Orchestrating the World
- a manual of intercultural music making

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- # Erhu

Description

       The Erhu is a bowed two-stringed instrument. It has a long round neck of hardwood attached to a hardwood resonator, usually covered with snakeskin. Its steel strings are tensioned between the tuning pegs at the neck's upper end, and the lower edge of the resonating box. The speaking length of the string extends from a nut at the peg end of the neck to a bridge placed upon the resonator. The horsehair bow, rosined on both sides, is inserted between the strings, and the strings are played one at a time, virtually never together. The player fingers the strings not by pressing them against the neck but by placing them on the strings lightly, to create different speaking lengths.

Tuning d^1 - a^1

Scordaturas and Extensions
In the Erhu $d_b{}^1$ - $a_b{}^1$ and c^1-g^1 scordaturas are possible, but an oversize instrument may render lower pitches better. Erhus with extensions are being made, but they are not yet common (as of 2004). With extension the Erhu can go down to a tuning of a - d^1.

Range
Full range: d^1 to a^3; practical range is d^1 to d^3; best sounding range is d^1 to a^2;   From d#^{3} and above the instrument is very difficult to intone and has a weak dynamic. Useful only by virtuosi and in very transparent passages.

General Considerations

Dynamics
The dynamic of the Erhu is generally:
d^1 to d^2 - nasal, rich, excellent projection
d^2 to a^2 - a bit more flutey, still very good projection
a^2 to d^3 - thinner and more delicate, still present, a bit difficult to intone
d^3 to a^3 - very difficult to intone, very delicate dynamically, easily covered.

Speed of Execution
The speed of execution depends somewhat on the register being called for. As noted in 'Dynamics' above, the higher one plays, the more difficult the intonation becomes. Therefore, as a general rule of thumb, one should not write very quick passages above a^2; in the hands of an excellent player quickness will not compromise intonation up to d^3.

It is very idiomatic to play passages that call for very quick detache notes. However, leaps and intervals of more than a third cannot be executed very quickly. Certain musical phrases, which utilize string crossings can include leaps, but the crossings themselves may create some difficulty. Crossing strings on the Erhu is not as easily achieved as on the western violin - one cannot move back and forth between strings as quickly or as gracefully.

A suggested maximum speed - for passages that move stepwise (in 2nds) - is 504 per minute (i.e. - playing 16th notes where the 1/4 note is at 126 per minute), but this drops dramatically above a^2. Tremolos on one note can of course be executed with greater speed. As always, the performer ought to be consulted regarding the feasibility of very fast passages.

Techniques
I. *Bowing and Fingering*
- It is not easy to execute many notes on one bow; a few notes in a moderato tempo is safe to call for, but slurring over many notes, even at a soft dynamic, is best left to the discretion of the performer.
- The composer should be aware of quick string crossings (between the d' and a' strings); these entail a change in bowing and fingering; in most cases it will not cause a problem for the performer.
- Most bowed string techniques are possible: detache, legato, and staccato.
- Battuto (striking the instrument with the wood of the bow) is possible, but only for rhythm; it is impossible to extract the bow to create battuto of the strings.
- Downstroke is a movement 'out', the hand moves away from the body; upstroke is 'in', the hand moves towards the body.
- Double stops on the Erhu do not render clear intervals or pitches; as an extended technique please consult with the performer.
- There are certain idiomatic movements typical of Erhu technique, as follows:

   *A slide down of a 3rd, e.g. - $a^1 \searrow f\#^1$.

   *Bending (tensing up and down) of a string, to create rise and fall of pitches (see 'vibrati').

   *Many kinds of vibrati.

   *An embellished style.

   *All kinds of glissandi.

II. *Vibrati*
All vibrati can be played slowly or quickly. In general, 3 kinds are possible:
   1. Pressing up and down against the string in one place - the pitch diapason remains small
   2. Back and forth slide (no pressing)
   3. Back and forth slide (no pressing), but quick and dramatic, using a larger pitch diapason

III. *Harmonics*
At nodes, a lighter press gives a harmonic; quite *pp*, a floating sound, easily covered.

String	Natural Harmonics possible
d'	2, 3, 4, 5, 6
a'	2, 3, 4

Artificial harmonics are possible on the erhu, using 4ths.
Harmonics may not be greatly differentiated from regular notes played *pp*.

IV. *Pizzicati*

1. Right hand plucks the string (d' string only, since the bow will naturally rest against the a' string); the entire gamut can be played, though it speaks well for about a ninth. Notes are marked with a + above them.
2. Left hand pizzicati are useful for open string work, but can also be utilized on a fingered A string by holding the bow against the D string. Some speed may be compromised with this one hand technique.
3. Left hand pizzicato together with bowed notes are possible at the same time.
4. Can combine r.h. bowing with l.h. pizzicati on a single string, eg. - d' is bowed as a drone and rhythmic pizzicato figures are played on the open a' string; and vice versa, a' is bowed as a drone and rhythmic pizzicato figures are played on the open d' string.

V. *Accents*

Care should be taken that staccatos and accents not be over emphasized - sudden digging of the bow will compromise pitch. Two staccatos, light (⊤) and hard (.), plus one accent (>) are enough for most practical purposes.

VI. *Special Techniques*
- Multiple staccato on one bow
- Horse Neighing effect; this is the above mentioned multiple staccato together with a slide.
- 3 fingers successively play the same note on one bow stroke.

VII. *Thoughts on Intonation*
Discreteness of pitch needs to be insisted upon for transparent passages, unless a very soloistic effect is desired. Notes are often connected idiomatically with slides, though the main notes must be intoned clearly. In an ensemble setting, when the Erhu upper register melody is paired with a fixed pitch instrument, like Yangqin, intonation problems are reduced.

Notation
Notation: assume that the Erhu player can read western notation and the number system. For western notation writing in concert pitch is best though it is also possible to use a movable 'Do' system and write everything in C. For scordatura work this is preferable, for example: tune the instrument Db - Ab, then written C = Db concert; so playing something written with 1 sharp (F#) will render a Db Lydian scale.

Related Instruments
The Erhu is the most common of a family of two-stringed bowed instruments, known as Huqin (pron. hu'-chin). For the purposes of this manual, we will assume that the various instruments vary only in tuning and thus in absolute range. We will cite 3 Huqin: Gaohu, Erhu, and Zhonghu.

♦ Tunings of Huqin:
Zhonghu: g - d^1 ; Erhu: d^1 - a^1 ; Gaohu: g^1 - d^2

Asian Relatives of the Erhu
Korea	- haegûm (2 strings)
Japan	- kokyu (3 strings)
Mongolia	- morin khuur (2 strings)
Persia	- kamanche (4 strings)
Thailand	- Saw-thai (3 strings)
Cambodia	- Tro-u (2 strings)