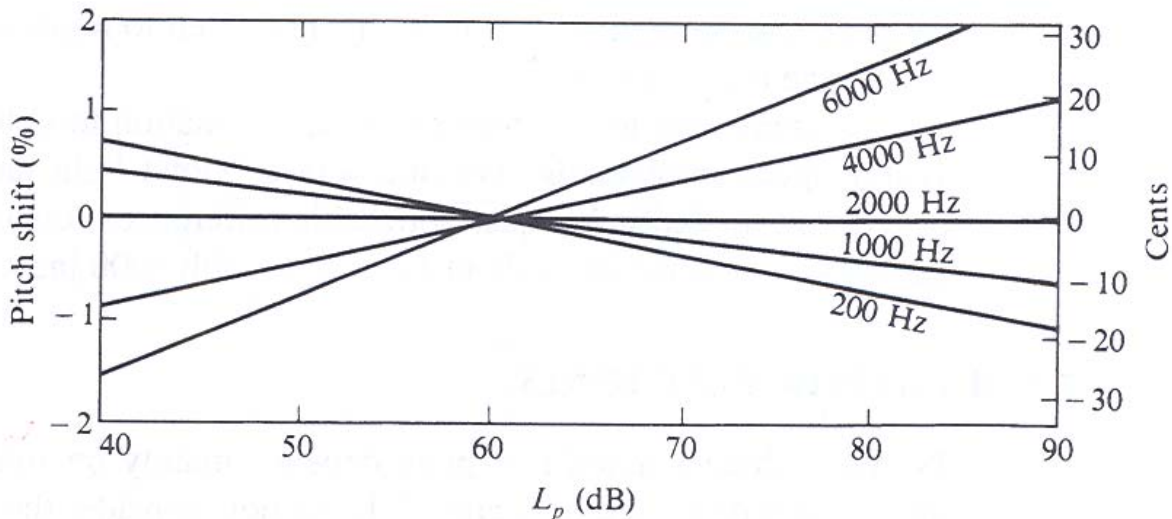


Human perception of pitch also depends {~ weakly} on the **loudness** of the sound.

- \* Effect arises due to non-linearities in the  $f$  &  $I$  response of the human ear.
- \* Pitch (perceived  $f$ ) **changes** as loudness increases – see graph below...
- \* Effect exists only for pure/simple tones (!!!)
- \* Complex tones show **no** perceived pitch changes with loudness! (why??)



Two ears of same person may **NOT** perceive sound of a given frequency as having the same pitch!!! = DIPLACUSIS – happens **only** for diseased, and/or injured ears.

For **normal** musical purposes, frequency and pitch are synonymous (usually)  
*n.b.* applies **only** to **periodic** sounds.

Sound **pulses** are made up of a **continuum** of frequencies, sound **pulses** are thus **anharmonic** and hence have **no** characteristic frequency and/or pitch.