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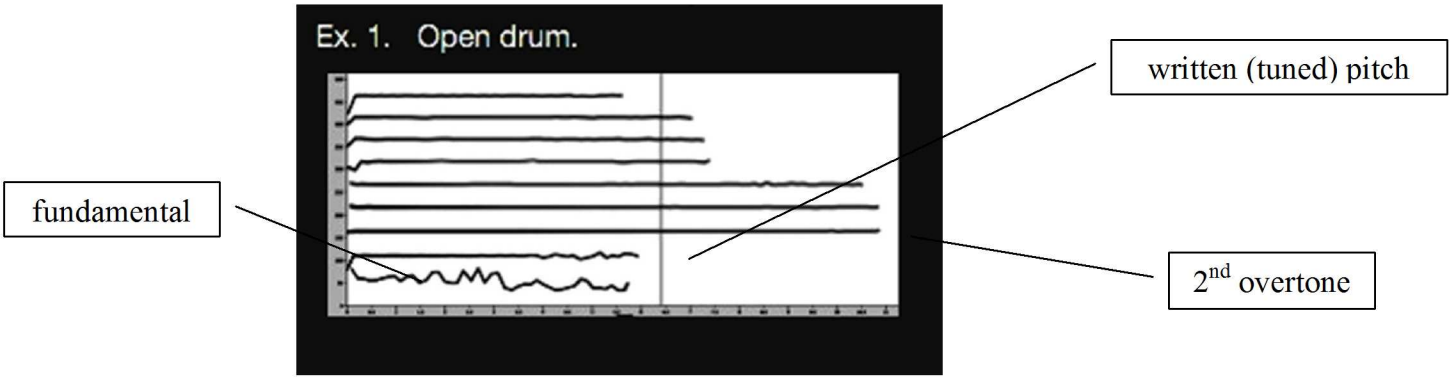
The Timpanist's Ear

Throughout the modern history of timpani pedagogy, tuning exercises have been emphasized as one of the most important aspects of a timpanist's study. Most timpani students begin to address the craft of tuning by learning to match pitch from a source such as a piano or perhaps a tuning fork. While pitch recognition skills are extremely important, they are only part of the process in truly understanding how to assess the tone of the timpani, their characteristic sound and their overtone series. While many of the most popular timpani teaching methods include excellent tuning exercises, none of them present a thorough and consistent system for training the ear. Therefore, although these method books contain tuning exercises, there is not enough complete information or instruction given that teaches the student how to be successful with these exercises. The timpanist is told what to do, but not how to do it. Many students can learn to tune successfully after a long and disciplined study of pitch matching, but for some, simply attempting to match pitch over and over is a tedious process that achieves limited results. We are all aware of otherwise gifted and exceptional percussionists who turn away from timpani simply because they cannot find a way to consistently tune well – even when they are successful at pitch matching in traditional aural skills settings.

In addition to the fact that many collegiate percussionists begin a degree program with a poor background and remedial ability in pitch recognition and reproduction, the most popular timpani method books do not treat the acquisition of timpani tuning skills and aural skills as one comprehensive discipline. This has been an ongoing pedagogical challenge in college percussion teaching.

I took these concerns to my colleague, Dr. Ed Martin, who is a composer and also an aural skills teacher at our university. Together, we researched ways to teach timpani tuning skills from an aural skills approach. We have developed a comprehensive approach, with innovative teaching materials that address these two problems. One of the most significant conclusions from this research is that we need to understand what we are hearing. When we strike the instrument, we are actually hearing a chord.

Dr. Martin and I recorded singular timpani pitches in a sound controlled environment, and did a digital analysis of each note using SPEAR software. SPEAR is an application for audio analysis, editing and synthesis. The analysis procedure attempts to represent a sound with many individual sinusoidal tracks (partials), each corresponding to a single sinusoidal wave with time varying frequency and amplitude. Aside from offering a very detailed analysis of the frequency content of a sound, this model offers a great deal of flexibility for editing and manipulation. Using SPEAR, we were able to create a visual representation of a timpano note. Each partial is represented by a line, and this line indicates the amplitude and the length of each partial. Immediately evident was the fact that the fundamental (an octave below the written pitch we play and tune) was disorganized, and the written pitch (the first overtone) loses its amplitude far earlier than the second overtone (what we hear as the 5th) and the third overtone (an octave higher than the written pitch). In all cases, we repeated this experiment on different models of timpani and achieved the same results.



The conclusion here is that we will learn to tune more accurately if we hear the singular written pitch we are playing as part of a harmony. This concept directly relates to the timpani in the symphonic repertoire. Most timpani etude books do not require the timpanist to play as part of a harmony. We all continue to value and play the Goodman and Friese-Lepak etudes, but these “a cappella” exercises are a one dimensional experience.

My colleague and I have composed exercises and etudes that allow any percussion teacher with basic piano skills to accompany the student. These exercises also require the student to tune in time and with harmony in the background.

Timpani tuning practice should include 3 items:
1) Singing
2) Listening to timpani tone
3) Playing with other sources of harmony

Singing: the more capable and comfortable we become matching pitches with our voice, the better we will hear as timpanists. Singing is a must.

Listening: It is important to listen to all of the overtones heard when the timpani are struck, and to be able to sing as many of them as possible.

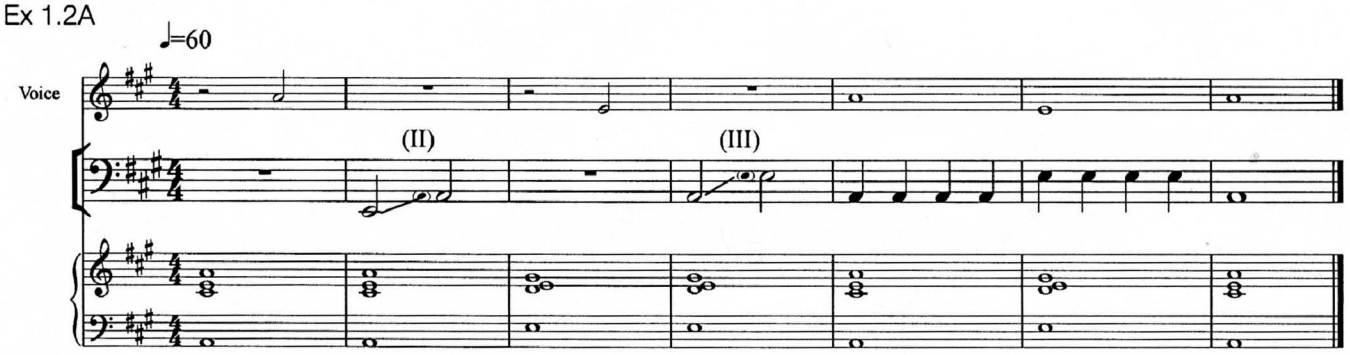
Playing with other sources of harmony: The exercise below demonstrates a method for pitch-matching with piano, singing the pitch aloud, tuning the drum in time, and then playing that pitch as part of a harmony.

(See tuning exercizes on pg. 3)

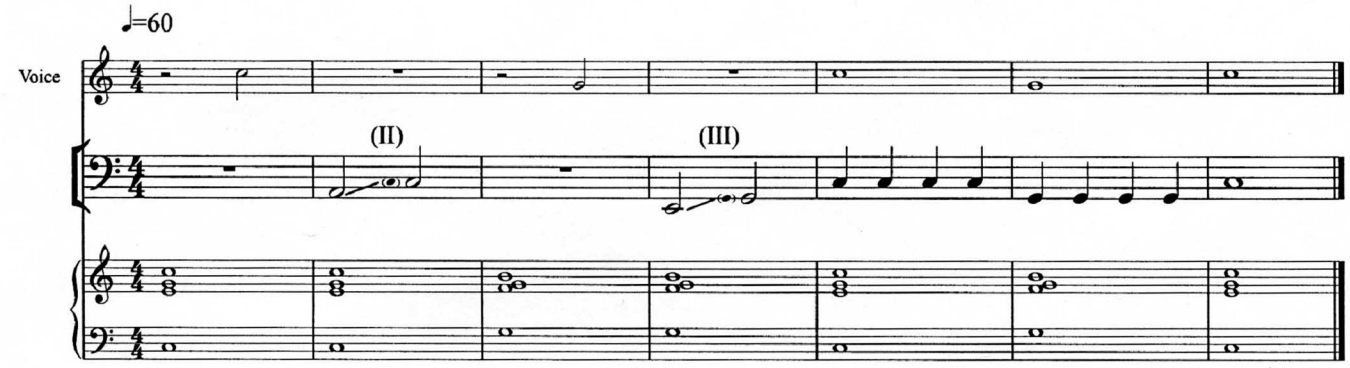
Tuning Exercise 1.2, Drums II and III

Perform the following exercise in various major and minor keys.

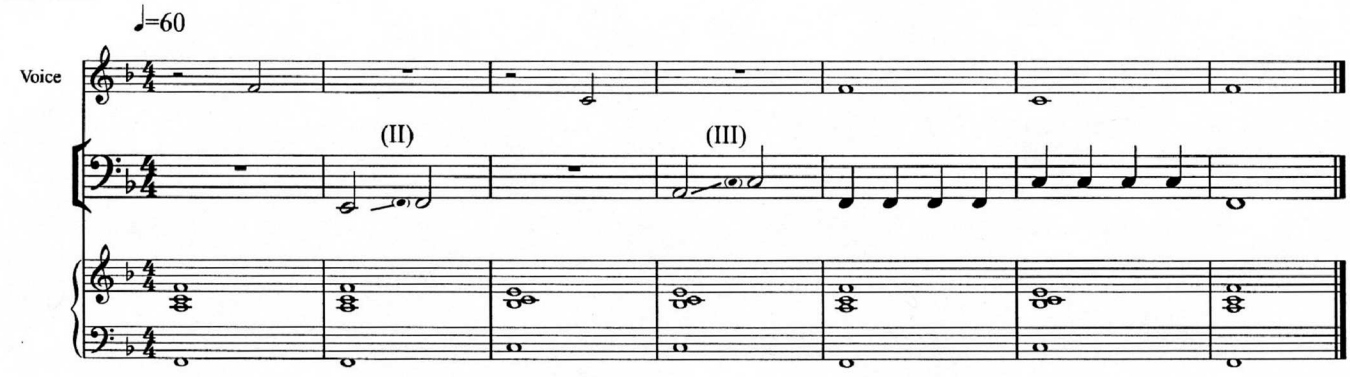
Ex 1.2A



Ex 1.2B



Ex 1.2C



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