tune, the open G will vibrate quite freely, and the sound of their instrument will take on an added depth. Learning to use these sympathetic vibrations is one tool in helping individual students listen to their instruments in a more complete way.

Good Tuning Habits:

The first step towards good intonation is good instrument tuning. Remember that great intonation in a chamber music group is even more difficult to achieve than in

orchestra, so don't tune up like an orchestra! I strongly discourage more than one person tuning at a time. Here is the method I recommend for string groups. Have the cellist take an A from an electronic metronome, or if there is a piano in the group, take the A from the piano. The others should listen too, helping to ensure that the cellist gets the correct A. Then the cellist tunes his/her instrument and gives the A to another member of the group. Check that the open strings match before moving on to the next person. All the while, each member of the group can help the other members get everything just right. Good intonation is hard enough...you might at least start with all the open string notes in tune!! A more advanced "trick" is to make the open C strings ever so slightly sharp, and the open E strings ever so slightly flat, which can help solve certain other intonation issues, as will be discussed next.

Group vs. Individual Intonation:

Good ensemble intonation requires flexibility and understanding how chords work. An individual may practice a passage and get it beautifully in tune at home, only to find it seems out of tune in a group. Individual intonation (also known as "expressive" or "horizontal" intonation) is different than group intonation. It can be used as a very expressive element. However, those beautiful close half-steps that sound so expressive by themselves might sound unpleasantly out of tune in a group. Ensemble intonation often needs to be approached from a more vertical or chordal standpoint. Here are a couple of great intonation exercises that ensembles can try, using a string quartet as an example. First, be absolutely certain that all of the open strings in the group are in tune with each other. The group will be playing a C Major chord together. The

cellist will begin on open C, the violist on open G, the 2nd violinist on a low C natural that matches the cello and the first violin on open E.

Build the chord from the bottom, and have all players play with a full and free yet focused sound. Everything should go splendidly until the poor first violinist plays their open E, which will sound painfully sharp!! Have the first violin get the pitch to fit into the chord by playing it on the A string. It will be flat to the open E. Why is this? Without getting too complicated, it is because in general, the third in major chords has to be slightly low to sound perfectly in tune. Historically, keyboard instruments used to be unable to be in tune in every key. By around 1700, the system of tuning called Tempered Tuning solved this by basically making all of the intervals very slightly imperfect. It was a revolution at the time, and J.S. Bach responded by writing his set of keyboard pieces in every key known as *The Well-Tempered Klavier*. String players, however, generally play with their strings tuned to perfect fifths, and so the thirds and sevenths of most chords will need to be adjusted to achieve beautiful intonation. Most students are better at hearing this than one might think at first.

This exercise can really help group intonation. Return to the C major chord exercise. This time, have the first violin begin on an E on the D string. The idea is that everyone will play a scale in the key of C major, beginning on their pre-assigned note. At first, a coach might need to help this process. It is imperative that the perfect fifth (C and G) be in tune, and then adjust the third (E natural). Have everyone move on to the next note in the scale and carefully tune that chord (D minor: D natural, F natural, A natural). Continue through one or two octaves of the scale this way. Next,

do it again, but switch which player starts on what note. You will find that in almost every case, the thirds of the major chords will need to be surprisingly low. A great way to help a group play a piece they are learning more in tune and get the feel and sound of the harmonies in that key is to do this scale exercise in the key or keys in which the piece is written.

Once the group gets the hang of this, you can try one more variation. Deliberately make at least one open string on each instrument a little out of tune and repeat the exercise, making everyone adjust their fingers to correct the problems caused by the out of tune string. Because it is our ears that ultimately guide our fingers, it can often be surprising how quickly student ensembles can learn to play chords in tune, even with out of tune strings. Unfortunately, during a performance it is not all that unusual for one or more strings to go out of tune. Learning to adjust can make a huge difference!

Hand Position:

The better in-tune each individual in a group can play, the better the chances of good group intonation. Most string teachers encourage “perfect” left hand position with equally spaced intervals between each finger. If all members of the group have achieved this, playing passages in octave

unison will be made much easier. It also will help each member of the group know (as opposed to guessing!) the small adjustments they need to make on specific notes when working on group intonation. For instance, if a student knows where a “regular” E natural is (one that will ring with the open E string), they can know how to tune it down to fit in a C major chord.

Here are some other tips and observations that can help:

- Know that there can be a limit on patience one or more members may have for this kind of slow and careful work.
- Rehearse fast passages as if written “molto adagio”, and speed up “molto adagio” passages to save time.
- Have one person hold a pitch for one or more other members to play a passage against. This can also be done with many newer electronic metronomes that produce a large range of pitches. Good individual at-home practice using this technique can speed up intonation work in the group.
- Use a system to mark music with reminders as to where certain pitches belong. A common one is an arrow up to slightly raise the pitch, and an arrow down to slightly lower it.

- Always rehearse intonation with focus in everyone’s sound. Playing with a fuzzy sound will disguise the center of the pitch making it more difficult to really hear what is going on. The idea in rehearsal is to find the problem and solve it...not disguise it! However, once in concert, certain notes (such as E naturals that must be played with open E) may benefit from a fuzzy or unfocused sound.

And finally, in each rehearsal, be sure to allocate your time wisely to cover many aspects of the music you are working on. Don’t focus only on intonation because after all...it is the *Infinite Onion!*

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