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THE PANTALON CLAVICHORD:
Resonance from the Eighteenth Century

By Paul Simmonds

The world of early keyboard instruments is full of contradictions. On the one hand radio broadcasts, in Britain certainly, could give the impression that the modern piano is once again the preferred instrument for keyboard music prior to 1800, although if one analyses the situation closely, it is generally the more "universal" composers that are favoured. On the other hand the palette of "specialist" instruments offered by makers seems to be, if anything, growing. The selection of good commercial recordings on unusual models of harpsichord and clavichord, not to mention Lautenwerk, claviorganum *and tangent-piano, has never been greater, even if this diversity is not reflected in what is broadcast on the airwaves. Along with this, performers are becoming aware of the greater selection of keyboard sounds that must have been at the disposal of 17th- and 18th-century players. The composer, writer and teacher Daniel Gottlob Türk, in his* Klavierschule *(published in 1789) names a number of keyboard instruments, listing in addition to the harpsichord, clavichord, pianoforte and organ, the* Klavierorganum, Cembal d'Amour, Geigenwerk, Bogenflügel, Lautenklavier, Theorbenflügel, Pandoret, Fortbien, Claveçin Royal, Bellsonore and Pantalon *– this is a selection from the complete list! In this article I'd like to examine one aspect of this instrumental diversity in closer detail, namely the Pantalon and, more specifically, the Pantalon-Clavichord.*

The influence of Pantalon Hebenstreit on the world of keyboard instruments, including the modern piano, has yet to be fully understood and appreciated. His very un-German sounding first name, which could excusably be taken for a stage name, was indeed his own. Only Louis XIV felt the need to dignify and separate it from the world of hosiery, decreeing after an obviously impressive court appearance, that he should henceforth be known as Pantaleon.
He was born in 1667 or 1669 in the village of Eisleben and, as legend would have it, earned his living as a young student in Leipzig playing the violin and teaching dancing and keyboard instruments. Under the threat of arrest for debt, he retreated to a village near Merseburg, becoming a tutor to the children of the local pastor. While there it seems he had the idea of lifting the humble rustic dulcimer onto a higher artistic plane. The pastor, a skilled craftsman, helped him realise this transformation, which must have been complete by 1697, as in that year he was to be heard playing his "cymbal" in Leipzig, presumably having settled his debts.

What the Pantalon is

Johann Kuhnau, who took lessons with Hebenstreit, has left us a brief description of the instrument's main features.[1] It seems to have had a large range, beyond that of the harpsichord, and was strung in gut. J.G. Keyfller, who saw the instrument in 1730, writes that it had gut and metal strings.[2] Charles Burney, when in Dresden in 1772, was shown a dilapidated dulcimer that may have been Hebenstreit's, which he estimated at nine feet long.[3] Georg Noelli, a pupil of Hebenstreit, reportedly played in England on a dulcimer eleven feet long with 276 strings. Michael Cole argues convincingly that, given its length, Hebenstreit's instrument was probably a double dulcimer with both gut and metal strings which, with the added possibility of being played with both hard and soft hammers, had considerable tonal resources.[4] Hebenstreit gave his name, *Pantalon*, to the instrument and with it seems to have taken the European courts by storm. He was appointed chamber musician and *pantalonist* to the Dresden court in 1714. The instrument

maker Gottfried Silbermann made instruments for him, but also apparently for others, until stopped by a court ruling in 1727. The ruling didn't prevent him from adding a stop to his pianos, whereby the dampers were raised by means of hand stops, thus imitating the undamped sound of the dulcimer.

Variants to the Pantalon

It was not long before a keyed dulcimer, pioneered by one Wahlfried Ficker, made its appearance; it was was being advertised by 1731. This appears to have been a metal strung harpsichord-shaped instrument with down striking hammers. By 1758 Adlung is describing something similar, also in upright form like a clavicytherium, and with a stop which caused a strip of cloth to move between the hammers and the strings, thus enabling the player to imitate the soft and hard hammers of the dulcimer proper.[5]

Adlung, who mentions Ficker's instruments, gives them the name *Hammerwerke* or *Hammerpantelone.* Judging by the survival rate in museums, many of these instruments were made, also later in clavichord or square piano form, and enjoyed considerable popularity, particularly in the German speaking world. What distinguished the keyed pantalon from the early pianos is the complete and deliberate lack of a damper mechanism.

These were not primitive pianos, but instruments in their own right. Whereas the dulcimer and its keyed relation died out by the nineteenth century (surviving in some cultures, for example the *Cymbalon* in the Hungarion folk tradition), the pantalon stop in pianos flourished. Zumpe built it into his square pianos, fine examples of which can be found in the Cobbe Collection in Hatchlands, England. Towards the end of the eighteenth century, knee levers were introduced to raise the dampers, replacing the hand stops. These were in turn replaced by pedals, and the rest is history.

Pantalon Registers in the Clavichord

The building of pantalon registers was by no means confined to the early piano and already by the 1740s a dulcimer register was being built into clavichords. As readers may already know, the clavichord has no dampers as such; the stringband is by default in a damped state due to the weaving of cloth between the strings, known as listing. The string is activated by metal slips, or tangents, fitted into the keys, which, by forming a "second bridge", simultaneously define the sounding length and pitch of the string. They also act to transmit energy when the key is depressed. When the key is released, the listing, which is to the left of the tangents, quickly stops the string from vibrating, and the sound ceases. As there were no dampers that could be raised by a simple mechanism, a separate, more complicated device needed to be introduced to render the stringband free-sounding. This was done by building into the clavichord a second set of tangents mounted on a board, or boards, under the keys. The activation of a handstop causes these to rise up and press against the strings as close as possible to the right of where the playing tangents will strike. There are usually cut-outs in the keys to allow space for the pantalon tangents to pass. Close proximity is of the essence, as the pantalon tangents now determine the pitch, which should not if possible be perceived as being higher than the note produced by the normal playing tangents.[6] The playing tangents now take on the role of little hammers.[7]

Different damper arrangements

This basic idea varied from maker to maker. The simplest arrangement was a single pantalon stop over the whole compass. A number of instruments had a divided pantalon, meaning that either the bass, the treble or the whole instrument could be undamped. The clavichord by Kintzing, signed and dated 1756, in the Metropolitan Museum of Art in New York, is just such an instrument. Another clavichord with a split pantalon is in the museum in Nuremberg.[8] Figure 1 is *Nuremberg Pantalon 2* a photo of the inside of the clavichord, with the keys removed, which allows the two pantalon

bars to be seen. In Figure the keys have been replaced in the clavichord and the relationship of the playing and pantalon tangents can be seen. (Since these photos were taken, this particular clavichord has been restored and is now fully playable.)

Some clavichords had one half of the pantalon tangents covered with cloth, to give a more muted effect imitative of soft hammers on the dulcimer. This was engaged by moving the whole keyboard slightly backwards or forwards, so that either the uncovered or the covered half of the tangents engaged the strings. The Nuremberg Museum has an example of this sort of instrument as well.

An anonymous North-German clavichord from about 1750 (formerly in the Broadwood collection but now in private ownership in England) seems to have had two separate pantalon registers. One set of tangents were apparently covered in cloth, while the second set of tangents were uncovered. Both pantalons functioned over the entire compass. Although the mechanism is mentioned in the Broadwood catalogue as still being in the instrument, it was removed and lost in the 1980's, and the clavichord now has one reconstructed pantalon register. Figure 3a shows the full instrument, and Figure 3b is a close-up view of the mechanism with some of the keys removed. Underneath the reconstructed pantalon bar in the centre of the photograph, one can just discern the original lifting mechanism. The relationship between the pantalon tangents and the playing tangents can be seen at the key ends to the left and right of the picture and in the inset view. (The cloth woven between the strings above is the damping cloth, or listing, referred to earlier.)

Let us digress for a moment, as I can hear some voices asking whether surely the clavichord is quiet enough without it being muted even further with a cloth covered pantalon? Yes, the clavichord is quiet by modern standards, but this feature didn't seem to be of concern to the 18th-century musician, who seemed to be more concerned with different sonorities than volume of sound. Indeed, the cloth covered pantalon seems to have attracted more than a little attention, and was referred to by Adlung as the *Coelestin.*

There is yet another refinement present on an anonymous Saxon clavichord from about 1770, also in private ownership in England. This clavichord has a single pantalon bar, but with little "U"s of wire soldered to the pantalon tangents for the top three octaves (Figure 4). The pantalon bar can be set in one of two positions by means of a hand stop — either half or fully engaged. When the pantalon is fixed in the half position, the two arms of the little U's make contact with the two strings serving each note. The notes without the U-ed tangents remain unaffected and damped. With the stop fully engaged, the pantalon tangents rise to their full height, engaging the full five octaves. In this way, an undamped upper register can be contrasted with a damped bass. The full evaluation of this system must wait until this interesting instrument is restored.

Playing Technique and Repertoire

The technique of playing the pantalon clavichord is not documented in any detail, but experimentation suggests to me two possible playing techniques. One would be to use the playing tangents purely as hammers, which strike the string and immediately retreat. Another way of playing is to use normal clavichord touch, which would mean that the playing tangents would lift the string off the pantalon tangent, dropping it back onto the same when the key is released, leaving, of course, the string undamped. In theory this way of playing should result in a tiny pitch rise as the string falls back onto the pantalon tangent, as the latter stops the string slightly (0.5 – 1.0mm) to the right, or soundboard side, of the playing tangents. In practice, this is less noticeable than one would imagine, and only really discernable in the extreme treble with a less than careful playing technique; a real advantage is that *Bebung*, or vibrato, can still be used. I imagine a mixture

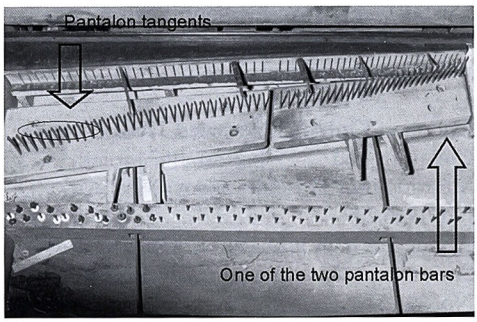

Figure 1

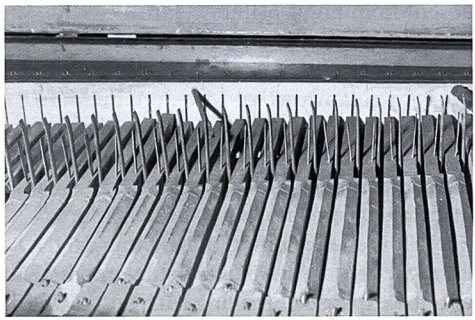
Figure 2

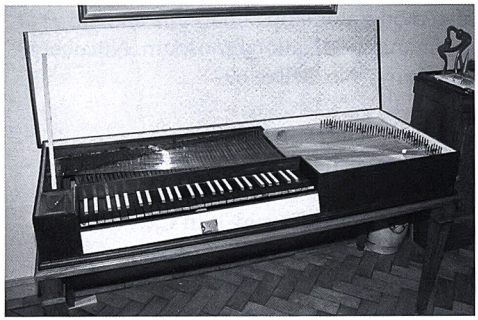
Figure 3a

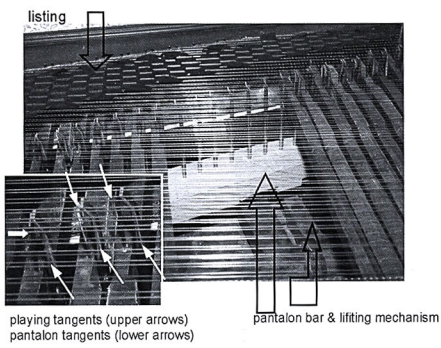

Figure 3b

of the two techniques would have been employed, but as little information has survived from the eighteenth century, this remains speculative. Türk, in his *Clavierschule*, merely advises against the use of the pantalon stop "as the clavichord easily becomes out of tune" and the student acquires a poor "(pecking [*hackende*]) execution" with it.[9]

The 18th-century musician does seem to have been fascinated by the undamped sound, and when one plays on such an instrument one very soon hears why. Pieces were not specifically written for a pantalon clavichord; it was a register used at the discretion of the player, and it did not suit all music. Types of music which work extremely well are free fantasies, preludes and pieces that profit from a sustained wash of sound. J.S. Bach's Chromatic Fantasy achieves a whole new dimension when played with the pantalon stop engaged, as do his other predominantly chordal preludes, from the *Well-tempered Clavier* for example. C.P.E. Bach's fantasies are a delight to play as well. Mozart's D minor Fantasy is another candidate, and, if the range can be adjusted, so is the first movement of Beethoven's "Moonlight" sonata, with its instruction to be played *senza sordini*. It should be pointed out that the amount of resonance achieved is no where near as overbearing as the modern piano with the dampers raised, and does not adversely impinge on the texture.

Where it should not be employed is in pieces that rely on clear articulation for their musical well being, such as fugues. Simple dances from the period, such as the 24 Polonaises by Goldberg, are enhanced by the pantalon stop. Needless to say, pieces closely associated with the early pianos also boasting damper raising mechanisms would work on the pantalon clavichord as well. David Owen Norris has made a convincing case for passages in Johann Christian Bach's output being conceived with undamped strings in mind.[10]

Although the clavichord was notably

absent from English 18th- century culture, these pieces could be performed with impunity on a pantalon clavichord.

I am not aware that a modern builder has, as yet, copied a pantalon clavichord. This is certainly not as a result of a profusion of originals – only some twenty such instruments are known to survive. More likely it is a lack of awareness, limited knowledge, absence of a suitable drawing and the expense of making such an instrument which have discouraged its reconstruction. Hopefully this article and the enclosed checklist of originals goes some way to dispel the first two barriers, paving the way for an entrepreneurial maker to produce the first facsimiles.

Photos of the Nuremberg museum instrument by Ingomar Mattitsch, with his kind permission. Other photos by the author.

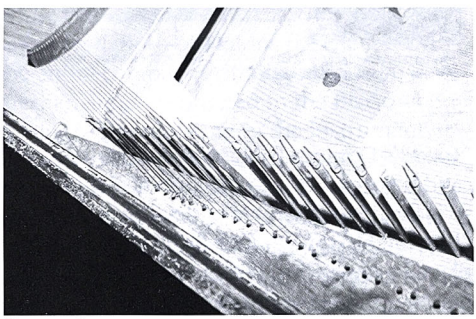

Figure 4

A preliminary check list of clavichords with sound altering devices

Provided with the kind permission of Karin Richter

Clavichords with Pantalon Stop

Christian Kintzing, Neuwied 1752;
FF-e^3 unfretted
Private Collection, Belgium

M. Christensen, Copenhagen 1759;
C-f^3, unfretted; also moderator stop?
Museum PA Frederiksborg, Hillerod, DK;
No. B 2322

Gustav Gabriel Woltherson, 1759;
diatonically fretted; pantalon stop may be not original, Sweden

Christian Kintzing, Neuwied 1763;
C-e^3 unfretted
Metropolitan Museum of Art, New York;
No. 1986.239
Anon., German mid-18th C. (?), unfretted
Smithsonian Institution, Washington;
No. 303,541

Anon., German c.1760; FF-f^3, unfretted;
also moderator stop
Germanisches Nationalmuseum, Nürnberg, Germany; No. MINe 69

Anon., Dutch(?), fretted(?)
formerly Michael Thomas Collection, GB

Anon., German (?) mid-18th C.(?);
C-f^3, unfretted; also una corda stop
Kloster Marienthal, Germany

Anon., North German (?); C-d^3, unfretted;
pantalon stop an early alteration?
Private ownership, Norway

Anon. probably Brunswick area, c.1750;
C-f^3, unfretted; originally two pantalon stops, one cloth covered, attributed erroneously in Boalch to G. Silbermann; 4′ in bass. Private ownership, England

Anon. Saxon clavichord c.1770. Single pantalon with two positions giving split treble/bass and full pantalon. FF – f^3
Private ownership, England.
Anon. German c.1775.
Evidence of pantalon stop. FF – f^3
Leipzig Museum no. 25

Anon. German c.1790. Multiple sound altering decices including hammers, moderator and pantalon.
Private ownership, Germany

Clavichords with sliding balance rail, with or without leathered tangents (moderator / una corda)

Anon., South German mid-18th C.;
C-e^3, diatonically fretted
GNM, N°rnberg, No. MIR 1052

Anon., Germany, mid-18th C.;
C-f^3, diatonically fretted
GNM, N°rnberg, No. MIR 1065A

Anon., Germany, mid-18th C.;
C-f^3, diatonically fretted
Stadtmuseum, Munich, No. MI 82,2

Johannes Moysë, Wien 1765;
c^1-f^3, diatonically fretted
Private Collection (formerly on loan to the Kunsthistorisches Museum, Vienna)

Anon., Flawil 1780; unfretted
Neues Museum, St. Gallen, CH; No. 9218

Clavichords with hammers:
Matthias Petter Kraft, Stockholm 1792;
FF-c^4
Musikmuseet, Stockholm, No. 3494

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1 A letter written by Kuhnau, dated December 8, 1717, appears in Mattheson's *Critica Musica* (Hamburg 1725), part 7, Facsimile edition, (Amsterdam: Fritz Knuf, 1964), 236-8.

2 Johann Georg Keyßler, *Neuste Reise durch Deutschland, etc* (Hannover 1751), 1324.

3 Charles Burney, *The Present State of Music in Germany* (London 1773), vol. 2,. Facsimile edition. (New York: Broude Brothers, 1969), 57.

4 Michael Cole, *The Pantalon - and what it tells us, in Keyboard Instruments - Flexibility of Sound and Expression* (Bern: Peter Lang S.A., 2004). This excellent article gives much background information on the development of the keyed dulcimer.

5 Jacob Adlung, *Anleitung zu der Musikalischen Gelahrtheit* (Erfurt, 1758.) Facsimile edition, (Kassel and Basel: Bärenreiter, 1953.)

6 As the pantalon tangents are always on the sounding side of the playing tangents, the pitch will always tend to be higher, as the string length involved is shorter.

7 The pantalon bars are the flat pieces of wood into which the pantalon tangents are mounted vertically.

8 *Verzeichnis der Europaeischen Musikinstrumente im Germanischen Nationalmuseum Nuernberg; Band 3, Klavichorde* (Florian Noetzel Verlag, Wilhelmshaven, 1999) MINe 69.

9 Daniel Gottlob Türk, *School of Clavier Playing,* trans. Raymond H. Haggh,(Lincoln & London: University of Nebraska Press, 1982), Introduction, §4, paragraph 7, pp.13-14.

10 Booklet notes to the CD "The World's First Piano Concertos" performed by David Owen Norris on a Zumpe piano) with Sonnerie (director Monica Huggett). Avie AV0014 (2003).