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Have you ever wondered how a piano tuner knows what pitches to tune each note to? He knows because overtime music has come to a level of standardization and he only has one option for the most part. He puts A4 (the one above middle C) at 440Hz as best as the piano will allow and then uses equal temperament to sort out the remaining 87 other notes. A temperament is an arrangement of notes to create a musical scale.

Before the 1860s there was no standard pitch. A theatre could tune their orchestra to whatever pitch they like be it A430 or even as high as A449. Claude Montal, a piano builder, along with others, approached the French government in the 1860s and demanded a standard pitch for the sake of instrument makers. After some deliberation, A435 was decided upon around 1880. By the 1920s people had lost favor for A435 and decided A440 was better. I have yet to find a good reason as to why either of these pitch centers were chosen. Many orchestras ignore this standard and tune to A442 anyway. Other musicians have ignored A440 and choose to explore music at A432 instead. The best reason I can find for this is cymatics. Regardless of which pitch center you prefer, understand that modern pianos are built to sound their best at A440Hz. Calculations have been done to know that a string of a certain thickness and length will sound the best at a certain tension. A440 is the pitch that decides the level of tension for piano makers.



Musical temperament evolved much the same way. There was no official standard until the 1900s, similar to pitch standard development, but there were agreed upon temperaments that most musicians used and people preferred at the time. Originally there was “just” temperament which made all the fifths but one beatless or pure causing only some keys to sound “good”. Then there was meantone temperament which made a number of thirds pure, and again, only some keys were usable. Then everyone moved toward well-temperaments of which there have been hundreds, some more popular than others. This left the purity of specific intervals up to the tuner to decide. Some made the key of C sound great but the key of C# unusable. Others made C# sound great but C was unusable. It really depended on personal preference. This became too chaotic and equal temperament was essentially forced upon musicians against much resistance. Equal temperament made all keys sound more or less the same so music could be played in any key, but the trade off was that certain keys no longer had the character present that they would within a well-temperament.

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Standardization certainly made life easier for instrument manufacturers as they had criteria to meet when producing an instrument. I can replace parts without having to make them by hand because a standard part is available, bringing down cost and time required for the repair. I made the new part pictured by hand in two hours but could have used a standard new part taking less than a minute to install. Standardization was detrimental to the composers and sound-painters because it put their creativity in a box with limits. Standards are a good foundation, but should not be the final say in what music is. Luckily, there are no laws that say we must tune to A440 with equal temperament or else. No one will arrest you if you decide to tune your new Yamaha to Bach’s well-temperament centered around A415, but with string tension that low on an instrument designed for A440, you may end up creating other mechanical problems.

Understand that music standards are important and useful, but in music, uniqueness is encourages.