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THE PIANO BETWEEN 1800 AND 1850: THE INSTRUMENTS FOR WHICH
THE COMPOSERS WROTE

The Ohio State University
D.M.A. 1980

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THE PIANO BETWEEN 1800 AND 1850:
THE INSTRUMENTS FOR WHICH THE COMPOSERS WROTE

DOCUMENT

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Musical Arts in the Graduate
School of The Ohio State University

By
John Wesley Golightly, B.M., M.M.

* * * * *

The Ohio State University
1980

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INTRODUCTION

Recent increased interest and studies into performance practices have initiated the use of original instruments in the performance of music of earlier times. The rise in the modern use of the harpsichord for music which for many generations was played only on the piano is one of the best examples of this trend. In the past decade, however, there have been attempts on the part of several outstanding pianists and piano restorers to revive the sound and characteristics of pianos made before modern piano design became prevalent. The restored instruments and the recordings of appropriate music on them by sensitive artists has revealed to many that this music originally sounded radically different to the composers than the performances we have heard on modern instruments. Indeed, some critics have been so impressed that they have predicted the use of period fortepianos will soon become as prevalent as the current use of harpsichords.

But one need not support exclusive use of such instruments for the appropriate music in order to appreciate their use in modern times. The study of piano literature on the instruments for which the composers wrote is valuable for an understanding of the pianistic effects and colorations inherent in that music. This document will provide an introduction to the early nineteenth-century pianos and the music composed for them. In the first chapter, there will be a summary of the history of the piano before 1850, in which the origins of the
differences between the English and German or Viennese pianos will be recounted, along with a description of early piano building practices. The second chapter will consist of a brief discussion of the effects of the technology of early pianos on the performance characteristics of the piano. Selected piano makers of importance will be the subject of the third chapter, together with the peculiar characteristics of their pianos. The fourth and last chapter will explore the piano ideals of selected composers who wrote for the piano between 1800 and 1850. In the conclusion, problems related to the modern use of early pianos will be discussed.

In speaking of pianos built before the advent of modern piano design, the use of the term "fortepiano" is becoming widespread. "Fortepiano" or "pianoforte" was the common name for the piano in its early years. Because the modern word "piano" is merely a modern abbreviation of "pianoforte" or "fortepiano," and because the longer names are still used at times to refer to the modern piano, "fortepiano" is not an ideal term for anything but that meaning. In this document, the designation "early piano" will be used, meaning any piano whose design is based on traditional concepts of construction before the advent of the Steinway-led modern piano design.

The technological basis for the actual difference in sound between the modern piano and those of earlier times lies in certain variable factors in piano design, namely the size and nature of the strings, the amount of tension on those strings, the size and nature of the hammers, the size and positioning of the bridges on the soundboard, and the quality of the string damping mechanism. A proper introduction
to these factors will assist in later discussions about different kinds of early pianos.

The physics of string vibration are such that the more vibrational energy that is imparted to a string, the louder that string will sound. An extremely thin, light-weight string under low tension is incapable of receiving enormous amounts of vibrational energy without breaking, but is capable of producing a musically useful sound when very little energy is applied. In contrast, a high-tensioned, thicker string sounding at the same pitch is capable of receiving larger amounts of energy. But since more energy is required to set such a string in motion in the first place, that string cannot produce a musically useful sound with the extremely low amounts of vibrational energy which can well serve a thinner, low-tension string.

In the history of piano construction, experiments have been made at different times with various kinds of string materials, such as wrought iron, steel, cat-gut, brass, silver, gold, and platinum. Some such strings sound dull and unmusical, whereas others sound bright and metallic. Naturally, high-tension pianos are limited in the kind of strings they can have, since only the stronger, less brittle materials can withstand high tensions without breaking. This is probably the reason for the exclusive use in modern pianos of stainless steel strings, which are sometimes wrapped with other materials.

The piano hammers are, of course, the means of setting piano strings into vibration. The hammer's effect on piano sound includes the nature of the initial attack, the amount of volume generated, and
the overtone structure of the sound. These hammers are invariably made of small, somewhat pointed blocks of wood covered with leather, felt, flannel, or other substances. Hammers covered with thicker layers of resilient materials create a softer initial percussive sound than do hammers covered with thin layers of harder materials. Also, heavier hammers naturally impart more energy to strings, so that high-tension pianos use heavier hammers than do low-tension pianos.

It is the shape of the hammer and the place on the string which it strikes which largely determines the harmonic structure of the sound which is produced. A rounded, blunt hammer will actually damp a few very high harmonics and will produce a somewhat dull tone compared to a sharply-pointed hammer, which produces a very brilliant tone. The striking place on the string is also very crucial, but this factor in piano design became somewhat standardized before 1800 and is therefore not important in this paper's discussion.

The design and construction of the soundboard-bridge assembly is especially crucial in the tone of a piano. This is because this assembly is responsible for most of the sound of the piano, since the strings by themselves generate very little volume. Soundboard wood is chosen for its ability to conduct sound efficiently and quickly. Wood which resists and absorbs sound vibrations will result in a rather dull tone and a partial loss of the weaker harmonics. Consequently, a thinner soundboard is more likely to vibrate with good conductivity than a thicker soundboard, such as is used on high-tension pianos. The vibrational characteristics of the soundboard-bridge assembly are strongly related to the weight and size of the wooden parts, since
greater masses of wood require more energy to set them into motion and produce sound. A bright or a weak tone can be made in a particular register of the piano by regulating the sizes and weights of the soundboard, bridge, and strings in that section.

The bridges of a soundboard assembly are responsible for the transmission of sound from the strings to the soundboard. Their placement on the soundboard is crucial, since the edges of the soundboard are fastened to the case and are therefore stiffer than the center part of the soundboard. Bridge placement varies significantly even on modern pianos, and nineteenth-century piano makers were frequently changing their designs to experiment with tone.

When a note is played on a piano, the final factor is the way the sound is damped or stopped from sounding when the key is released. If a firm, somewhat hard substance is used for damping, a slightly percussive sound and a "twang" will be made as the strings initially vibrate against the damper. Softer substances tend to be very quiet in stopping sound, since they can actually absorb some of the string vibration. Additionally, the actual shape or design of a damper determines its damping quality.

This brief discussion of some of the variables in piano design show the enormously different qualities of piano sound which are possible. It also serves as a groundwork for the discussion of the differences in the sound of the modern piano and the different kinds of early nineteenth-century pianos, which will be the underlying subject of the remainder of this document.
CHAPTER 1
Piano Technology Before 1850

The invention of the piano has been definitively attributed to Bartolomeo Cristofori (1651-1731), a Florentine repairer and tuner of harpsichords who served under Prince Ferdinando di Medici, Grand Duke of Tuscany. Cristofori's first "pianoforte," designed in 1709, was basically a single-manual harpsichord in which the strings were struck by small hammers instead of being plucked by plectra. In 1720, Cristofori considerably improved his pianoforte action (striking mechanism), adding a device still used in the modern piano: an action-shifting feature which positioned the hammers to strike only one of the two strings used for each note (una corda).

Unfortunately, Cristofori met with little success as a pianoforte maker, and despite the great importance of his invention, he did not establish any tradition of piano making in Italy which survived his death. The same lack of success was met by other early inventors of hammered harpsichords, including Jean Marius of Paris (1716) and Christoph Gottlieb Schroeter of Dresden (1717).

The clavichord and the harpsichord, with more than two centuries of musical and social tradition were at first much too strongly entrenched to be rivaled by the pianoforte, which must have seemed awkward and contrived. One important factor in the slowness of the piano's acceptance was the radically different technique required
for the new instrument; the initial absence of imaginative artists willing and capable of developing such skills did little to improve the situation. However, some basis for playing the hammered harpsichord was possessed by those skilled on the clavicord, which had similar, but more limited, dynamic flexibility and a considerably different feel to the finger.

It was the organ builder Gottfried Silbermann (1683-1753) who was the first to establish a successful piano making business. The pianofortes built by Silbermann and his apprentices had two different types of action. The first type is identical with Cristofori's action of 1720; there is no doubt that the German craftsman had seen either a Cristofori piano or drawings of one.¹ This action was mounted on wooden rails spanning the width of the keyboard, with each note's mechanism resting over the corresponding key. The second type of action employed individual mechanisms fastened onto the keys themselves. The first action type was later developed in England and the second type became predominant in Germany and Austria, known later as the "English" and the "German" or "Viennese" actions, respectively. These differences in action types later combined with other differences in construction to make two piano-making schools of markedly different ideals of touch and tone.

Before discussing the specifics of the two action types, it is important to note that both were concerned with the same tasks: the

thrusting of the hammer to the string when the key was depressed, and the subsequent stopping or damping of the sound when the key was lifted. Primitive versions of both the English and Viennese action types were designed without allowance for the "escape" of the hammer from the key's control before the key was fully depressed, so that the hammer would frequently bounce on the hammer-thrusting device. This resulted in a jerky, unpleasant touch and often a re-striking of the strings by the bouncing hammer. Another characteristic of primitive pianos was the complete absence of dampers to silence the strings.

Cristofori's action of 1720, however, had an escapement feature and a damper for each note. It also had a "backcheck" for each key which served to catch the hammer on its rebound from the string, preventing it from bouncing and striking the string a second time. This Cristofori action of 1720 provided later piano makers such as Silbermann with all of the basic features needed for an effective action; later improvements were concerned only with technical changes such as more effectively shaped dampers or different means of fastening the hammers to the action frame.

The 1720 Cristofori action is diagrammed in Figure 1 (p. 10). In this action the hammer (1) is fastened to a wooden frame (2) above the keys. It is "pushed" by an intermediate lever (3), which in turn is pushed by a rod or "jack" (4), fastened to the key (5) on a pivot point. Just before the hammer reaches the string (6), the jack slips away from the butt of the intermediate lever, causing the hammer to be free of the key's influence while it strikes the string and rebounds.
The hammer is then caught and held by the backcheck (7) while the key is still depressed so that it cannot bounce and hit the string a second time. The damper (8) rests on the string until the key end raises the wooden rod (9) to which the damper is connected.

This kind of action was used frequently in English pianos past the beginning of the nineteenth century. It became known as the English "double action" since in it two levers were used to raise the hammer. A simpler version without the intermediate lever was also very common, and was known as the English "single action" (Figure 2). Note the adjustment button (A) for the jack in this particular single action. Both the single and double actions were used in English grand pianos as well as in the smaller, cheaper and more popular square pianos.

The design of the Viennese action is more directly linked to the design of the clavichord. In it the hammer is fastened to the key itself, somewhat like the clavichord's tangent. According to Rosamond Harding, the inventors of this Viennese action type probably arrived at their results by experimenting with clavichords, which were much cheaper and more expendable than harpsichords. She makes the point that, in spite of the common use of the clavichord for experimentation, the goal of these craftsmen was more likely that of improving the harpsichord, since the clavichord itself had considerable expressive power already. And yet it is entirely possible that the aim of these inventors was to increase the extremely limited volume

FIGURE 1
Cristofori Action, 1720
(Pfeiffer, p. 40)

FIGURE 2
English Single Action by Stodart, 1777
(Pfeiffer, p. 47)
of the clavichord by the addition of hammers, which resulted in the clavichord-like square piano.

In either case, the result was the same: harpsichord-like grand pianos as well as clavichord-like square pianos were often equipped with the action which shall henceforth be called the Viennese type. Unlike the English action, the Viennese type lacked an escape provision for the hammer until 1773, when Johann Andreas Stein (1728-1792), a Silbermann pupil, provided an escape feature. After the addition of a hammer backcheck by one of Stein's successors, Johann Andreas Streicher (1761-1833), the Viennese action was fully developed. Figure 3 shows a Viennese action in which the hammer (1), facing toward the key's front (2), is held in a sheath (Kapsel) (3) which is firmly fastened near the key's end. The hammer is able to pivot within the Kapsel, and when the key is depressed the far end of the hammer rod is caught by a pivoting device (4) fastened on the piano's case behind the key's end. The hammer is thus forced upward by the key's motion and the string is struck. The hammer immediately begins to fall back toward the key, but the butt end of the hammer rod is above and outside the slot in the pivoting device (Prelleiste) (4). However, when the key is released, the pivoting device then moves back. This allows the butt end of the hammer rod to slip back into the slot, and the note is ready to play again. The damper (5) is raised by the key, but is necessarily placed away from the key end because of the action design. The hammer backcheck of Streicher's (6) serves the usual purpose of preventing the hammer from double-striking.
FIGURE 3
Viennese Action, Stein-Streicher Type
(Pfeiffer, p. 27)
The damper design of Stein's 1786 action was a highly efficient wedge-shape: when this damper falls between the two strings of each note, the point of the wedge, penetrating between the strings, pushes them apart slightly and damps them equally. This type of damping was generally more effective than the flat dampers of the English pianos.

Thus, the basic principle of the Viennese action was that of "bumping:" the far end of the hammer rod "bumped" a more or less fixed object. In the Viennese actions without Stein's escapement, this fixed object was a solid rail which spanned the back end of the keyboard. This single rail, which served to activate all of the hammers, was commonly called the Prelleiste, and the action working by this principle the Prellmechanik (bumping action). The English action was known in Germany by the name Stossmechanik (pushing action), since the hammer was activated when it was pushed by a rod or the jack.

It is a surprising fact that in mid-eighteenth century Germany, both of these action types were often built in the same maker's workshop. Silbermann's own preference, if indeed he had one, was not strong enough to inhibit some of his pupils from later developing and promoting one action type while others promoted the alternate type. Since the two action types had slightly different touch characteristics, and since the bumping action was generally cheaper to make, the earliest piano makers found it profitable to make both types of action to appeal to the tastes and the pocketbooks of different clients. Later in the eighteenth century, this came to be less and less the case, for the English action entirely dominated the industry
in the British Isles and in France. Although a few pianos of the 
Stossmechanik type continued to be made in Germany, the bumping 
action was heavily favored there and in Vienna.

Piano making before 1850 was different in many respects from 
modern manufacture. Not only did piano makers vary their pianos in 
action type, cabinet style, and other respects, but they usually 
made their pianos with the desires and specifications of a particular 
customer in mind. Perhaps the most famous example of this is the piano 
made by Conrad Graf for Beethoven in 1826. Beethoven had requested a 
piano with sturdy construction which had a larger range than most 
pianos of the day. In an effort to enlarge the tone, Graf gave each 
ote four strings instead of the usual three. It is also believed that 
Graf designed a horn-shaped listening device for this piano, although 
this device may have been on Beethoven's Broadwood piano instead.

In the matter of pedals, Beethoven requested and received only 
three—una corda, "piano" or moderator (with which a strip of felt 
was placed between the hammers and the strings), and the damper pedal. 
Other clients of that time might have demanded any of a variety of 
other pedals for their pianos, some of which imitated sounds of the 
Turkish craze which swept Europe for a time. Among these were pedals 
which struck small bells attached inside the instrument's case in 
imitation of a triangle, "cymbal" pedals which knocked thin strips 
of brass against the bass strings, or a bassoon stop which inserted 
strips of stiff parchment against the lower strings, producing a nasal 
quality in the appropriate register.
As in the case of Beethoven's Graf, the personalization of a piano by the maker was not merely superficial. The extra-heavy case and quadruple stringing rendered a significantly different tone quality than possessed by other Graf pianos. If a customer asked specifically for the older style of piano with duple-unison stringing (two strings per note) and thin soundboard, most makers were ready to oblige. This is not to say that makers did not have general features and designs which were used on the greater number of their instruments. However, it is faulty to draw conclusions about a piano maker's instruments from only one example.

Another characteristic of early piano making was that different makers had considerably different instruments. One maker might prefer thicker wire and slightly higher tension than another, or different criteria for the crucial placement of the bridges on the soundboard, or for the selection of wood for the soundboard itself. Some piano makers, like Jean-Henri Pape (1789-1875), were constantly experimenting with radically different designs, such as an action for grand pianos which was placed over rather than under the strings, or the use of different materials for covering hammer heads, or with unusual stringing methods. Some makers even tried using a double soundboard, which served as a resonating box, attempting to increase the volume and tone quality of a piano by designing it like a violin body. Thus, pianos by different makers varied remarkably in touch, in nature of tone, and in volume, as well as in the more superficial aspects, such as cabinetry.
Furthermore, changes in piano technology occurred constantly during this period, and pianos built in 1800 generally had much different sound and touch characteristics than those of 1840. Consequently, when one speaks of an early Broadwood grand piano, it is quite necessary to specify an approximate date. In contrast, since the advent of the modern, high-tension piano, different makes have become increasingly alike, so that today there is comparatively little difference in touch and tone among well-made pianos.

Before 1800, piano makers were often makers of other instruments, such as organs, clavichords and harpsichords in the case of Silbermann, and harps in the case of Sebastien Erard (1752-1832). Initially, piano makers always built harpsichords also, since the traditional instruments sold better. But with the decline and eventual disappearance of the clavichord and the harpsichord in the early nineteenth century, piano makers became more and more specialized in the newer piano trade, increasing their market by making different models of pianos.

At the beginning of the nineteenth century there were two commonly-made models of pianos: the square piano and the grand piano. The square instrument was by far the more popular model during the first years of piano making, since it was much smaller than the grand and was used almost exclusively as a home instrument until about 1770. Actually rectangular in shape, the square piano was designed the same as a clavichord, with a rectangular case and strings perpendicular to the keyboard. Many of the earlier square pianos were simply converted clavichords; in the same way, the earliest grands were usually
converted harpsichords. The familiar shape made it much easier for the piano to be acceptable to a public long accustomed to the clavi-
chord and harpsichord.

Known in Italian as the piano a tavolo or tavolino, in German as Tafel-Klavier, and in French as the piano carre, the square piano was extremely popular until a sudden decline in the mid-nineteenth century, when the vertical piano became popular. Although it is uncertain who first successfully put a hammer action in a clavichord, the invention of the square piano is commonly attributed to Christian Ernst Friederici (1709-1780) in Saxony in the year 1758. As in the clavi-
chord and virginal, the tuning pins were set on the right side of the horizontally-strung instrument. The keyboard was set toward the left of the rectangular case, with the dampers usually consisting of rods placed over the strings with cloth-covered ends which contacted the strings. As in the later clavichords, the bass strings of a square piano were eventually wrapped with thin metal wire to compensate for their shorter length.

The square piano became especially important in England, where it received its chief development. When John Christian Bach (1735-1782) set up residence in England and began giving his piano concerts there, the piano was given all the impetus it needed to succeed as in instru-
ment of the social elite. Anyone who considered himself to be a "person of fashion" would be sure to own a square piano. Piano playing itself was considered one of the foremost subjects in the education and refinement of women.
Thus, when the Seven Years War forced some dozen piano makers from Saxony to flee their homes in 1760, it was to England that they went to find a market for their trade. Among these were several of Silbermann's disciples, one of whom was Johannes Zumpe (dates unknown). Zumpe made square pianos exclusively, and his instruments became so popular that "Zumpe's piano" became synonymous for the square piano. Very simply designed, they were easily constructed and cheaply sold. The tone was rather thin compared to the grands of the time, and the square piano was of decidedly inferior quality at first. However, it was gradually improved by different makers. John Broadwood made square pianos with sturdier cases and a fully developed, effective English action. He was also the first to begin setting the tuning pins at the back of the piano instead of at the side, giving extra room for lengthening the bass strings and also increasing the piano's range. The tone of the square piano was gradually improved, the frame strengthened by adding metal braces, and finally a complete iron frame was installed in a square piano by Alpheus Babcock in Boston in 1825. As late as 1843, Pierre Erard thought the square piano sufficiently important to install in it a "double escapement" repetition action, as is commonly found in modern grands.

Just as the great organist J.S. Bach was especially enamored of the tiny clavichord, great pianists frequently expressed special affection for the square piano. Mozart once tried in vain to purchase a square piano in Leipzig which he wanted dearly. A.J. Hipkins notes

3. Closson, pA 84.
that in 1848, when Chopin visited England near the end of his life and in poor health, he was known to prefer playing an old square piano for his own pleasure, even when a new grand piano was sitting in the same room. 4

The sound of these instruments was necessarily small, due to their size. Stringing was usually two strings per note, and the hammers averaged about the size of peas. The tonal output is roughly comparable to twice that of a clavichord, which can hardly be heard in an adjoining room when played in a house. A noteworthy example of a restored square grand, probably made by Mattaus Andreas Stein, is in the possession of Edmund Michael Frederick of Newcastle, Ohio. This instrument, built between 1820-1830, has less than half the key dip of a modern piano (about 3/16 inch on the older piano as compared with 3/8 inch on a modern keyboard). The action offers no noticeable resistance when played, and the delicate tone produced when the instrument is played properly is very light and "sweet," very intimate and appropriate for many of the piano sonatas of Mozart and Haydn and even the sonatas of Schubert. Knowing that such compositions were often composed for teaching purposes or for the enjoyment of amateurs, it is easy to see that these composers may well have had the most commonly owned domestic piano in mind when writing these pieces. Mozart's Sonata in C, K. 545, elicits completely different affection when played on an instrument such as this Stein. The scales in the first movement whisper up and down in a way inimitable on a modern piano,

whereas the ability of the instrument to play in cantabile style, as occurs in the second movement of this sonata, is not at all impaired by the low-tension scaling. Instead, the tone, although soft and lacking in depth, sustains quite well and has an apparently moderate rate of decay. 5

Square pianos retained their intimate character during the first half of the nineteenth century, despite some technical changes. Their size gradually increased with the addition of more keys to the lower and upper registers. The effectiveness of the action was advanced by such fine makers as Erard, Broadwood, Wornum, and Pape. But the most important changes were the steady increases in tonal depth and volume which occurred universally. That the square piano was still conceived as an intimate, softer instrument with less sonority than a grand is evident in the fact that such popular makers as Broadwood and Stodart still used only two strings per note in metal-supported square pianos of about 1830.

Grand piano design differed from that of the square piano in that the strings were in the same direction as the keys, with the tuning pins directly above the keyboard. This made the instrument much larger, with lengths ranging roughly from six to nearly nine feet. With longer strings and a larger soundboard, much more sound was possible so that the grand piano became the only type practical for the concert hall.

5. On a piano, the rate of decay (the speed at which the volume of a piano sound decreases) must be slow enough for the sound of one melodic note to sustain and blend into the sound of the next note, in order for cantabile playing to be successful.
The grand piano resembled a harpsichord in exterior design until the mid-nineteenth century. This is partly due to the piano's original conception as a hammered harpsichord. W.L. Sumner describes the original structural differences between the two keyboard instruments as being necessitated by the nature of the difference between plectra and piano hammers. He states that since the leather plectra of the harpsichord was more energy-efficient in producing tone, pianos required larger strings with more tension on them in order for equivalent volume to be produced.6

The long, pointed shape of both instruments was due to the length required of the bass strings. It was when cross-stringing was introduced that the diagonal shape of the instrument's far side was altered. Cross-stringing, first introduced by Henri Pape in 1828, was a design concept wherein the long bass strings were elevated slightly above the treble strings and fastened behind their far ends, directionally at an angle to the shorter strings (Figure 4). The pointed shape of the piano's end was broadened to accommodate the hitch pins (for fastening the ends) of the bass strings, resulting in the "wing" shape used for all modern grands. The advantage to cross-stringing was that space was economized because the length of the longest strings was diagonally placed, so that the piano did not need to be as long. Conversely, if the length remained the same, the treble strings could be lengthened and fanned out over the area where the bass strings were formerly. The stringing would thus be the equivalent of a larger piano.

A. Straight-strung grand by Broadwood, 1820 (Hirt, p. 64)

B. Modern cross-strung grand by Broadwood (Sumner, p. 153)

FIGURE 4
Cross-Stringing versus Straight-Stringing
Cross-stringing necessarily changed the position of the bridges, which conduct the strings' vibration to the soundboard. As can be seen in Figure 4, the shape of the soundboard itself is considerably different as well. It is typical of a soundboard that there is more rigidity and stiffness at its edges, due to the fact that soundboards are nearly always fastened down to the frame at those points. According to Curt Sachs, the above factors are responsible for the two main results of cross-stringing:

"No strings had to run along the less resonant borders, the arrangement allowing them all to run nearer the middle of the soundboard, and the closeness of the bass and the treble strings favored the formation and intensity of harmonics when the right pedal was pressed. Thus, the overstrung piano is much more powerful than the older piano; but it is lacking in transparence, and certain full chords that composers of the beginning of the nineteenth century have written in the basses cannot be played on a modern piano without causing confusion."7

The most commonly used actions in grand pianos before 1750 were the previously discussed upstriking actions, either the English or double actions, or the Viennese Prellmechanik action. However, in the 1820's, two developments occurred in action design which made a radical departure from these types. The first of these inventions was a down-striking grand action, patented by Johann Andreas Streicher in Vienna in 1823. Streicher's action (Figure 5) was positioned above the strings, and was designed to depend upon metal springs to counteract the pull of gravity on the hammers, so that they would return to their original position after striking the strings. Another type of

down-striking action, in which the hammers were counter-balanced with weights to cause their return, was rarer.

FIGURE 5
Streicher's Down-Striking Action
(Pfeiffer, p. 33)

There were two reasons for the use of a down-striking action. The up-striking action required a space between the tuning pin block and the soundboard through which the hammers could pass in order to strike the strings. This weakened the structure of the piano, since piano strings exert tension between the tuning pins and the far edge of the soundboard where the strings are fastened. As pianists demanded more power from the piano and piano makers added thicker strings and higher tension, this weakness became a crucial problem. The down-striking action allowed the soundboard to be set snugly against the tuning pin block, providing a much stronger structure. A second reason for using the down-striking action was that the up-striking action tended to force the string up and away from its fastening points. On the other hand, the opposite action type forced the string against its fastenings, resulting in better tuning stability and fewer
problems with strings coming loose at their ends.

The above structural problems were met in other ways by piano makers: first, by the use of wooden or metal braces and supports, which eventually resulted in the use of full length metal support plates; and second, by re-designing the fastening points for strings so that they were held in place from above rather than below. Although these changes proved so effective that the down-striking mechanism was eventually abandoned, some of the finest craftsmen made pianos of the latter type. Pianists of no less stature than that of Johann Nepomuk Hummel owned and concertized on such instruments. The grand piano with down-striking action therefore must be considered important in the understanding of the early nineteenth century piano.

Another important invention with which we are concerned was Sebastien Erard's repetition action, the first version of which appeared in 1808. Perfected by 1821, this so-called "double escapement" action has virtually unlimited capacity for repetition speed. Erard accomplished this by the placement of a lever which held the hammer close to the strings while the jack returned to its original position, ready to strike. The effect was that the note was ready for full-toned repetition after the key had been raised only a small distance from its fully depressed position. In actions without such devices the key needed to be raised completely before repetition was possible.

The Erard repetition action was endorsed by Ignaz Moscheles and other fine pianists, and when modified by the maker-pianist Henri Herz, was eventually used by other piano makers to the extent that today all grand pianos are so equipped. Perhaps it is this repetition action
which was most responsible for the eventual demise of the Viennese action in piano making, since the newer action was capable of the same subtleties and ability to repeat. This was the opinion of Madame Louise Dulcken, pianist to Queen Victoria, who according to Rosamond Harding said that the Erard pianos had "the same advantages as the German pianofortes with a greater brilliancy of tone." 8 Further discussion of other important characteristics of grand pianos before 1850 will be undertaken later in this chapter in the discussion of piano technology.

The third type of piano, the vertical, was later in its successful development than were the grand and square pianos. By the late 1820's, the small vertical piano began to replace the square piano as the most popularly bought domestic piano. A.J. Hipkins reported that in 1848, Chopin was especially fond of Broadwood's boudoir cottage piano, which was a small upright with two strings to a note similar to the small Pleyel upright piano he ordered for his dwelling in Majorca.

Attempts to design vertical (upright) pianos were motivated by a desire to conserve floor space. Square pianos were continuing to lengthen, making them less efficient as a home instrument. Several attempts were made to set grand or square piano frames on end using stands to hold them up, with custom-designed actions and cabinets. In 1800, two makers eliminated the stands and built vertical pianos with strings reaching to the floor and tuning pins at the top. These

8. Harding, p. 16.
makers, Matthias Mueller of Vienna and Isaac Hawkins of Philadelphia, were pioneers in the making of practical vertical pianos. Afterwards, English makers gave the vertical piano special interest. Robert Wornum patented an upright piano of this sort in 1811 which had an improved double English action, after which the upright became quite popular. French firms such as Pleyel were consequently spurred to build upright "cottage pianos" of their own, and by the 1820's both French and English firms were necessarily building "pianinos" less than four feet tall.

A still different action was employed in these types of pianos. The so-called "tape-check" action (Figure 6), patented in 1826 by Robert Wornum, became the model for the modern vertical action. It had a tape which assisted in pulling back the hammer after it had struck the string, aiding in repetition and insuring a "clean" blow.10

The vertical piano by Mueller mentioned above was designed so that the hammer struck the strings in their centers. This produced a very mellow tone since it eliminated the second, fourth, and all other even-numbered harmonic partials. Most vertical pianos thereafter used a connecting device or "sticker" so that their actions could be elevated to the proper heights, enabling hammers to strike the strings nearer their ends, resulting in a more conventional sound (see p. 36).

Piano makers were hesitant at first to make small instruments, since good tone was sacrificed due to the decreasing of the length of the bass strings. Also, effective techniques for wrapping bass strings

10. Summer, p. 81.
to make them heavier and capable of lower pitches were not developed until sometime in the second and third decades of the nineteenth century. In addition, the advent of cross-stringing greatly improved the tone of the vertical piano.

In any event, smaller and larger vertical pianos without stands were well established as instruments by the late 1820's, with their actions being constantly improved until late in the same century. Like the square piano, most vertical pianos seem to have been conceived as soft, unobtrusive domestic instruments which were never to be compared with concert pianos. Singers often used such instruments,
and some designers made special attempts to accommodate them by removing portions of the cabinet directly across from their face so that their voice would project past the instrument.

There were two contrasting schools of taste in pianos at the beginning of the nineteenth century—one preferred the fuller-toned English pianos while the other preferred a lighter-actioned, brighter but weaker-toned Viennese piano. The abundance of public performances in increasingly larger auditoriums was partially responsible for a decided trend toward increasing the piano's volume. By the third decade of the century, piano music itself began to demand more sonority, along with a larger pitch range. The playing of Franz Liszt and Sigmund Thalberg were important in provoking constant efforts to increase the piano's sound capabilities. The production of stronger wire and the consequent use of high-tension stringing, as well as the use of larger hammers and cross-stringing design, all resulted in the modern piano sound.

This tendency toward increasing sonority affected all aspects of piano technology. One important development during 1800-1850 was the change in the use of metal in pianos. Before this time both musicians and piano makers thought that using metal in piano frames was undesirable, that metal bars and plates were harmful to the tone. This prejudice against metal was reflected by a London reporter for The Musical World, who in 1836 reviewed a soirée given by the Paris piano maker, Henri Pape:

"A fortunate circumstance in the present invention is, that it requires much less solid wood; and the iron bars which
they were compelled to make use of under the old plan, have been entirely laid aside."11

The reporter was referring to Pape's grand piano with down-striking action and was no doubt parroting information delivered by the maker himself.

The most crucial place where braces were needed was between the tuning pins and hitch pins (i.e., between the two ends of the strings), where rigidity was required to withstand the pull of the strings. At first, one or more solid wooden beams were placed in this direction, but these were large and heavy. Metal braces were the next step, with Broadwood and Sons being the first to introduce metal bars into general use in pianos in 1808.12 The first complete cast-iron frame for a piano was produced in 1825 by Alpheus Babcock of Boston, who combined a plate for the hitch pins with long bars running parallel to the strings all the way to the tuning pins, all in one casting. This type of frame, standard in all modern pianos, was capable of supporting much greater amounts of tension than the old wooden braces permitted. The cast-iron frame was favored by most American, French and Danish piano makers, but English, German and Austrian makers generally preferred a composite frame in which the metal bars and plates were separately made.

Structural support was not the only motivating factor in the use of metal in piano frames. In 1820, two men working for the English piano maker, William Stodart, patented a tubular compensation frame (Figure 7). The purpose of this invention was to counteract the


FIGURE 7
Thom and Allen Compensation Frame
(Harding, p. 207)
effect of temperature on the strings of a piano. Since bass strings
were made of brass, whereas the rest were of iron or steel, temperature
changes caused the bass register to contract or expand at a different
rate. Thus, the bass register was usually out of tune with the rest
of the piano. Known as Thom and Allen's Compensation Frame, this
device consisted of tubes placed above the strings, made of the same
materials as the strings beneath them (i.e., iron tubes were placed
above iron strings and brass above brass). The design allowed all of
the string tension to be supported by the tubes instead of the sound­
board, which was practically free of tension. The effect of atmospheric
humidity changes on the strings due to the swelling of the soundboard
was minimized because the strings only touched the soundboard at the
bridges. The structural freedom of the soundboard was said to have
increased the duration of a note struck on such a piano by one-third.13

This intriguing design proved to be very practical, since Stodart
used it in his pianos successfully as late as 1851. The Erard family
copied the Stodart design in 1822, obtaining a French patent for the
same. For uncertain reasons, the compensation frame was superceded by
the cast-iron support frame, so that by 1851, Stodart's grand piano was
the only example of a compensation frame displayed at London's Great
Exhibition.

Soundboards in pianos were made gradually thicker and in different
shapes in the period of 1800 to 1850. Viennese pianos carried into
the nineteenth century a tradition of soundboards with a flat shape,
approximately one-eighth inch thick, being slightly thicker

in the treble than in the bass. English soundboards were slightly thicker throughout, with a convex bulge outward. In 1844, Carl Kuetzing wrote that one-fifth to one-fourth inch was the best thickness for soundboards of pianos having string tension of about 215 pounds for the lowest "a." Higher-tensioned pianos were made with soundboards as much as twice as thick.  

In the early nineteenth century, piano strings were only moderately thicker than harpsichord strings. Brass and iron strings were used for the bass and treble sections, respectively, and were approximately two or three times the thickness of strings on harpsichords of equivalent size and sound. Bass strings were not wrapped with copper thread in grand pianos until into the second and third decades of the nineteenth century, although wrapped strings were used in square pianos before that. Steel was used by some piano makers for strings, but all wire had only moderate tensile strength and thus the overall tension possible on pianos was limited.

Surprisingly, there is reason to believe that wire makers commonly varied the thickness of single strings used for pianos. In 1840, John Hawley, a steel wire maker, described his bass wires as being thicker in their centers than on their ends. The firm of Sanguinede et Capt of Paris also made bass strings with varying thicknesses around 1840. Whether or not this practice was usual is not known, but it certainly contradicts the modern practice of precise uniformity of diameter. It is difficult to know how the varying of diameters in a single string effected the tone of the bass notes, but the stiffness

of the wire, crucial in the formation of harmonics, varied with the wire's thickness.

According to Edmund Michael Frederick, an American expert in the restoration of nineteenth-century pianos, piano wire of the earlier, low-tension type was much more flexible than modern piano wire. It is necessary to anneal or temper modern wire to give it comparable flexibility, and the many methods of making early piano wire make it difficult for modern piano restorers to find modern materials which are authentic in characteristics.16

A very graphic change in the pianos of 1800-1850 can be noted in developments in hammer making during this time. (Figure 8). In the first century of piano making, hammers were made by gluing thin strips of leather over small wooden wedges. Thicker hammers were used in the bass sections, where several layers of leather were built up for size. The hammers on the earliest pianos were very small and usually covered with sheepskin. Soft, flexible deer leather, also called buckskin, was used universally for covering hammers well before 1800. The material had to have even thickness and elasticity in order to be hand-stretched tightly over the wooden, wedge-shaped hammers properly. By the middle of the nineteenth century, when the hammers used by Erard were about half the size of those on the modern piano, a great deal of time was needed for fine craftsmen to set on the hammers the many layers of leather needed to construct the proper size. Because it was difficult to find buckskin of the right qualities, makers

16. Told to the writer in personal conversations. It is to be hoped that Mr. Frederick will soon be persuaded to write a volume which includes the rare technical knowledge of early pianos he possesses.
FIGURE 8
Hammer Samples
(Pfeiffer, p. 87)
Shown: end-most hammers of selected pianos, with side and top views pictured
tried other materials at first for the crucial outer layer and later for the entire covering of the hammer. Some makers tried cloth coverings for their hammers as early as 1770.

One problem relating to the piano hammer received considerable attention near the beginning of the nineteenth century, namely, the problem of the setting of the place on the string on which the hammer strikes. In 1788 John Broadwood began building pianos in which hammers struck the strings at one-ninth the length of the string. This produced a bright tone, since the upper harmonics were given more prominence than if a striking point closer to the center of the string were chosen. After a few decades the distance of one-eighth the string length was settled upon by most makers.

Jean-Henri Pape, the inventive French craftsman, began using felt for the outer layer of his hammers in 1826. Felt was especially successful for use on hammers because it was resilient, rebounding from the string very efficiently. It was also very possible to produce felt strips which were perfectly even in thickness and elasticity. Furthermore, felt was fairly resistant to the cutting effect of the strings on the hammer surface, although leather-covered hammers were far superior in this respect.

In 1827 Charles Cote, a French piano maker at Lyons, obtained a patent for using a thick layer of felt as a complete hammer covering, replacing the multiple layers of buckskin then in common use. Strong machine clamps were developed so that the gluing process could be accomplished more efficiently and with greater precision. However, such hammers were not widely used until well after the middle of the
nineteenth century.

The keyboards of pianos before the mid-nineteenth century were not standardized, and they differed in certain respects from the modern keyboard. The action characteristics resulted in a key depth which was considerably shallower than that now used. Black notes were thus only about half as tall as modern black notes, and they were often tapered in height toward their backs.

1820 Viennese Sharp:

1980 Modern Sharp:

FIGURE 9
Comparison of Sharp Keys

Other dimensions also differed from the modern keyboard. Before about 1800, the fronts of the white keys up to the fronts of the black notes were shorter in length due to the old, pre-Bach fingering methods which eliminated the thumbs. The width of keys was not standardized at first, and Beethoven's Graf piano, built in 1823, had a three-octave span of 18.9 inches, compared with 19.7 inches on the modern keyboard. Sometimes the white keys were designed with rounded edges, making it
easier to perform glissandos without hurting the fingers.

The composition of the dampers in pianos before 1850 is yet to be discussed. The dampers were basically of two types: flat and wedge-shaped, the former being commonly used by the English and French, and the latter by the Viennese and Germans. Materials used were felt, leather and cloth. Makers such as the Viennese preferred a sudden, abrupt end to the sound. They used firmer materials such as soft leather, mounted on a piece of wood which was sometimes weighted with lead. Other makers achieved a smoother cessation of sound by using cloth glued over a pad of soft felt or other material.

Before 1800, the devices known today as pedals were often designed to be operated by the knees, and consisted of levers attached to the bottom of the case directly below the keyboard. Afterwards, the use of foot pedals became virtually universal, due to greater operating ease. Many pedal devices which were imaginative and popular in the sounds they produced have been mentioned previously (see p. 14). The pedals most commonly used by serious concert pianists were the damper sustaining pedal, the moderator, and the una corda pedal. The sustaining pedal was the same as the same as that on the modern piano, but in some models it was split so that the left side lifted the lower dampers only and the right side treble dampers only. The "moderator" was simply a device for inserting a strip of felt or cloth between the hammers and the strings so that the sound would be soft, somewhat dull and muffled. The una corda pedal was adapted from Cristofori's invention whereby the grand action was pushed to the side so that the hammers struck only one string instead of the two or three of which each note was comprised.
In the early nineteenth century, the *una corda* was sometimes equipped so that the hammers could strike either one or two strings of the three-string unison. Notches were placed in the device so that the desired position could be found easily and precisely. Vertical and square pianos could not be fitted with action-shifting, *una corda* devices because of their design. Piano makers usually equipped these types of pianos with a device which moved the hammers closer to the strings so that a soft tone could be produced more easily. Unlike the other pedals, this device did not result in any changes in coloration, since the same hammer surface struck the same number of strings.

Of these pedals, all have become standard today except the moderator, which is occasionally found on vertical pianos. The damper pedal, of course, is never split, but many vertical pianos have a separate pedal for lifting the bass dampers. The treble dampers on such pianos cannot be lifted as a section independently of the bass dampers. The so-called *una corda* pedal on modern pianos actually causes the hammers to strike two strings, since the hammers are too large to strike only one string without also hitting the strings of the adjacent note.

From the foregoing information, some general conclusions can be drawn about the sound and capabilities of pianos built between 1800 and 1850. First of all, pianos differed greatly from decade to decade and from maker to maker. Makers seeking a more powerful tone experimented with new materials and designs, whereas other makers continued to build in a more conservative way, maintaining the tonal traditions of the past.
Secondly, the materials of the dampers and hammers, as well as their sizes and designs, caused definite tonal characteristics which differ greatly from those of modern pianos. The small, leather-covered, sharply pointed hammers of the early 1800's produced a brighter tone because their smaller striking surface allowed more of the higher harmonics to sound. The modern expert, W.L. Summer, points out that as the leather on the hammers hardened with age, dryness or use, the tone became brilliant and metallic, whereas when in new condition, the hammers produced a "gentle, singing and flute-like" tone. The use of flannel or felt on the outer layer of the hammer's covering would also change the tone considerably, since these materials have different resilience properties.

The use of thinner soundboards resulted in weaker sound, while gradually thicker boards gave stronger volume with more powerful tone. The different resonating characteristics of the soundboard exploited by the method of cross-stringing has been noted already (pp. 21-22).

Further tonal differences were effected by varying the direction of the wood grain in the soundboard. For instance, in the mid-nineteenth century, Erard installed soundboards so that the wood grain ran in the same direction as the strings. In modern practice, soundboard grain runs at approximately a sixty degree angle from the treble keyboard side to the bass tail side.

The relatively shallow key dip and lighter touch on pianos of the first decades of the nineteenth century had very important bearings on the development of piano technique at the time. Since very little

17. Summer, p. 45
finger motion or energy was needed to produce the sound, technique centered on the fingers exclusive of the wrists and arms. This kind of technique, the basis of the so-called Finger School of Hummel, Cramer and Czerny, was necessary in order to play with the small amount of energy needed to play softly on such instruments. Indeed, the use of the lower and upper arms while playing on the pianos of the early nineteenth century creates sounds of a harsh, uncontrolled nature when applied as on a modern piano. Arm technique developed in the third and fourth decades of the century in the revolutionary playing styles of Franz Liszt and Frederic Chopin. But pianos made contemporary with them had already developed a firmer touch and somewhat deeper key depression, and performers found it necessary to alter their technique when playing an older-styled instrument.

More specific discussions of the performance characteristics of the early nineteenth-century piano will appear in the forthcoming chapter.
CHAPTER 2
The Effects of Early Piano Technology on Performance

The differences between Viennese and English pianos were important enough for writers of piano instruction methods, such as Hummel and Kalkbrenner, to devote attention to a discussion of these differences. In 1823, the famous artist Ignaz Moscheles gave a public recital in Vienna in which he used an English piano by Broadwood (one of Beethoven's pianos) and a Viennese instrument by Graf. The purpose of this endeavor was to provide a comparison of the instruments. The Viennese audience overwhelmingly agreed that the Graf was the better instrument, but the few Englishmen in the audience admired the tone of the Broadwood.  

The background behind such noticeable differences in piano-making schools is that in England, the public concert had a long-established tradition, and larger halls required louder sound than private salons, where most Viennese performances were held. Thus, the Viennese piano ideal was a bright sound and intimate, light character while the English preferred a piano with more robust action and tone. The French began making pianos similar to those of the English, and after 1820, they became leaders in the development of English piano technology because of the important innovations of such expert craftsmen as Henri Pape, Sebastien and Pierre Erard, and Guillaume Petzold.

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The technical differences between the English and Viennese pianos are summarized by W.L. Summer in his book, *The Pianoforte*. He states that the strings of the Viennese piano were thinner than those used by the English makers, with Viennese wire measuring about .012 inches in diameter while the English wire was about .018 inches thick, making them fifty percent thicker. English pianos were strung with three strings to each note, whereas the Viennese had only two, except for a few triple unisons in the treble. Also, the soundboards of the Viennese were flat, and the English soundboard was thicker and slightly convex-shaped, outwards. The English case was structural, supporting most of the strings' weight, but the Viennese built their pianos with a solid base and a system of braces, with the case being merely decorative. English hammers were somewhat heavier than those of the Viennese. Viennese hammers escaped more easily from the key mechanism, so that no friction was perceivable at that point in the key's depression. Viennese makers used properly weighted wedges, more efficient in stopping the sound than the English dampers, the latter resting only lightly on the strings. According to Summer, the modern piano technician, Hugh Gough, believes that English pianists preferred inefficient dampers (see p. 38).

The tone of the Viennese grand piano had a good balance between the bass and treble registers, with neither being overly rich, powerful or bright. English pianos, on the other hand, were known for their rich and powerful bass registers, which tended to overpower their

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rather weak and characterless trebles.

There are three types of sources for personal impressions regarding the performance characteristics of early nineteenth-century pianos. The first of these is contemporary commentaries found in biographies, collections of correspondence, contemporary periodical literature, and other records of a particular musician's taste in pianos. The second source is modern impressions of restored pianos from this era, gathered almost entirely from the periodical literature. Lastly, there are the increasing numbers of recordings on restored instruments, as well as a widening distribution of the instruments themselves, which enable one to gather first-hand impressions of one's own.

Of these sources, the last two present special problems in that they deal with instruments whose condition may or may not be authentic. Reference has been made to a few of the problems in restoring instruments from this period (see p. 34). Some such problems refer to the obtaining of materials of comparable composition and processing, inadequate knowledge of the individual characteristics of the enormous number of piano makes and designs, and questions about the effects of time on authentically irreplaceable materials such as soundboards.

Problems in restoring early nineteenth-century pianos are further complicated by the fact that many of these instruments have been previously modified a number of times to "improve" them according to unauthentic, late-nineteenth-century standards.

Fortunately, a very few technicians have combined superb scholarly skills with their technical knowledge to produce restored instruments.
and copies which reflect the original condition of such instruments as closely as is thought possible today. Still, such technicians are limited in that they must use as a model whatever period piano is available to them, due to the scarcity of early pianos today. They can seldom choose from several surviving pianos of the most famous makes, which would decrease their chances of working with an uncharacteristic example. Then, as now, poor quality pianos were made occasionally even by some of the best makers. Indeed, one of the values of contemporary opinions about pianos is that those writers were familiar with the best pianos of many different builders, at a time when these pianos were in ideal condition. Another value is that contemporary sources did not have the prejudices toward the modern piano which have been developed by modern musicians. Hence, their opinions are more "authentic."

A contemporary comparison between English and Viennese pianos is given by the outstanding pupil of Mozart and Clementi, Johann Nepomuk Hummel (1778-1837), in his treatise on piano playing. In Hummel's opinion, the Viennese piano had the advantages of being easily managed by the most delicate hands due to the lighter and shallower touch, being able to permit the expression of the finest nuances, and being half the price of the imported English instruments. He also said that due to the lighter action, fluency was not hampered by great exertion on the Viennese piano, and that when played with an orchestra, the softer but brighter and more distinctive tone stood out better from the orchestra's sound. Hummel did give credit to English pianos for their

"durability and fullness of tone." He added that "through the fullness of tone of the English pianoforte, the melody receives a peculiar charm and harmonious sweetness."^4

Friedrich Kalkbrenner offered an English point of view when he compared English and Viennese pianos in his Methode. Kalkbrenner, at that time considered one of the foremost pianists in Europe, was a business associate of Pleyel et Compagnie, the famous makers in Paris, builders of English-style pianos. Kalkbrenner wrote that the Viennese pianos were "extremely easy to play" due to the rapid, articulate playing style for which Viennese pianists had a reputation. He also pointed to the reason behind the inefficient damping systems used in English pianos when he referred to "the inherent dryness" of these instruments. He went on to say that pianists of the English tradition established the use of the damper pedal "when harmonies do not change."

This pedalling, hardly used by the Germans according to Kalkbrenner, indicates a taste which did not object to strings not completely ceasing their sound immediately after their key was released. Kalkbrenner went on to describe further links between the pianos and playing styles peculiar to England and Vienna:

"The instruments of Vienna and London have produced two schools. The Viennese pianists are particularly distinguished for their precision, the clarity and rapidity of their execution. Thus the instruments manufactured in that city (Vienna) are extremely easy to play...English pianos have a fuller sound and a heavier keyboard action. The players of that country have adopted a larger style and that beautiful way of singing that distinguishes them."^5

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Some of the most valuable modern impressions of early pianos come from Malcolm Bilson (professor at Cornell University), who has made several recordings on early pianos. Bilson comments on the light construction of Viennese pianos and their "extremely light, quick, responsive action." He states that Viennese pianos increased in size, range and volume after 1800, but still retained their light action and clear, transparent quality in the bass. He contrasts this with the English piano's heavier, louder sound, fuller tone, and heavier action, and speaks of a rivalry between the Viennese and English types which persisted until late in the nineteenth century.

Bilson expounds upon the Viennese piano in depth. He specifically refers to the dampers, which were of leather and stopped the strings more quickly than those of felt. He further indicates that the light leather hammers combined with other Viennese traits so that, compared to the modern piano:

"...there is more attack, less tone afterwards, more rapid decay and finally a quicker release. The overall effect would be of course lighter, far less 'juicy' than on a modern piano, but with much greater articulation and a certain sweetness which the Viennese treasured, and which they found lacking in the English and French pianos of the day, and which they would, doubtless, find wanting in today's pianos."

Bilson makes an important remark about the quality of a sforzando when played on a Viennese piano from this time. The characteristic rapid decay has a greater effect than on a modern piano, becoming a vital part of the "expressive message." This is because of the modern piano's

8. Bilson, p. 58.
ideal of there being a minimal difference between the sound of the initial attack and the decay of the sound which immediately follows. The modern piano also is designed so that the decay of the note is as slow as possible, so that the sound of one note can be blended with the initial sound of impact of the next note.

Robert Winter⁹ makes an enlightening statement about registral quality in all pianos from this time:

"The top-to-bottom evenness sought on a modern piano--breaks, for example, are abhorrent today--would have been unthinkable to a maker before the second half of the century."¹⁰

Accordingly, when Winter describes an early nineteenth-century piano's tone, he mentions the characteristics of the different registers instead of attempting to find a singular trait common to all registers.¹¹

Walter Pfeiffer, until his recent death one of the world's foremost experts in piano technology, gives penetrating insight in his study of the performance characteristics of the Viennese action.¹² The most important trait of the Viennese action, Pfeiffer claims, is that the hammer is directly connected to the key. Thus, everything which happens to the hammer is felt by the finger itself, resulting in a

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9. Professor at the University of California and, like Malcolm Bilson, a scholar of the early nineteenth-century pianos.


11. See p. 70 for an important exception to Winter's statements on the registral variety in early pianos.

"somewhat bumpy" feel and "a certain noisy sluggishness and stiffness."

Pfeiffer states that with the increasing weight of the hammer and deepening of the key dip, this bumpiness increases from an almost imperceptible level to quite considerable touch characteristics. According to Pfeiffer, Viennese actions were still being produced in Vienna in 1947. But he states that the course taken in the piano's development toward heavier construction caused the demise of the Viennese action's practicality in piano making.

Pfeiffer describes the touch on a Stein grand in the Stuttgart Landesgewerkemuseum as follows:

"The touch is very light, the letoff resistance can scarcely be felt and the repetition is excellent. The key dip is about 6 millimeters; the touch weight is 30 grams beginning in the bass and an additional 20 grams (only) in the treble."13

In comparison, the touch weight on a modern grand is 50 to 55 grams throughout, and the key dip is 9.5 to 10 millimeters.

The English and French piano-making schools of this era must be taken together, for the English type of piano was built in France instead of the Viennese type because of the geographic proximity of England. At the outset of French interest in the piano, English-made pianos were imported to France for a time and became very popular there. When Sébastien Érard established one of the first piano-building businesses in Paris in the two decades before 1800, he found there a ready-made market among the nobility, the ill-fated bourgeois. Because of the turmoil of the 1789 revolution, Sébastien Érard moved to London and established another firm there which flourished well into the

13. Pfeiffer, p. 25.
nineteenth century. Thus, English and French piano builders had a good deal of interaction and became quite competitive.

Vienna, on the other hand, was hardly affected by the English market at first. Imported instruments had to be carted over long, primitive, mountainous roads in order to reach Vienna, and were very rare and expensive there. It can be surmised that the tastes in piano characteristics of these geographic regions remained distinct partly because of the lack of sufficient exposure to the other types of instruments.

An important characteristic of the pianos of the English types was that different makers produced pianos of varying traits. The London-based Clementi and Company firm produced grand pianos with actions of almost Viennese lightness, whereas Broadwood's grands had a much heavier touch and broader tone with a dull treble. Clara Schumann and her father Friedrich Wieck, on their first Parisian tour in 1832, found French pianos to be very difficult to play and very dull in tone, but preferred Érard's pianos because they were much less so.14 Chopin and Liszt also found major differences between Pleyel and Érard pianos, the former having a "veiled" tone and the latter a powerful, "ready-made" tone.15


CHAPTER 3
Selected Piano Makers of Importance, 1800-1850

I. Viennese Makers

Stein/Streicher

The Stein/Streicher dynasty of piano makers produced many of the most sought-after instruments in Central Europe from the middle of the eighteenth century to the middle of the nineteenth century. Johann Andreas Stein (1728-1792), patriarch of this dynasty, was the son of an organ builder in Heidelsheim (Baden). He studied with Johann Andreas Silbermann, brother of Gottfried, the famous piano, harpsichord and organ builder, from 1748 to 1749 in Strasburg. After another year's work with Franz Spaeth in Regensburg, he moved to Augsburg and opened his own shop in 1751. Soon he found so much demand for his instruments that he began filling orders from as far away as Salzburg, Vienna, Zurich, and Freiburg. His pianos were especially valued by Mozart in 1777, who wrote a letter of glowing enthusiasm about them.1 Stein used the Viennese "bumping action" for his grand and square pianos, being responsible for the invention of an escapement mechanism which made this action type a viable one musically. Stein was also among the first to use foot pedals (1789) instead of a knee-operated mechanism, as well as an innovative damper design, using the more effective wedge


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shape. Stein also applied his skills to the invention of the melodika, the vis-a-vis grand, the politone-clavichordium and the stringed harmonica. In 1758 Stein made a successful visit to Paris to demonstrate his instruments. According to Arthur Loesser, it was this visit which first introduced the piano to the cultural center of France.  

A number of the most successful piano makers of the early nineteenth century were pupils of Stein, including Johann David Schiedmayer and Johann Georg Schenk in Wiemar, Johann Gottlieb Horn in Dresden, and Johann Kupler in Nuremberg.

Ernest Closson, the distinguished French scholar of museum science, describes the characteristics of one of the rare, surviving Stein pianos (1786) which exists in Brussels:

"Its hammers are covered with chamois leather and are scarcely larger than peas; its tone is gentle, its timbre thin but clear and distinguished; the strings are of steel in the treble, and of unwrapped brass in the bass (as in the harpsichord, which the instrument somewhat recalls both in tone and appearance). Instead of pedals it is furnished with 'knee-pedals' or genouillères, which raise the dampers. The outstanding characteristic of the instrument is the lightness of its action compared with that of a modern piano."  

This sort of piano became the model for the Viennese-German type of piano at the beginning of the nineteenth century.

Upon Johann Andreas Stein's death in Augsburg in 1792, his daughter Maria Anna (Nanette) (1769-1833) and son Mathaus Andreas (1776-1842) took over the workshop. In 1794, Nanette married Johann Andreas Streicher (1751-1833), and later in the year the couple, Mathaus and another Stein brother moved the business to Vienna, where


it had extraordinary success.

Nanette Streicher was an enormously talented and versatile woman. She began helping her father in his workshop at age seven and eventually demonstrated a thorough knowledge of the craft of piano building. As a pianist, she played for Mozart at age eight, and in the same year performed the Mozart Triple Concerto in F minor with her father and Mozart. Socially, Nanette gained prominent stature by her ability to befriend important people, including Beethoven, with whom the Streichers were particularly close. Haydn and Clementi were other famous composer-pianists with whom the Streichers had associations, and, according to Franz Joseph Hirt, "before long, their salon became a rendezvous of the artistic, intellectual, and business elite of Vienna." After 1823, Nanette retired from piano making and devoted herself to literary pursuits.

Johann Andreas Streicher was known as a pianist, composer and teacher, as well as a builder of pianos. As a young man he was a friend of the great poet Schiller, about whom he later wrote a book.

The Streichers improved their pianos by strengthening the construction of their pianos and increasing their volume. They did this especially in two ways. The first was the invention of the down-striking action which allowed a stronger structural design (see p. 24). Streicher's second method of increasing tone was the use of two soundboards, a design which was short-lived. Called his


5. Johann Andreas Streicher, Schillers Flucht (1830).
"Patent-Fluegals," Streicher's pianos with down-striking design were popular with many pianists. According to Walter Pfieffer, Streicher's down-striking action required the full return of the key to its original position before a repetition was possible. He notes that the touch was light and responsive, with a key dip of 6 millimeters and a touch weight of 29 grams (about one ounce). The Streichers gave a model of their Patent Grand to the great composer-pianist, Johann Nepomuk Hummel, who used this piano for concerts and teaching for eight years in Weimar. Since Hummel's playing style incorporated rapid performance of figuration and ornamentation, his prolonged use of such an instrument proves its viability.

The pianos produced by the Streicher firm were famous for their clear, transparent but rounded tone and their balanced, even touch. The Streichers produced an unusually large number of pianos for a Viennese firm making 49 to 52 pianos per year by 1816, as compared to a figure of less than 20 per year which was common for other makers. The emphasis by the Streichers on sales and their ingenuity in expanding their operation into a factory after the manner of some English manufacturers was responsible for their higher production rate.

From 1796 until 1802, the firm of the Streichers and Mathaus Stein was known as "Geschwister Stein," or "Frere et Soeur Stein" (Brother and Sister Stein). A grand piano of 1797 signed in the

6. Pfieffer, p. 32.


8. Loesser, p. 133.
French manner is housed in the Basel Historisches Museum. Having four pointed legs and a cherrywood cabinet, this piano has a range of just over five octaves (FF to g\textsuperscript{3}). It is designed with the Viennese action, one long, continuous bridge, and bichord stringing, measuring 214.5 cm (about seven feet) long. All of these details are basically similar to those of J.A. Stein's pianos, with the possible exception of the slightly extended range.

According to Hirt, Mathaus Stein had a very particular, difficult personality, and in 1802 he separated from Nanette's firm and founded his own business under the name of "Andre Stein." His pianos and those of his son, Karl Andreas (1797-1863) were used and favored by many prominent pianists, including Clara Schumann, Franz Liszt, and others. The pianos of Karl and Mathaus Stein were built after the tradition of their father, except with expanded ranges and gradually increased string tension. Karl Andreas Stein was also an important pianist, composer, and pedagogue.\textsuperscript{9}

After the break with Mathaus, the Streicher family had complete ownership of the family firm. An 1819 grand piano, signed "Nanette Streicher", is located in the Bern Historisches Museum (Inv. No. 33174). It has a six-octave range (FF to F\textsuperscript{4}), has a Viennese action with adjustable escapement, leather-covered hammers, triple-unison stringing, and a total length of 225 cm (seven feet, five inches). The bridge is positioned markedly closer to the more flexible middle part of the soundboard, so that a longer-lasting, fuller tone must result. There is a dust cover positioned halfway between the strings and the piano lid.

\textsuperscript{9} Hirt, \textit{Meisterwerke}, p. 458.
The early nineteenth century saw another generation of important Steins and Streichers in the music world. In 1823, Johann Baptiste Streicher (1796-1871) became a partner in the Streicher company. Assuming sole proprietorship in 1833 upon the death of his father, he made improvements to the down-striking action and, in 1835, introduced fanning-out iron struts in place of the less sturdy wooden braces. Johann Baptiste's sister, Sophie, became the mother of the pianist Ernst Pauer (1826-1890), and the grandmother of the famous pianist Max von Pauer (1866-1945). Johann Baptiste Streicher was succeeded by his son, Emil Streicher (1835-1916), who was at the head of the Streicher firm until its liquidation sometime after 1871.

The Munich Deutsches Museum is the location of an 1834 Streicher "Patent Pianoforte" with a range of six octaves and a fourth (CCC to f'). It has a spruce soundboard, wooden bracing, a down-striking action, and is strung with two to three strings per note. There are three pedals: a damper pedal, and two shifting pedals called piano and pianissimo.  

Graf

A Viennese piano maker whose pianos rivaled Streicher's among concert performers was Conrad Graf (1783-1951). His pianos were owned by Schubert, Beethoven, Schumann, and Brahms, and were favored by Liszt and Chopin. Born in Riedlingen (now Wuerttemberg), Graf traveled to

10. A family tree of the Stein/Streicher dynasty and brief biographical descriptions can be found in Hirt, Meisterwerke, pp. 457-461. The English translation of this book, listed in the bibliography of this document, does not contain Hirt's extensive list of biographical information about piano builders which is to be found in Meisterwerke.
Vienna in 1799 to work with the harpsichord and piano builder, J. Schelke. Upon Schelke's death, Graf married his master's widow and took over the business. In 1810 there were ten workers in his shop, and in 1812 he moved the business from Waehring, near Vienna, into the city itself. By 1841, his factory employed fifty workers and, according to Hirt, Graf built over 5,000 pianos by the end of his life. Graf was the first Austrian builder to place his instruments on three legs, and he later introduced the use of wheels or casters on each leg to facilitate moving the instrument. His pianos were first-rate in their furniture value, with his luxury instruments having mother-of-pearl lining on their keys, the choicest veneer for their cabinets, and the finest bronze and Wedgewood-porcelain for further adornments.

Graf experimented with quadruple-unison stringing as early as 1812, but found that the difficulties in tuning the instruments, and the added strain on the frame, made this design impractical. In 1823 he built such a piano for Beethoven at the composer's request, since Beethoven wanted a piano with louder sound due to his deafness. (Nearly all of Graf's other pianos were built with three strings per note.) In 1835 the Oesterreichischen National-Encyklopedie called Graf's piano factory the "greatest and most renowned piano factory of Vienna and of the kingdom."  

Beethoven's Graf piano has been preserved, and has been restored recently and used on recordings. Since it was built in consultation with Beethoven himself, this piano is very interesting historically.

11. Hirt, Meisterwerke, p. 444.
Its range is over six and a half octaves (CCC to $f^4$), the combined range of the common English and German pianos of that time. Its keys are slightly narrower than those of the modern piano, and a Viennese action is used with dampers for every note on the piano. The piano is very heavy and solidly built, with a strong wooden support between the bridge and the tuning pin block. The left pedal shifts the action to play either one or two strings of each unison. The middle pedal activates a moderator. 13

Another Graf grand piano, built in 1839, is owned by Joerg Demus. Like Beethoven's piano, it has a six and one-half octave range (CCC to $f^4$). Demus' piano has a deeper resonance in general and also a greater touch depth in its action, which has the traditional leather-covered hammers. The piano's sound is rich in overtones, and the upper register has a flute-like, mellow yet penetrating sound. Demus' piano is particularly important, since it was built in the same year and is much like the piano which Graf gave to Robert and Clara Schumann as a wedding gift. 14

Haertel

For many years, Central Germany lacked a good piano-building firm of its own. The continuance of a tradition of artistic activity in Leipzig in the early nineteenth century caused Gottfried Haertel (1763-1827) to establish a piano factory there. Haertel, partner in the flourishing Breitkopf und Haertel publishing company, attracted fine


craftsmen from Vienna to set up and operate the factory. The Haertel firm achieved an excellent reputation in the city which became the home town for Clara Wieck and her father Friedrich (who later operated a piano factory of his own), Robert Schumann, Felix Mendelssohn, and others. The Schumanns, Mendelssohn, and also Richard Wagner all thought sufficiently of Haertel's pianos to buy his instruments for their own use.

Like many other piano-building companies, Haertel owned a concert hall at which their pianos were exhibited in public concerts. This hall was used by Clara Wieck, Franz Liszt, Felix Mendelssohn and others. In spite of the success of the company, the piano-making business was abandoned in 1884. According to Hirt, one of the last piano builders for Haertel was a brother of the poet Eduard Moerike. 15

Walter

The pianos of Anton Walter (1752-1826) were much in demand by Viennese artists near 1800. Mozart owned a Walter piano, in spite of the preference he seemed to give to Stein's instruments in letters to his father. Mozart may have considered the stronger, fuller tone of Walter's pianos to be more effective in concert rooms than the thinner, more refined and delicate tone of Stein's pianos. Beethoven also owned a Walter piano, and gave lessons to Carl Czerny on it. 16

According to Ferdinand von Schoenfield, a writer for the contemporary Jahrbuch der Tonkunst von Wien und Prag, Walter was one of two

15. Hirt, Meisterwerke, p. 444.
original instrument makers in the vicinity at the time, the other being Streicher. Schoenfield declared that all other makers imitated one or the other of these types, and that Walter especially had a number of imitators. Walter's pianos were known for their full, bell-like tone, their clear attack, and their strong, full bass notes.

Walter came to Vienna from Schwabia sometime before 1780, specializing at first in organ building. His reputation as a piano builder was well established by 1792. After 1800, he signed his pianos, "Walter und Soehne," indicating that his stepson, Joseph Schoffstoss, was active in his workshop by that time. It is not known if the Walter und Soehne business was continued by Schoffstoss or if it was sold or taken over by someone else; neither Schoffstoss nor Walter appear in lists of makers active in Austria or Germany after 1850.

II. English Makers

Clementi

Some of the finest English concert instruments of the early nineteenth century were built by the firm, Clementi and Company. This company received its name from the famous Italian pianist Muzio Clementi (1752-1832), who spent most of his life in England after being taken there as a boy of thirteen. Clementi and Company originated as Longman and Broderip, a company which combined publishing music and manufacturing pianos. Clementi, finding the need for a more stable and


profitable income than performing and teaching, invested in the
Longman and Broderip firm sometime in the last decade of the eighteenth
century. In 1798, the firm experienced bankruptcy, after which it was
reorganized under the name of Longman, Clementi and Company. Soon
afterwards, there was another reorganization after which the company
was briefly known under the unwieldy name of Clementi, Banger, Hyde,
Collard and Davis. In 1802 the name of Clementi and Company was
agreed upon, not being changed again until Clementi's death in 1832.
From that year until the present, the same firm has been known as
Collard and Collard.

After 1802, Clementi and Company became one of the most successful
English piano manufacturers, exporting pianos as far east as Vienna
and St. Petersburg and as far west as Boston. This wide distribution
was due largely to the efforts of Clementi, who in 1802 left on an
eight-year tour through Europe with his pupil John Field. After he
established an outlet store in St. Petersburg, Clementi left Field
there to pursue a successful career as concert artist and teacher, and
a permanent promoter of Clementi's pianos in that region. The same
tour also resulted in the establishment of a relationship with the
publishing firm of Breitkopf and Haertel in Leipzig. Clementi arranged
for the Leipzig company to sell his pianos, while Clementi's music
publishing company would be able to publish Breitkopf and Haertel's
music in England.

While Clementi was on his extended European tour, Clementi and
Company experienced a tragic fire in 1807 in which the piano factory
was completely lost. However, Clementi's music publishing company was
so profitable that through it the piano factory was able to be rebuilt soon afterwards. In the following decade, Clementi and Company devoted serious attention to the development and production of vertical pianos, especially the upright grand type (see p. 26). Up until 1818, Clementi and Company was the primary developer of vertical pianos, in spite of important inventions of other makers related to the vertical design. By 1824, the company was fully engaged in producing the complete line of pianos: square, cottage cabinet (a small vertical), upright grand, and horizontal grand.

Clementi's grand pianos differed from most of the other English and French pianos of the early nineteenth century in that their touch was much lighter and their tone much clearer, resembling Viennese pianos in these respects. Consequently, Clementi pianos were favored by many pianists who otherwise preferred Viennese pianos but were unable to find good ones in their locale. Because of the English superiority in manufacturing procedures, firms like Clementi, and others, produced far greater numbers of instruments, and thus were successful in finding markets in remote places despite the presence of other makers, whose output could not reach local demand.

One particular Clementi grand piano, owned by Edmund Michael Frederick, was built near 1805, having a range from FF to c⁴, with string tension about three times that of a harpsichord of the same size, and a key dip of about 6.4 millimeters. The bass strings are of brass, unwrapped, and the treble strings are of steel. Rebuilt in the

20. Loesser, pp. 261-266.
1820's, this piano seems to be very authentic in its performance characteristics, with an English-type action, a very light touch, the volume of a harpsichord of similar size, and a capacity for extremely soft playing. Only small metal supports are used, the main structuring being entirely of wood. One continuous bridge is used for all strings, in the traditional design. The hammers are very small and are covered with leather. The dampers are somewhat ineffective, especially in the bass, but the overall effect is of a reverberating quality, like the sound produced in a room with "live" acoustical characteristics. Damping quality, unfortunately, is one property which cannot be accurately evaluated on older instruments, since the critical texture quality of the surface of the dampers is certain to change with age. 21

A Collard and Collard piano of 1843, in the C.F. Colt collection of keyboard instruments, was built with felt-covered hammers, indicating a general trend toward adoption of progressive ideas in technology in later years.

Broadwood

The firm of John Broadwood and Sons is the oldest of all piano manufacturers still in business today. Its origin stems from the English harpsichord-building operation of the Swiss emigrant Burkat Shudi (1702-1773). In 1761 Shudi apprenticed a young Scottish cabinet maker, John Broadwood (1732-1812), with whom an excellent and profitable

relationship was built. When Broadwood married Shudi's daughter, Barbara, he also became a partner in the business and assumed sole proprietorship upon Shudi's death.

At first, John Broadwood emphasized the building of square pianos, which were in tremendous demand after Zumpe began their production in the early 1760's (see p. 18). After Broadwood's improvements to the square piano's design, the instrument was much more durable and musically satisfying than the crude design of Zumpe's of the 1760's. In the late 1780's, Broadwood turned his attentions to the grand piano design. Finding that the long bass strings in grands were a problem area, he divided the bridge into two parts so that the bass strings could be given greater tension. This taste for a fuller, more powerful bass sound became a distinguishing characteristic of most English pianos.

In 1793, the company built its last harpsichord, and in 1795, the firm of Shudi and Broadwood became John Broadwood and Son. John Broadwood and his son James soon became proficient in the methods of mass-production which were so predominant in the growing Industrial Revolution. By 1802 the Broadwoods were producing four hundred pianos a year, as compared with the average of about twenty instruments produced yearly by makers such as Johann Andreas Stein of Augsburg. Throughout the first half of the nineteenth century, Broadwood and Sons far outstripped all other companies in the number of pianos produced. 22

In 1794 Broadwood introduced a six-octave piano, but makers generally offered such extensions as an option, and most of Broadwood's

pianos were of five, and later, five and a half octaves. Broadwood was one of the first to use long metal bars for bracing, using a single bar in his grands of 1808, and three to five bars after 1821. The company also used metal hitch pin plates frequently after 1821, and in 1850 Broadwood pianos were still built with composite frames such as these instead of single piece, cast-iron frames.23

An 1802 Broadwood grand is in the collection of the recording artist Joerg Demus. The soundboard is made of cypress, the range is five and one-half octaves, and the case and strings are similar to those of a harpsichord. Exceptions are the triple-unison stringing (three unison strings per note), and the presence of a hand lever to shift the action for the hammers to strike one, two or three strings of each unison. Catherine Smith describes the varied tone quality in this restored piano's range as resembling woodwind sounds; a "snarling bassoon in the bass, horns in the middle and light woodwinds on top."24 (A piano presented by Broadwood to Beethoven in 1818 has been restored in recent years. The instrument has a very powerful tone compared to other instruments of the day, and has a six-octave range from FF to f⁴.) Ignaz Moscheles, a highly successful concert pianist who resided in London for many years, frequently encountered Broadwood's pianos. He is an excellent source for contemporary impressions of pianos from about 1810 to 1850, since he frequently noted improvements in different makes in his letters and his diary. Moscheles used Beethoven's Broadwood in a Vienna concert in 1823, and he noted that it was a typical example of the "broad, full, although somewhat muffled

tone of the Broadwood piano."\textsuperscript{25} He noted that after the addition of metal bars and plates in 1821, the tone on these pianos was even fuller, with a "vocal resonance" which was particularly suitable to the legato of the pianist, Jean Baptiste Cramer.\textsuperscript{26} In 1836 Moscheles recorded that Broadwood had introduced a "semi-grand" piano with two strings per note, proving "the possibility of gaining a powerful tone through the medium of only two strings." Moscheles' wife added that he "delighted" to play on these pianos.\textsuperscript{27}

Broadwood and Sons quickly followed the lead of other English makers in the development of vertical pianos. By 1815 they were building upright grand pianos, as well as smaller cabinet pianos, all with six-octave ranges. By 1828, the cottage piano was offered in addition to the above types, with an optional six and one-half octave range. Broadwood's price list of 1840 advertised a small "boudoir cottage" piano which had bichord stringing and was favored by Chopin. It also mentioned a "semi-cottage" piano which was three feet, four inches high, which replaced the large, awkward upright grand sometime in the 1830's. During this time Broadwood continuously built regular grand and square pianos, some bichord and some trichord.\textsuperscript{28}

The pianos produced by the Broadwood company were quite successful in England, but most prominent concert artists voiced preference for Erard's pianos when they had a choice (an exception was Chopin in his last years). More than Broadwood's pianos, it may have been their extraordinary business acumen and mastery of production which were the

\textsuperscript{25} I. Moscheles, p. 60. \hspace{1cm} \textsuperscript{26} I. Moscheles, p. 44.
\textsuperscript{27} I. Moscheles, p. 231. \hspace{1cm} \textsuperscript{28} Harding, pp. 379-380.
company's most important contributions to the piano-making trade of the nineteenth century.

III. French Makers

Érard

In France, the most important and prominent maker of early pianos was Sebastien Érard. Born in Strasbourg in 1752 under the name of Ehrhard, Sebastien was the son of a cabinet maker. He came to Paris in 1768 and began working for different harpsichord firms. He was gifted with high aptitudes for architecture, drawing, geometry, and mechanics, and his masters found him too precocious to be an acceptable apprentice. In 1777 the Marechale de Villeroi noticed the young man's inventive powers and established him in a workshop at her own residence, where he built his first pianoforte. Érard's talent, success and strong political backing eventually aroused the enmity of his trade rivals, the Luthiers, who raided his workshops and accused him of working outside the corporation without a license. But Érard was protected by the king, Louis XVI, and was able to continue his work with renewed political strength. He soon moved his workshop to the Rue Bourbon and enlisted his brother, Jean Baptiste (1750-1827), to help him.

When the revolution broke out in 1789, the Érard brothers retreated to London, where Sebastien patented his first grand piano. In 1796, Sebastien returned to Paris and left the newly-founded London operation in the hands of his nephew, Pierre (1796-1855). The London sojourn gave Sebastien a look at English methods of manufacture and design. Thus, in 1802, the Érard workshop utilized divided labor in their manufacturing process, had a much higher output than any German
movers, and exported heavily. In 1834, Érard et Frères employed 150 men and produced 400 pianos per year. In 1855, there were 425 employees making 1500 pianos per year, figures matched in France only by Pleyel et Compagnie.

Érard was constantly making improvements to his pianos, becoming the first to replace the lower brass strings with wrapped steel strings. He tried making pianos with Stodart's ingenious compensation frame, and he was one of the first to use a soft pedal which inserted a strip of felt between the hammers and strings, called a moderator. Érard's most significant improvement was the repetition action, also known as the double-escapement action (see p. 25).

Ignaz Moscheles took special notice of Érard's improvements, and in 1821 was the first to play on a piano equipped with the improved repetition action:

"Young Érard (Pierre) took me to-day to his pianoforte factory, to try the new invention of his uncle Sebastien. This quicker action of the hammer seems to me so important that I prophesy a new era in the manufacture of pianofortes. I still complain of some heaviness in the touch, and therefore prefer to play on Pape's and Petzold's instruments; I admired the Érards, but am not thoroughly satisfied, and urged him to make new improvements."\[31\]

When Pierre Érard took over the firm in 1824, many improvements were forthcoming. In 1828, Moscheles was given a new piano by the Érards; he noted that the tone was improved, but that the upper register was "somewhat dry," and the touch was still too heavy.\[32\]

Soon afterward, he began to prefer the new Érards to other pianos. He

32. I. Moscheles, p. 146.
noted that the touch was much lighter and more pleasant. In 1853, Érard et Frères sent Moscheles another new piano with which he was so excited that he asked his friends to see and hear it:

"It has the power of an organ and the softness of a flute, with a touch light enough even to satisfy me. Really I can act upon it as upon a kindred spirit, and slowly spin out the tone as upon a stringed instrument, and that, too, without using the loud (sustaining) pedal; as for the soft pedal I do not require it to produce a pianissimo, and can rely solely on my touch."  

The capabilities of the Érard action and its powerful tone made it the most popular instrument among concert artists from 1830 to about 1860. Franz Liszt, Sigmund Thalberg, Felix Mendelssohn and Giuseppe Verdi all owned Érard pianos. After the popularization of the cross-strung Steinway type of piano, Érard pianos became less and less popular outside of France. The firm, which had been so much a leader in progressive technology, became very conservative in the second half of the century. Érard et Frères kept many of the essential characteristics of their pianos of 1860 until the beginning of the twentieth century, when a grand piano with cross stringing was finally introduced. Hammers covered by hand with multiple strips of leather were used as late as the 1890's.

Joerg Demus attaches special value to the older-style Érard pianos:

"It has so many features of the modern piano, but without the later enforcement of the fundamental tone at the expense of the overtones. Unlike the modern piano, it is rich in overtones."  

33. I. Moscheles, p. 164.  
34. I. Moscheles, pp. 374-375.  
35. Smith, p. 12.
Demus compares the "wooly" sound of modern pianos with the clarity of older ones, making the point that the addition of overtones restores clarity. In his book, *Abenteuer der Interpretation*, Demus includes a special section describing the performance characteristics of Érard pianos of the nineteenth century. He cites the greater hammer impact force, the result of Érard's change in the hammer-to-string distance, as being the important factor in the powerful tone of which Érard's instruments were capable. Demus also remarks that the registral qualities throughout Érard's grand pianos were completely equal in tone, differing from all other pianos in this respect.36

**Pape**

Perhaps the most prolifically inventive piano builder of all time was Johann Heinrich (Jean-Henri) Pape (1789-1875). Born in Sarstedt, near Hanover, Pape moved to Paris in 1811, where he worked as a foreman for Ignaz Pleyel. In 1815, Pape founded his own factory and went on to secure more than 137 patents relating to piano design. Along with his inventions, he bequeathed to the world of piano building one of the most important piano builders in the latter part of the century, his student, Friedrich Bechstein.

At first, Pape's efforts were mainly directed toward the design and production of very small pianos, which he was under contract to make for Pleyel. In 1826, Pape became the first to patent the use of felt as a hammer covering, and in 1828, he was the first to use the principle of cross-stringing (see pp. 21-23). The latter two

inventions have become essential factors in modern piano design.

In 1827, Pape patented a down-striking action for grands which used counter-balancing weights to return the hammers to their original position. In making pianos of the down-striking design, Pape was inspired by the Viennese maker, Johann Andreas Streicher, who built similar pianos. These down-striking pianos were generally adopted in France by about 1836, according to an English reviewer. 37

Pape's pianinos were especially popular, as they were sturdily built and came in convenient sizes, as small as one meter in height. His grand pianos were used by some of the foremost artists of the time and were preferred by Moscheles because of their light touch. Moscheles preferred Pape's pianos even after Érard had produced the repetition action. 38 Also, Pape's actions were characterized "by their elegance of design, the various parts being bent and curved in graceful lines to economize space." 39

By 1826, Pape was using metal in many of his pianos, although no metal bracing was used in the down-striking grands of 1828. In 1851, Pape exhibited a grand with a "strong open frame of cast iron or wood strengthened by iron." 40 For strings, Pape was probably the first to use tempered steel wire regularly, beginning in 1826.

Pape's son took over the business from 1855 to 1872, and then from 1872 to 1855 the firm was known as "Madames Pape et Debouche." But with the retirement and later death of Jean-Henri Pape, the firm gradually died out. 41

Petzold

Another important French piano maker of the early nineteenth century was Wilhelm Leberecht Petzold (1784-?). Born in Saxony, Petzold studied with Anton Walter in Vienna before settling in Paris in 1805. From 1806 to 1814 he was associated with J. Pfeiffer (1769-1838), after which he worked independently. Moscheles preferred Petzold's pianos along with those of Pape because of their light touch.42

Petzold's most important contribution was in action design, and his actions were imitated by most other French makers of the time. His actions had provisions for adjustment of the hammer's stroke, of its escape from the jack. Also, the jacks were built with an angled tongue, so that the whole jack was L-shaped, and hammer escapement from the jack was facilitated. The significance of these features was that they made actions more adjustable, and consequently much more responsive and even in touch. In 1829, Petzold patented an improved upright piano with a full cast-iron frame. He was also the first to enlarge the soundboards in square pianos to extend completely from end-to-end.43

Pleyel

Érard et Frères had no serious competition among French makers until the 1820's, when Pleyel et Companie began to flourish. By 1855, both Érard and Pleyel were producing close to 1500 pianos per year.44 Both companies operated small concert halls seating three to four

42. I. Moscheles, p. 40.
hundred and featuring concerts by the most outstanding artists of the century.

Pleyel et Compagnie was formed on an exceedingly strong musical base. Founded by the composer-pianist, Ignaz Josef Pleyel (1757-1831), the company later named as a business partner the famous pianist Friedrich Kalkbrenner, and counted Frederick Chopin among its proponents.

Pleyel began his musical career as a student of Wanhal, and later of Haydn. After serving as Kapellmeister at the Strasbourg Cathedral, Pleyel journeyed to London and was set up there by society elements as a competitor of Haydn. After the French Revolution, Pleyel returned to Paris and followed Clementi's steps in starting a music publishing and sales business in 1797. Clementi contracted Pleyel to sell pianos for him in 1801, and in 1807 Pleyel himself entered piano manufacturing. By 1813, his company was second in production only to Erard among French makers.

In 1815 Pleyel began producing small upright pianos with slanted stringing, after the design of the English maker Robert Wornum. These uprights were some of the best such pianos in France and were produced with the assistance of Pleyel's outstanding ex-employee, Jean-Henri Pape.

By 1821, Friedrich Kalkbrenner was enlisted as a company partner, promoter, and artist-in-residence. In the same year, Ignaz's son Camille joined the company, and through Camille's own musical talents and those of his wife Marie (or Camilla), an informal relationship with Chopin was established. In fact, Chopin's premiere in Paris was at
the Salon Pleyel, under the sponsorship of the Pleyels.45.

Pleyel's pianos had the typical characteristics of the English pianos of this time: the tone was slightly muffled or "veiled," there was a fairly sonorous bass register, and the action had a deeper key dip than that of the Viennese piano. After 1839, Pleyel et Companie used an outer covering of felt on their leather-layered hammers, which may well have added slightly to the muffled nature of the tone. Iron support bars and a metal hitch pin plate were used in Pleyel grands of the 1840's, paving the way for higher-tension stringing. Consequently, the sound is fuller and more modern-sounding compared to other instruments made early in the nineteenth century.

The 1845 Pleyel grand in the possession of Edmund Michael Frederick is constructed in this design. It has a close resemblance to the Pleyel grand owned by Chopin in 1845, except for its smaller size. Measuring 6 feet 8 inches, this medium-sized grand has a range of six and one-half octaves (CCC to g⁴). Its touch is heavier and deeper than many other instruments of the time, but still lighter and slightly shallower than modern actions. The tone in the bass of this instrument is powerful, with a clarity and distinctness to each note which approaches the clarity of contemporary Viennese pianos, and yet there is a rounded, "booming" quality also. The treble register is sustained in quality, but is somewhat incisive and quite harsh to ears accustomed to the modern piano.46 Especially noticeable to a modern

45. Loesser, pp. 336-347.

pianist is the force needed to produce full tone in the upper register on this instrument. This characteristic may be partially due to the way the strings were tempered, since Pleyel had patented his own method of tempering iron wire. The wire on this piano could have changed its sounding characteristics with the passage of time, but such changes usually result in dullness, a very rapid decay, which is not an outstanding characteristic of this piano. The soft, delicate nature of the upper register in Pleyel's pianos is especially significant in understanding Chopin's works after 1832.

Pleyel's pianos were built with single-escapement actions until about 1849, when the company began to use the Herz-Erard repetition design which became universally adopted in grand pianos at about that time. Thus, the performance characteristics of the Pleyel instruments used by Moscheles, Kalkbrenner, Chopin, Thalberg and others were close to those of modern vertical pianos; repetition was only possible after a full return of the key.

Camille Pleyel succeeded his father in the business after the founder's death in 1831. In 1852, August-Desire-Bernard Wolff was introduced as Camille's partner and succeeded the younger Pleyel upon his death in 1855. Pleyel et Compagnie has continued to embody the best traditions of piano building up to the present day.  

CHAPTER 4
The Piano Ideals of Selected Composers
for the Piano of the Early Nineteenth Century

This chapter will consist of an investigation into the piano ideals of several of the greatest composers for the piano in the early nineteenth century. Composers to be considered are Beethoven, Schubert, Chopin, Mendelssohn and Schumann. Among these, all were excellent pianists and all but Schubert and Schumann were leading concert artists. Thus, nearly all of these composers had extensive experience with different kinds of pianos and left recorded impressions of these instruments in letters and diaries. The following studies will attempt to determine the makes of pianos most appropriate for historical performances of these composers' works.

Special problems occur in these studies, since composers sometimes changed their taste in pianos as they encountered different kinds of instruments. This problem is especially important in the cases of Chopin and Mendelssohn. Also, certain works by all of these composers were undoubtedly composed with different performance settings in mind. Works composed especially for the concert hall (i.e., Schumann's Carnival, Op. 13) would have been written for a large, resonant piano, whereas pieces written with an intimate performance setting in mind (i.e., Chopin's Mazurkas, Nocturnes) would have been composed presumably for a small piano, perhaps even a square or upright instrument.
William S. Newman has thoroughly explored Beethoven's concept of the piano as an instrument, including the pianos he possessed or preferred.1 Due to the completeness and excellence of Newman's study, only a review of some of his findings will be given here.

Beethoven was a composer who was not completely satisfied with the pianos of his time, or with the prevalent manner of playing on them. He frequently voiced his opinions to piano makers concerning the tone, range, and action characteristics of their pianos. In a letter in 1746 to Johann Baptiste Streicher, the manufacturer-performer husband of Nanette (Stein) Streicher, Beethoven voiced his opinions about contemporary piano playing:

"There is no doubt that as far as the manner of playing it is concerned, the pianoforte is still the least studied and developed of all instruments; often one thinks that one is merely listening to a harp. And I am delighted, my dear fellow, that you are one of the few who realize and perceive that, provided one can feel the music, one can also make the pianoforte sing. I hope that the time will come when the harp and the pianoforte will be treated as two entirely different instruments."2

Beethoven's association of piano sound with that of the harp was probably stimulated as much by the pianos themselves and the contemporary style of composition, as by the playing style, which was naturally bound up with the style of the music played. Modern recordings on Viennese pianos of about 1800 sound remarkably like harp


performances, especially with music by Haydn and Mozart. Thus, it is probable that the above letter was intended to encourage Streicher to build his pianos with different ideals in mind. In 1809, Johann Friedrich Reichardt wrote that Streicher had made major changes in his pianos, so that their actions had "more resistance and elasticity," resulting in "a greater and more diverse character." Reichardt mentioned that these changes were made at Beethoven's request.³ Beethoven wrote to Streicher in 1817 that, since 1809, he had "had a special preference for (Streicher's pianos)." He added that "only Streicher would be able to send me the kind of piano I require."⁴ The composer voiced the same opinion later in 1823,⁵ although he was completely deaf by that time.

It is reported in most modern sources that Beethoven came to prefer the more powerful tone and heavier action of English instruments. But the above references refute this common misconception, and the fact is that Beethoven tried to have his 1803 Erard and his 1817 Broadwood pianos "improved" by the Streichers. Beethoven was never very happy with his Erard, and he was too deaf when he received his Broadwood to be able to have any accurate idea of its sound. Indeed, the historical significance attached to the sound of the instruments owned by Beethoven has a somewhat weak foundation, since, as Newman pointed out, "He may never have owned any piano that was not presented to him

as a gift." More indicative of his taste than these pianos would be those which Beethoven specifically requested, such as a Walter in 1802 with an una corda pedal, and Streicher pianos after 1809. Beethoven's 1825 Graf piano, designed in close collaboration with Beethoven, was built mostly with concern for overcoming the composer's hearing problem, and Beethoven had lost much of his hearing ability before Graf began making pianos on his own in 1805. The only piano sound which Beethoven is certain to have heard accurately is that of Viennese pianos before about 1802. Thus, in understanding the sound to which Beethoven was accustomed when writing for the piano, Viennese pianos are of central importance, especially those by Streicher, Walter, and, also, Mathaus Andreas Stein, Nanette Streicher's brother. The special features of Beethoven's Graf (see p. 14) are valuable only in respect to the kind of pedals used (una corda, damper), range (CCC to $f^4$), and other such détails.

Several problems are encountered in Beethoven's music which are often attributed to the differences in modern piano sound from that of Beethoven's pianos. The problems most frequently referred to are some enigmatic pedal indications. It is often said that, in reference to the first movement of the Sonata in D minor, Op. 31, No. 2, that Beethoven's long, blurred pedal effect in measures 143-148 sounded differently on the Viennese pianos of the day. Purportedly, this was because these pianos had a much more rapid rate of decay, and the blurring effect was not as pronounced as on modern pianos. Trial of

this and similar passages on an 1820 Hasska of Viennese make, as well as on an 1805 Clementi piano, reveals that the effect is still very much blurred, but the thinness of the piano's tone makes the effect wispy, breath-like. Although the initial decay on these earlier pianos is somewhat more rapid than on the organ-like modern piano, the greater success of the effect is due more to the basic tonal differences of the older pianos.

The most remarkable pedal indication given by Beethoven in his piano sonatas occurs in the Sonata in C-sharp minor, Op. 27, No. 2. At the beginning of the first movement, Beethoven indicated the following: "This whole piece (movement) must be played with maximum delicacy and without mutes (with raised dampers)," and to reinforce the point, "constantly pianissimo and without mutes." Newman considers it unlikely that Beethoven intended pedal changes to be made as needed, but that instead the vibrations were to be allowed to build up as long as the sound of each note lasted. Newman cites Berlioz as having endorsed a performance by Liszt in which this practice was used. But by 1846, Czerny advocated for this movement pedal changes with each bass note change, acknowledging the greater resonance on the pianos of that time. The slow harmonic changes and constant reiterations of the chord in the accompaniment patterns corroborate the damperless interpretation, and at a slow tempo the effect is dreamy and


impressionistic on a piano from about 1800. The harmonies do not interfere with each other, except on the first part of the beat of a new chord, or when the harmonic rhythm quickens from the normal whole note duration. Still, the sound is disconcerting at first and quite extreme in taste, and (in the author's opinion) successful only on a piano of early nineteenth-century design.

Another unusual pianistic effect exploited by Beethoven is the octave glissando passages in the Finale of the Sonata in C major, Op. 53. Many a sore-fingered pianist would be distressed to learn that such effects were tricky, but not at all impossible, on most Viennese pianos. This is due to the shallow key depression which made a glissando only a matter of skimming the key tops; also, many Viennese keyboards had rounded key edges, and all had a slightly narrow octave span, by modern standards, so that octave glissandos would neither create sore fingers nor require large hands.

A very remarkable experience can be had by playing the Sonata in D minor, Op. 31, No. 2, on any good piano designed before about 1820. With care, the opening arpeggiated chords can be played quite softly on a modern piano, but on an early piano they can be easily played at a veritable whisper of sound. The lower dynamic level, combined with the thin, slightly percussive tone of these pianos, add to the musical effect to give a stunning, misterioso atmosphere both in the beginning and at the recapitulation. The tremolo accompaniments in the transition material can be executed with very little effort because of the light action, and due to the slight percussive sound of the leather hammers, the tremolos have a rustling effect which adds interest to
this kind of passage. The forte places in this movement sound intense, but weak to ears accustomed to modern piano sound. With a proper adjustment of dynamic levels by the pianist, the loud passages can still be effective because of the changed perspective. Passages in which the lowest registers of the piano are exploited (i.e., the final bars of this movement) are greatly transformed on an early piano; every note is clearly heard, without the rumbling which is unavoidable on a modern instrument. The bass register's melodic capability is thus greatly increased—perhaps the most significant musical advantage forfeited by modern design.

Another kind of passage, in the second movement of Op. 31, No. 2, reveals still another performance characteristic of Beethoven's music on the early piano. The varied, recapitulated version of the first theme (m. 50) receives added color from a Viennese piano in that the arpeggiated passagework changes color as it descends from the dry, thin, high register through the more resonant middle register, to the "brassy"-sounding bass register. Such effects, which emphasize differences between registers, are minimized on pianos which are designed to have uniformity and continuity of registration.

In the final movement of the D minor Sonata, the differences between the upper and lower registral qualities are again displayed, in the first part of the development section (mm. 95-150), where there are exchanges of the opening motive in many different registers. A performer on a modern piano can use varying touches to create an effect which occurs naturally and with more variety of timbre on an appropriate early piano.
Because pianos changed so rapidly toward the mid-nineteenth century, and because it was the practice of nearly all early nineteenth-century concert pianists to play mostly their own works or else music of the most recent times, it may well be that Beethoven's piano works have hardly ever been played on the kind of instrument for which he wrote. On the other hand, it may be that Beethoven often wrote for a piano which never existed. Newman quotes a famous episode in which Beethoven answered a violinist's complaint about the awkwardness of a certain orchestral passage, "Do you think I think of a wretched fiddle when I write my string music?"9

Schubert

The piano had a special role in Schubert's musical thought. Since Schubert himself rarely appeared as a public performer, and never considered himself a concert pianist, his piano works were mostly written for use in the home by amateur pianists such as himself. Schubert's treatment of the piano is thus very personal and intimate in many instances, such as in his song accompaniments and Moments Musicaux. Kathleen Dale describes the piano as the "object of (Schubert's) unvarying devotion, the companion of his lonely hours and a never-failing source of inspiration to him."10 Dale describes Schubert's piano music as characterized "by a refreshing intimacy of treatment which makes it intensely lovable."11

With this concept of Schubert's piano music in mind, it is not surprising to learn that Schubert's concept of the piano was bound up in the Viennese pianos of his time. Schubert spent virtually all of his life in Vienna, and probably had only brief encounters with English or French pianos in that city. The only piano Schubert owned was a five-octave Graf given to him by his father in 1814. Schubert probably was not overly attached to this piano, nor perhaps to any piano, for in 1818 he responded without hesitation to his brother Ferdinand's offer to buy his Graf piano, "Do take my fortepiano; I shall be delighted."12

Schubert did most of his piano playing at friends' houses, especially at Franz von Schober's. He especially liked pianos such as those made by Johann Jakob Goll, which had a "soft mechanism" and a pleasing tone.13 In 1821, a new Graf piano was used in an important concert of Schubert's vocal music,14 indicating the confidence Schubert had in that maker's instruments.

Malcolm Bilson has written an article in which he describes the relationship of Schubert's music to the pianos of Schubert's time.15 Bilson is a modern concert pianist who has made recordings on both modern and early pianos, and is thoroughly familiar with the performance characteristics of early pianos. He cites the opening of the fourth

movement of the Piano Sonata in G major, D. 894, in which a chord is repeated quickly four times, marked decrescendo from piano to pianissimo. Such passages are nearly impossible on modern pianos, which require more energy to be played. The rapid execution is possible, of course, but the heavy action invariably results in too much sound. The execution is natural and easy on a Viennese piano, however.

Bilson also points out that the register of the accompaniment to Das Wandern (the first song of the cycle, Die Schoene Muellerin) is in a register of the piano which is too low to be played with the necessary vitality on the modern piano. However, he points out that on an early Viennese piano the pianist can "pitch right in" on the "rollicking" accompaniment. The latter point about the early piano's accompanying characteristics is especially important in considering Schubert's music. The overall softness of most early pianos compared to modern instruments has been cited before, but this characteristic becomes especially important in chamber music. When an early piano is used for accompaniment of a vocalist or string player, the soloist can sound over the piano even in the thickest textures, and the pianist never needs to play more softly than he would in solo music. Also, since the softer ranges of the early Viennese pianos are almost limitless, a soloist can use his softest ranges and still sound over the piano without effort. Counterpoint occurring in accompaniments can be brought out more successfully, also, since there is hardly any competition between the pianist and the soloist. The result: more

freedom for both accompanist and soloist.

Some of Schubert's works were definitely written with a concert hall in mind. The "Wanderer" Fantasy in C major, D. 760, and the Sonata in D major, D. 850 are examples of such works. These works could certainly sound successfully on the finest Viennese concert grands of the 1820's, and Cyril Ehrlich considers the recent recording by Malcolm Binns of the "Wanderer" Fantasy on an 1825 Hasska (BBC), as "the most convincing testimony for the old technology known to the present writer."\textsuperscript{17} Ehrlich is especially impressed by the "warmth of tone and a silvery treble" on this instrument from the C.H. Colt collection.

\textbf{Chopin}

"The Chopin playing of this century is a post-Chopin tradition which has nothing to do with the playing of the master, and has continually progressed further and further from his ideas as the piano has gained in strength and volume. It represents what others have made of his music, but it is not the real Chopin, any more than the Bach of our pianists is the real Bach."\textsuperscript{18}--Edith J. Hipkins

Perhaps it is widespread misconception of Chopin's style which is responsible for the feeling of appropriateness modern pianists have toward playing Chopin on modern pianos. It is indeed shocking and puzzling for a twentieth-century performer to read accounts of Chopin's playing which describe entire programs as never rising above a somewhat sonorous degree of softness.\textsuperscript{19}


\textsuperscript{18} Hipkins, p. 17.

\textsuperscript{19} Schoenberg, p. 142.
One need not read many such accounts before concluding that Chopin's playing was indeed very quiet and sensitive, with an extremely refined control of dynamic levels. He seemed to transpose the loudest passages to levels much softer than other pianists, while playing the softest passages so quietly that the desired contrasts were nevertheless successful. Moscheles wrote, "His piano is so delicate that no very strong forte is required to give the desired contrast."  

A key to Chopin's reasons for playing this way can be found in his letters, in which Chopin candidly describes his feelings about many such subjects. He was aware of the "almost unanimous opinion that I play too softly, or rather, too delicately, for the public here (in Warsaw)." But he frequently answered such opinions by taking pride in the fact that he did not "thump" as so many other pianists did. This delicate playing style, full of subtlety and careful tonal gradation, had a parallel in Chopin's choice of pianos. As we will see, he preferred pianos of light construction and soft sound, instead of pianos such as Érard or Streicher which produced a bright, full-voiced tone with considerably more volume.

Chopin's taste in pianos seems to have changed to some extent during his lifetime as he came into contact with different instruments. It is revealing to follow his encounters with these instruments and his comments about them. Initially, Chopin preferred Polish-made pianos,


such as those belonging to him and to the sister of his friend, Titus Woyciechowski. These pianos were probably of the German or Viennese type, and were generally soft in sound, with a fairly weak bass register. However, he did not favor the Polish pianos categorically, but only the best such instruments. This is revealed in his letter to Titus from Warsaw on December 27, 1828, when he remarked, "I have not found (a piano) either in mechanism or tone anything approaching ours or your sister's."22

It is unfortunate that Chopin's boyhood piano, a Warsaw-made Buechholtz, has not survived. The instrument, like many of his letters and manuscripts and personal effects, was destroyed by soldiers in a spurious, politically-motivated incident in 1863.23

Finding and restoring a large, promising Buechholtz grand from this period would be quite helpful in discerning Chopin's taste in pianos. Chopin strongly preferred his piano to many Viennese pianos, since he chose to use it in a concert in Warsaw in March 27, 1830. This drew criticism from some, including his teacher, Elsner, who

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22. Karasowski, p. 66.

23. William Murdoch, Chopin: His Life (New York: The MacMillan Company, 1935), p. 139. In Poland at that time, there was intense political animosity directed against the occupying Russian forces, and against Russian-appointed Polish government officials. A bombing occurred outside Chopin's sister's residence, directed against a government official and some army troops which were passing by on the street. There were no serious injuries, but the official directed that all the contents of the building be piled into the street and burned. Chopin's sister had been gathering many materials, including manuscripts, letters, and personal effects belonging to Chopin, for a Chopin museum. All of these items, along with the belongings of all the building's residents, were destroyed in the incident.
voiced the opinion that the Polish-made piano was too weak, especially in the bass register. It was only after considerable urging that Chopin was persuaded to use a more powerful instrument, a Graf, for the second performance of the same program. Chopin still maintained a preference for his own instrument. 24

Eventually Chopin grew to appreciate the best pianos of Conrad Graf (see pp. 56-58), who became Chopin's favorite Viennese piano maker and supplied him with pianos for his Viennese concerts in 1829-1830. In his letters, Chopin frequently paid compliments to Graf's pianos, in one instance referring to a particular piano as "a wonderful instrument of Graf's, the best, perhaps, then in Vienna." 25

Another Viennese make on which Chopin performed was Streicher. He wrote about an 1830 concert in Warsaw in which he played a Streicher. On the program was his Concerto in E minor, Op. 21, "which I just reeled off; one can do that on a Streicher piano." 26 "The notes seemed to roll along of themselves on the Streicher piano." 27 These comments seem to refer to the light touch and easily-produced tone of this make. The nature of these comments indicates that Chopin was less than completely satisfied with this kind of instrument. In describing his own opinion of how he played at the Warsaw concert, Chopin commented that "the Streicher piano was very much liked." 28 But Chopin seems to have preferred an instrument which required more energy of the pianist

24. Karasowski, pp. 120-121. 25. Karasowski, p. 106.
to produce equivalent tone.

This idea is supported by Chopin's choice of instruments when he lived in Paris. The two most prominent piano makers there were Erard and Pleyel, who produced pianos which contrasted considerably in sound and touch. Derek Melville says Chopin preferred the Pleyel pianos for their "unique singing quality which he could control absolutely with the single escapement action." According to Liszt, Chopin liked Pleyel's pianos for their "slightly-veiled but silvery sonority and easy touch." Chopin told Liszt in an often-cited remark:

"When I am indisposed, I play on one of Erard's pianos and there I easily find a ready-made tone. But when I feel in the right mood and strong enough to find my own tone for myself, I must have one of Pleyel's pianos."

We find this is the first time Chopin favored an English action, although there does not seem to be any record of Chopin comparing the Viennese action and the English. Nevertheless, Pleyel's pianos were Chopin's first choice after 1832 until near the end of his life.

Chopin was indebted to Camille Pleyel, who arranged for his first concerts in Paris in the Salle Pleyel. It is doubtful, however, that Chopin continued to favor Pleyel's instruments only because of this indebtedness. Chopin could have acted similarly when he offered his music for publication. Instead Chopin made his choice by what suited his purposes best: in the case of instruments, he chose his preferred make; in the case of publishers he selected the one with the most money to offer. Pleyel himself, also a prominent music publisher, was

29. Melville, p. 28.  
30. Liszt, p. 98.  
31. Melville, p. 28.
often snubbed when Chopin chose music publishers.

It was on Chopin's second tour of England in 1848, that Chopin demonstrated a preference to a make other than Pleyel. According to A.J. Hipkins, an outstanding English musician, student of performance practices, and a tuner for the Broadwood Piano Company, Chopin favored Broadwood's pianos to the Pleyel he had brought with him. Hipkins wrote that Chopin used his Pleyel only once, that being immediately after his arrival. 32

Chopin especially favored the boudoir cottage pianos (a small upright model) of Broadwood from that time, according to Hipkins, which had only two instead of three strings per note, with a very "sweet" sound. 33 Such an instrument was too small for a concert hall, obviously, but Chopin apparently enjoyed playing on such small pianos for his own pleasure. He sent for a small Pleyel upright while he lived at Majorca, with which he was finally able to replace a rented, poorly-made Spanish piano. Edith J. Hipkins even claims that Chopin would often go to a small, old square grand instead of a larger, new grand in the same room. These small pianos had a very light touch and in sound resembled a clavichord more than a modern grand, with a clear, soft bass register and a bright, yet delicately sonorous treble. 34

Chopin's preference in pianos was bound closely to his playing style. The main significance of a study of his taste in pianos, then,
is the insight revealed concerning his playing. Such insights can certainly be helpful in modern interpretation, but the fact remains that Chopin approved of the performances of his music by certain other outstanding pianists. One of his favorites was Clara Wieck Schumann, whose choice of instruments will be included in the study of Robert Schumann's taste in pianos.

If, on the other hand, one considers Chopin himself to be the definitive interpreter of his own music, and seeks out the sounds he heard while composing, one must have first-hand experience with a contemporary model of Chopin's favorite instruments, either Pleyel, Graf, Broadwood, or Buechholtz. Similar instruments to these could be satisfactory, also, as long as the chosen instrument is in good condition. The most difficult adjustment to make is how to play satisfactorily such powerful compositions as the first movement of the Sonata in B-flat minor, Op. 35. The secret is to develop the soft end of the sound spectrum to its extreme, adjusting the median dynamic range to a much softer level. The overall volume becomes less, and yet the effect of the fortissimo is accomplished where it is required.

Mendelssohn

Felix Mendelssohn-Bartholdy (1809-1847) was considered by many of his contemporaries to be the most important composer of his time. Robert Schumann spoke of him as having "long been recognized as the
most finished artist—nature of our day, a master of all styles."\textsuperscript{35} Ignaz Moscheles and Clara Wieck Schumann also thought of Mendelssohn's music in the highest terms, considering him their favorite pianist. His skills and taste in improvising and in interpreting the classics were especially favored by Moscheles and the Schumanns.

Coming from an important and highly successful family, Felix Mendelssohn proved to be one of the most successful musicians of his time. He distinguished himself as a composer and pianist early in life, and was later much sought as a conductor. His artistic offerings were enhanced by his highly agreeable personality and ability to befriend and deal with people. Mendelssohn's career success and family background meant that he was able to purchase any piano he wanted for his personal use. The respect he elicited among his fellow artists, combined with his freedom from financial confinements makes Mendelssohn an important figure in the study of pianos favored by concert artists before 1850.

It is known that the Mendelssohn family possessed a Broadwood grand made in 1820.\textsuperscript{36} It is likely that this instrument was purchased new, in which case Mendelssohn used this piano himself. The instrument, now housed in the Stadt-und Universitatbibliothek in Frankfurt am Main, has a six-octave range (FF to \(f^4\)), triple stringing, and two metal braces. The powerful tone and deep, heavy action of this


\textsuperscript{36} Hirt, pp. 60-61.
Broadwood piano introduced the young pianist early to the English type of piano, whereas other pianists in Germany developed their techniques entirely on Viennese pianos, which were by far the most common in that country.

In 1821, Mendelssohn spent time practicing on a good Streicher piano owned by Goethe. This was while the young man was staying with Goethe as his special guest. (This instrument is now housed in the Goethehaus in Weimar.) His letters to his parents state that he played the piano much more at Weimar than when he was home, indicating at least some satisfaction with Goethe's piano. Mendelssohn encountered Clementi's pianos on a London trip in 1829, playing on them frequently at his concerts. He especially liked their light touch, but used words such as "heavenly" and "excellent" for their new pianos. At one concert on his English tour, Mendelssohn became "carried away" on an old piano (perhaps a square piano) in a concert hall while he was warming up for a recital on the same day.

Thus, it is certain that before 1830 Mendelssohn was an adaptable pianist, content to play on good Viennese or English pianos, or even on older instruments. Sometime after 1830, Mendelssohn began to have a definite preference for Erard pianos. The tonal improvement noted by Moscheles in Erard's pianos at about this time was probably an important factor in the forming of Mendelssohn's opinion (see p. 68-69).

38. Mendelssohn, p. 38.
Mendelssohn had become acquainted with Pierre Érard while on his London trip in 1829, and was presented a piano by the firm in 1832. Mendelssohn thought very highly of his Érard, for in 1835 Moscheles noted that Mendelssohn "has but one piano--his own Érard." He used this instrument almost exclusively for his own performances in Berlin, but eventually it fell into disrepair. Thus, in 1838, the pianist found it completely unusable because of the condition of its action. He thought so much of the instrument that he eagerly sought to repair it, inquiring of Moscheles in London whether or not he should send the piano to London to be repaired at the factory. Mendelssohn stated that it had kept its "tone and beauty," and that he thought "no sacrifice too great to preserve an instrument with such a splendid tone." He wrote to Moscheles in quasi-serious manner, "There be none of Beauty's daughters with a magic like Érard's." In describing his demands in a piano to Moscheles, he said, "I want an instrument with a perfectly even and precise touch, responding freely and fully to my wants and wishes." When Érard responded to Mendelssohn's queries by sending him a new grand, the composer-pianist received the piano with great enthusiasm:

"...it is only now, since I enjoy the happiness of playing on an instrument so full and rich in tone, that I realize...

41. Mendelssohn, Letters to Moscheles, p. 43.
42. Mendelssohn, Letters to Moscheles, p. 166.
how hard I should have found it to accustom myself to any other."43

The last piano owned by Mendelssohn was given to him just after his sister Fanny's death in 1846. It was a Broadwood grand, sent to him by the company itself so that it was waiting at his home when he returned from taking care of his deceased sister's possessions. One of his biographers, Stephen Stratton, relates that he derived "great pleasure" in playing on this piano,44 an 1846 model which was probably comparable to his Érard in sound and action characteristics, but somewhat weaker in tone.

From this study, it can be concluded that Mendelssohn at first preferred the lighter action of Clementi's pianos, as well as those of the Viennese. But the repetition action of the Érard grands, combined with their powerful, evenly-voiced tone, attracted him to that type of piano. Since Mendelssohn played a great number of his recitals on his own Érard pianos, it is safe to assume that his concept of the piano after about 1829 was represented by that type of piano. This would include pianos with some metal bracing and reinforcing and wrapped bass strings, which meant higher string tension than many early pianos. The tone would be rich and relatively strong, but with a balance between the treble and bass registers and a clarity in the bass typical of the straight-strung piano. The action would be somewhat heavier than the Viennese action: Érard's refined repetition


action which was complimented by Moscheles in the 1830's. Because Mendelssohn was so consistent in his preference for Erard from 1832 to 1846, and because that firm was extremely conservative in the second half of the nineteenth century, any Erard grand piano of good quality made between 1832 and 1900 would approximate Mendelssohn's concept of piano sound. Other pianos of the powerful English type, such as those of Broadwood or Stodart, would also be possibilities. The best Viennese makes, such as Graf or Streicher, would also be close to Mendelssohn's concept, since some of his favorite performers used those instruments. The most controversial early piano for Mendelssohn's music is Pleyel, since Mendelssohn refused to play on these instruments. His main reason for not doing so was undoubtedly due to his unusually strong dislike for Kalkbrenner, who was promoting Pleyel's instruments among the artistic world. However, there may well have been a dislike for the pianos themselves, since their tone quality contrasted with that of Erard's instruments (see p. 50).

Schumann

The piano ideal of Robert Schumann provides an interesting study for two reasons. First of all, Schumann had hopes of being a concert artist while he was a youth, but had to devote his energies in other directions when he injured his hand at age 21. He thus developed his concept of piano sound both as a performer and as a listener, but had to rely on other pianists to give proper performances of his works. Secondly, after his marriage, Schumann relied heavily on Clara Wieck's criticisms of his music and respected her interpretations of
his works unreservedly. In addition, Clara became the leading promoter and most authoritative interpreter of Schumann's works after the mid-1830's. Schumann himself wrote that "the composer is not usually the finest and most interesting performer of his own works." This increases the significance of Schumann's endorsement of Clara's performances of his works. Furthermore, Clara Wieck was herself a composer of importance, and some of her works are enjoying a revival today (i.e., Variations on a Theme of Robert Schumann, Op. 20). A proper study of Robert Schumann's piano ideal must therefore include a study of Clara Wieck's ideal as well.

Robert Schumann provided very fine sources for research into his concept of the piano in his many writings. His articles and reviews for his own periodical, Leipzig's Neue Zeitschrift Fuer Musik, are supplemented by his many letters to Clara and to others. In a kind of handbook he inserted into one of the issues of his periodical, he defined the term "Klavier," mentioning only Viennese pianos. He listed makers who represented the older school of piano making, including a certain Lauterer, and Johann Andreas Stein. For the newer school he cited Graf, Streicher, Wache, Melzer and F. Bayer. Schumann's failure to mention any English or French makers may have been due to the relative scarcity of their pianos in central Germany, where most of Schumann's subscribers lived.


Schumann wrote his best piano music while living in Leipzig. The pianos there were mostly of the Viennese type at that time. The publishing firm of Breitkopf and Haertel had founded a piano company in 1807 (see pp. 58-59). In 1802, Clementi arranged to sell his pianos through Haertel, possibly under Haertel's name. In spite of this agreement, it is certain that Haertel's reputation as a piano maker was based on the products of Viennese makers. Robert Schumann presented Clara with a new Haertel grand piano to celebrate their wedding and Clara's birthday. About this piano she said, "I have become filled with a passion for playing, the piano sounds so well."^47

Clara Wieck lived in Leipzig during her younger years. Her father and teacher, Friedrich Wieck, owned a piano manufacturing company in Leipzig, and Clara used her father's pianos often in concerts as did other prominent pianists. Clara especially liked the pianos of Mathaus Andreas Stein, and her father bought her one in 1827. This preference for Stein's pianos lasted at least until 1840, when Clara chanced upon a Stein piano in Hamburg on a concert tour:

"Just think, to-day, by chance, I have found a wonderful instrument of Andreas Stein's of Vienna, quite new, which is at my service for the whole of my stay in Hamburg. I was inconsolable to think that I had plagued myself with these wretched instruments when I might have had the best."^50

49. I. Moscheles, p. 184.
As a prodigy, Clara also thought highly of Streicher's pianos, and late in life, in 1870, she still maintained her relationship with the Streichers.

Clara Wieck developed her pianistic skills very early, and as a teenager was generally considered one of the foremost pianists in Europe. Her technique was at first bound intimately with the Viennese piano, with its light, shallow action. Thus, when she and her father visited Paris in 1832, the two were completely unprepared for French pianos:

"The kind of piano in use (in Paris) even in the best houses, was far below her modest expectations. So much was this the case that Wieck at first seriously debated whether he would not be compelled to teach Clara some other method of playing, because with his method no light and shade and no expression could be brought out of these 'tough bones,' as he called them."51

The Wiecks were obviously stunned by the difference in touch and tone of these pianos. Érard placed a piano at Clara's disposal the same year Mendelssohn received his "magnificent" Érard. The visitors even heard Chopin play his Variations, Opus 2, "so that they were hardly recognizable on this tough and stubborn piano of Kalkbrenner's, playing on which is nothing but a struggle."52 In 1839, Clara still found French pianos wearisome to play, for she wrote to Robert about her stiff Érard and the "more manageable" pianos of Pleyel.53 Clara changed her opinion of Érard's pianos, for later she used them often in concerts. In 1862 she wrote excitedly to Johannes Brahms that she

had "again" been presented with a piano by Érard, and said that while in Paris she had selected a "beautiful instrument." 54

In 1840, the great Viennese maker Conrad Graf presented the Schumanns with a piano as a wedding present. This piano, an eight-foot grand with a range of six and one-half octaves (CC to g4), was given to Brahms upon Robert's death, and was presented by him to the Society of Music Friends in Vienna in 1873. Now in the possession of Vienna's Kunsthistorisches Museum, this piano is hardly mentioned in biographical literature on the Schumanns, and not at all in Berthold Litzmann's published collections of excerpts from their letters and diaries. 55 Since Robert gave Clara a Haertel piano at the time of their marriage, it is safe to assume that he used the Graf in his composition room. In 1868, Brahms sent Clara a letter from Hamburg asking her about the disposition of Robert's grand piano, which further corroborates the idea that Robert must have used the Graf for himself. Joerg Demus holds to this viewpoint, claiming that Schumann composed the Faschingsschwank aus Wien, Op. 26, with the aid of the Graf, and that Brahms played on it when he first came to Schumann. 57


55. This statement is meant to include Clara Schumann: An Artist's Life and Letters of Clara Schumann and Johannes Brahms in the editions at the author's disposal (listed in the bibliography).


57. Smith, p. 11. Demus has made recordings on both Schumann's Graf (HMS 30828), which is only partially restored, and on his own
One problem with focussing on Graf's pianos as the embodiment of Schumann's piano ideal is that Schumann himself makes little or no reference to his Graf. It would seem that if this piano were superior to all others in Schumann's mind, he would have compared other instruments to it. In fact, Schumann never purchased a Graf piano, even when he bought a piano in an extravagant mood. When he gave Clara a new Klems piano for her birthday in 1853, Clara wrote in her diary that she thought Robert had spent much more than they could afford, although she liked the piano too much to be dismayed.\(^{58}\)

Another episode is recorded in Clara's letters in 1844 which is both tantalizing and frustrating in investigating Schumann's piano ideal. Clara and Robert were on a concert tour to St. Petersburg, with no idea what kind of instruments would be available there. Clara wrote to her father:

"I have found a wonderfully good pianoforte of Wirth's, in Rigs (near St. Petersburg)--the Wirth piano in Dresden cannot give you any idea of it; these instruments are the best English make that I have yet seen; from top to bottom they have the most spendid tone, soft and yet so forcible! My husband, whom hardly any piano satisfies, was delighted with the tone of this one as soon as he touched it."\(^{59}\)

This passage tells something of what Robert thought of the pianos of his time. It is the opinion of some that composers like Schumann placed demands in their music which their pianos could not fill satisfactorily.\(^{60}\) And yet both of the Schumanns were enthusiastic


\(^{60}\) Ehrlich, p. 26.
about the Wirth piano. There is practically no other record of Robert expressing enthusiasm about a piano in his writings, and it would be very tempting to search for a restored Wirth piano of this time and to associate that instrument with Schumann's music. However, Clara Schumann nearly eliminates this option by saying, "The Wirth piano in Dresden cannot give you any idea of it." The modern problem of scarcity of examples of early pianos thus becomes a glaring one in this instance: several Wirth pianos would have to be found, at least more than one, so that there could be some chance of getting a good one. This may be impossible, for Wirth did not manufacture large numbers of pianos, as did Érard, Pleyel, Broadwood, Clementi and Graf.

Consequently, one can only determine the general characteristics of Wirth's instruments and then search for another make of piano which could be equivalent. Samuel Wirth was a French craftsman in Lyons who, according to Clara's notes, made pianos of the English type. Rosamond Harding states that his action designs were like Pape's in that they "may almost be said to possess aesthetic charm." By gleaning information from Harding's extensive list of patents taken out in Europe before 1851, it can be deduced that Wirth produced a down-striking piano with repetition action and improved design in 1840. This date is early enough that it could have been this kind of piano which the Schumanns found near St. Petersburg. But since Clara described the piano as an "English make," although the maker was a Frenchman, it is more likely that the design was like the traditional

English-French type with an English single action (or perhaps a Wirth repetition action) and a full, powerful tone produced with a metal frame and heavy construction, stringing, and hammers. Clara's remarks about the Wirth near St. Petersburg suggest that it had well-built hammers which could produce very soft tone as easily as brilliant, powerful sound. All of these are characteristics of Érard pianos as well.

Clara's comment that the Wirth was "the best English make I have yet seen," was made before she began to prefer Érard's pianos. Her objections to the latter in 1839 were not due to tone quality, but to "stiffness" of the action. By 1862, Clara must have become accustomed to Érard's action, because in that year, she accepted a "beautiful instrument" from the Érard company about which she wrote excitedly to Brahms. 62 It is probable that this Érard piano represented the same qualities admired by the Schumanns in the St. Petersburg Wirth piano.

Robert Schumann's piano ideal can be glimpsed in his writings, which mostly consist of reviews and commentaries for the Neue Zeit­ schrift fuer Musik. Insights of a deeper nature are found in Schumann's reviews, which often reveal his own feelings as a composer-pianist. In a review of the works of Adolf von Henselt (1814-1889), Schumann recalled the emphasis he himself put upon attaining "the finest tone" when he practiced on the piano. He wrote about "euphony, the magic of tone," which impressed him in Henselt's works. 63

In a review of Schubert's piano music, Schumann linked his own concept of the piano with that of the Viennese composer when he proposed that Schubert's sonatas (except Opus 140) expressed "the purest pianoforte character." The "Grand Duo" Sonata in C for one piano, four hands, Op. 140, was excluded because of its orchestral nature. Schumann commented that references to orchestral colors, such as woodwinds, strings, drums, tuttis, and other qualities, were futile when expected of the piano, since the piano is not capable of such expectations. Schumann expressed the same opinion when reviewing Liszt's transcription of the Scherzo and Finale of Beethoven's Sixth Symphony, which he heard performed by Liszt in Leipzig. Schumann remarked that he was accustomed to the sound of the orchestra in this work, and noted that "the weakness of the pianoforte is striking, and the more so the more an attempt is made to represent masses in their strength."

These observations, made while Schumann was involved in writing his greatest piano music, indicate that Schumann conceived those works with a Schubertian piano in mind; that is, a Viennese piano of roughly 1830. The orchestral sounds in the Symphonic Etudes, Op. 11, or the Fantasy in C, Op. 17, were limited in the scope of their imitation of the orchestra: "orchestral" passages consisted of textures in which several levels of activity occurred simultaneously, such as in the second variation and the finale of Opus 11. The massive,

virtuoso sonorities in the introduction and finale of the Carnival, Op. 13, and the second movement of the Fantasy were not written to sound comparable to an orchestra in volume and power, if Schumann's own comments are to be taken seriously. Instead, the piano's own resources were exploited and not meant to be surpassed, so that the limitations in sonority of the pianos of his time were not a problem. Massive sonorities sounded massively in the context of the pianos of the 1803's. It must be added that much of Schumann's virtuoso writing, especially the Fantasy, was influenced by Liszt, and thus Liszt's piano ideal (roughly, before 1860, Erard) should be considered in understanding some of Schumann's piano music.

In conclusion, the piano ideal of Robert Schumann was at first embodied by the Viennese pianos of the 1830's, which were common in the city of Leipzig. After 1840, he used a Graf piano while he composed, but it may well be that he began to grow partial to pianos of the English type, as indicated in his delight in the Wirth piano. It is probably that Erard's instruments after 1840 pleased Schumann, and even the modern-technology Grotrian-Steinweg pianos, which Clara used after 1870, would have met his favor.

Nevertheless, Schumann wrote his best solo piano music before the time when he expressed any interest in pianos which were other than the Viennese type. The relatively dry treble notes, the strong but not broad or expansive bass register of these pianos were what Schumann had in mind as he wrote his piano music before the mid-1840's.
CONCLUSION

After studying the characteristics of the pianos of the early nineteenth century, and after investigating the piano ideals of the major composers for the piano between 1800 and 1850, the implications for modern times must be discussed. Even at the beginning of the twentieth century, there were those who called for the use of appropriate early pianos for the performance of early piano music. Henry Krehbiel, writing in 1911, made the following surprisingly "modern" statement in his book, The Pianoforte and Its Music:

"We are rapidly coming to an appreciation of the fact that all music sounds best when played under conditions like those which existed when it was composed. The present generation may yet hear a Mozart or Beethoven sonata for pianoforte and violin from instruments in angelic wedlock instead of destructive warfare." 1

The rise in the use of the harpsichord for performance of Baroque and early Classical keyboard music began taking place in the 1930's, when Wanda Landowska and Ralph Kirkpatrick popularized the use of that instrument with their artistic performances. These performances led to an increasing awareness that the music of J.S. Bach was intended for an instrument with a much different sound than the modern piano. This awareness has made pianists more conscientious of the harpsichord's sound in the style of their interpretations of Bach's works.

It was only a matter of time before there would be those who would begin using early pianos for performance of works written for them.

At first, pianos were used which were historically important, such as the restored 1818 Broadwood grand owned by Beethoven. More recently, all kinds of early pianos without any extraordinary historical backgrounds have been restored and used in performances and recordings. There are a distinguished handful of prominent "fortepianists" at present, most of whom are at least as distinguished on the modern piano: Paul Badura-Skoda, Joerg Demus, Malcolm Bilson and Raymond Dudley. Other artists on the early piano have made their names, for the most part, on the early piano or on the harpsichord; among these are Virginia Pleasants, Malcolm Bins, and Robert Winter.

The chief question raised by the present study is this: how important is it to use the most authentic piano in performances on early pianos? The answer is most practical: not very important. Ideally, it is most desirable to use the proper instrument from the right time period; however, early pianos have enough characteristics in common that the use of any make from a generally appropriate time period still provides some degree of authenticity. Ronald Ratcliffe takes this point of view, pointing out that pianists and composers of the eighteenth and nineteenth centuries played on all sorts of pianos, and modern pianists should not be hesitant to use any early piano for early piano music.2 Composers of this time were known to be particular

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about the way their works were played, but any record of a composer
objecting to his works being played on a particular piano has escaped
this study.

The one qualification to Ratcliffe's opinion which should be
made is that there is a difference between the early pianos cherished
by Mozart and Haydn and the stronger, more powerful pianos made in
the four or five decades before 1850. The reason for this exception
is that the more virtuosic works of the Romantic composers place
strains on the tonal capacities of the earliest pianos. Also, the
actions on certain early pianos, such as Zumpe's square pianos, are
too crude to be used for an artistic performance. Since the scarcity
of early pianos limits the choice of instruments to be used, such
factors as the size of the piano in relation to the size and sound
properties of the room in which it is played should naturally be
considered. A square piano or an early cottage upright piano is
appropriate for small rooms, but the weakness of their tone would be
overly emphasized if they were used in even a moderately large hall.
Conversely, large, concert-sized pianos were designed for large
rooms (although a "large" hall in the mid-nineteenth century often
had a seating capacity of only about 300) and their sound properties
are distorted when they are played in a small, confining room with
dull acoustical properties.

Another matter of particular importance is that the instruments
should be in excellent condition, just as would be expected of a
modern piano. If restored, the piano should be rebuilt with authentic
materials and according to original specifications. An early piano
in poor condition cannot be representative of an era of some of the finest craftsmanship in the history of keyboard instruments. Copies of original instruments are being built by some modern craftsmen, and a recently-made copy is likely to be far more reliable for performance than most old instruments. But modern craftsmen do not have at their disposal the same experience that makers like J.A. Stein possessed. Therefore, copies of the best early pianos cannot be relied upon to be as fine an instrument as the originals. In spite of this, many institutions are finding the possession of a copy of an early piano to be an efficient way to offer students experience with such an instrument.

For those who have limited or no access to early pianos, there are numerous recordings available in which many different kinds of early pianos are used. Robert Winter has reviewed nearly all such recordings released before 1977 in an article for 19th Century Music. Winter's article, used as a listener's guide, is important because of his first-hand familiarity with the sound of different early pianos. According to this article, certain recordings are not representative of the sound of early pianos because of improper microphone placement, incomplete restoration of the instrument, or some other reason.


4. One final word must be said about listening to recordings: due to the inherent brightness in many early pianos, particularly Viennese makes, too high of a volume setting on the listener's equipment will result in poor reproduction of the original sound. Some record jackets carry a warning to the listener to keep the sound turned down enough so that the softest playing will be only barely audible.
Among those who are interested in the early piano, some would like to see it used regularly for the performance of early piano music, just as the harpsichord is used. One such person is Joerg Demus, who puts forth his point almost poetically:

"What was once modern, today becomes dusty. So the old pianos tell us the adage, still as before: every yesterday was once a today. And for us pianists, we who so tenderly love our great masters, today's yesterday should once again be a today."  

Franz Josef Hirt, speaking of early keyboard instruments, proposes the following opinion:

"Nowhere is the theory of 'progress' more out of place than in the art of musical instrument building, for, in conformity with the times, each epoch has produced the perfect instrument."  

There are also those who see historical value in early pianos, but have no desire to see them used in place of a modern piano as a performing instrument. Paul and Eva Badura-Skoda reported that Curt Sachs once remarked that the more he dealt with old instruments, the less he wanted to hear them. Problems related to the condition of the instruments may have been part of the cause of Sach's ironic reaction. The Badura-Skodas themselves, in 1962, expressed their own opinion:

"The practical musician cannot propose to do away with the acoustical and technical alterations of the last 150 years, even though these alterations often meant sacrificing some particular effect of tonal beauty, for he will find his approach condemns him to isolation. The revival of old ideas of sound, and the use of old instruments, is extraordinarily interesting for the historian; but for the musician, because of the general alterations in our aesthetic attitude, it is for the most part impracticable." 8

The Badura-Skodas appear to have deviated from the above opinion in recent years, for Paul Badura-Skoda has made many fine recordings on early pianos since the above was written. But according to Cyril Ehrlich, Paul Badura-Skoda still feels confined by the early pianos he has used for recordings. Ehrlich claims that fine artists can overcome any difficulties inherent in the differences between modern and early instruments. He criticizes the early piano "cult" for having made "too ready an acceptance of the old instruments' alleged superiority, and a disregard for their manifest inadequacies." 9 Ehrlich argues that most of the "orchestral" piano literature, including Liszt's Sonata in B minor, Brahms' Piano Concerto in D minor, and Schumann's C major Fantasy, "demanded a power and tonal range beyond the resources of contemporary instruments." 10

All agree, however, upon the value of knowledge and experience with early pianos. Ehrlich recognizes that the revival of old instruments engenders better style awareness and an idea of the composers' requirements. 11 Demus claims that modern pianists could learn to

enlarge their sound and color range at the soft extreme, since one of the peculiarities of early pianos is their capability for extreme softness. He cites the example of Feruccio Busoni, the great turn-of-the-century pianist-composer, who was noted by his contemporaries for his extra-soft playing.\(^{12}\) Ratcliffe advocates the use of early pianos in the collegium musicum groups of musical institutions and colleges.\(^{13}\)

There is a rather frustrating question which comes to mind without fail when the subject of early pianos is first broached. It asks, would the great composers have been favorably impressed with the modern piano? This question can be answered in the cases of Liszt, Brahms, Tchaichovsky, and other piano composers who knew the modern piano. But for those who did not, the answer to this question is only speculation. Joerg Demus addresses the matter with logic: perhaps the great composers would have liked the modern piano, but the fact remains that they wrote for the instruments they knew. If they had had a modern piano, they probably would have written differently.\(^{14}\)

This document has examined the piano from 1800 to 1850 and has discussed the piano ideals of the major composers for the piano during that period. The history of the piano has been given briefly from its origins with Cristofori to modern times. This was followed by a somewhat detailed investigation into piano technology before 1850. Viennese pianos were then contrasted with those of the English and French makers, and then several of the most important makers from 1800 to 1850 have been described, along with the characteristics of

\(^{12}\) Smith, p. 13.  
\(^{13}\) Ratcliffe, "Why the EPT?" p. 21.  
\(^{14}\) Demus, p. 217.
their instruments. The piano ideals of the most important composers for the piano during the first half of the nineteenth century were then examined, including an investigation of their favorite pianos and the way their music sounds on such instruments. A natural consequence of the present study would be the making of recordings of selected literature of these composers on the most appropriate instruments. Only in this way can a clear representation of the authentic sound of these works be made, a study which is long overdue in an age which is so greatly interested in the past.


Hirt, Franz Josef. *Stringed Keyboard Instruments, 1440-1880*. Translated by M. Boehme-Brown. Boston: Boston Book and Art Shop, 1968. (This is a translated and slightly abridged publication of the above work.)


