

Advanced Techniques for Vertical Tablet Playing

A Overview of Two Years of Practicing the HANDSKETCH 1.x

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Abstract

In this paper we present new issues and challenges related to the vertical tablet playing. The approach is based on a previously presented instrument, the HANDSKETCH. This instrument has now been played regularly for more than two years by several performers. Therefore this is an opportunity to propose a better understanding of the performing strategy. We present the behavior of the whole body as an underlying aspect in the manipulation of the instrument.

Keywords: graphic tablet, playing position, techniques

1. Introduction

When we are discussing about the making of new digital instruments, a recursive issue is constantly addressed. It concerns the lack of expertise and feedback related to the practice of these instruments. Poepel [1] or Dobrian [2] already addressed this problem in recent papers. Two years ago the HANDSKETCH has been one of those new prototypes [3]. It has been presented as a tablet-based instrument with a particular polar mapping for the preferred hand and eight FSRs (force sensing resistors) added on the side in order to use the non-preferred hand. At that time the idea of playing the instrument vertically has been presented as a marginal aspect.

In this paper we do not expose improvements achieved on the existing HANDSKETCH. This is rather a deep introspection in the fundamental reasons that pushed this instrument to reach its current shape, and a discussion about associated practices. Indeed the idea that the HANDSKETCH is a novel instrument is deconstructed and the behavior of the graphic tablet itself as an expressive controller is generalized [4]. We discuss the way the vertical playing position evolved along these two years (cf. Figure 1). It gives interesting keys to understand how this position influences the overall attitude of the performer on stage.



Figure 1. HandSketch playing in 2009.

2. Gravity-Related Performing Issues

The HANDSKETCH is based on a Wacom Intuos A4 [5], played vertically. The first motivation for these size and orientation was the opportunity to develop new kind of gestures based on the writing skills [3]. Indeed most of existing practices associated with the graphic tablet were more or less close to a browsing strategy. With the use of a large tablet along the natural trajectory of the arm, more dynamic, expressive and “embodied” gestures could be achieved. The fact that the audience could see the control surface has also been highlighted as an interesting performing aspect.

In order to get further answers we had to involve time in practicing the instrument and discussing with many people about it¹. It gives us today the possibility to explain one mechanisms, considered as really important in order to consolidate the approach of playing vertical tablet: the fact that the gravity field and centers of gravity of the body play an important role between the performer and the instrument.

Research in applied physiology shows that the shape and the position of the human body is strongly related to the alignment of forces applied on different segments, such as shoulders or knees [6]. It can be seen as an intrinsic strategy of positioning ourselves in the gravity field. It is interesting to notice how this topic is missing in the digital instrument making literature. Only few contributors discuss the influ-

¹ The HANDSKETCH participated to more than 30 events (concerts, demonstrations, workshops, etc) and has probably been tried (at different levels of involvement) by about 100 people, for the last 2 years.

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ence of the gravity (and its impact on body/object interaction) in their practice of the instrument [7]. However this is probably one of the most important aspects of the vertical tablet playing in its way of highlighting the body expression. Indeed when the tablet is played *normally* (i.e. in horizontal position, in front of the performer): the arm is far from the center of gravity of the body, the pen pushes in the same direction as the gravity, which results in a relatively static behavior, close to the manipulation of a mouse. The overall position progressively moved from the formal sitting on a chair to a different attitude: sitting on the ground (cf. Figure 1). There is two significant differences between the former and the current position.

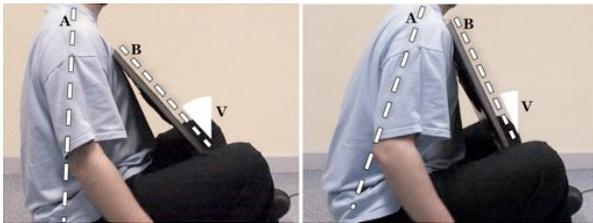


Figure 2. Tilt (B) of angle V due to spine movements (A).

1. The tablet is no more fully vertical. As the device is supported by the lateral part of the knees on one side, and by the upper part of the chest on the other side, it makes an angle V of 30-40 degrees with the vertical direction, as illustrated in Figure 2.
2. The angle of the tablet V is correlated with the movement of the spine. Therefore this angle can vary, as illustrated in Figure 2. This aspect is really important because we know that the behavior of the spine is highly correlated with the emotional state [8]. Moreover the way the gravity field influences the contact point between the pen and the tablet is more complex. Indeed a given position on the sensing area becomes a *suspended* situation – pressing on a tilted surface is unstable – and requires concentration (cf. Figure 3). Playing that way for a long period reveals that the connection between the body attitude (through spine behavior) and a located pressure provokes contrast and tension during the performance.

3. Conclusions and Perspectives

In this paper we took back on the playing strategies associated with the previously presented HANDSKETCH [3]. The controller-centered approach has been deconstructed in order to highlight new issues and challenges that can be shared with the whole community of tablet performers. The vertical playing position has been re-evaluated as one of the most important aspects for the expressive manipulation of this controller. This assumption is based on a better understanding of how the gravity influences the playing position

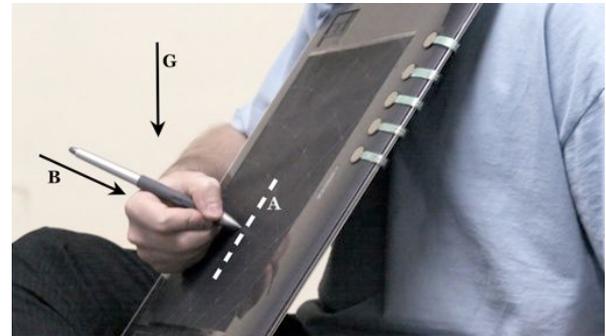


Figure 3. Gravity (G) and pressure (B) on the tilted area (A).

and defines balance or tension in the behavior of the body. In the future both preferred and non-preferred hands have to be repurposed considering this new performing model.

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