

Evidence and Intuition: Making Medieval Instruments

When it comes to creating replicas of instruments that only exist in poetry and iconography, makers are guided by guesswork and good sense

The *Atlakvida* (The Lay of Attila), an 8th- or early 9th-century story from the Old Icelandic *Edda*, contains a description of music performed under the most difficult circumstances: “The living prince they placed in the pit – a crowd of men did it – which was crawling inside with snakes; and Gunnar, alone, furiously struck his harp with his hand. The strings resounded...” In one version of the story, Gunnar, being bound, plays the harp with his toes.

This brief passage contains a world of information about Medieval heroes, but it doesn’t tell us much about how Gunnar played the harp – with his fingers or his toes. And if you want to know how many strings the harp had or how they were fixed, the *Atlakvida* will not answer those questions for you.

Yet Ben Bagby plays (with his hands) a harp he believes is much like Gunnar’s. And across America, other performers are playing bone flutes, lyres, gitterns, vielles, cruits, hurdy-gurdys, ttun-ttuns, rotas, and citoles – instruments built by makers who have combined art history, archaeology, materials science, acoustics, etymology, history, anthropology, sociology, physics, and musicology to re-create Medieval instruments that no one has held in their hands for centuries.

“The central issue in early music is the interdependence between scholarship and art,” says Wendy Gillespie, associate professor and chair of the early music department at Indiana University. Recreating nonextant instruments may be the most classic example.

Visual representations

Scenes of Gunnar playing the harp in the snake pit have been depicted in Medieval Norse art, but how much can harp makers learn from them? “Dimen-

sions are usually based on depictions showing instruments near or held by actual people,” says Bagby, a Medieval scholar and performer who is co-founder of Sequentia and now lives in Paris. “But often we are in the dark with things like string numbers, since Medieval artists were not particularly fussy about these kinds of details – plus the fact that it’s extremely hard to render multiple harp strings accurately in a tiny miniature!

“For these early harps we also have a certain number of Christian manuscript illuminations depicting harps being played – principally by King David, of course, or by musical legends such as Boethius or Pythagoras. These illuminations are very useful for learning how the instrument might have been held, its size relative to human bodies and hands, and the way the player’s hands interact with the strings.”

Still, “there is distortion. You must take into consideration the human body,” says Milton Scheuermann, founder and co-director of Musica de Camera in New Orleans. Scheuermann has made harps, lyres, a Medieval fiddle, and a hurdy-gurdy. “In the illuminations I use, the fiddles and harps seem to be in proportion to the body.”

Makers must always ask if what they are looking at makes sense. Sondra Bromka, co-founder of the Bells & Motley Consort in Marcellus, New York, takes an active approach to answering this question. “Build what you see,” she says, “and if it works, that’s the way to test the iconography. Is it holdable? Is the weight balanced? Can it be played?”

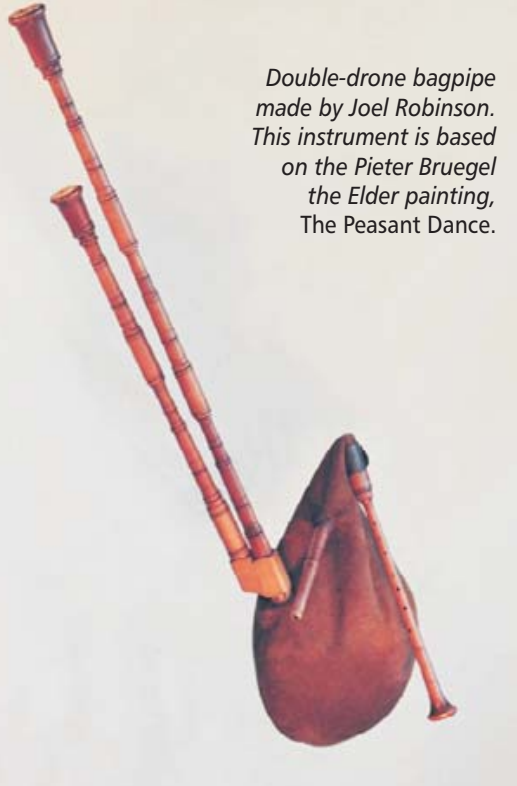
The problem is that it’s not always easy to know for sure what makes sense. “You see illustrations of positive organs reversed, with the bass notes on the left,



Top, a 12th-century carving showing Gunnar in the snake pit, playing with his toes. Below, Sequentia’s Ben Bagby, holding a German harp constructed by Rainer Thurauf and plucking it by hand.

By Beth Adelman

Double-drone bagpipe made by Joel Robinson. This instrument is based on the Pieter Bruegel the Elder painting, The Peasant Dance.



and scholars wonder if this is artist error, or whimsy, or if there really were instruments like this,” says Scheuermann. In other words, if it looks like a mistake, is it really?

Then there’s the opposite problem: “You can look at the players and see which hand was on top, which tells you something about the instrument,” says Sally Mitchell, who plays recorder in the Medieval music ensemble Contrafacta in Seattle. “But you can’t take it seriously. I know examples of modern photography in which the instruments are played backwards – and this is not just a 21st-century phenomenon.”

So instrument makers look at hundreds of images and then combine the most salient features. “I take a Jungian archetypal approach: what remains the same is more important than the differences,” says Timothy Johnson in Waco, Texas, who makes modern and historical

instruments in the string family as well as all of the Medieval instruments for Altramar. “Certain details emerge over and over again. You combine this with the fact that there are only a certain number of solutions that work.”

Luckily, some artwork has proven to be meticulous and reliable. “Pieter Bruegel’s paintings are so accurate that you can literally take a caliper to them,” says Joel C. Robinson, a wind instrument maker in New York City who makes Medieval bagpipes for Piffaro. Hieronymous Bosch is another artist whose work is absolutely accurate. “The harp [in the Hell portion of *The Garden of Earthly Delights*] has been reproduced by many of us in many sizes,” says Lynne Lewandowski, who makes Medieval harps and psalteries in Bellows Falls, Vermont. “Bosch is an amazing draftsman of mechanical things.” Albrecht Dürer also drew musical

Medieval vs. 21st-Century Ears

“A lot of us have closets full of instruments that we do not exhibit, but we’ll bring them out when the time and player are right,” says harp maker Lynne Lewandowski. “Modern harp tradition has set back the discovery of early harp music by a decade or two. When someone has studied their professional instrument for several decades, and you put something in their hands that makes them sound bad, they’re going to be hostile.”

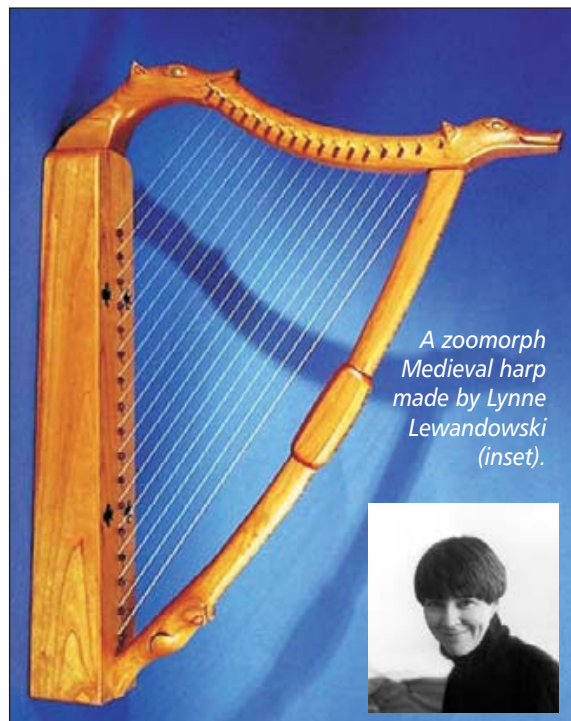
David Ohannesian sees the same situation with Medieval recorders. “What characteristics are modern recorder players likely to put up with? It’s supposed to be that you make the instrument, and the musicians use it to figure out how it affected the music. But I don’t see a willingness to do this. The cylindrical bore in Medieval recorders works best in the upper range, but the low notes are weak. It’s not a pleasant instrument to play if you’re used to something else. The modern recorder is played in a certain way, and players tend to be inflexible about playing in a different style.”

Audience likes and dislikes are another consideration. “Many Medieval instruments have a lot of overtones, but modern audiences don’t necessarily like that,” says Ohannesian. Lewandowski adds, “Early harps had brays. When I started making them, they sounded like Moog synthesizers and nobody liked them. Now people want them.

“There is an undeniable commercial element in all this,” she concedes. “We have to please the audience in order to beguile more people into the field of early music. It is honorable to create a line of less threatening instruments, as long as you’re not fooling yourself. After all, early music is a 20th-century phenomenon. These instruments are not for history; they are for us now.”

Lewandowski continues, “Part of this job involves having the patience to see if your ideas are borne out by later discoveries. If you have an idea of what might have been, you need to stay with it, ride out the fads and fashions, and be willing to be wrong. Put that wrong thing away for 10 years, and it might turn out to be right on the money.”

“The thing everybody always says is that they wish they had recording technology in those times,” says Wendy Gillespie. “But we have no idea what things would sound like. And I think it’s just as well, because another question is, would we like it? Probably not.”



A zoomorph Medieval harp made by Lynne Lewandowski (inset).

instruments in exacting and extremely useful detail.

Another source of visual information — one Gillespie calls “as good as it gets” — is the western portico of the 12th-century cathedral of Santiago de Compostela in Spain. Around what is known as the Gate of Glory are figures of the 24 Elders of the Apocalypse, all holding stringed instruments as if they are about to play. Most are vielles, but there are also harps, and the two figures in the middle are holding a two-person hurdy-gurdy (or organistrum). The instruments are depicted almost in three dimensions, with the backs carved in some detail. Instrument makers have access to this remarkable visual record because a few years ago scaffolding was erected and all the figures were meticulously photographed and videotaped.

Working with three dimensions

Visual representations go only so far, however, because they do not reveal what is inside the instrument — the shape of the bore, the way the strings are attached, the thickness of the sound-board. For these, makers must explore how the instrument was used and consider the tool technology of the time. At the heart of this question is the fact that the instrument has to be playable — for Medieval musicians as well as for musicians who happen to live in 2005. “You ask, would it hold together under the conditions of play and travel at the time?” says John Bromka, co-founder of Bells & Motley Consort.

“Compromises need to be made on the interior to survive today’s playing conditions,” adds Sondra Bromka. “The harp needs to stay in tune. Wood has changed a lot over time and across conditions. European and American cherry are completely different, and Small Ice Age wood is different from wood growing now. This affects the bracing and the interior.”

“We know they couldn’t bend thin wood, and they did not have good glue, so that tells us a lot about how things were made,” says Lyn Elder, in Bristol, Vermont, who makes a wide variety of Medieval and Renaissance stringed

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The Swan Bone Flute

On the first track of Sequentia’s CD *The Rheingold Curse*, Norbert Rodenkirchen plays an instrument that possesses what Ben Bagby has called “an almost shamanistic quality” — a swan bone flute based on the remains of a 10th-century instrument. The flute was made by Friedrich von Huene in Boston (2005 winner of the Howard Mayer Brown award for lifetime achievement in the field of early music).

“I went to a museum in Speyer, Germany, where they have all kind of artifacts from an old castle that was destroyed 1,000 years ago. They found a flute made from the ulna of a swan—the ones made out of bone survived, unlike the wood ones—with four finger holes and an embouchure hole. It is in good shape, except there is no plug on top, and you can’t play it. But they do let you touch it and take photos and make drawings,” von Huene explains.

Seeing the model was useful, but many decisions about the flute were dictated by the material. “The bore is decided by the bone,” he says. “And putting a plug in like a recorder is not always possible because the swan bone is very thin.”

This made the job a lot easier, as did following the basic design of Medieval flutes. “A flute is essentially a tube with holes in it,” says von Huene. “I’ve made a flute with a pocket knife and a reed on a beach in Mykonos. If you are inventive, you can do it. To test the design, you try to play it. Or else you can say, ‘I haven’t learned to play it yet.’”

The real problem was finding the swan bone. “I finally got a few from a nature conservancy in Florida,” he says. “I also wrote to a swannery in England, and I am always talking to people I know who have ponds, asking them to look for dead swans.”



Norbert Rodenkirchen plays Friedrich von Huene’s swan bone flute.



The members of Altramar, posing with instruments made by Timothy Johnson.

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instruments. "Quite often they resorted to carving the instrument out of a solid block. You boil the wood in water or milk to make it soft and malleable, and then you only need a few carving tools."

"You start cutting, roughing, and make course corrections as you go along," says Johnson. "Things reveal themselves as you start working in three dimensions. There's a mystical component. You start feeling as if there are other people in the room: I'm not the first one working on this. You start feeling connected."

Historical fingerprints

Many instruments are re-created based on the archeological record (see sidebar on page 29), which can reveal a lot about internal structure. "Sometimes what's missing can tell you more than what's there," says Wolodymyr Smishkewych, a doctoral student at Indiana University, a player and singer with *Sequentia*, and a maker of harps and

lyres. "The missing materials may have been made of things that disintegrated, like skin, so then you know something about the materials. The missing parts may also reveal things in the instrument you otherwise couldn't see. For example, all that's left of a lyre in Novgorod is a bowl, two prongs, and a bird carving. The sound board is gone. Because I can see the mortises, I can tell how thick the sound board was, the materials that would have been used, and how it would have been assembled." Smishkewych, who won the 2004 Barbara Thornton Memorial Scholarship, is on his way to Spain to study Medieval hurdy-gurdies, courtesy of a 2005 Fulbright Scholarship.

Sometimes the "artifact" is an instrument still in use. "I look at modern analogs in ethnic instruments," says Johnson. "They look so much like Medieval pictures. They have a certain set of structural solutions that you can't ignore." David Ohannesian, a recorder



Luthier Lyn Elder created this citole, played by its present owner and co-builder Deborah White.

maker in the Seattle area, finds shared characteristics between modern ethnic fiddle flutes and Medieval recorders. And Robinson says, "In the Balkans, bagpipes are totally chromatic, and that didn't suddenly happen in the 19th century." Smishkewych adds, "A lot of instruments made their way along the Silk Road."

A good understanding of the social history of the time also informs the way

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images and fragments are interpreted, both for the maker and the player. "I have done some research into early geometry, and the same geometrical principles that work on Renaissance instruments also work on Medieval instruments – rule of proportions, intersections of circles, and so forth," says Johnson. "These geometric archetypes were also used in religious art and had mystical significance. This ancient reverential geometry gave life to Medieval instruments."

"I played a pardessus, which is an instrument that was mainly played by women," says Tina Chancey, co-director of Hesperus in Arlington, Virginia. "You need to be holding it higher than the lap or on a lower chair because the crinolines in the skirt at the time forced you to hold it up higher."

Knowing where an instrument was played (monastery, church, court, or street fair), in what context, and whether it was part of an ensemble or mainly played solo also greatly informs its construction and the style of play. "Medieval musicians would stand and play for six hours. They wouldn't make instruments that crippled them," says

Johnson. Rather, according to Elder, "you want the instrument as light as it can be without losing strength and stability."

In the end, though, when it comes to both making and playing a reconstructed instrument, guesswork and intuition are always factors. "Nonextant instruments are always idiosyncratic,"

Lewandowski says.

Joan Kimball, co-director of Piffaro in Philadelphia, adds, "We all wish we could travel back in time and be a fly on the wall.

We can only guess how these instruments sounded based on extant folk models."

Which means that despite all the scholar-

ship, there is always a leap of faith.

"You have to take your best guess and go ahead and do it, then perfect the instrument on the design you have chosen," says Elder. "Nobody can really say, 'This is the way it was.'"

If your best guess is very good, Lewandowski says, "we occasionally get these glorious glimpses of something that is like us, but different." 🍷

Beth Adelman is a reviewer for *Early Music America* and a freelance editor.

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– Timothy Johnson

Piffaro playing Medieval bagpipes at the Spoleto Festival in Italy.



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