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*Golden Music: Phi And The Musical Arts*

This project is the collection of data relating to Phi found when searching for the golden number in musical harmonies. The initial idea was to find a "golden chord/note/scale" that sounded naturally pleasing to the human ear. In order to discern a number from sound, I took the frequencies of two harmonic notes, found the ratio of the larger frequency over the lesser one, and compared this number to Phi (which equals 1.6180339887...). Theoretically, the chord with the ratio closest to Phi would be the "golden chord," or the chord that sounds naturally pleasing to the human ear. I used this procedure to find the frequency ratios of major 3rds, dominant 7ths, perfect 5ths, and major 6ths, and found that the major 6th had the closest ratio, the real "golden chord" being somewhere in between a major 6th chord and a sharp 5th chord. However, the major 6th chord didn't sound very harmonic to me, so I researched further and found that the Fibonacci sequence appeared in the simplified ratios of the major 3rd and perfect 5th. The ratios of consecutive Fibonacci numbers converge on Phi, so the Fibonacci sequence represents the golden number. I found that if you apply Phi directly to music, you will find misleading results. However, if you examine musical ratios carefully, you will find traces of Phi in harmonic chords. Phi can be found in music, but it doesn't show itself blatantly.