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A LATE FLORENTINE HARPSICHORD UNCOVERED:

THOUGHTS ON A NEWLY DISCOVERED INSTRUMENT FROM THE "SCHOOL OF BARTOLOMEO CRISTOFORI"

by Peter Thresh

A year or two ago a previously unreported Italian harpsichord came to light. In this article I should like to take a look inside this late example of the Florentine harpsichord maker's craft and to offer a few thoughts about the so-called "School of Cristofori" from which it springs. Constructed in Florence by the previously unknown builder, Gio. Piero Migliai in 1763, this outwardly rather plain looking instrument has nonetheless aroused considerable interest amongst instrument scholars and performers. Fortunately, the musical (and most of the decorative) aspects of this harpsichord have come down to us in original, unaltered condition (see Illustration 1); it is currently undergoing a painstaking restoration to perfect playing condition in the hands of the distinguished restorer, Miles Hellon. Once the restoration is complete, it is to be hoped that this exciting new discovery will find a suitable home in a museum collection or conservatoire where the musical and constructional features of this late Florentine can both be studied and enjoyed. But, why this excitement?

Illustration 1: the inscription by Miglai

Firstly this instrument is surprisingly rare: only a handful of these late Florentine harpsichords survive. Secondly, though its maker's name may be new to us, his surname is nonetheless familiar to instrument scholars. Thirdly, and probably of most interest to harpsichord players, recent research has demonstrated that it is precisely this sort of late Florentine harpsichord with which Domenico Scarlatti would have been most familiar in the four decades or so he spent living and working on the Iberian peninsula. Indeed it now seems likely that he took an active part in promoting such instruments at the royal courts of Spain and Portugal between 1719 and his death in 1757. But whilst this recent research (notably by John Koster) has succeeded in establishing the strongest possible link between these late Florentine instruments and Scarlatti and his circle, maybe it is our ears that should have been telling us this all along?

It was the harpsichordist, Colin Tilney who, long before the research was published, alerted us to the musical "rightness" of such late Florentine instruments for Scarlatti's music. In the sleeve notes to a groundbreaking recording of Scarlatti sonatas which he made some two decades ago he writes: 'Scarlatti's music is perfectly served by these sounds, from the gunshot bass to the bell-like top, the lightning modulations from major to minor caught as if by a high speed camera and the mostly two-part texture amply supported over the whole compass.' But what precisely do we mean by "late Florentine" and "School of Cristofori"?

Put briefly, we are talking about a style of harpsichord construction which differed in major respects from that practised both in other Italian cities and also from the techniques employed in Florence herself in earlier years. So how does this late instrument fit into that long and noble Italian tradition? As good a place as any to start finding out might be to look at the nameboard.

Illustration 2: the Migliai's nameboard

The nameboard (see Illustration 1-2) on this harpsichord (which, incidentally, unquestionably belongs to this instrument) bears an inscription: "GIO.PIERO.MIGLIAI.CIMBALAIO.FECIT. IN.FIRENZE.ANNO.1763" and underneath that Giovanni Bimbi restauro in Firenze anno 1790. (Trans. Gio(vanni) Piero Migliai harpsichord maker made in Florence, 1763/ Restored [by] Giovanni Bimbi in Florence 1790. The surname Migliai is a promising sign since Antonio Migliai was (and is) acknowledged to have been one of the most distinguished Florentine makers of the seventeenth century. About half a dozen surviving harpsichords can be attributed confidently to Antonio Miglai (who matriculated in the Fabbricanti, the sub-guild to which Florentine harpsichord makers were loosely assigned, between 1684 and 1687). Significantly, these surviving Antonio Migliai instruments show a marked resemblance to the earlier plucked instruments of the great Bartolomeo Cristofori, the man credited both with instituting "the late Florentine School" of harpsichord making and more famously, of course, inventing the piano. Indeed it is fair to say that it is likely that Antonio Migliai influenced the construction techniques of Cristofori - who was not a native of Florence - rather than the other way round.

Cristofori himself is on record as saying that he learned from the makers he encountered when, presumably, he was lured to Florence by the Medici in 1688. As the contemporary writer, Scipione Maffei, reports it: Cristofori "learned very much from the other (makers) when he came here." Whilst at present there is no documentary evidence to connect Antonio Migliai with the younger Gian Piero Migliai (and also with a certain Michelangolo [sic] Migliai, for whom there is some archival evidence), further research in the labyrinthine Florentine archives might well establish such a familial link: Italian harpsichord builders, like those in the Low Countries and France, tended to run in dynasties and in fact we have a Florentine precedent for such a familial succession in the form of the three generations of Bolcioni who made harpsichords in the city throughout most of the seventeenth century.

Moving from the nameboard to the instrument proper, one of the first things to strike one about the 1763 Migliai instrument is its sheer length; at eight and a half feet, it is nearly as long as a Steinway concert grand, with which, by the way, it shares some groundbreaking constructional features. One is tempted even to suggest that maybe the proportions are one of the aspects of instrument making which, as Maffei notes, Cristofori picked up from the makers in Florence - and just maybe Antonio Migliai in particular - though it's fair to say that the somewhat unrelated instruments of Giuseppe Mondini are even longer still.

The next thing one might notice perhaps is the rather subdued nature of the design. There is no rose in the soundboard and there are few of those delicate decorative mouldings one might expect to find applied to the top and bottom edges of an Italian harpsichord case. The Gio. Piero Miglia's case is solidly constructed (of poplar) with little attempt to imitate the effect of a lightly constructed harpsichord within a protective outer case, the "*non levatore di cassa*", which Frank Hubbard terms "the false inner-outer construction". But to dismiss an instrument because of an absence of decoration would be a mistake. Just because this instrument is superficially a bit plain does not mean that it is somehow inferior either in design or in execution. On the contrary: where it really matters, Gio. Piero Migliai has gone to immense trouble with his workmanship. Without the distracting "noise" of decoration to disguise any failure in precision, his work needed to be immaculate. The quality of his workmanship, achieved using hand tools of course, is second to none and more than worthy of a tradition of Italian harpsichord making which, even in 1763, stretched back nearly two and a half centuries.

Mention was made earlier of the generous proportions of this harpsichord. But there is more to generous proportions than sheer length. The deeply curved bentside and elegant appearance of this 1763 Migliai harpsichord alerts us to the sort of string scaling and proportions so beloved of Italian theorists at the time. This is known as Pythagorean scaling, a concept familiar to us from our admiration of classical and renaissance architecture. In short, Pythagorean scaling involves the doubling of string lengths at the octave: just as one finds that an organ pipe which is 8-foot long sounds an octave lower than a pipe which is 4-foot long, so too one finds that a string needs to be twice as long to sound an octave lower. For practical reasons this is never really achieved on a harpsichord and the process of compromise is known as foreshortening. The 1763 Gio. Piero Migliai harpsichord is the longest of the handful of known late Florentine harpsichords and this stands as an extreme exemplar of an Italian tradition where the Pythagorean scaling extends deep into the bass. The only known late Florentine harpsichord that is longer is one by Giuseppe Mondini (now in the Beurmann Collection) and it is probably no coincidence that he was also a keen theorist and mathematician.

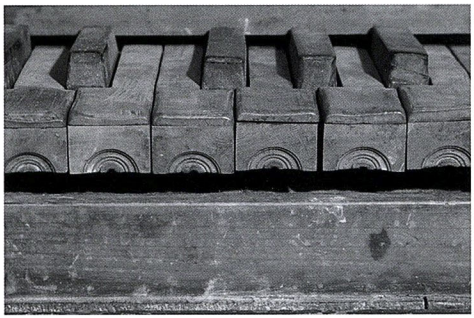

Illustration 3: the keyboard of the 1763 Migliai harpsichord showing the signature arcades.

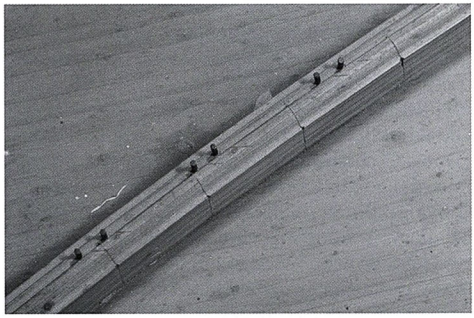

Illustration 4: the bridge of the 1763 Migliai showing the distinctive "Cristofori school" profile and kerf cuts

Illustration 3 shows the keyboard of the newly discovered Migliai harpsichord. Like those of other late Florentine makers, the keyboard is made of chestnut wood with the natural keys faced in box wood, though the 1763 Migliai differs from most of those by Cristofori in that the keys are guided in a standard Italian rack guide rather than by vertical wooden pins between the rear of the keys. The Migliai possesses a typically wide octave span. The reason for this is that this harpsichord, like other Italian instruments, would have been laid out - on the base board - using marking sticks calibrated according to pre-Napoleonic units of measurement. The size of these units changed from city to city and the prevailing Florentine unit of measurement happened to be particularly large. Each of the 59 keys (GG-f^3) on the 1763 Migliai harpsichord is exactly half a Florentine *soldo* wide, that is, half of 27.34 mm. That means that, even by the standards of the modern piano, the resulting octave span is quite wide.

Once again, this is a typically Italian and, more especially, a late Florentine feature. Another is the shape of the decorative semicircular arcades at the front of the natural keys. As the distinguished scholar and builder, Denzil Wraight has kindly demonstrated, the arcades on the G.P. Migliai are remarkably similar to those found on the instruments of Cristofori and, more especially, of his pupil Ferrini, although they are dissimilar enough to prove that they were not made with the same moulding plane or cutter. The same applies to the scroll-like carvings on the insides of the instrument to either side of the keyboard. Once again, the profile of these keyboard scrolls is similar but not identical to the scrolls of Cristofori and Ferrini.

The known surviving instruments made in the tradition of Cristofori all have bridges and nuts with a distinctive profile when seen in cross section. The 1763 Migliai harpsichord is no exception: it too has bridges and nuts with this double curved or "ovulo" shaped profile. The moulding of this shape has been executed with text book precision. Interestingly enough, when these late Florentine harpsichords came to form the basis of Portuguese instruments (particularly after the Great Lisbon Earthquake of 1755) this was not a feature which the Iberian builders normally chose to emulate.

Gio. Piero Migliai's execution of kerf cuts is also exemplary. These vertical cuts in the wood are employed, following Cristofori's example, in an almost obsessive manner whenever wood needed to be bent. Kerfs are to be found on the bridge, nut, hitchpin rail, inner liner and bentside of this and other surviving late Florentine instruments and also, as it happens, along with the ovulo-shaped bridge and nut profiles, on many of the instruments which underwent an "updating" or restoration at the hands of Cristofori and his circle.

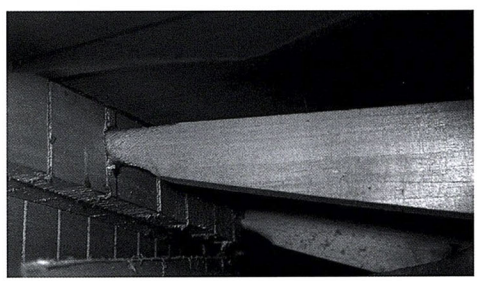

Illustration 5: typical Cristofori school "flying buttresses" double-skinned and kerfed bentside construction

A particularly interesting feature on many of the known instruments made in 18th-century Florence is the use of a sort of "flying buttress". These wooden struts are morticed into the kerfed bentside liner and nailed into the base of the instrument. They are effective in transmitting the stress caused by the string tensions from the bentside to the baseboard. The 1763 Migliai has six such struts.

Cristofori is famously credited with the invention of the piano action. What is less well known is that he also pioneered a construction technique, the principle of which is still in use in pianos today. All the surviving later instruments of Cristofori display a double skinned bentside construction of kerfed wood which isolates the stresses on the case from the soundboard; the Gio. Piero Migiai instrument follows this pattern, though the maker chooses to make his kerfs on the convex rather than the concave side. This isolation of the soundboard was something that seems to have exercised Cristofori greatly. Indeed, Maffei quotes him as saying that: "As long as these (case sides) push on the soundboard" the instrument does not sound well and that this is one of the reasons the old ones are good: because there is hardly any [pressure on the] soundboard.' By the way, 700 miles or so to the north, Dulcken seems to have followed a similar path though maybe he did so for practical rather than acoustical reasons.

Another feature, or rather absence of a feature, on this Gio. Piero Migliai harpsichord which betrays the influence of Cristofori, is the use of three "mouseholes" instead of a soundboard rose. Although by now many Italian makers had given up the practice of inserting a decorative rose in the soundboard of their instruments, it was Cristofori whom Maffei credits with proposing this alternative in the form of three or four thumb sized holes drilled into the instrument's belly rail just above the rack at the back of the keyboard. Maffei quotes Cristofori,who says that without such openings: 'the sound remains dull and short-lived and not resonant.'

Whilst this is not, perhaps, the time nor the place to go into detail, one should mention briefly the presence of a few other "School of Cristofori" features on this newly discovered harpsichord. These include a typical use of gap spacers, whose presence necessitates the adoption of top and bottom registers (of a characteristic design) rather than the more standard Italian box guides. Other features are the tail set at something close to 90 degrees to the spine, and the raised hitchpin rail in the bass which has been rebated in such a way as to minimise contact with the soundboard and to isolate the load bearing structure of the case from the soundboard. Downbearing and side bearing on the double-pinned bass section of the bridge are also minimised. GP Migliai, incidentally, does not follow Cristofori in providing a separate bass bridge. He deviates too in adopting the more traditional approach of running the grain of his cypress soundboard parallel to the spine rather than at an angle. The use of typically plain jack rail supports and the lining of the inside of the instrument with 3mm cypress wood above the soundboard - a vestigial reminder of the "false inner-outer" tradition - are though, pure Cristofori features. Lastly, the vermillion original paint which remains on the inside of the fall board and under the canvas painting on the lid of the GP Migliai harpsichord is a colour to be found on some of the outer casework of the extant Cristofori instruments, most spectacularly the two 1726 instruments now housed in Leipzig.

Last but not least, mention should be made of another idea that Cristofori seems to have adopted, but did not necessarily invent. This is his use of a sort of incipient A-frame construction found on modern pianos whereby a board like strut (set at an angle of approximately 30 degrees to the bellyrail) opposes the tensions to which the bentside is subjected. The 1763 Migliai adopts this pattern. Significantly, for our purposes, as the harpsichord builder and scholar David Sutherland has pointed out, the earliest instance of such a bentside brace on an Italian harpsichord is to be found on an instrument by Antonio Migliai. In the absence of archival or biographical evidence, the odds would seem to be closing in on Antonio being related directly to our own Gio. Piero Migiai, the subject of this article. A reasonable bet would be to assume that he is. Thus, as with the Bolcioni dynasty mentioned above, there might have been three generations of Migliai working in Florence: Michelangolo [sic], the famous Antonio di Michelangelo Migliai (as his name is given in a Guild document of 1684) and our own Giovanni Piero Migliai, known only for this newly discovered 1763 harpsichord.

Whilst one is speculating, this might be the time to mention a tantalising discovery. For, hidden for two and a half centuries beneath the soundboard of this instrument, is a pencil sketch about a foot high. (See illustration 6.) This sketch shows the standard symbols of the Jesuit Order flanked, on this occasion, by what appear to be candlesticks. Each of these two candlesticks is surmounted by the three balls, making six balls in all. Presumably, these

Illustration 6: a sketch employing familiar Jesuit symbols discovered under the soundboard of the 1763 Migliai harpsichord. The letters IHS, representations of the Host and the Passionist heart, are flanked by candlesticks surmounted by the six balls of the Medici and the traditional lilies of Florence.

are the six balls of the Medici and atop these are the famous lilies of Florence. Whether this sketch is a private homage, a doodle of a side altar or a float for a religious procession (perhaps of the Guild), or a roadside shrine of the sort then becoming increasingly popular in Tuscany, we will probably never know. In any case, perhaps it does not really matter.

What is significant about it though is the way it brings the broader political and economic landscape of late Medici Florence and Tuscany to bear on this newly discovered harpsichord. Here, hidden away inside this instrument, is a clue to the prevailing order of things in early 18th-century Tuscany. An inability to produce a male heir, a succession of plagues leading to a deserted and unproductive countryside combined with the loss of huge tracts of land to the Church, meant that the once great house of Medici was in terminal decline. Indeed by 1763 it was dead. And the main beneficiary of this power vacuum was the Jesuits who, ironically had been supported by the faltering Medici, if not their advisors. We see this writ here, the Medici and the Jesuits sitting together in a cosy union, cut off entirely from the world outside.

Now it would be tempting to discount the discovery of these Jesuit symbols inside the Gio. Piero Migliai harpsichord as a mere accident were it not for the presence of a similar, albeit simpler, set of symbols inside the uncannily similar instrument in Leipzig Museum attributed to Ferrini (Leipzig 89). And maybe there are more such symbols hidden away on other Italian harpsichords of this period. Most likely the presence of these symbols is explained away by suggesting that the harpsichord makers shared work space with other craftsmen or that like Haydn (with his *"In Nomine Domini"* dedications), they were making a devotional offering on the insides of the instruments. But it is also possible that there is more to them than mere happenstance. It is well known that the Jesuits acted as a major catalyst for cultural endeavour in the visual arts, especially in Rome, at this time. It is possible that their reach (as the Medici advisors bemoaned) extended into other spheres of cultural and manufacturing life. Thus it is plausible to suggest that the new orders of the church might have acted as the spur to the dissemination of these Florentine harpsichords in Italy and Spain, and maybe even to the New World. With this in mind one might suggest that possibly it is not wholly insignificant that the already mentioned Florentine maker Mondini is described in both the Vatican and the Medici archives as *"Sacerdote"* or "Priest", that Antonio Migliai is mentioned in the Florentine Guild archives of the Fabbricanti as *"Da Gesuiti"*, that the Cristofori heir, Del Mela was known as "the priest maker" and that the young Vicenzo Sodi is known to have taken lodgings with a priest. Archival work might confirm some sort of link between harpsichord making and the church either as makers, patrons or sponsors. But for the moment some general conclusions about this newly discovered harpsichord must suffice.

It is probably clear by now that the 1763 Gio. Piero Migliai harpsichord is an instrument of some significance both to musicians and to instrument historians. Whilst the maker himself is otherwise unknown, his surname is the same as that of one of the most prominent and distinguished Florentine makers active in the city during the late seventeenth century. And whilst the Florentine makers of the seventeenth century are not maybe as celebrated as those of Venice and perhaps Naples, it is a paradox that whilst the city itself, dominated for so long by the Medici until their demise in 1737, might have been in terminal economic decline, the development and production of new instruments seems not just to have continued but to have flourished. It was in the hands of Antonio Migliai, and most especially those of Bartolomeo Cristofori and the makers, such as Feroci and Solfanelli whom he influenced, that the late Florentine harpsichord assumed its characteristic form. After Cristofori's death in

1731, the mantle passed to his pupils Giovanni Ferrini and the harpsichord building priest, Del Mela (though none of the latter's harpsichords survive). On Ferrini's death in 1758, as this article demonstrates, the Cristofori tradition reached its apogee in the hands of Gio. Piero Migliai and, to a lesser degree, those of Vincenzo Sodi, who continued to make harpsichords into the last decade of the eighteenth century.

But, like the makers of Portugal (and possibly Castillian Spain, though the dearth of surviving instruments precludes such conclusions), Ferrini, Gio. Piero Migliai and Vincenzo Sodi did not slavishly copy the instruments of Cristofori. Rather, they took from him the features which suited their purposes, opting to leave aside some of his more outlandish experiments. And it was precisely these Florentine-inspired harpsichords with their two 8-foot stops and deceptively simple, but beautifully executed designs that formed the majority of the instruments at the court of Queen Barbara of Spain, for whom Scarlatti worked for so many years. It is almost certain that Scarlatti himself favoured these instruments (in parallel with Cristofori's extremely expensive pianos). It is also just possible that, these unflamboyant late Florentines were the instruments of choice for the increasingly powerful Jesuit orders. Indeed they just might have had some influence in the Florentine workshops themselves.

For the moment, let's put aside the research and celebrate this newly discovered 1763 instrument by Gio. Piero Migliai. It is instruments like these that brought Scarlatti's music to life on the Iberian Peninsula. And it was the "School of Cristofori" harpsichords which gave the noble 300-year tradition of keyboard instrument making in Italy such an unexpected but musically spectacular finale.

End notes:

It is with great gratitude that I should thank the following individuals who have given so generously of their scholarship, advice and enthusiasm during the course of the work on this instrument: Dr Denzil Wraight (for his groundbreaking work on moulding profiles and background information on Cristofori, so freely and eagerly shared), Kerstin Schwarz and Tony Chinnery (for their detailed studies of Cristofori's extant plucked instruments) and Malcolm Rose for his detailed comparisons of the 1763 Migliai harpsichord with Leipzig 89, attributed to Ferrini. The published articles and other writings of, among others, Stewart Pollens on the early piano, David Sutherland and David Jensen on Cristofori, John Koster, Michael Latcham, Gerhard Doderer and Luisa Morales (on the instruments of the Iberian Peninsula) and the work of Grant O'Brian (on Italian Units of measurement and Cristofori's restoration work for the Medici) have, of course, proved immensely invaluable. But it is to that artesian source of wisdom and encouragement, Christopher Nobbs, that I owe perhaps the greatest debt on this and many other occasions. I must, however, stress that any opinions expressed, errors of fact or more minor infelicities are entirely my own.

Lastly, I should like to thank Miles Hellon for the many insights he has made during the course of a restoration which, among other imaginative procedures, involves the use of keyhole surgery techniques so as to minimise any invasion of the instrument's fabric. Despite such minimal access his work has yielded unprecedented images of the interior of such an instrument.

It is hoped that the harpsichord will be ready to unveil in November 2009. A recording is planned for early in 2010. Further details, a table of string lengths etc and eventually a plan of the instrument can be obtained from the author at rarekeyboards@hotmail.co.uk