

Welcome to the Optimizing Pianism newsletter – the place where science, art and pianism come together.

TOPIC:

The Piano Tone (Part 4/5)

This week, we discuss the noise of the hammer hitting the string, and whether we, as pianists, can alter its quality while keeping the volume of the note the same. That pianists prefer to choose different words (eg *sound*, *tone*, *blow*, *noise*, *thump*) to describe the sound of this otherwise mundane physical event strongly hints at the perceptual distortion that the human mind brings to the aesthetic evaluation of the piano tone – and to the stream of pedagogical doctrines and discourse that subsequently arise from it. (See *The Psychology of Touch and Tone Quality*, pp.64-78, for more.)

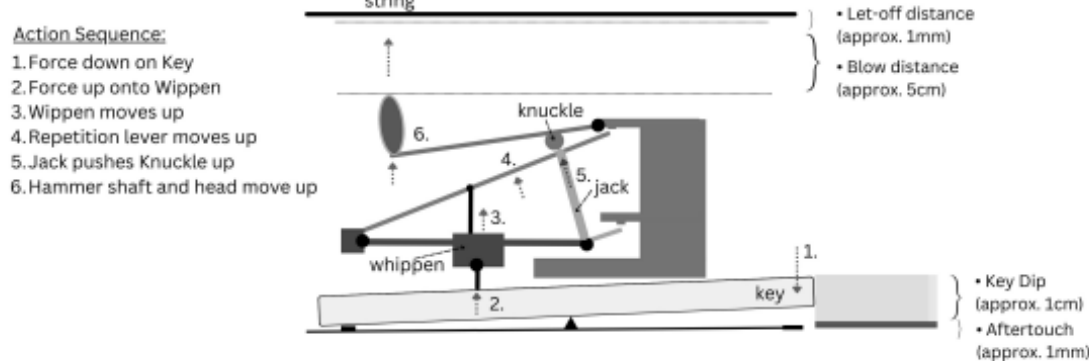
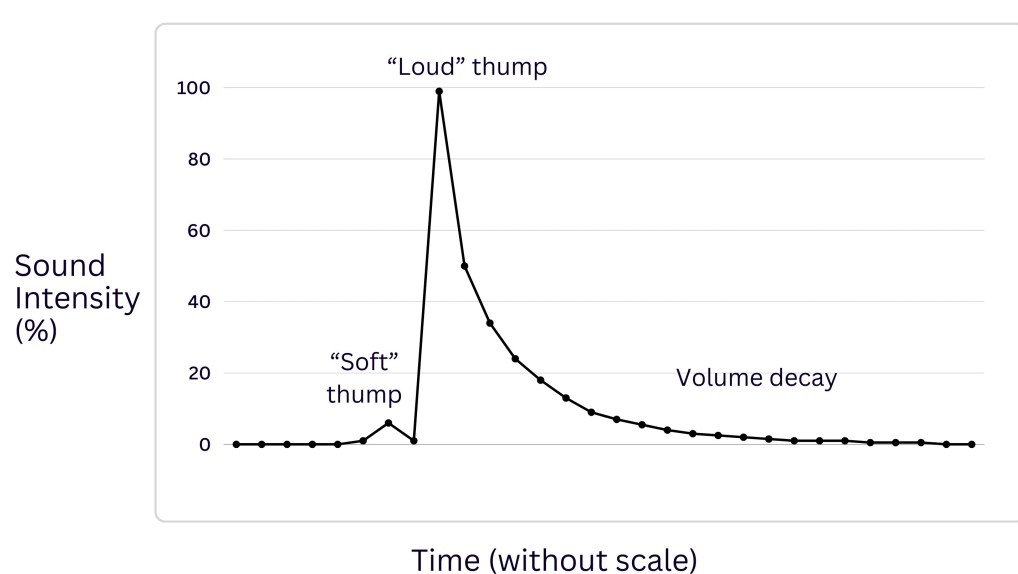
MYTH-BUSTING FACTS:

To state the obvious, when the hammer hits the string faster, it will make a louder sound. And, when it hits the string slower, it will make a softer sound.

This impact sound IS the noise which IS the 'thump' which IS the peak intensity of volume of the piano tone (see diagram).

The thump sound is also superimposed with a softer, low-frequency noise from the key-keybed impact (as this occurs at the same time) – though this key-keybed noise is only ever noticed when playing in the higher registers of the piano where it might be independently heard.

The loud thump sound is preceded by a very quiet 'soft thump' sound which corresponds to the noise of the finger hitting the key surface – as discussed in Newsletter #2 – which occurs approx. 0.02-0.2 s before the loud thump.



(Pictures from *Optimizing Pianism*, pp. 61, 96)

Implications:

If you want the thump sound to be softer, the hammer speed must be slower, which means the volume of the note will be softer. There is no way around it. Despite hundreds of years of pianists' attempts to simultaneously (!) *slow down* the hammer speed (to reduce its thump) AND *increase* its speed (to increase its volume and resonance) using all means of gestural attempts, facial expressions and obtuse metaphorical explanations about tone-quality causality, the physics of the hammer-string interaction could care less.

The thump IS intrinsic to the piano sound. We cannot ignore it. We cannot remove it. We need to learn how to deal with it. THAT is the craft – and the skill.

More next week.

Cam



Want more depth?

Read pp.58-64, *The Touch-Tone relationship – Scientists Perspectives* (All references about the physics and noises of the piano tone are listed there.)

Other info

- Read the book: *Optimizing Pianism: Evidence-Based Perspectives* ([LINK](#))
- Read previous newsletters: ([LINK here](#))
- Comments or topic requests: ([HERE](#))
- Upcoming Concerts and ticket bookings in Melbourne ([LINK](#))

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