Triangles: The Good Sound

by Dr. Stuart Moors, University of Maine

What is the "good sound"? When lecturing on the highly underrated idiophone known as the triangle, I start with a survey of opinions regarding preferences of sound production on the instrument. First I produce a sound that is very pure in nature a few tones sounding at the same time. Then I play a sound that is thick and rich with many dissonant tones. Invariably, most listeners in the audience prefer the pure sound. This is understandable. In an isolated environment, why would someone prefer a dissonance to a consonance? The audience always reacts with bewilderment when I reveal that it is the second one, the one that is flush with harmonics, that is the accepted norm among professional players. It is preferred in part because the instrument is usually used in an ensemble context. As part of an ensemble, the humble triangle becomes integrally involved in an aspect of acoustics known as "constructive interference." This means that the volume of pitches that are in phase (in tune) with other sounding frequencies add their volume on top of the others while the volume of the notes that are "out of tune" remains soft. If a triangle sound has few pitches, it has less chance of being "in tune" with the prevailing harmonic structure. A triangle sound more abundant in pitches will always cut through and sound as if it is in tune with the prevailing harmony. Imagine an instrument that automatically plays in tune! A triangle played with the "good sound" accompanying a series of harmonic changes sounds as if it is changing pitches with the chords.

How to produce the "good sound." For this issue, we are discussing two modes of vibration. The first, the one that produced the purer tone can be thought of as existing in a two dimensional plane. The legs of the triangle that form the open end vibrate back and forth, while the opposite side bows in the middle with the two closed corners being nodal points of no vibration . One creates this mode of vibration by striking the triangle at 90 degrees to its plane, on any of its sides. The second sound breaks out of the two dimensional mold into the third dimension. Here the open legs and closed side not only vibrate back and forth as in the first mode but also vibrate laterally, side to side. Scientifically, this is called "torque" or twisting. To make the triangle enter this twisting mode, we simply strike it at a 45 degree angle (or less) to its plane. This causes the instrument to torque and produce the lush desirable sound.

Now that you know how to produce the different sounds try a little experiment. Have a friend play a series of chord progressions on the piano while you play the triangle (the good sound) in the same rhythm. Listen to the triangle seemingly change its pitches to match the chords! The technique of striking the triangle at an acute angle to its plane extends to roll technique. Instead of rolling with the beater perpendicular to the corner of the triangle, try moving the wrist down and away from the corner while you are rolling. Listen to the dramatic increase in fullness of sound. The beater is striking the triangle at an acute angle to its plane.

Whenever possible the triangle holder should be hand held. This is because energy (sound) is lost when the instrument is hung or clipped to a music stand. Again, a little experiment will show what I am describing. In a quiet environment, clip or hang your triangle to a stand and play it with a heavy beater. Touch the stand and feel the vibrations that should be emanating from the instrument passing through the stand. Now play it hand held. Can you hear the difference? The reason the energy doesn't dissipate through the hand as it did through the stand is that the fleshy fingers are poor conductors and allow most of the energy to be released in the form of audible sound waves caused by the vibrating triangle.

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Stuart Marrs received his doctorate form Indiana University School of Music. Dr. Marrs' professional experience spans over thirty years and three continents. His principal orchestral positions include the orchestras of Louisville, Bolivia, and Costa Rica. Dr. Marrs is the founder and president of the Maine Chapter of the Percussive Arts Society, a driving force behind the development of percussion in the state of Maine. He has taught at the National University of Cost Rica, Indiana University and is presently teaching percussion, music research, and digital music at the University of Maine. Dr. Marrs tours the United States, Latin America, and Europe as a soloist, conductor, clinician, and teacher.