Martelé is made up of the following distinct components:

**Bow speed**: Fast–slow. The stroke begins very quickly and then slows.

**Bow pressure**: Heavy–light. The stroke begins very heavily and then lightens.

*Bite*: Before the stroke begins, the hair momentarily grips the string extra-hard, causing a ‘click’ at the very beginning of the stroke. This click is an extra component in addition to the heavy–light bow pressure, i.e. the pressure pattern is: click–heavy–light.

**Space**: There is a silence at the end of each martelé, ranging from a marked silence between the strokes to the smallest gap. It is during the space between the strokes that the bow bites the string ready for the next stroke.

- Before playing the complete stroke, first try separate components on their own:

  **Fast–slow speed on its own**
  - Rest the bow on the string in the upper half.
  - Using no bow weight at all, so that the hair skims across the surface of the string without making a proper tone, make one, single down-bow and stop. At the end of the stroke, leave the bow on the string. The ‘swishing’ sound that the bow makes is represented by x-notes.
  - After the fast beginning to the stroke, slow down:

    1. Grabbing the string to make the bite
    2. To get the feel of the bite, press the bow down heavily into the string, without moving the bow along the string. Grip the string with the hair.
    3. Then, without allowing the hair to move along the string, pull and push the string sideways. If the hair does not lose its grip this is entirely silent.
    4. Having moved the string from side to side a few times, stop the bow on the string without releasing the pressure. Then play the martelé.
    5. Try it on different soundpoints (soundpoint 5 = near the fingerboard; soundpoint 3 = at the centre point; soundpoint 1 = near the bridge), since the different tensions of the string make such a difference to how you make the click:
Heavy–light pressure on its own

There is little point in isolating the heavy–light pressure pattern from the fast–slow bow-speed. Without extra speed during the heavy part of the stroke, the tone simply becomes crushed. However, it may be useful to isolate the heavy–light pattern from the click at the beginning of the stroke. Alternate between playing the heavy–light pattern with, and without, a click at the beginning of the stroke:

![Graphical representation of heavy-light pressure](image)

Understanding technical and musical timing

The most common mistake in martelé is to confuse the moment of gripping the string with the moment of moving the bow. First grip the string; then move the bow fast–slow and heavy–light. The stroke does not begin well if you try to do the two things at once.

The difference is between ‘technical timing’ and ‘musical timing’. Musical timing is when you want the note to sound; technical timing is often before the note sounds. A good example away from the violin is in playing the piano.

The thumb moves under the second (index) and third (middle) fingers, towards the F, long before the moment when the thumb actually plays the F.

Imagine if the technical and musical moment were to happen together: the thumb would continue to hover over the C until the very last fraction of a second, and would then suddenly rush towards the F at the precise moment that it was already meant to be playing it.

Other key examples of the difference between technical and musical timing are finger preparation, where you place a finger on the string before bowing the string; and pivoting, where you continue to bow one string while moving the bow towards another string, beginning to move long before you want the hair to contact the new string.

Finger movement alone

A tiny amount of finger movement adds a great amount of extra energy to the beginning of a martelé.

The fingers move in the same direction as the bow. On the down-bow the fingers straighten slightly; on the up-bow they flex slightly. Try the finger action on its own:
Do not move the arm at all. Move only the fingers.

Make sure the thumb moves as well. The thumb and the fourth finger work together. When the fourth finger flexes, the thumb flexes; when the fourth finger straightens, the thumb straightens.

Then add the arm movement to the finger movement.