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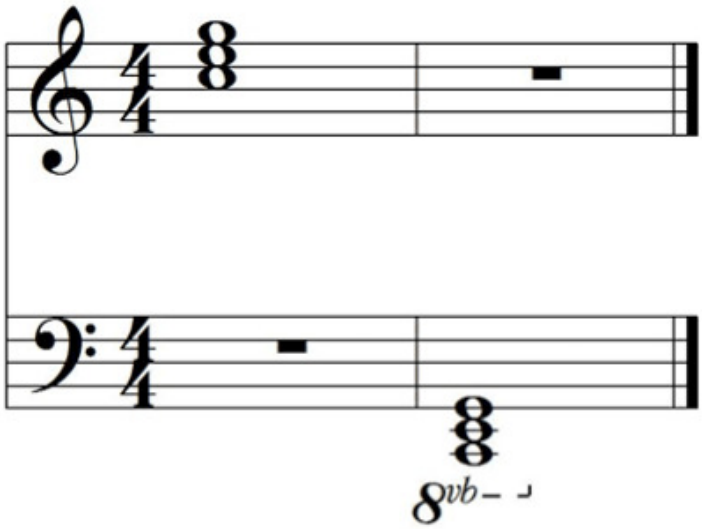
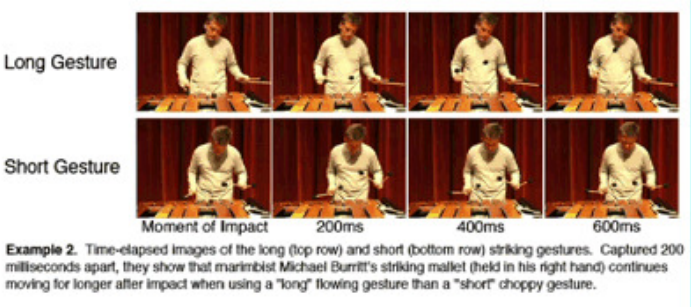
MTO 18.1 Examples: Schutz and Manning, Looking Beyond the Score

(Note: audio, video, and other interactive examples are only available online)
http://www.mtosmt.org/issues/mto.12.18.1/mto.12.18.1.schutz_manning.php

Example 1. Although each triad exhibits the same pitch relationships between notes, our perception of the two differs markedly. The higher C Major triad *sounds* more consonant than the lower, due to differential processing of notes in high vs. low registers.

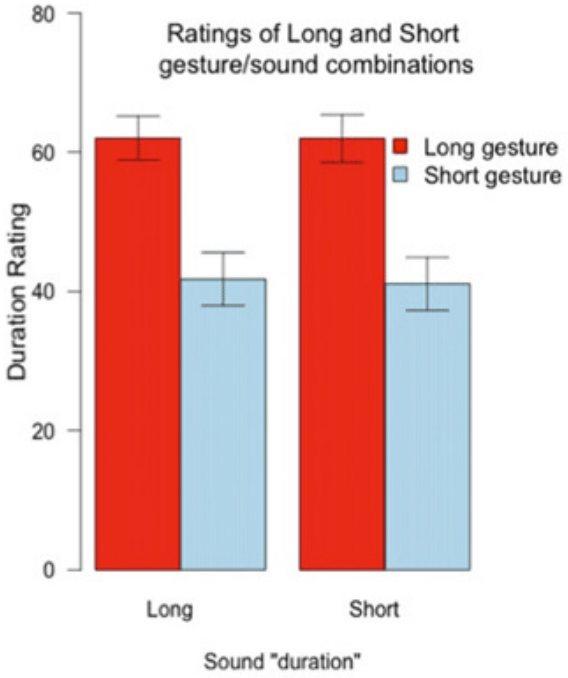


Example 2. Samples of the "long" and "short" gestures performed by marimbist Michael Burritt in a recital hall at Northwestern University. Freeze frame images taken from *Psychology of Music* (Tan, Pfordersher, & Harre 2010) by Psychology Press

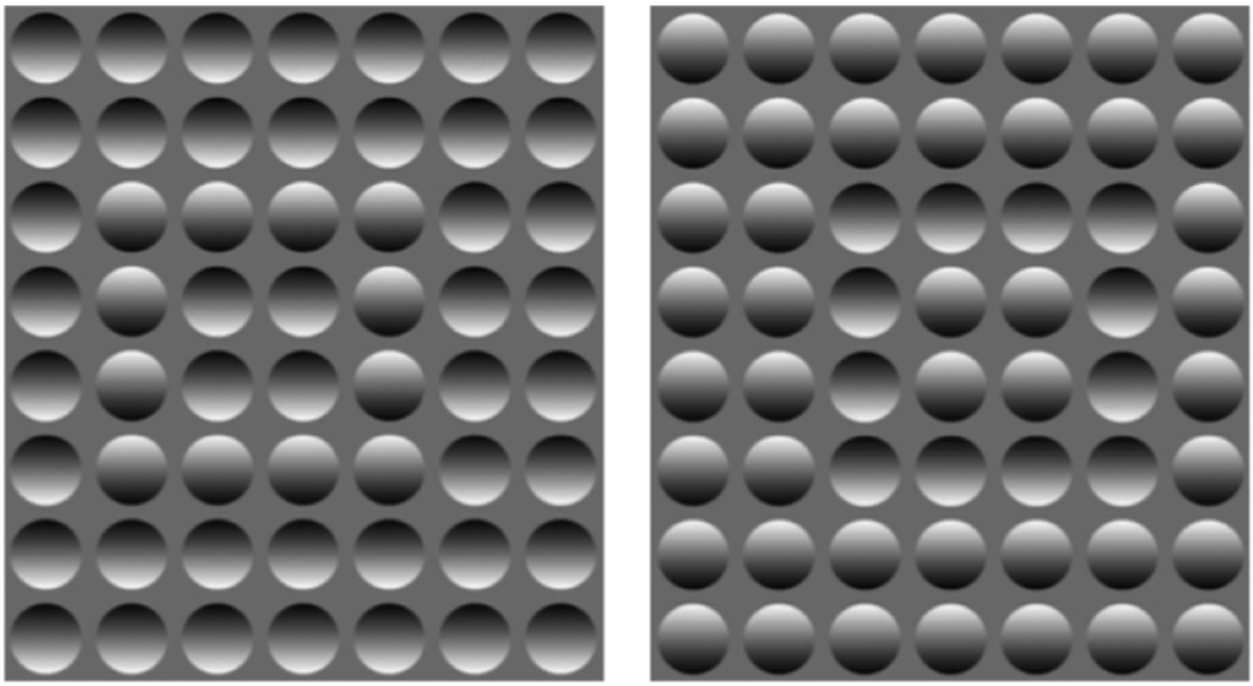


Example 2. Time-elapsed images of the long (top row) and short (bottom row) striking gestures. Captured 200 milliseconds apart, they show that marimbist Michael Burritt's striking mallet (held in his right hand) continues moving for longer after impact when using a "long" flowing gesture than a "short" choppy gesture.

Example 3. Participants' duration ratings indicate that a given sound *sounds* longer when paired with a long gesture (red) than when that same sound is paired with a short gesture (blue). Note that the difference in ratings of sounds produced by the long and short gestures were indistinguishable.



Example 4. All circles in this figure are identical in their shading, color, and texture. However, the 12 convex "bumps" which form a square in the left image are rotated 180 degrees relative to the concave "dents." When the image on the left is flipped upside down on the right, the pattern reverses such that the squares in the middle appear to make concave dents. This perception is due to the implicit assumption that light comes from above. The image is a variation on those described by Kleffner and Ramachandran (1992)

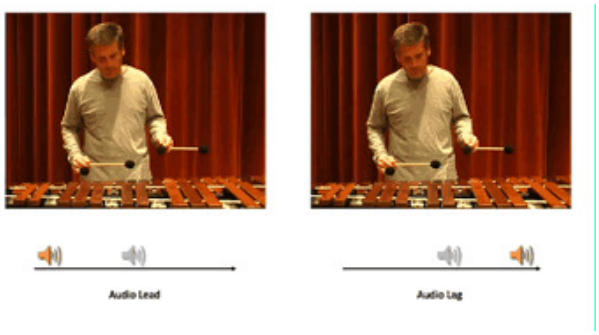


Example 5. In the McGurk effect, seeing the lip movements of the speaker categorically changes what we "hear" him saying

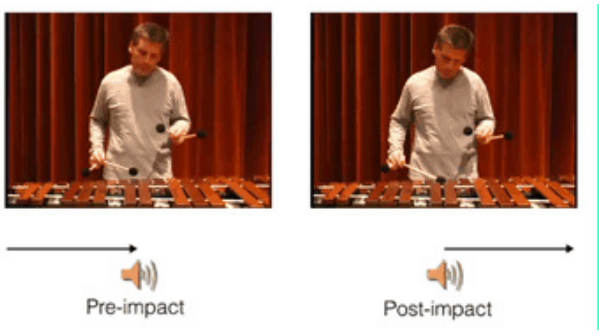
Example 6. Heard sounds that are incongruent with the seen gestures are not perceptually integrated, and in fact appear somewhat comical when presented together

Example 7. Heard sounds that are congruent with the seen motions are perceptually integrated since they appear "natural" when paired together

Example 8. It is harder to detect the temporal incongruity in the audio-lag (vs. audio-lead) condition, as the perceptual system is more tolerant of an auditory lag. This reflects the relative speed of light vs. sound. Since sound travels significantly more slowly than light, the perceptual system is more inclined to pair sounds with images when the sounds lag than when they lead



Example 9. An experiment comparing integration using both pre-impact gestures (left) and post-impact gestures (right) demonstrates that the illusion is driven primarily by post-impact motion

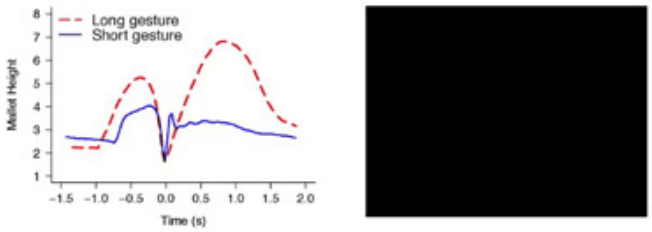


Example 10. Creating point-light representations of the striking gestures

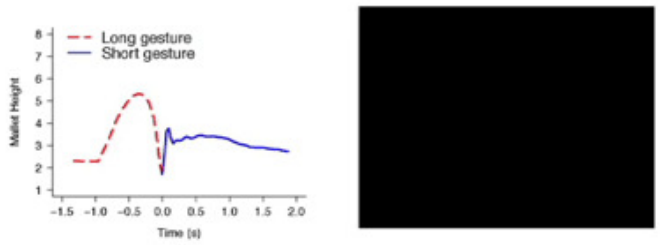
Left panel: Snap shot of original video (top), four-point "virtual marimbist" (bottom left) and single-point "dot" representation
Right panel: Animation depicting creation of the "virtual marimbist" from key joint information in the original videos

Example 11. *Left panel:* Representations of the long (red) and short (blue) striking gestures
Right panel: Single-dot point-light videos of long (first) and short (second) gestures

The long and short gestures have similar velocities prior to the moment of impact. However, their motions differ considerably post-impact; the long gesture continues in a fluid motion whereas the short gesture stops abruptly



Example 12. *Left panel:* Hybrid motion path consisting of the pre-impact motion from the short gesture paired with post-impact motion from the long gesture (previously unpublished)
Right panel: Single-dot point-light video instantiation of the long-short (first) and short-long (second) gestures



Example 13. Animations with equal post-impact durations. The animation on the left covers a greater distance, and therefore moves with greater velocity than the animation on the right. Each animation is played in sequence, and then simultaneously to highlight their similarities and differences