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The Pantalon – and what it tells us

Michael Cole

Pantalon seems a strange word to encounter in a musical context. Yet, an examination of old documents will reveal that, however strange it may seem, Pantalon (with several variant spellings) was generally recognized to be the correct name for a specific type of keyboard instrument in all German-speaking regions during most of the eighteenth century. Information given in these documentary sources enables us to identify large numbers of surviving examples, but these have passed largely unreported because they are, as a rule, unhappily catalogued under catch-all titles such as “Tafelklavier”, or “square piano”. As such they can be easily misunderstood and, owing to their apparently simple nature, they are generally disregarded by serious musicology. But they should not be neglected because a thoughtful study of such instruments gives us vital information about performance practices in the early classical period, and this information indicates that there is still much to explore before we can truly understand the musical aesthetics prevailing in the cultural environment which nurtured such eminent musicians as C.P.E. Bach and Mozart.

During the modern fortepiano revival, keyboard performance from the early classical period has been overwhelmingly dominated by instruments in the Viennese style, and of these the only eighteenth-century type to receive much attention has been that made by Anton Walter during the 1790s. This is not good for our appreciation of the repertoire, and sadly leaves us with a very limited understanding of the great riches of performance possibilities available to musicians of that era. In fact this reliance on Walter-style fortepianos leaves the musical public with a very unbalanced and completely misleading impression. Three points in particular might be readily stated:

- If the aim of using early pianos is to explore the sonorities of the music in its original format, Viennese pianos of the Walter type are completely inappropriate for much of the early repertoire. For example, it is very doubtful that C.P.E. Bach ever saw or played on anything resembling them.
- The dominant timbres of the period are rarely if ever heard in modern “period instrument” performances.
- Much of the information available in surviving instruments is overlooked and undervalued because it does not seem to relate to the stereotype established by the 1790s Viennese fortepiano.

The dominance of these instruments in modern concerts and recordings gives no hint of the great variety of early pianos that Mozart played. Many of the tone

colours familiar to him and his contemporaries are simply unknown even to those studying in conservatories.

With this modern re-introduction of the Viennese fortepiano there is the opportunity to employ a pedalling technique adapted with only small changes from that in use with the modern concert grand. Against this two important points should be mentioned:

- First, an examination of old instruments, beginning with those in the pantalon category, demonstrates beyond doubt that a very different use was made of the continuous reverberation obtained by playing without dampers, and that this older style was and is incompatible with the legato pedalling style which developed after 1800.
- Second, the use of changing registrations, with distinctive tonal palettes, was an important part of early performance style, particularly in Germany, and these period tone colours cannot be realized when overlaid by anachronistic, cantabile pedalling.

A study of the much-neglected pantalon, together with its influence in other areas of keyboard studies, provides insights in all of these areas.

Preliminary

Keyboard instruments made and sold under the designation “Pantalon” were produced in large numbers from around 1730 until at least 1805, and their popularity over a wide geographical area is exhibited in many regional variants of design. Since this is very unfamiliar to many readers we might do well to begin by showing an example – and since this paper is being given in Switzerland I have chosen to go first to Konstanz. Figure 1 shows an instrument signed by Gottfried Maucher, in Konstanz, and dated 1797. It is now in the collection of America’s Shrine to Music Museum in Vermillion, South Dakota. Another, very similar, example of Maucher’s work in this style is shown by M. Tiella and R. Veltori in *Strumenti per Mozart* (1991). Neither instrument is cited as an exalted specimen of fine craftsmanship or design. In fact the contrary is the case. Nevertheless, they do tell us something important – viz. that even at the very end of the eighteenth century, when we might easily imagine that sophisticated pianofortes were *de rigueur* accoutrements to any fashionable home, Gottfried Maucher – a professional instrument builder, not a dilettante – was making and selling keyboard instruments whose tone was nothing like that expected from a normal pianoforte: they have no dampers (so their sound continues unchecked until it slowly dies away, like a dulcimer), and they also have a very primitive mechanism resulting in a rather hit-or-miss touch, so there is little scope for expressive nuance.



Figure 1. Pantalon signed and dated by Gottfried Maucher, Konstanz, 1797. (Shrine to Music Museum, Vermillion, U.S.A.)

In the *New Grove Dictionary of Music* (2000) there is no entry under “pantalon” as such; but under “pantaleon” there is a brief paragraph explaining that this name was sometimes used for a synonym for pianoforte, when applied to small, square pianos and the like. So, in Figure 1 it will be seen that Maucher’s instrument has three obvious features.

- It has metal strings (actually one string for each note).
- It has a standard five-octave keyboard, typical for pianos of the 1790s.
- The strings are sounded by hammers.

The question therefore immediately arises: “Is this a pianoforte?” If the answer to this were “Yes” then clearly Maucher was incompetent, or misguided, because as a pianoforte this instrument is grossly inadequate. Yet many other makers constructed similar instruments – and people bought them. There may be as many as a hundred or more historic specimens, many being in this harp-shaped format. Among them there is some variation of quality and specification but their characteristic features are these:

- Nearly all have bare wooden hammers, without any covering of leather or felt.
- A softer tone is obtained through a moderator (or *jeu céleste*).
- A retractable harp stop rests on the end of the strings.
- The majority of these instruments have no dampers.

I have personally examined more than thirty of them and can vouch for the fact that their touch is very light and also, lacking an escapement, subtlety of expression is not possible. As pianofortes they would be woefully inadequate. If the point and purpose of the pianoforte is to facilitate expression, by enabling the musician to play every degree of loud and soft, and so shape a phrase simply through touch control on the keys, then these damperless, hard-hammered claviers must be rated a wretched failure. Hard hammers make expressive nuances very difficult, and the want of dampers to silence the strings when the finger leaves the key means that variations of staccato and legato are unattainable. Despite these limitations the fact is that instruments of this kind (in various physical forms) were manufactured for more than seventy years, often by craftsmen whose skills of design and execution are of the highest order. So, such instruments ought to be examined with appropriate respect. Consigning them to a store room and disregarding them is not a worthy response. The key to understanding them, proposed in this paper, is to recognize that they were not intended to be pianofortes: they were made to be played as keyboard dulcimers, and were sold under the name “pantalon”.

Origins

To trace the early history of the pantalon we must go first to Saxony and focus on the period from c.1700 to 1730. The Elector’s court, in Dresden, and the Lutheran church in the surrounding area, produced a rich musical legacy for succeeding generations. J.S. Bach and his predecessor Johann Kuhnau, the magnificent succession of opera composers and performers culminating in the famous husband and wife team of Faustina and Hasse represent only the highlights. But there was one performer who enjoyed greater renown than any of them. He was Hebenstreit. Yet he was not a keyboard player, nor was he a specialist on any standard orchestral instrument. His fame rested solely on his extraordinary ability as a player of the dulcimer – in his case a gigantic variant of the common *Hackbrett*, invented and perfected by himself. Hebenstreit’s given name was Pantalon, and it was this that he preferred to use as a professional name when promoting himself as a performer. In his early days he played the violin, quite well according to Telemann, but his first step to fame was his appointment at Weissenfels in 1698 where he was known as *Monsieur Pandalon*, *Maître de danse*. It was at this period that he perfected his technique on the

large dulcimer which he developed with help from a well-disposed joiner. To his improved version of the dulcimer he gave his own name. He called it a *Pantalon*. And with a certain theatrical panache he appeared as “Monsieur Pantalon” at several princely courts and major cities during the next decade. Wherever he went audiences were filled with admiration and wonder, and awed by the novel tone that he could summon from this strange instrument. It was during a visit to Paris that he was granted the ultimate accolade of an audience before King Louis XIV and the whole court at Versailles in 1705. There the astonishing *corps de resonance* of his instrument and his incomparable showmanship caused the king to remark that he should be called not “Pantalon” but “Pantaleon”. Such an elegant complement from such an august personage could only be treasured by Hebenstreit who thereafter preferred to be known as “Pantaleon”. Nevertheless, it was not Pantaleon but Pantalon that was afterwards preserved in common usage by musicians and instrument makers.

For such an extraordinary and famous instrument there is surprisingly little detailed description, and currently there is no known picture showing Hebenstreit with his instrument. Kuhnau, who took lessons with Hebenstreit, left a brief summary of its main features.¹ Its compass extended beyond that of harpsichords or organs, descending to EE, and probably ascending to e³. However, the lowest part of the range (up to G) was provided only with diatonic notes. Like any dulcimer it was played with at least two varieties of hammer (held in the hand), one having a hard striking surface, perhaps tipped with bone or horn, while the other had a soft wool-covered head. A surprising feature was that the Pantalon (or Pantaleon) had gut strings, overspun in the bass like cello strings or, more accurately, like a contrabass. These were often troublesome, and liable to break, so when Hebenstreit was appointed to the court of the Elector of Saxony, in 1714, he received not only a handsome salary but an additional allowance for keeping the instrument in order with replacement strings. Hebenstreit’s role as court musician required him to appear not only as a soloist, playing extensive music adapted or composed by himself, but also to provide a continuo role in concerted music. Later it appears that for important occasions the court orchestra featured two, three, or even four pantalon players.²

J.G. Keyßler, who saw Hebenstreit’s instrument in 1730, states that it was furnished with both gut and metal strings, and this makes sense of some other evidence regarding its extraordinary size.³ When Charles Burney visited Dresden in 1772, Binder showed him a dilapidated pantalon which may

1 Kuhnau’s letter, dated 8 December 1717, appears in Mattheson’s *Critica Musica* (Hamburg, 1725), Teil 7, 236–8.

2 See further: Christian Ahrens, „Pantaleon Hebenstreit und die Frühgeschichte des Hammerklaviers“, *Beiträge zur Musikwissenschaft*, I, 1987, 37–58.

3 Johann Georg Keyßler, *Neueste Reise durch Deutschland, Böhmen, Ungarn, etc.* (Hannover, 1751), 1324.

have belonged to Hebenstreit.⁴ Though most of the strings were broken Binder told him that when in good order it required 186 strings of gut. This equates to three or more strings per note. Burney remarks in his travel diary that it was over nine feet long. This we must understand was simply his estimate. He did not carry a measuring tape. So his report suggests that it was about 2.85 metres long. The width is not reported, but as there is a limit imposed by the extent that Hebenstreit could reach comfortably across the string band, we may suppose something in the order of 65 to 85 centimetres maximum. Supplementary information is provided by a report of performances on tour in England by Georg Noelli, a pupil of Hebenstreit. He played on an instrument advertised as being eleven feet long with 276 strings all told. This is probably the most revealing and reliable information we have. Consider for a moment the length. If we suppose that about 30 centimetres would account for the after-length of the bottom string it would seem to have a vibrating length of about ten feet (approximately 3 metres). But a string of this length is simply not necessary, and if such a long string were fitted there seems every likelihood that the amplitude of the strings when struck for even a moderate *forte* would cause them to jangle against one another. Bear in mind that though the string may be set in motion with a downward hammer strike, during the long-sustained sound period the oscillation of the string undergoes precession in which the wave form soon rotates to the horizontal. My interpretation is therefore that the pantalon did not have strings ten feet long – or even nine feet long – but rather that Hebenstreit's pantalon was in fact a double dulcimer. At the right was a conventionally disposed dulcimer with gut strings, while at the left there was a complementary dulcimer, possibly descending only to C, with steel strings. This metal dulcimer would not require more than four feet length (1.2 metres), and for convenience the layout might have been reversed so that the treble strings were nearest the player, whereas on the main dulcimer the bass strings were nearest (or *vice versa*). This is as much as one can say, except to remark that as with any dulcimer there is no way to stop the reverberation (the after-sound which is such a feature of these instruments) except if the player should place his sleeve on the strings so as to suppress any clash of harmony from the long-sustaining bass notes, or bring the music to a final close. Harp players do this by placing their hands flat against the strings at the end of a piece. As a visual aid Figure 2 shows the four registrations available to Hebenstreit, as provided by gut strings and metal strings, struck by either hard or soft hammers. These are encircled to show that each tonal register exists within the soundworld of continuous reverberation characteristic of dulcimers. We will refer to this again.

4 Charles Burney, *The Present State of Music in Germany* (London, 1773), ii, 57.

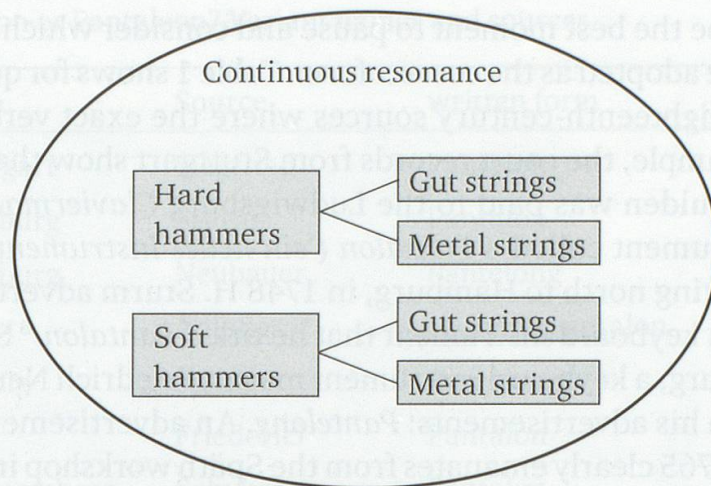


Figure 2. Hebenstreit's dulcimer: the tonal resources.

Such was the instrument with which Hebenstreit created a sensation. His pupils had duplicate instruments made for themselves, at great expense, but keyboard instrument makers were equally interested in the possibility of replicating these sonorities with something that could be played like a normal harpsichord. How soon this happened we cannot tell. Certainly by 1731, that is while Hebenstreit was still active, and before Silbermann completed any pianofortes in emulation of Cristofori, Wahlfried Ficker of Zeitz, advertised in Leipzig newspapers a keyboard instrument of his own invention which he expressly claimed would imitate the effects produced by "the famous Pandalon".⁵ The description given makes it clear that this was a metal-strung *Flügel* with down-striking hammers. Ficker named it his *Cymbal Clavir*. "Cymbal" being an equivalent for "dulcimer" and "Clavir" denoting a keyboard, Ficker is saying only that this should be characterized as a keyed dulcimer. In 1758 Adlung's *Anleitung zu der Musikalischen Gelahrtheit* described exactly the same thing, even confirming that Ficker was the best known maker – but no longer keeping the *Cymbal Clavir* title, Adlung styled them *Hämmerpantalon* or *pantalonisches Werk*.⁶ He remarks also that they are made in upright form, exactly like the more familiar Clavicytherium, except that they are not plucked but sounded by little hammers made of hard wood or horn. In place of the soft alternate hammers used by Hebenstreit these keyboard instruments had a special stop by means of which a strip of cloth is interposed between the hammer and the strings, producing exactly the same auditory effect. To the ear it sounds like soft, wool-covered hammers. Even when Adlung's book was at the printers many makers were already using a neater title for their creations: they named such instruments *pantalon*, or occasionally *pantaleon*.

5 Ahrens, „Vom Versuch zur Schöpfung – das Clavichord und Fortepiano in Deutschland, 1750–1800“, in *Katalog der Musikinstrumenten-Ausstellung, 14. Tage Alter Musik in Herne* (Herne, 1989), 67.

6 Adlung, *Anleitung zu der Musikalischen Gelahrtheit* (Erfurt, 1758), 559.

This could be the best moment to pause and consider which variant of the name should be adopted as the correct form. Table 1 shows for quick reference a selection of eighteenth-century sources where the exact verbal formula is known. For example, the court records from Stuttgart show that in July 1745 two hundred gulden was paid to the Ludwigsburg *Claviermacher* Siegfried for a new instrument called a *Pantalon* ('*ein neues Instrument der Pantalon genannt*').⁷ Moving north to Hamburg, in 1748 H. Sturm advertised for sale a hammer-action keyboard instrument that he titled *Pantalon*.⁸ Six years later, again in Hamburg, a keyboard instrument maker, Friedrich Neubauer, used a variant word in his advertisements: *Pantelong*. An advertisement in a Leipzig newspaper in 1765 clearly emanates from the Späth workshop in Regensburg: there the reference is to instruments titled *Pantaleon-clavecins*.⁹ Another newspaper notice, from 1778, advertises instruments made by Friederici of Gera, using the term *Pantalon*.¹⁰ It is interesting that this advertisement, placed by F.G. Tromlitz acting as an agent for Friederici, cites the products from the Gera workshop as being: "große und kleine Forte piano, Fortbiens von verschiedener Art, Claviere und Pantalon ..." that is, "large and small pianofortes, square pianos of various kinds, clavichords, and pantalons". *Fortbien*, a name used almost exclusively by Friederici, appears to be a transliteration of "fortepiano" as spoken in Paris, and in the absence of identified specimens, these I imagine would be square pianos similar in style to those made by Johannes Zumpe in London – which were very popular in France during the 1770s. There is therefore clear evidence in this advertisement of 1778 that Friederici distinguished between small pianofortes in this style (whose tone was produced by leather-covered hammers) and another instrument which he called "Pantalon" (whose characteristic tone was provided by hard hammers probably without individual dampers). Continuing in Table 1, a label is visible inserted in an instrument by J.C. Jeckel of Worms wherein he names these little hammer-action types *Bandlong* – clearly another transmutation of the original pantalon.¹¹ Next, in his *Ideen zu einer Ästhetik der Tonkunst*, (page 286) Schubart, one of the most perceptive and capable clavier players wrote very approvingly of the pianoforte, which he supposed was a German invention, and with great disdain

7 Hauptstaatsarchiv Stuttgart, A 282, Büschel 1730. See Sabine Klaus "German Square and Harp-Shaped Pianos with *Stoßmechanik* in American Collections: Distinguishing Characteristics of Regional Types in the Eighteenth and Early Nineteenth Centuries", in *Journal of the American Musical Instrument Society*, Vol. XXVII, 2001, 120–182.

8 *Hamburger Relations Courier* 26 November 1748. First noticed by Christian Ahrens, 1989.

9 Ahrens, „Vom Versuch zur Schöpfung ...“, 74.

10 Ahrens, „Vom Versuch zur Schöpfung ...“, 68.

11 A label in an instrument dated 1790 in the Metropolitan Museum, New York, Sabine Klaus, "German Square Pianos with *Prellmechanik* in Major American Museum Collections", in *AMIS Journal* XXIV (1998), 37–8. Klaus follows Libin in reading this inscription as *Bandlony*. Other examples by this maker date from 1784 and 1785.

Table 1. Pantalon or Pantaleon? Variant names and sources.

	Place	Source	written form
1745	Stuttgart	Siegfried	Pantalon
1748	Hamburg	Sturm	Pantalon
1754	Hamburg	Neubauer	Pantelong
1758	Erfurt	Adlung	Hämmerpantalon
1765	Leipzig	Späth	Pantaleon
1778	Gera	Friederici	Pantalon
1785	Württemberg	Schubart	Pantalon
1789	Dresden	Türk	Pantalon
1790	Worms	Jeckel	Bandlong/Bandlony

for another keyboard instrument that he named *Pantalon*. This was written while Schubart was imprisoned in Württemberg around 1785. And finally on this brief survey, Türk, in his *Clavierschule* of 1789 (page 2) lists the *Pantalon* separately from the pianoforte, using the standard spelling that I am proposing to re-establish. This list is by no means exhaustive, but was selected to show a wide geographical distribution and a long time frame. It could easily be extended, for example from Viennese sources where the word *Pantalon* was clearly in musical currency from 1760 to 1790 at least. So it would appear that the term pantalon was understood among German-speaking peoples over a wide geographical area, and that there was an overwhelming preference for the form “pantalon” rather than the francophone term “pantaleon” which, in this list, only appears in conjunction with the French word “clavecin”.

The nomination *pantalon* does not signify any specific outward form. From some indeterminate point early in the eighteenth century until about 1760 such instruments could be encountered in *Flügel* form (that is, like a harpsichord); until at least 1780 they could be seen in upright form, like a clavictherium; between 1765 and 1800 they could be encountered as small horizontal instruments, shaped either like a clavichord (or square piano), or in so-called “lying harp” form, as in Figure 1. Internal details of design might vary greatly, but what unites them all is an aesthetic inspired by Hebenstreit’s dulcimer and its associated style of performance. These can be summarized under a small set of distinctive characteristics, each clearly derived from Hebenstreit.

First, they are to be played without dampers. In many examples there are simply no dampers – they never had any. Their makers designed and built them to be played with continuous reverberation, just like a conventional dulcimer. Sometimes one finds almost identical instruments, or at least very closely similar examples, where one specimen was not provided with dampers but a more

elaborate version was provided with them. These dampers would be engaged or disengaged by a hand stop, so that the player could choose sustaining or non-sustaining modes. This can be well understood when we recognize in a pantalon that such hand stops are always provided in association with other tone-changing devices, similarly operated by hand, so that one is clearly expected to use them in combinations.

Second, they have hard-surfaced hammers. These may be of bare wood, bone, horn, or even metal. But in any instrument distinguished as a pantalon there will also be a soft hammer tone. This can be provided either by a second, duplicate set of hammers, so that one may alternate hard hammer or soft hammer tone by moving a hand-operated stop; or the same aural effect will be provided with a "moderator" inserting a layer of cloth, leather or silk between the hammers and the strings. This too was nearly always provided by a hand stop until the principle was transferred to the Viennese-style pianoforte, where it first appeared as a hand stop but after 1785 was generally operated by a knee lever, and later by a pedal.

Third, to qualify as a pantalon, without the risk of objections, the instrument should have a buff-or harp-stop, acting as a semi-mute on the end of the strings, so that the upper partials are suppressed and the tone resembles that of gut strings.

When these three features occur together we have a complete replication of the Hebenstreit dulcimer. With only the most cursory inspection one may see that instruments constructed in this fashion are similar to the pianoforte only in the most superficial way. Yes, they have strings. Yes, they have hammers. But no, they were not constructed to be exquisitely expressive instruments. Instead the pantalon aimed to open many differing soundworlds by the use of changing registrations. An examination of surviving instruments will make this clearer.

Surviving instruments

Figure 3 shows a general view of a small, rectangular clavier in the Museum Viadrini in Frankfurt an der Oder.¹² Viewed externally it might be mistaken for a clavichord. Or perhaps, observing that the case is a little deeper than one might expect of a four-and-a-half octave clavichord, one might guess that it is a square piano. It is neither, and this one may see very readily when the lid is lifted.

12 Herbert Heyde, *Historische Musikinstrumente der Staatlichen Reka-Sammlung am Bezirksmuseum Viadrina, Frankfurt (Oder)*, (Leipzig, 1989), 90–92.

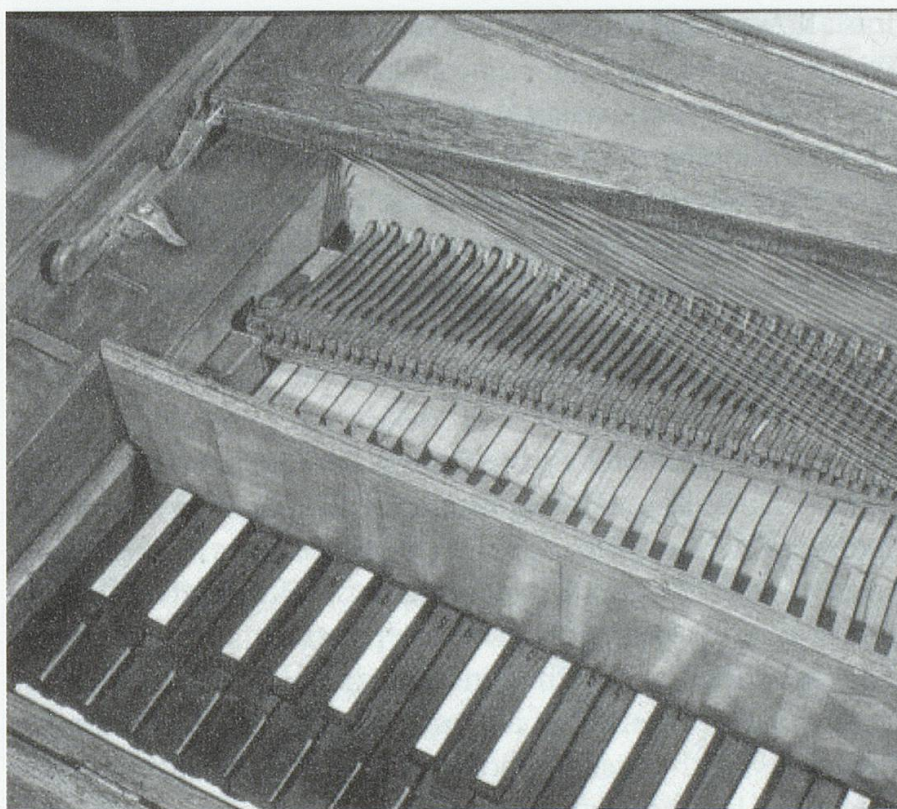


Figure 3. Anonymous Pantalon clavier, Saxony, c. 1775. (From Heyde, *Historische Musikinstrumente* (Leipzig, 1989), plate 3).

Figure 4. Interior view of the above instrument.

Before citing its special features one should notice that it is a very well crafted instrument. The maker's name is not known, but he was clearly a very competent and painstaking worker. The joints are cut with precision; the fascia board over the keys is very neatly inlaid with lozenge-shaped parquetry; and the key levers are expertly carved. This is not hack work, but rather the product of a very good workshop. (It may be remarked here that there is an identical instrument, very clearly from the same workshop, in the Germanisches Nationalmuseum, Nuremberg, inventory No. MINE 166. It is in equally good order.)

In the internal view (Figure 4) the first thing to observe is that there are two hammers for each note. One hammer is of bare wood; the other has exactly the same form but is tipped with a small scroll of soft, oil-tanned leather. While one hammer set is active, the other lies dormant. At the edge of the soundboard, operated by the player's right hand, there is a wooden lever which slides the hammer rail sideways so that one may select either hard or soft hammers as the active set.

The next feature to observe is another wooden stop lever at the left which raises or lowers the triangular wooden frame visible at the top of the picture. This is the harp stop (so-called) which applies a narrow band of tasseled fabric at the end of the strings creating a sound similar to that of a gut-strung harp – hence the tag *Harfenzug*. When the frame is raised we hear ordinary metal strings but when it is allowed to fall back on the strings the aural effect is like changing to gut strings.

The reader will have perceived already that, if I am correct in my analysis, there are two striking parallels here with Hebenstreit's dulcimer. We have hard and soft hammers, and the opportunity to use either metal strings or gut – in this case simulated by the harp stop. But there is one more thing to observe, and it is of great importance: there are no dampers. Thus the instrument sounds always in sustaining mode – like a dulcimer. There is no way to suppress the reverberation except by the slow damping provided when the “harp-stop” is in operation.

Now if the reader will again consult Figure 2 it will be seen to offer an exact summary of this clavier. There is, to put it mathematically, a one-to-one correspondence. Each feature of Hebenstreit's dulcimer is replicated in the Frankfurt “Tafelklavier”. Since it was clearly intended to replicate the Hebenstreit formula there should be no hesitation in saying that this is a pantalon. There is no discernable reference in this design to anything in the “cembalo col piano e forte” developed by Cristofori in Florence. All of its inspiration comes from Saxony; from the Hebenstreit legacy, with possibly a little savour of north German organ school in its dependence of hand-drawn changes of register.

Rosamond Harding in her very influential work published in 1933, *The Piano-Forte: its history traced to the Great Exhibition of 1851* gives a brief description of the special features of these instruments (page 51), having apparently examined MINE 166 (now in Nuremberg), but completely misunderstands their

function. She did not perceive the relationship to Hebenstreit's dulcimer and consequently describes these claviers as "pianofortes with a cembalo stop". That is, the leather-capped hammers are to provide the pianoforte tone, but the bare wooden hammers are meant to sound like a harpsichord. This interpretation takes no account of the absence of dampers (which she does not mention). She also pays little attention to the *Harfenzug* which she describes peremptorily as "a lute stop for subduing the sound".

Herbert Heyde describes the instrument as a *Tafelklavier* with four registrations: *Spinett*, *Spitzharfe*, *Laute* and *Pantalon*. He also reports that the maker may have signed his work at the back of the keyboard – but the ink is so faint that there is no longer any hope of reading the inscription. Despite this Heyde gives it as his opinion that the stylistic features point to its origin in Magdeburg area of Saxony ("Raum Magdeburg-Eisleben"). He points out very pertinently that this is not "Bastlerarbeit" (amateur work) but the product of a highly skilled professional workshop. Heyde suggests a date of construction about 1775.

From this same period exactly the same pantalon aesthetic is evident in numerous rectangular claviers from western areas of Germany. Their constructional differences from the Saxon type are so great that there can be no doubt that the two "schools" developed their ideas quite independently, yet evidently both aimed to translate Hebenstreit's tonal formulae into a small, portable clavier to suit clavichord and organ players. The most important type to observe is that with a specific form of hammer mechanism shown in Figure 5, nowadays known as "Prellmechanik". The design seems to have its origins in the middle Rhine region (between Strasbourg and Cologne) some time between 1765 and 1770. The idea is a very simple one. Each hammer pivots in a small wooden block fixed to the back part of every key lever. Thus, as the finger presses the front of the key the back part carries the hammer upwards to the overhanging wooden "shelf" (the *Prelleiste*). When the back of the hammer (*Schnabel*) is arrested by this obstruction the hammer head is flipped up to hit the strings. The earliest dated example is from Mayence in 1767.¹³

To illustrate the wide geographical distribution of this type Figure 6 shows an example from east coast America.¹⁴ It is one of four or five extant specimens made by German immigrant makers between 1770 and 1795, mostly in Pennsylvania. Unsurprisingly, in all essential features it is exactly like dozens of examples actually made in western Germany in the same period. The maker's name is not known. Unfortunately this instrument was subject to a very intrusive "restoration" in the USA in the twentieth century during which many parts were thoughtlessly discarded and replaced with entirely new components.

13 Signed by J. Anton Boos, see Klaus, as note 11, page 33.

14 M. Cole, "Square Pianos in the Payne Gallery Exhibition", in *The Square Piano in Rural Pennsylvania 1760–1830* (Bethlehem PA, 2001), edited by Paul Larson and Carol Trautman-Carr.

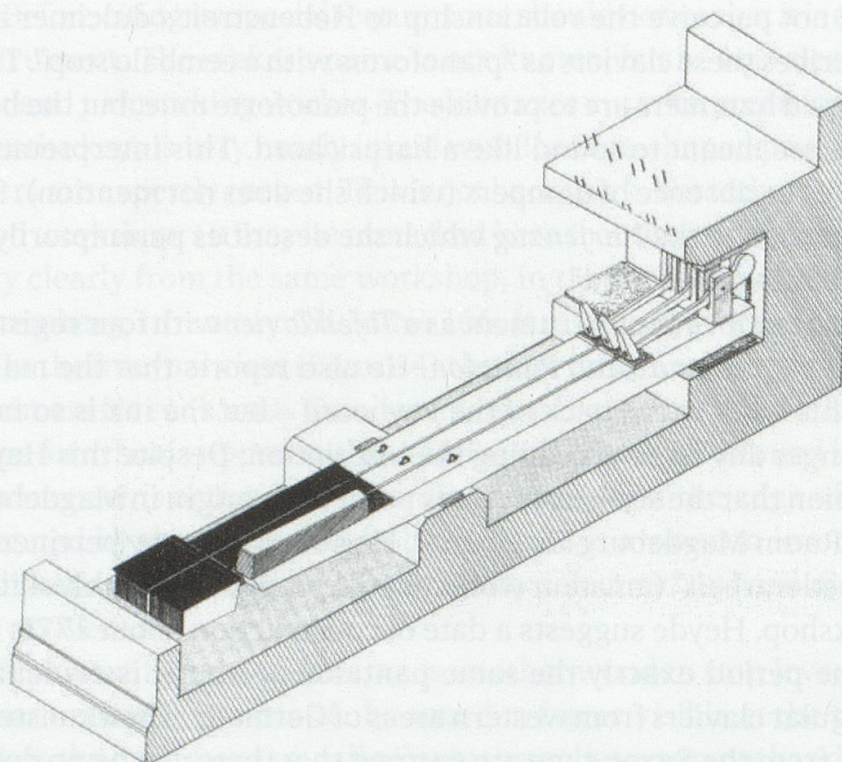


Figure 5. Flip Action (or retro *Prellmechanik*) with bare wooden hammers and without dampers.

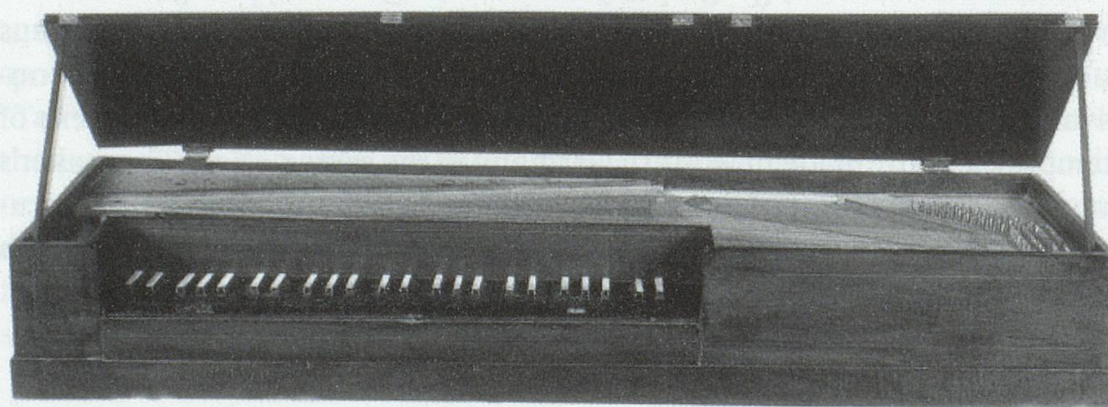


Figure 6. Anonymous Pantalon in rectangular form. (Moravian Archives, Bethlehem, Pennsylvania).

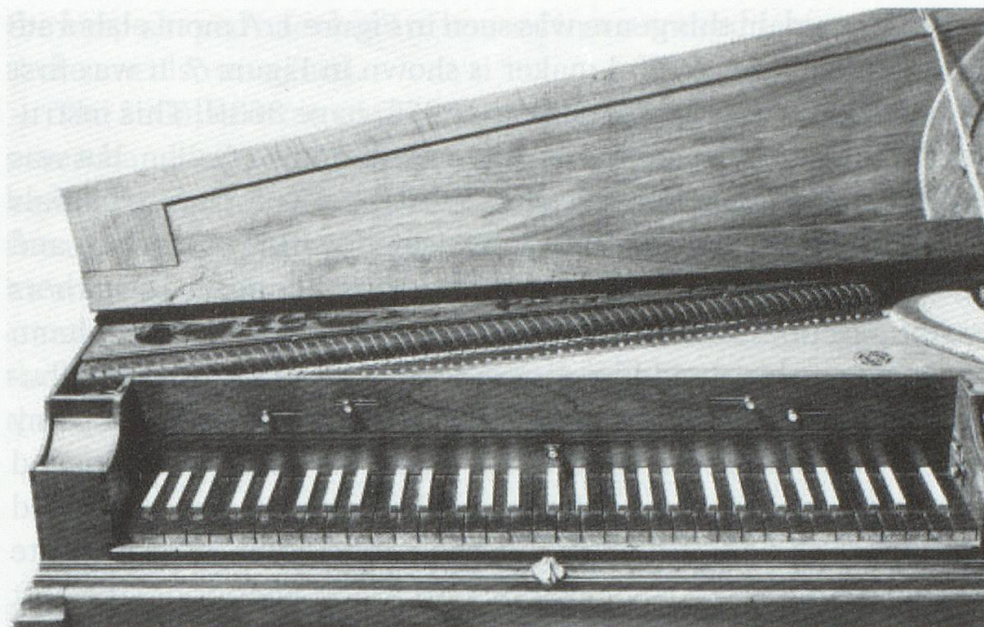


Figure 7. Anonymous Pantalon in Harfenform, formerly in the Frauenkloster, Altstätten, St Gallen. (From F.J. Hirt, *Meisterwerke des Klavierbaus* (Olten, 1955), 363).

Among these were the soundboard, the baseboard, the hitchpin block and the stop-changing mechanisms. But happily, the keys and the hammers were not replaced, and such essential features as the harp stop were replicated in such a way as to leave clear information as to the original construction. Therefore the musical specification is as it always was. The hammers are of bare wood, very like those in Figure 5. To provide the softer sound that Hebenstreit gained with wool-covered hammers this clavichord has a moderator, consisting of a textile strip (woolen cloth) which can be advanced to come between the hammer and the strings. To the ear the effect is very similar to that obtained with the second set of hammers in the Saxon example. The Pennsylvania pantalon also has a harp stop, pressing soft material to the end of each string to produce the half-damped effect similar to the gut-strung harp. Both stops are now operated by knee levers but due to the extensive restoration we cannot be certain of the original arrangement. Most importantly, like the Saxon specimen, it has no dampers. Thus, the available tonal resources correspond exactly with Figure 2. The musician may choose hard hammers or soft hammers (the latter simulated), played with metal strings or “gut” strings, and each registration is heard with continuous reverberation, because there are no dampers. Despite many design differences from the Saxon example the tonal resources are exactly the same.

A third manifestation of the pantalon concept from the Mozart era is represented by dozens of surviving specimens in the form of “harp-shaped” claviers.¹⁵

15 For a general view of these instruments see Laurence Libin, “The ‘Lying Harp’ and some Early Square Pianos”, in *Early Keyboard Studies Newsletter* (Westfield MA) VIII No 3, 1994.

Gottfried Maucher's work in this genre was seen in Figure 1. A more elaborate specimen from a much more skillful maker is shown in Figure 7. It was first shown in Hirt's *Meisterwerke des Klavierbaus*, 1955, page 363ff. This instrument came from the Frauenkloster Maria Hilf in Altstätten, St Gallen, but was given to the Schweizerisches Landesmuseum, Zurich. So its Swiss credentials are quite good, complementing the less sophisticated work by Maucher, and confirming the southward progress of the pantalon. Hirt, like dozens of authors and museum staff, ascribes this instrument to the Ulm organ-builder Johann Matthäus Schmahl but this should be disregarded. The widespread attribution of these harp-shaped claviers to J.M. Schmahl is not supported by any evidence that can withstand serious scrutiny. (A similar instrument, loaned by the museum in Geneva for this conference in Lausanne, is also attributed to "Johann Matthäus Schmahl vers 1770" – without foundation.) The ultimate source of these attributions is a statement by Carl Anton Pfeiffer of Stuttgart that he examined one of these (about 1900) and found a signature "Johann Matthäus Schmahl, Ulm, anno 1771". On this account four examples in this form in the Heyer Collection were assigned to this maker in Kinsky's catalogue of 1910. But none of these is actually signed by Schmahl, and no such signature has since been uncovered, so there was always room for some scepticism. More recently, research by Sabine Klaus has revealed that no trace can be found of such an inscription in any of the instruments likely to have been available to Pfeiffer, nor is any such inscription reported elsewhere among the many similar instruments that are extant.¹⁶ Furthermore, her research suggests that Schmahl was only a second-rate organ builder, and that he was the maker of only one surviving pianoforte-style instrument, in *Flügel* or grand piano form, dating from 1775. So none of the attributions of harp-shaped instruments to this maker can be supported from any source.

Whether made in Ulm or not, it is clear that there are many surviving instruments in this form, with divergences of style and basic differences such as octave spans, indicating that they were made in several workshops, spread throughout southern Germany and contiguous German-speaking regions. They would have been plentifully present within this region during Mozart's lifetime. It is clear that they were also very well known to Schubart, living in Württemberg in 1785, and to Türk whose *Clavierschule* was published in Leipzig in 1789. It may be added that the outward form – the "leg-of-mutton" or lying harp shape – should not be regarded as the primary distinguishing feature of this class since there are many historic examples that exhibit exactly the same internal details as

16 S. Klaus, „Der Instrumentenmacher Johann Matthäus Schmahl (1734–1793) im Spiegel der Ulmischen Intelligenzblätter“ in *Musica Instrumentalis*, 1. Ausgabe (Nürnberg: Verlag des Germanischen Nationalmuseums, 1998), 72–93.

the harp-shaped ones but are housed in a standard rectangular case.¹⁷ Most of those are also unsigned.

The St Gallen example has many interesting features. There are, altogether, seven handstops. Two of these, placed inconspicuously at either end of the keyboard, must work together. You pull them both to unlock the keyboard and then push backwards, whereon the keyboard slides into the instrument. By this means each hammer strikes the string course one place further back, or one course further still, effecting a transposition, either by one semitone or two. But the more important stops for our current analysis are the five disposed across the front of the fascia board. From left to right their functions are as follows:

- silk moderator (a silk ribbon comes between the hammers and strings)
- sheepskin moderator (a softer tone than above)
- dampers (left disengaged, move right to engage dampers)
- harp stop (an S-shaped board drops onto the strings near the soundboard bridge)
- mystery stop.

This last stop needs further investigation. Mechanically it raises a wooden bar to the underside of the soundboard. Some have asked whether this was intended to work as a *Fagott* or buzzing effect like the *arpichordum* on old Flemish virginals. Hirt suggests that it is a *Trommel*. Others, including Derek Adlam, assert that it merely presses against the soundboard to deaden part of the vibrating area, making a different kind of mute.

Say what you will, this is clearly a complex instrument, and the fine cabinet-making work seen in the quality of such details as the blind fretwork on the hitchpin block, the concave fall board, and the walnut panelled lid indicates that this is a high-quality product intended for a discerning buyer. In Leipzig there is an almost identical instrument except that the keyboard only ascends to f^3 (one tone lower than St Gallen), and other specimens apparently from the same workshop are to be seen in Nuremberg, Halle and elsewhere.¹⁸ However, the unfortunate aspect of this is that museum curators seem to be interested solely in these very complex examples, so that what is chosen for display (and available in photographs) is invariably the most highly developed type with dampers. Yet my researches into this type of *clavier* would seem to indicate that more than sixty per cent of extant examples were constructed without dampers. If we allow for a greater rate of destruction among those instruments

17 M. Cole, "Tafelklaviere in the Germanisches Nationalmuseum: Some Preliminary Observations", *Galpin Society Journal* 1997, 180–207. See particularly page 193.

18 Inventory No 105. Shown in M. Cole, *The Pianoforte in the Classical Era* (Oxford, 1998), Plate 13. The same museum has another example, without dampers, No. 104. Similar examples: Berlin No. 8 (without dampers), and No. 336 (with dampers).

that were quickly obsolescent by the early nineteenth century it is likely that a larger proportion, perhaps 75 percent of these harp-shaped pantalone were constructed without dampers. Thus, the understandable policy of displaying in museums the most elaborate examples of any class of artifact can, as here, give the public a false view, because the more typical objects, being simpler, languish in store rooms. My attempts to procure a photograph of a well-made specimen without dampers have been completely frustrating. But the reader should understand that a great number of these instruments were made without dampers, and that sometimes even those that do now have dampers acquired them at a later date. (Such alterations can usually be detected through the inferior quality of craftsmanship and materials in the added parts.)

Relating them to the Hebenstreit model we have a slightly higher degree of complexity in that we now hear three types of hammer – hard, softer, and softest – represented by bare wooden hammers, silk moderator, and soft leather (sheepskin) moderator. The harp stop remains a feature, as does the continuous reverberation. The additional stops providing individual dampers for each note and the “mystery” stop, make for a total of at least twelve distinct registrations, possibly more, and a veritable feast for the musician in leading the listener through a series of aural experiences, like passing from room to room in a house with many varieties of décor and lighting. This is the aesthetic of *Veränderungen*, the art of selecting and changing the *Affect* for artistic interpretation, so much enjoyed by German musicians of the early classical period.

To classify such instruments as “pianofortes” is to misrepresent them and to overlook important aspects of their musical application. It is not, as Harding stated, that their makers intended to produce cheap, rudimentary pianos for an unsophisticated clientele. On the contrary some are painstakingly crafted. It is not that they added a variety of stops to pander to their clients love for extraneous “gadgets”. These registers are intrinsic to the realization of Hebenstreit’s tonal resources. It is not that the makers could not devise any means of making individual dampers. (Clearly they could and sometimes did.) The plain testimony of these instruments is that the makers and their clients desired to play in the style of the great dulcimer virtuosi. Their patriarch was Hebenstreit, and these instruments were known as “pantalone”.

When this is agreed inevitable conclusions must follow about how keyboard music was performed in the second half of the eighteenth century. First, since so many instruments were constructed without dampers there must have been a strong tradition of playing in dulcimer style, with continuous reverberation. Second, it was also expected that players of hammer-action instruments would make use of a wide variety of registrations, achieved with numerous mechanical stops. Before making any further comment on this it would be advisable to examine the influence of the pantalone on other keyboard instruments.

The wider influence of the pantalon

In 1747 J.S. Bach famously visited Potsdam and there played before King Frederick of Prussia on a pianoforte by Gottfried Silbermann. The features of this pianoforte can be examined today in the instrument preserved in the palace of Sans Souci. In particular one may observe that the hammer mechanism is very sophisticated, allowing for a very expressive touch, and that the hammer heads are hollow and faced with soft leather. Silbermann was deeply indebted to Cristofori, the Florentine inventor, for most of this internal design but he nevertheless added stop levers, never seen in Italian pianofortes, to provide alternate registrations that completely alter the tonal ambience.

At each side of the keyboard there is a lever which, when depressed, lifts the dampers off the strings. To operate this registration both hands must be taken from the keyboard to press the levers firmly down; then, as one resumes playing, the instrument builds up that majestic resonance and reverberation characteristic of Hebenstreit's dulcimer. It is this feature of the pianoforte which C.P.E. Bach particularly praised in his *Versuch*. "Zum fantasieren", he wrote, "ist das ungedämpfte Register des Fortepianos das angenehmste, und wenn man die nöthige Behutsamkeit wegen das Nachklingens anzuwenden weiß, das reizendste". This statement should be read in the context of the whole of Bach's *Versuch*, and particularly on the way in which extemporary playing was then seen as the true test of a great musician. It remained so, certainly until Beethoven's lifetime. Mozart did this habitually. How many times he writes to his father in Salzburg of how he began a concert or recital: "Ich preludirte" he says, and only then did he launch into his sonata or concerto. Clementi likewise, when he played before Emperor Joseph II at Christmas 1781, chose his sonata which today reminds us of Mozart's overture to *Die Zauberflöte*, selecting this work precisely because the structure of this piece enabled him to insert numerous cadenzas, extemporary digressions that could include spontaneous passages designed to appeal to the specific audience. So, it is in this context that C.P.E. Bach particularly praises the undamped registration, provided that the player understands how to manage the long reverberation so as to avoid offensive harmonic clashes. This is not the same as saying that one should eschew the danger of harmonic conflict. On the contrary, it is exactly this tension imposed by the potential for discord that gives the harmonic progressions of the music a special zest.

Pages and pages might be written about why and how Silbermann added this resource to his pianofortes, but it is simply mentioned here that Hebenstreit had previously taken out a writ against Silbermann in 1727 to prevent him from manufacturing copies of the giant dulcimer. So, in adding this hand-stop to his pianoforte the great organ builder could obviously provide the same tonal resource without infringing Hebenstreit's interdict. But in order

to emulate Hebenstreit's pantalon Silbermann went even further. Though seldom observed, there is another double handstop fitted inside the pianoforte above the wrestplank. This advances five blades of brass and ivory so that they lie next to the strings. The aural effect is a bright metallic tone. Although the hammers are of soft leather, it sounds almost as if the strings were being struck by brass tangents. This is a very puzzling thing to find in a pianoforte, and it does not appear that there is any mention of this in contemporary documents. Harding (*op. cit.*, page 50) opines that it is an imitation of the *cembalo*, and I confess that I myself was persuaded until I heard a reproduction instrument played by David Schulenberg. Before performing a prelude by C.P.E. Bach he let the audience see that he was about to use this special stop, and then very deliberately he also depressed the other stop to lift the dampers. The effect was astonishing, for it sounded exactly like a metal-strung dulcimer played with hard hammers. More than one person in the audience turned and said to their neighbour with new insight, "The sound of the pantalon!" Such an amazing sound to hear from a pianoforte!

Gottfried Silbermann died in 1753 but his work with the pianoforte was continued by his nephew Jean Henri Silbermann in Strasbourg. He continued to produce such instruments during the 1760s and 1770s changing very little in the design. It is particularly important to note that the hand-operated damper lift can still be seen in Silbermann pianos up to 1777 – the latest that survives. So when Mozart was in Paris in 1778 this is probably the only kind of grand piano that he would have encountered – let it be emphasized, an instrument with only hand stops to raise the dampers. It is also worth remarking here that Mozart's own pianoforte, made by Anton Walter in the early 1780s, was certainly constructed with hand-operated levers to raise the dampers. Although it was subsequently altered to have knee levers for this purpose there is no certainty at all that this was done during Mozart's lifetime, or at his request. What we may say with confidence is that around 1780 only a tiny proportion of pianos were built with pedals or knee levers to raise the dampers. Therefore, performing music of that period with the commonly seen legato pedalling style is highly questionable.

Späth & Schmahl

Although Silbermann's pianofortes were designed to have a manageable, expressive touch with which one could produce every grade of loud and soft, crescendo and diminuendo, C.P.E. Bach noted the difficulty of expressing all the *Manieren* which could be so well expressed on a good clavichord. Truth to tell, the touch of many of the pantalon-style instruments was even more troublesome. An advertisement by Franz Jacob Späth, of Regensburg (Ratisbon), in 1765 develops this matter to commend his own improvements:

Obgleich verschiedene Künstler seit einigen Jahren sich Mühe gegeben, den unvergleichlich angenehmen Gusto der sogenannten Pandaleons durch mancherley Inventiones in Volkommenheit zu setzen, so werden doch alle diese Inventiones von wahren Kennern der Music und solchen Spielern, welche etwas ganz anders, als ein Gerausch lieben, als mangelhaft und unvollkommen beurtheilt, da man bey denselben wegen Härte und Schwere des Tractaments nicht alle und jede Passagen in Moment forte, piano, und pianissimo exprimiren kan, vielmehr an statt zierlich zu spielen, sich verbunden sieht, die Töne durch Hacken und Kratzen in Ansprache zu bringen. Diesem allgemeinen Übel hat Hr Franz Jacob Späth ... also gänzlich abgeholfen, dass seine Pandaleons-Clavecins nicht allein in durchgängiger Gleichheit des Tones, sondern auch so leicht und delicat wie ein Clavichord gespielt, und alle Passagen aufs zärtlichste exprimirt werden können ...¹⁹

This advertisement proceeds to say that “besides these Pandaleons Herr Späth makes combination instruments with two manuals (combining harpsichord and hammer actions), as well as harpsichords [*Cembali*]”.

The fame of this Regensburg craftsman nowadays rests on his *Tangentenflügel* but it is clear that they are not mentioned (under that name) in this 1765 advertisement. Two conclusions are possible. Either he did not begin making such instruments until after 1765, or the instrument that is now known as a *Tangentenflügel* is to be identified with the *Pandaleon-Clavecin*. My conclusion is that the second interpretation is the more likely. If that is correct we can see that this is confirmation that Späth was making such instruments in 1765, before he took his son-in-law C.F. Schmahl as a partner, and that the correct name for such instruments, as given by the maker, is either *Pandaleon* or *Pandaleon-Clavecin*. In view of the tonal characteristics of these instruments this name is really very suitable. Though they look very much like pianofortes made by Stein in Augsburg, Späth's creations have an utterly different tone, and exhibit an extreme contrast of aesthetic. Their comprehensive range of registrations is in fact very similar to those available on the “harp-shaped pantalone” like the one from St Gallen shown in Figure 7.

The basic tone colour of Späth's *Tangentenflügel* is provided by bare wooden tangents, exactly like bare wooden hammers in their tone and function, but, as the 1765 advertisement promises, the touch is so improved that a good player may confidently seek several degrees of piano and forte to shape a phrase or make a contrast. To this a moderator stop can be applied, thus providing the soft-covered hammer tone. Whereas only the most elaborate of the harp-shaped pantalone have dampers for each note, Späth's instruments always have dampers throughout which, on the surviving examples (which when dated can be seen to be later than 1765) can be disengaged at will by a knee lever. Some also have a hand stop which will raise the treble dampers for a longer passage, without use of the knee. A “buff stop” or *Harfenzug* is provided, pressing a strip

19 Ahrens, „Vom Versuch zur Schöpfung ...“, 74.

of soft leather against the end of the strings next to the nut. So, in summary, the changes or *Veränderungen* appear completely to correspond with the “harp-shaped pantalon” except for the facility of adding or subtracting the dampers *ad libitum* during a piece.

Another noteworthy example of this influence can be seen in the work of Johann Gottlob Wagner of Dresden during the 1770s, which is made perfectly explicit in a documentary source published at that time. In 1775 Wagner claimed to have invented a new instrument to which, on the advice of one of the greatest living keyboard players (C.P.E. Bach?), he gave the name “Clavecin Royal”.²⁰ It was in fact a hammer-action instrument, in clavier form, with four pedals to make quick changes of registration. The hammers are of bare wood, not at all like pianoforte hammers, but Wagner justly claims for it the benefit of being able to play loud and soft through the pressure of the fingers on the keys, and this he achieves by incorporating an escapement mechanism which can be adjusted, so that there is a much greater possibility of expressive nuance than with the simple *Prell-* or *Stossmechanik* without escapement. One can really feel the touch rather than simply pressing the key. The influence of the pantalon can be clearly detected in the information that Wagner gives about using (or not using) the pedals.

The player should first sit down to the instrument and play without touching any of the pedals. He will hear, says Wagner, the tone of a loud harpsichord, with this difference – that the tone reverberates and the bass notes continue a long while. What is happening, though Wagner does not explicitly state it, is that the strings are undamped, playing dulcimer fashion, while being struck by hard wooden hammers. Whether the innocent ear would recognise this as “like a loud harpsichord” as Wagner says, or as a dulcimer (with metal strings and hard hammers) would be debatable. But Wagner continues: “If one is quick of thought and has a rich fund of musical invention, so the most beautiful harmonic effects may be created”. It will be understood that what Wagner has in mind is extemporaneous, spontaneous creativity. He stands in that same tradition to which C.P.E. Bach refers, and in which Mozart “preludes” before any sonata or concerto. But if your music requires it, writes Wagner, perhaps in performing published pieces from paper where one must pass quickly from one key to another, creating a conflict of harmony, “the reverberation may be cancelled [*man nimmt es weg*] by pressing pedal No. 2.” This, of course, brings the dampers to the strings. “To make an imitation of the ordinary harpsichord”, says Wagner, “keep the foot on pedal No. 2. This will be useful in accompanying recitatives. The difference between this and an ordinary harpsichord is that one can play all shades of loud and soft, not just *forte* and *piano* as on the quilled

20 Johann Nikolaus Forkel, *Musicalisch-Kritische Bibliothek* (Gotha, 1778–79), iii, 322ff. Reprinted in Cole, *The Pianoforte in the Classical Era*, 338–44, with English translation.

variety.” Altogether Wagner lists six basic registrations, each one being akin to those already mentioned above in the small pantalon instruments: each is devised or brought about by the same mechanical means. There is a moderator, a harp stop, and in default mode all dampers are off. To these resources Wagner adds a light inner cover, to be raised by a pedal *ad libitum* to further increase the tone for a *fortissimo*. It may be of interest that he likens each of his registrations to a specific instrument: harpsichord, pantalon, lute, harp, and pianoforte. This “pianoforte tone” he achieves with the moderator stop and dampers engaged. Of the pantalon he says: “Pedaltritt No. 3 ... macht den Pantalon, dieses nunmehr fast ganz, wegen seiner vielen Schwierigkeiten, abgekommenen Instrumentes aus.” (Pedal No. 3 produces the pantalon, on account of its many difficulties an almost extinct instrument.) The pantalon that he here refers to is clearly the original dulcimer. The tone which he chooses from Hebenstreit’s armory is that made with soft hammers (here a moderator) playing on strings in continuous reverberation mode.

Wagner’s *Clavecin Royal* is an extraordinary phenomenon absolutely of its era. He claims to have invented a new kind of instrument, so different from others that it deserves a new name. But few were taken in by this since, to the musician, it seems to do exactly what several others could do: the ability to play loud and soft with an improved touch was exactly what Späth claimed, and the tonal registrations were achieved with just the same devices. Some modern observers, notably Harding in 1933, and Michael Latcham (as recently as 2000), state that Wagner’s instrument is simply a “square piano” with an added stop to imitate the harpsichord. But the maker refutes this and expressly disclaims the “pianoforte” title. He states: “There are now so many types of [*pianoforte*], differing in size, in construction, and in tone, that it is almost impossible to give a description of them that can be generally applied. So here it is only one registration [*Veränderung*] of the *Clavecin Royal* which bears this name.” Notice that if the dampers are disconnected, by releasing the pedal No. 2 to put it into sustain mode, Wagner asserts that this sounds now like a pantalon.

And this is the point that had been reached by many keyboard instrument makers in Germany at that time. The pianoforte was certainly much admired for its tone and expression. But since Gottfried Silbermann’s era every German pianoforte was expected to have a stop to create the sustained tone. Usually it was by hand stops, but sometimes, as with Stein, with Späth, and with Wagner a pedal or knee lever was used. This may suggest that they were intent on making the sustained resonance available measure by measure. But this is not what Wagner – the only one of the trio to have given instructions for using the stops – prescribes. For him the pianoforte tone is obtained by keeping the dampers “on” and using the moderator. If the moderator is on but the dampers are “off” the registration is “pantalon”. Whatever one thinks of Wagner’s originality (or otherwise) there is no doubting that he had a formula which pleased. C.P.E. Bach owned a *Clavecin Royal*, or at least an instrument described as such, and not only Wagner but other

makers too continued to use this instrumental specification with much approval until at least the mid 1790s. It incorporated elements of both the pantalon and the pianoforte, and provided musicians with much desired means to produce a great variety of aural environments, with easy changes from one to another. So there was at this time a rich ferment of disparate ideas: from the multi-voiced instruments of Späth to the seemingly pure pianoforte aesthetic espoused by Stein in visually almost identical instruments.

Time is too short to enumerate every manifestation of the pantalon legacy. Nevertheless, it must be absolutely explicit that the pianoforte, as invented in Florence about 1700, was never equipped with any of these features that came from Hebenstreit. Today we are so accustomed to having a sustaining pedal that we can overlook the fact that this was no part of the Italian concept. No piano by Cristofori or Ferrini has any means of lifting the dampers off, except by holding down each key. The same would be true of the pianoforte that Handel played in London in 1740, and of the one that Charles Burney played in 1747. Portuguese pianos, like the antique instrument that Harold Lester played during the *Rencontres harmoniques* in Lausanne, had no damper lift, either by hand or foot. So too in Spain: no Iberian pianoforte made up to 1770 has any sustaining device. That today it has become a seemingly indispensable part of piano technique is entirely due to the pantalon and its influence on an apparently similar invention created in Florence. Indeed, so important is aural resonance in piano playing, we so much enjoy the skillful use of the sustaining pedal that it seems to be inseparable from our very notion of what the pianoforte should be. Yet truly, the piano we know is a marriage of two concepts: the historic Italian pianoforte and the German pantalon.

If this much is obvious, and readily conceded, what is easily overlooked is that when studying eighteenth-century repertoire we have to understand that the sustaining mechanism was not used in the way we are accustomed to. So, when Charles Burney went to Paris in 1770 he was very impressed with the playing of Madame Brillon de Joue, who could play anything at sight on her new pianoforte (from London) – except that she insisted on playing every piece with the dampers disengaged throughout. When he tried to intervene, gently suggesting that they might play something *with* the dampers, she would have none of it: “c’est sec” she said. If her delectation seems extreme, consider what Mozart could or would have done when playing pianofortes in Paris in 1778. There were relatively few grand pianos, and those that were available, even the most recently manufactured by Silbermann of Strasbourg, had hand-operated sustaining mechanisms. Far out-numbering these, even in the wealthiest homes, were London-made square pianos. In August, Mozart was in fact delighted to meet there Johann Christian Bach, famously a purveyor of these instruments and an agent for Zumpe and Buntebart, and went off with him to St Germain. So when Mozart was composing his keyboard sonatas in Paris the pianofortes on which he could have expected these works to be played, whether grand or

square, could only be played with the dampers entirely on or entirely off, the latter presumably only as some sort of relish, or *leckerhafte Speise* as Daquin remarked in 1769.

The armory of special mutations to which the pantalon gave rise was retained as an essential element in French piano design until, about 1820, an enormous increase in string diameters made the harp stop unworkable. From 1785 the mutations were all operated by pedal, so in the post-Revolutionary era the most elegant salons would be furnished with Erard pianofortes with four pedals, as was the instrument that Sebastien Erard proudly presented to Beethoven. Harp, moderator, and sustaining pedal were common to all, with usually an *una corda* device as the fourth option. Viennese fortepianos bowed to this French fashion and were themselves equipped with four pedals (or more) during the second decade of the nineteenth century. Treatises on pianoforte history frequently represent this fashion as an ephemeral aberration: a misguided attempt by instrument makers to add ever more novelties to an instrument which is not in need of them. An alternative interpretation is that these devices to alter the tone all arose in the German pantalon tradition, and that makers were unwilling to dispense with them; the only one that pianoforte makers were happy to discard was the hard-hammer tone, last used by Regensburg maker C.F. Schmahl in his *Pandaleon-Clavecin*, or *Tangentenflügel*, about 1805.

Summary

Keyboard music written during the last third of the eighteenth century is not necessarily best interpreted on a Viennese-style pianoforte. A long-lived tradition, originating with Hebenstreit's dulcimer, fostered an entirely different performing style, making use of changing registrations, usually provided by hand-operated stops. A survey of museum store rooms attests that the pantalon tradition survived to 1800 and beyond, with characteristically designed instruments being made throughout German-speaking areas, where, despite the quaint oddity of the name, they were generally designated as *Pantalon*. Among the more sophisticated manifestations of this tradition, the so-called *Tangentenflügel* of Späth & Schmahl in Regensburg was highly regarded by discerning musicians to 1800 and maybe beyond.

But the smaller pantalons had their critics. Some of the most perceptive musicians were exasperated by the limitations of the simpler types, and none was more scornful than C.F.D. Schubart. In his *Ideen zu einer Aesthetic der Tonkunst*, written (though not published) about 1785, he heaps sometimes extravagant praise on the best pianoforte makers – especially Stein and Silbermann – but is absolutely dismissive of its humbler alternative:

PANTALON. Ein Zwerg von Fortepiano. Da er zu sehr blechelt, so ist das Instrument ewig unfähig in der musikalischen Republik Ton anzugeben. Das Tractament dieses Instruments ist: leise Berührung. Da es bloß Tangenten hat ... so muß es mehr geschneilt als durchgeknetet werden. Die Vibration läßt sich hier am vollkommensten ausdrücken, allein alle Empfindungen scheitern, weil die Nuancen oder Mitteltinten fehlen. Das ewige Hüpfen nach Spatzenart von einem Ton zum andern ohne Ausfüllung der Lücken, das Toben, Rasseln und Blecheln dieses Instruments macht es für wenige Gesellschaften erträglich und prophezeit ihm sein nahes Ende.

Extinction, as foretold by Schubart, was soon to occur, but features of the pantalon were retained for many decades, and one, the wonderful aural soundspace created by an instrument without dampers, continues to fascinate many avant-garde composers even today.