

P Tagg: Entry for EPMOW — pitch

pitch: (Fr. *hauteur*; Ger. *Tonhöhe*) that aspect of a sound which is determined by the rate of vibrations producing it and which is denoted either in terms of absolute frequency or, more commonly, with reference to its perceived location on an axis from low to high frequency (e.g. ‘1046.5 Hz’ or ‘high **c**’). According to this general definition, all sounds have pitch. However, although, for example, the hi-hat is heard as high-pitched and the kick drum as low, the ear is unable to detect a fundamental frequency in NOTEs produced on those instruments, with the consequence that such sounds are heard as being of *indefinite pitch* or *unpitched*. Pitch, therefore, most frequently refers to the position of a NOTE’s perceived fundamental on the axis of low to high frequency.

1. Standard pitch. 2. Absolute pitch. 3. Range and register.

1. STANDARD PITCH. Since 1939 there has been an internationally recognised pitch which sets a fixed frequency for a particular note — 440 Hz for the **a** above middle **c** — from which the pitches of all other notes can be determined (see TUNING). This convention is referred to variously as *standard pitch*, *philharmonic pitch* or *concert pitch*. Until the nineteenth century, when the fixed pitch of **a** converged on a range between 410 and 450 Hz, keyboard players would have to transpose, wind instrumentalists take extra lengths of tubing on their travels, and string players radically retune, all in accordance with the local norm. Thanks to international standard pitch, musicians can cross regional and national borders without having to perform the same music at different pitches. Two other areas to have benefitted from the establishment of internationally recognised standard pitch are the mass production of instruments and the worldwide dissemination of music through the medium of recorded sound. It should, however, be noted that concert pitch is of little relevance to musical traditions whose pitch names are relative rather than fixed (see NOTE [2]), or in which no pitch names are used, or where participants have no need to interact with those following the **a**=440 standard. While standard pitch is virtually essential to music featuring instruments whose overall TUNING cannot be radically and quickly adjusted from one performance to another (piano, organ, harmonica, accordion, etc., as well as most wind instruments), it is by no means a necessity for other pitched instruments such as bass, guitar, banjo, fiddle, mandolin or even a synthesizer sporting the requisite detune options.

One recent divergence from standard pitch in popular music was caused by slight variations in the motor speeds of analogue recording and playback equipment. Music recorded on one tape machine (reel-to-reel, audiocassette, videocassette) and played back on another, or heard on vinyl spinning too fast or too slow, meant that the entire recording would be heard at a pitch up to a semitone higher or lower than had been originally intended. Consequently, bands emulating an original recording would sometimes need to retune their instruments, or use a capo, or transpose wholesale in order to produce their COVER in the key heard through their playback equipment. Similarly, transcriptions based on home taping could appear in an unintended key showing, for example, pitches consistently a semitone higher than those actually recorded or heard the time of broadcasting (Tagg 2000:133).

Although digital recording and playback cause none of the problems just mentioned, they have created other anomalies regarding standard pitch. While the quest for brighter sound seems to have provoked many classical ensembles to opt for a set pitch of **a**=446 or even higher (Corey 1996), modern sound postproduction allows for the creation of similar effects in several ways, for example: (i) by equalising/filtering to boost the relative dynamics of higher pitches; (ii) by

means of an Aphex exciter; (iii) by using a few clicks of the mouse and computer keyboard to raise the pitch of an entire track.

2. **ABSOLUTE PITCH:** an individual's ability, based on long-term memory, to identify and/or reproduce a particular pitch, independent of musical context. This ability, which can be trained, is useful in standard pitch situations because it allows the individual to quickly identify and/or produce the absolute pitch of particular notes, and thus facilitate processes of transcription and covering. However, it can be a nuisance in non-standard pitch contexts, for example if a guitar or fiddle playing patterns characteristic for a particular key (e.g. G, D, A or E) is heard a semi-tone higher or lower than concert pitch: a simple tune in, say, G major may then be heard, and its constituent notes seen, as if it were in G \flat (key signature of six flats) or G \sharp (seven sharps, of which one double). In other words, an open D chord on guitar is exactly that for most musicians, whether the D is, in terms of absolute pitch, D \flat , D \natural or D \sharp .

3. **RANGE AND REGISTER.** *Range* and *compass* (Fr. *diapason*; Ger. *Tonumfang*) both denote, in terms of pitch, the span of sounds that can be produced by a voice or instrument, e.g. 'the range of a standard synth keyboard is five octaves, from **C0** to **C5**' (65.4 - 2093 Hz). *Range* and *compass* can also denote the span of pitches covered in a piece of music, either in terms of its overall range from lowest note in the lowest part to highest note in the highest, or within a particular voice or part; for example, although the melodic line of *Da Doo Ron Ron* (Crystals 1963) stays inside a very restricted pitch range, the total pitch range of all tracks on the whole recording is large. *Range* also applies to the span of pitches (re)produced through recording and playback equipment (e.g. 'full frequency range recording'), and of those perceptible through human or other animal ears.

Register is a narrower concept which not only denotes a 'range within a range', for example the higher pitches of the head register within a singer's total range, but also connotes specific timbral qualities of that register, for example pitches produced in falsetto or head register as 'thinner' than those of the same singer's chest register. Players of string instruments tend to associate register with either the position of their hands on the fingerboard or with the timbral qualities of different strings, while wind players connect registral/timbral change with such phenomena as overblowing (flute), octave keys (saxophone) and lip tension (brass).

Ambitus and *tessitura* are two terms from historical musicology that have been occasionally applied to the description of pitch in popular music. *Ambitus* basically means the pitch range or compass of a particular melodic passage, while *tessitura* denotes the predominant register of a particular vocal or instrumental line.

Bibliography

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