Studying music performance is more than analyzing sounds produced by individual performers, it also includes aspects like synchronization, expressive gestures and the underlying intentions and interpretation of the performer. Musicological research mostly looks only at a limited number of these modalities, and therefore loses sight of the overall performance. In order to get a more complete view, we designed a multimodal setting where we collected data out of recorded midi and audio, motion capture, pressures sensors and feedback of the musicians on their performance. The challenge of musicological research nowadays is to provide a meaningful link between the different data streams collected from these multimodal recordings. In this study, musicians, musicologists and experts in audio-technology collaborated to retrieve meaningful information out of these different sets of data. This method was applied to a study on the performance of two pieces of music in a wide range of tempi. It allows us to see at which point musicians lose synchronization, change their metrical interpretation, change performance gestures and timing. Tempo is an elementary component of music and it has become a crucial research topic in the study of expressiveness and variability in music performance. By means of this multimodal methodology, motor control, musical gestures, timing, musical structure and performance cues can be mutually approached in the study of music performance.