

This compact disc features recordings of two works: *Panorama* by Alvin Lucier, and *Two*⁵ by John Cage, two American composers. Our interest in these pieces focused, apart from their own aesthetic, on a technical aspect found in these two composers: the glissando on the trombone and the place of silence in the performance. We have also retained the important question of musical time, mentioned, we think, in these two works.

I. OUR WORK

For ten years, we have been working with interest on pieces by composer John Cage, and in particular on works including a part for the trombone. So we successively studied and recorded the *Concert for Piano and Orchestra*, including the solo part for the trombone called *Solo for Sliding Trombone*. Then we also worked and recorded the duo for piano and trombone *Two*⁵, a logical continuation. Research work was also carried out with Mikhail Malt (IRCAM). We have developed CAP (Computer Assisted Performance) tools, this in order to improve performance without harming the composer's intentions¹. We continued with the study of the pieces *Ryoanji* and *Music for Two*, respectively for trombone and percussion, and trombone and piano. With the same double treatment: performance and research².

Among these pieces, *Ryoanji*, with his precise *glissandi* in the low register of the trombone, has opened up an in-depth research into the glissando, a particularity of this instrument. Seemingly easy, the glissando gives the performer a hard time. Alvin Lucier's study of *Panorama* came about as a natural follow-up. This work, which is a continuous slide for the trombone, poses problems for the performer similar to those encountered in Cage's works. In both cases, the trombonist is faced with a double task: performing the glissando, and inserting (playing) rests. This double problem is found in the two composers³.

Panorama and *Two*⁵ are two open works: the performances may vary according to the place, the duration of the sound elements and the silences performed.

It is therefore all of these motifs that prompted us to engrave these two works: *Panorama* and *Two*⁵, for years of experience, of performance of Cage's works.

For *Two*⁵, although previously recorded, we decided in 2018 to make a new engraving enriched with a text, thus testifying to the evolution of our conception of this work. Thus was born this discographic project.

II. TROMBONE GLISSANDO AND COMPUTER-ASSISTED PERFORMANCE (CAP)

Of all the brass instruments, the trombone is the only instrument that can achieve a perfect glissando: a precise shift in pitch without losing sound quality. Indeed, the slide, this telescopic tube which allows the instrument to obtain continuous degrees of length, the slide, in its archaic principle, allows to obtain a continuous change of sound pitches, and thus to produce an infinity. If we represent the pitches of sound on a vertical axis and the horizontal axis represents the passage of time, a glissando would be the line that connects two points in the plane representing two discrete heights. Different curves are possible (Figure 1). The path between two points (a, b) takes a multitude of

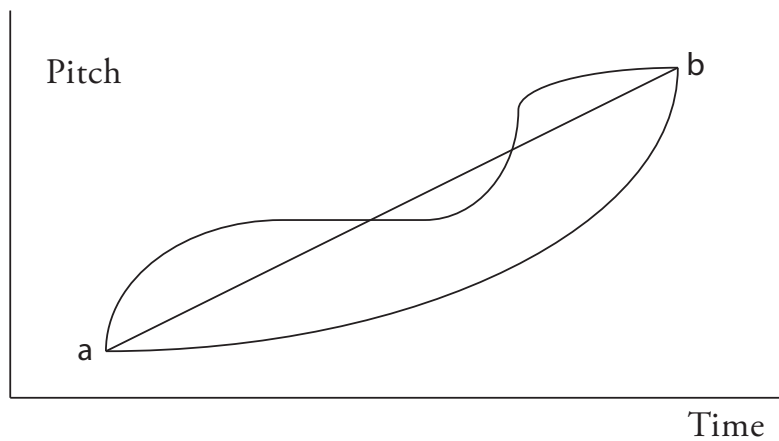


Figure 1 : Paths between two points a and b representing glissandi.

forms: a straight line, therefore the shortest path, which reflects a shift of constant speed, or a curve, which reflects a variable speed on the travel. What could be easier than to cover a distance at a constant speed. But when the glissando time is prescribed, the duration of the action is given, it becomes a problem of high school physics. We can only estimate the speed of execution required. Along the way, if we notice that this speed is too high, and that we are going to arrive early, we must therefore reduce it. But that does not guarantee us an exact arrival. Conversely, we can see that the speed is too low and that we will be late, and the need this time to increase this speed. The task is difficult because it is a process and we do not have the time to perform a calculation.

We see that the notion of glissando speed is thus defined and that it is intimately linked to this continuous movement of heights. The speed could be expressed by interval vs. second, that is to say the interval between two discrete heights to be covered during a period expressed in seconds. But the values can be more or less scientific or more or less musical, for example be expressed in cents (a tone is divided into 100 cents) and the time could be measured by a quarter note with its metronome (quarter note = 60), the equivalent of a second (Figure 2).



Figure 2 : Glissando, traditional writing.