



“A Keyed Vielle”

Construction of the Instrument
from a Fresco by Taddeo Di Bartolo –
Siena (Italy), 1408

By Silver Plachesi

The idea of undertaking the extremely difficult challenge of constructing the first example of the keyed vielle, of which the only Italian picture is available in an extremely beautiful fresco by Taddeo di Bartolo (maintained in excellent state in the Cappella of the Palazzo Comunale di Siena dated 1408), was born from involvement in a course concerning the Nyckelharpa at the School of Popular Music of Forlimpopoli (Scuola di Musica Popolare di Forlimpopoli).



As an architect by profession, and a musician through passion, my childhood was spent in the Italian region Romagna, in the dusty carpentry workshop of my grandfather Romeo, in contact with materials and tools (which today would be considered authentic antique pieces), which over the years I learnt to use well, as well as gaining extensive knowledge of the characteristics of wood.





Over the years, my profession as an architect has led me to refine designing methodologies in very diverse areas – let me say “from the spoon to the skyscraper”. And right in the middle I found the space for the difficult challenge of designing and constructing this marvellous instrument.



Having to start exclusively from an image in a fresco, the method used was inevitably deductive.



Cappellina di Palazzo Pubbico, Siena, Italy, Fresco by Taddeo di Bartolo, 1408



Firstly, visual examination of the image in question, and others of the same period, suggests a strong similarity and therefore a credible derivation of this strange “keyed” instrument with the vielle.

The vielle was used frequently until the end of the XV century (the period in which it is pictured in great detail, especially in numerous works by Hans Memling, and in a famous politico by Jan van Eyck) In the XVI century it was surpassed by other bow instruments, particularly by the family of “violas with legs”, but the idea of an instrument tuned to fifths without keys was taken up again by hand held violas (the violin, the viola and the cello). In the iconography available it seems to be used both by court musicians (minstrels) and by groups of angels playing and singing – therefore one can deduce that it was used for both profane and religious music.¹

¹ <http://it.wikipedia.org/wiki/Viella>, May 2011



Analogy in the shape of the body and the bow with the vielle depicted in the beautiful fresco of Melozzo from Forlì.



The form of the resonant box and the proportions are similar, apart from the neck, which in the keyed vielle is obviously bigger, so as to contain the mechanics, and therefore the tangents moved by the keys which are very visible in the picture.

At this point, taking into account all that was evident in the fresco, a decision had to be taken concerning the real dimensions of the instrument.

The starting point had to be the calculation of the Diapason – that is to say the distance between the nut and the bridge.

Research into the measurements of the diapason used in vielles of that period was not of much help, as they varied from 33.5 to 58 cm.

It was decided to fix the diapason at 39.5 cm, the measurement used in almost all contemporary nyckelharpas.

Uncertain that the choice made was the best possible, I carried out an incredible series of measurements of all parts of the image, including the figure of the angel in order to confirm the proportions, and the figures that I had decided to use.

I remembered a text entitled “Human Dimension” by Julius Panero and Martin Zelnik, an extraordinary manual of useful measurements for planning. In the introduction one reads: “Interest on the part of philosophers, artists, literary men and architects on measurements of the human body is very antique. The only complete work on antique architecture available to us by Vitruvio, who lived in the first century BC in Rome, wrote: *“The body of man, as nature has composed it, the face, from the chin to the edge of the forehead and the hairline is proportionately one tenth of the body, and in equal proportion is the open hand from the articulation to the tip of the middle finger; the head from the chin to the top of the cranium is an eighth ...”*

Calculating therefore all possible proportions with the measurement 39.5 already fixed, the angel would have been 1.65/1.70 metres tall.



Real planning began from this point – the exact form and dimensional relationships, body measurements, and the neck of the instrument.

The next step was to decide how many, and which strings to mount, and the type of key mechanism.

The reduced number of keys shown in the fresco, five to be exact, led one to suppose that the same key was at the head of two tangents, therefore two keyed strings. Therefore it had to be diatonic.

The definitive solution adopted, in agreement with Marco Ambrosini was the following:

4 strings tuned as follows:

A for the first string keyed the bottom (with reference to the instrument), D and G for the second and third, Two drones, the fourth at the top (with reference to the instrument) another D and keyed. It was also decided to insert a sixth varying from the image in the fresco.

Basic planning – dimensions, form, the decision concerning materials began in June 2009 though construction did not begin until November. The transition from the purely theoretic phase, to planning and construction, was made possible thanks to my attendance at a course at the SCHOOL OF LUTEMAKING OF COLORNO taught by Lino Mognaschi, lute maker and constructor of my nyckelharpa and of 80% of all those actually present in Italy, a highly qualified person in this subject.

Attendance at this school led to my changing my mind from the idea of building a model, with good aesthetic characteristics, and good workmanship, to one of pure and professional lute making, constructed according to traditional rules, methodology, and use of materials.



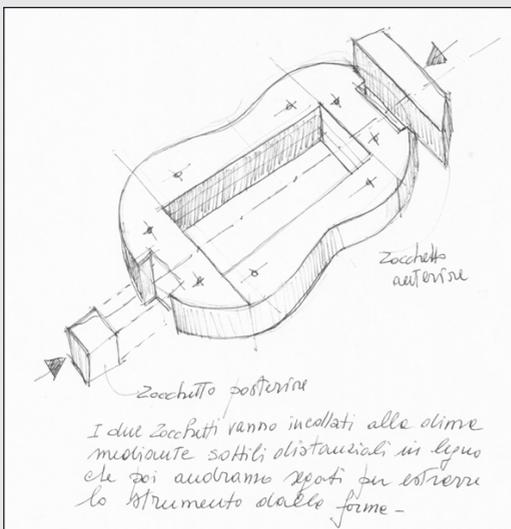
The first sketches on paper – June 2009

I continued research on the choice of woods, and the most suitable sectioning, on their sound characteristics, on the techniques for curving the ribs and on the analytic study of all the phases of construction. I also

researched, for my own curiosity based on an interest in physics, those aspects of sound associated with the construction of an instrument of this type. It was also important to keep the weight as light as possible without compromising the resistance and strength of the instrument itself.

Some phases of construction

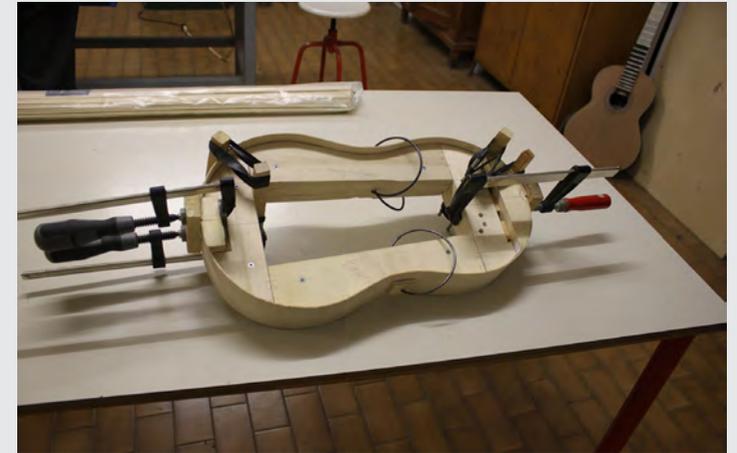
Planning and realisation of the template and the mounting of top and lower blocks



(The blocks are
in well seasoned
spruce)



Gluing of the ribs to the blocks



Planing and preparation of the neck and the head





Realization of the coined joint
between the body and the neck



Preparation, gluing and dowelling of the neck, lower belly
and the construction of the related bass bar
(belly in maple, bass bar in spruce.)



Here is the instrument in its definitive form, finally closed with the upper and lower belly finished. The harmonic and the relative longitudinal bass bar are in spruce, the bridge is in beech, the tail piece not yet visible in this photo is to be in Italian walnut.

In this phase a balsa model of the keyboard was constructed in order to evaluate its form and dimensions, more or less completed. This verification was extremely useful, and the model underwent several modifications before the keyboard was definitive.



The keyboard, constructed in maple was conceived as an autonomous element, and to facilitate the varnishing it was varnished separately, and assembled when this was completed.

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Silver Plachesi



Silver Plachesi, Italy

Born at Forlì (FC). He holds a degree in mathematics and in architecture, and also holds a diploma from the Academy of Fine Arts from Brera (MI) and from Ravenna (RA). A passion for "popular music" has taken him firstly to the study of the hurdy gurdy guided by Sergio Berardo and Patric Bouffard, and then to attendance at the "European Nyckelharpa Training" at the Scuola di Musica Popolare di Forlimpopoli. His main interest is to introduce the nyckelharpa into popular dance music. In 2009, he founded the group TRAS an BALL.



Silver Plachesi (right) together with the instrument builder Lino Mugnaschi (left)