From recent fMRI studies, we now know that the human brain has in fact ***two*** separate centers for processing sounds as consonant *vs*. dissonant – which in turn are wired into to different emotional centers of our brains – thus explaining why we (anthropo-centrically) experience "pleasure" at hearing consonant sounds *vs*. "displeasure" at hearing dissonant sounds [1], since our own human singing voices are inherently consonant in nature (*i.e*. have integer-related harmonics).

Is this solely the explanation for why our brains have ***separate*** processing for discriminating between these two types of sounds, experiencing pleasure for {human-like} consonant sounds *vs*. displeasure {non-humanlike} dissonant sounds?

Note that dissonant sounds – complex sound waveforms with non-integer-related harmonic content can arise *e.g*. from non-everyday sounds in the environment, such as a rock slide or avalanche, gales/high winds, or a tornado, *etc*. as well as human and/or animal sounds that are more of negative or threatening nature…*e.g*. groans, cries, shrieks, growls, howls, roars, *etc*…thus, the differing human response to sounds perceived as consonant *vs*. dissonant may possibly have arisen from this as well.

See/hear the Physics 406 consonance/dissonance demo! Please see/read/think about the information contained in additional Physics 406 lecture notes on consonance & dissonance!

Musical Scales:

Anthropocentric in origin – *i.e*. we humans (as are other animals…) are primarily interested in the sounds that our ***own*** species make… Thus, the musical scale(s) that we have developed in our culture(s) over the millennia are ***not*** disconnected from the fact that complex sounds associated with the singing human voice have integer-related harmonic content, due to our vocal cords vibrating as a 1-D mechanical system, and associated consonance/dissonance phenomena…

Nevertheless, there are many kinds of musical scales! We'll see why! First, remind ourselves of the notes *e.g*. on the keyboard of piano:

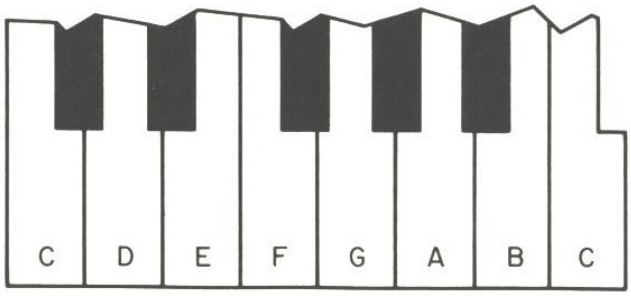

FIG. 2. A portion of the piano keyboard.