



Timbre

Our new music element, timbre, is a French word pronounced ‘TAM ber’. Timbre is an extension of soundwaves which explores deeper into the wave patterns of a single sound.

Another term for timbre is ‘tone colour’ which explains why a flute sounds different from another instrument (i.e. has a different ‘colour’), even when the same note is played and the cycles per second are identical.

The previous article on soundwaves should be kept in mind when we discuss timbre — you can access it (and all the music articles) from the link at the end of this article if you wish to reread it.

The harmonic series pattern

In God’s design of a single soundwave we see an amazing pattern which only God could have created. This pattern is called the **harmonic series pattern** because all the notes in it are in harmonic agreement with a base note called the **fundamental**. I call the notes above the fundamental ‘God’s

secret hidden notes’ because that’s exactly what they are. God put them there and the untrained ear does not pick up these subtle, hidden notes. Technically they have several names.

1. **Overtones** because they are higher than the fundamental.
2. **Harmonics** because they are in harmony (i.e. agreement) with the fundamental.
3. **Partial tones** because they are smaller parts of the complete soundwave.

In this article we will call them ‘overtones’.

I apologise if this gets a bit technical, but please bear with me because timbre reveals how awesome our God is in His miraculous creation of soundwaves.

So — what is this harmonic series pattern? In the soundwaves article we learned about the cycles which form a wave, and the pitch of a note depends on its number of cycles per second.

When you halve the length of a string, the note will sound exactly one octave higher. This note is the first overtone, when the string vibrates at exactly twice the number of cycles.

The overtones continue up the scale as the string vibrates at three, four, five, six, seven and eight times the number of cycles from the fundamental. And they keep going up until they fall outside the range we can hear. The first eight overtones formed by exact divisions of the string are shown on this chart. Together they form the harmonic series pattern.

basis of harmony. Notice that the first six overtones of the fundamental C form the C chord. Harmony is about agreement and these notes (C, E and G) sound good together because, scientifically, they are the lowest part of the strong foundation of the harmonic series pattern. The seventh chord is found in the first seven notes. 9th, 11th and 13th chords also work well because they are part of the harmonic series pattern.

■ **Timbre is like a fingerprint, voiceprint or signature which identifies the owner. No two are the same — like snowflakes.**

The design of the humble soundwave and its timbre is a reflection of God and people. God is the fundamental and people can be likened to the overtones related and joined with Him. In music, there is one fundamental with many notes just as there is one God with many people. The closer we are to the fundamental, the stronger and more harmonious (agreeable) we become in our relationship with God. God knows us intimately and wants us to know Him. Matthew 10:29–30 tells us God knows every hair on our head. Jesus said in John 10:14, ‘I am the good shepherd and know my sheep and am known of mine’ and again in John 10:27, ‘My sheep hear my voice and I know them and they follow me.’

Instruments and voices

When we think of timbre we often overlook the voice as an instrument. However a closer look at the voice will put instruments into perspective. The voice is the only instrument God built into us as a part of His design. Every other instrument is man-made, costs money, needs tuning and must be carried around. The voice is God-made, free, doesn’t need tuning and is easily transported. The voice is God’s preferred instrument for man.

Throughout musical history we see instrumental music dominating. Instruments are simply an extension of our bodies in that they respond to how we play them. It is very easy to make an instrument into an idol. As a young music student I did exactly that for many years. The piano became my means of escape from situations I could not handle. My family was not a singing family so I was never confident with my voice. The piano became my emotional release and means of expression without having to use words. I always felt better after piano practices but it was a false and short-lived sense of comfort.

Today we still see many instruments idolised by their players and it is too easy for ego and self to surface and dominate the music. The instrument distracts us from the true purpose of music which is an extension of spoken language and a part of our worship and communication with God. Where ego dominates, player and instrument become one and the voice may need to shout or even scream to be heard.

So many students study for music exams and practise endlessly. There are no words of praise to God here — the constant focus is on the sounds produced on their instrument. It is a purely emotional and intellectual experience. Ezekiel summed it up beautifully about 2500 years ago when he said, ‘And lo, thou art unto them as a very lovely song of one that hath a pleasant voice and can play well on an instrument: for they hear Thy words but they do them not.’ Playing an instrument brilliantly does not indicate obedience and worship to God.

We try to justify instrumental music by saying it is ‘training for the brain’, especially classical music. Sadly God is not often a part of our music-making. Music, self and the instrument are the focus. God told Habbakuk,

Of what value is an idol since a man has carved it? Or an image that teaches lies? For he who makes it trusts in his own creation. He makes idols that cannot speak. Woe to him who says to the wood, ‘Come to life.’ Or to a lifeless stone, ‘wake up.’ Can it give guidance? It is covered with gold and silver. There is no breath in it. But the Lord is in His holy temple. Let the earth be silent before Him.’

Habbakuk 2:18–20 NIV

We must not make idols out of our wood, metal, gold and silver musical instruments.

Church music

The element of timbre raises many sensitive issues. Should instruments be used in church? Do we really need instruments in

church? In the 1500s Luther said ‘yes’ and Calvin said ‘no’. Could the money spent on them be put to better use for missionary work and spreading the gospel? Can we get away with simple worship using just a keyboard of some sort? Should we sing acapella only? Listening to the beautiful singing of Cook Islanders without instruments shows this is certainly possible.

Unfortunately many of us have been trained from childhood to depend on instrumental accompaniments and have lost confidence in our voices. And what about all the beautiful classical music of the so-called great composers written over the centuries? Where does this fit into God’s plans for music? We need to find out why the works were written to find the answers. Was God part of their motivation? Did they acknowledge Him? Or was composing just their income, and passion and instruments their idols?

Oh dear! So many questions arise out of this simple music element of timbre. We need to ponder and make decisions about the use of instruments. I am not giving any answers but leave it up to you to find out more and decide where you stand. Or maybe it is easier just to leave things as they are and not rock the boat, especially in our churches.

Conclusion

I end on a positive note by saying that I have been privileged to hear the timbre of some most beautiful voices in church which, even though untrained, were still

natural, devoid of ego, showed clear diction, were soft and unforced, melodious, in tune, harmonious, worshipful and reflecting the beautiful melodious voice of Jesus and His love. The characters of the singers are revealed in the timbre of their voices. One can hear the humility and selflessness in the gentle purity of their tone colour. Oh how I long to hear the sounds of the angels singing in heaven. That WILL be something! And yes, we will be given golden harps to play – so I'm sure there will be a place for some instruments.

For further information on instruments please see the article *Should my child learn an instrument?* available from the link below. 

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