

Orchestrating the World

- a manual of intercultural music making

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- Tar



[Picture of Tar]

Description

Belonging to the lute family, the tar appeared in its present form in the middle of the eighteenth century. The body is a double-bowl shape carved from mulberry wood, with a thin membrane of stretched lamb-skin covering the top. The long fingerboard has twenty-six to twenty-eight adjustable frets made of cat gut, and there are three double courses of strings. Its range is about two and one-half octaves, and is played with a small brass plectrum. A smaller version of the tar is the *setar*. This is the older more traditional instrument. It can play most everything the tar can play but without the tar's projective capacities. The tar is a more modern development.

Tuning and Scales

Tuning

The three courses of strings on the Tar are basically tuned c - g - c¹. (Piano notation: C28 - G35 - C40). There are several scordaturas possible, which are discussed below.

The highest course, double string # 1, has 2 steel wire strings; the middle course is comprised of 2 copper strings; and the lowest is comprised of a lower copper string plus a higher steel string. Thus, double string # 3 will sound the octave c-c¹.

	<u>Course</u>	<u>Tuned</u>
[highest]	Double String # 1 -	c ¹ c ¹
	Double String # 2	g g
	Double String # 3	c ¹ c
[lowest]		

Scale

In the Persian-Turkish-Arabic traditions of modal music, there are notes which do not conform to the 12 tone gamut of western music. A rough theoretical idea of the gamut employed in these systems is what is called the 24 tone equal temperament, in other words, the system which divides the octave into 24 quarter tones of equal ratio. If the 12 tone equal temperament octave of western musical practice consists of 12 semitones, each separated by an interval of 100 cents (1200 cents to the octave), the 24 tone equal temperament octave would consist of 24 quarter tones each separated by an interval of 50 cents.

This theoretical idea is only a rough snapshot, and in practice the actual notes played do not conform to the theoretical ideal.

The Tar utilizes a gamut of 17 tones to the octave, where (taking the note C as tonic) the positions:

C - D - E - F - G - A - B

are tuned approximately as in the western system, and the positions:

C#/Db - D#/Eb - F#/Gb - G#/Ab - A#/Bb

each have 2 variants, at least one of which approaches a quarter tone alteration.

These altered notes are signified by one of 2 symbols:

p is known as "koron" - and means lowered by a microtone;

> is known as "sori" - and means raised by a microtone.

To illustrate, here is one theoretical construct for the tuning of the Tar (put forward by the theoretician Professor Hormoz Farhat).

<u>interval</u>	<u>cents</u>	<u>note name</u>	<u>approximate interval ratio</u>	<u>description</u>
0	0.000	C	1/1	unison, perfect prime
1	90.000	Db	256/243	Pythagorean limma
2	135.000	Dp	27/25	large limma
3	205.000	D	9/8	major whole tone
4	295.000	Eb	32/27	Pythagorean minor third
5	340.000	Ep	243/200	acute minor third
6	410.000	E	81/64	Pythagorean major third
7	500.000	F	4/3	perfect fourth
8	565.000	F>	25/18	classic augmented fourth
9	630.000	Gp	36/25	classic diminished fifth
10	700.000	G	3/2	perfect fifth
11	790.000	Ab	128/81	Pythagorean minor sixth
12	835.000	Ap	81/50	acute minor sixth
13	905.000	A	27/16	Pythagorean major sixth
14	995.000	Bb	16/9	Pythagorean minor seventh
15	1040.000	Bp	729/400	acute minor seventh
16	1110.000	B	243/128	Pythagorean major seventh
17	1200.000	C	2/1	octave

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Another representation of the 17 tone gamut is as follows:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
C	C [#] D _b	D ^b C [‡]	D	D [#] E _b	E ^b D [‡]	E	F	F [‡] G _b	F [‡] G ^b	G	G [#] A _b	G [‡] A ^b	A	A [#] B _b	A [‡] B ^b	B	

Note that the 8th and 9th positions, which correspond to the raised 4th and lowered 5th of the gamut, do not have a variant which approximates the western scale. The raised 4th, F[>] (F sori) is less than a semitone, and the lowered 5th, G_p (G koron) is similarly not quite a semitone. Other than these two, the entire gamut of western music can be approximated, not in equal temperament of course, but nonetheless in tune with the western trained ear.

Frets

In order to obtain the 17 tone scale on the fretboard of the tar, the gut frets are placed at the appropriate positions. These frets can move to a small degree, but since the tar's neck is graduated in thickness from the nut to the sound box (thinner at the nut, thicker at the box), only incremental movements, of perhaps a couple of millimetres, can be made; these however are sufficient to adjust the tuning of the scale.

Since the circumference of the neck graduates as one proceeds from the nut to the sound box, moving the frets towards the nut would loosen them to the point of being unusable, and in moving them towards the box they will refuse to budge due to over-tightening. Thus one cannot really change their positions within a composition. Alternate scales or notes can be called for, but these would entail untying and retying the frets to the neck of the tar, not at all an easy or quick task. Nor is it certain that the performer would be amenable to the task.

The correct placement of the frets, in order to render the 17 tone scale, is done by ear.

Scordaturas and Keys

Scordaturas

Several scordaturas are possible, the most common being those that alter the tuning of the 3rd and 2nd double strings. For example:

Basic tuning	Scordatura 1	Scordatura 2	Scordatura 3
c - g - c ¹	d - g - c ¹	c - f - c ¹	c - g - d ¹

Other scordaturas are possible as well, though there is a limit to how much the strings can be tensioned, or loosened. Consult with the performer. It is possible to raise or lower strings during performance, though some time would be required to do this. A workaround is to have a second or third instrument available.

Certain modes require retuning a string to one of the microtones of the scale. For example, in the mode **segah**, the tonic is the 3rd lowered by a quarter tone (e^b), so the tuning becomes: e^b- g - c¹.

Double string # 3 is quite flexible and one can raise it up to a 4th higher, to **f**. The 2nd string can go as high as **a_b** or **a**. The 1st string may be raised a major second, to **d¹**, but checking with the performer and his instrument is always a good idea.

Keys and Modes

Not all keys are good for the tar. Generally a key which utilizes one of the open strings as a tonic or a dominant works well. Some keys that will work are: C, G, F, D. Ease of the key also depends upon the mode being played, some modes are more easily rendered in one key or another.

For example, **mahur**, the mode which corresponds to the major scale of western music, sits well in C, F, and G. Bb may also be a good key for **mahur**.

The context of the music itself will determine the best keys; certainly some notes outside the mode can be added, or certain modal modulations can be made, but care needs to be taken in choosing the actual keys so that the main notes called for are playable, and the instrument's resonant properties (open strings) are utilized.

Most of the tar's music is traditionally learned in *chapkuk* (the female singing key) and *raskuk* (the male singing key). Note: *Chap* means 'left', *ras* means 'right', and *kuk* means 'tuning'. The keys chosen depend upon the mode called for. In the case of the above mentioned **mahur**, men would sing it in C and women in F.

The modes of Persian music which utilise microtones are not easily transposed from one tonic center to another. Thus the choice of tuning is central. The actual pitches available on the various strings change with a change in tuning, the fret placements being unchanged. Here are several charts with the notes obtained on the various strings:

c string:

C - C#/Db - C[♯]/D[♭] - **D** - D#/Eb - C[♯]/D[♭] - E - F - F[♯]/G[♭] - F[♯]/G[♭] - G - G#/Ab - G[♯]/A[♭] - A - A#/Bb - A[♯]/B[♭] - **B**

g string:

G - G#/Ab - G[♯]/A[♭] - A - A#/Bb - A[♯]/B[♭] - **B** - C - C#/Db - C[♯]/D[♭] - **D** - D#/Eb - D[♯]/E[♭] - E - E#/F - E[♯]/F[♭] - **F#**

f string:

F - F#/Gb - F[♯]/G[♭] - G - G#/Ab - G[♯]/A[♭] - A - **Bb** - B[♭]/C[♭] - B[♭]/C[♭] - C - C#/Db - C[♯]/D[♭] - **D** - D#/Eb - D[♯]/E[♭] - **E**

d string:

D - D#/Eb - D[♯]/E[♭] - E - E#/F - E[♯]/F[♭] - **F#** - G - G[♯]/A[♭] - G[♯]/A[♭] - A - A#/Bb - A[♯]/B[♭] - **B** - B#/C - B[♯]/C[♭] - **C#**

Notation

The tar is notated at concert pitch. The western five line staff is utilized together with the treble clef exclusively, and leger lines below the staff are common. For extended passages in the lowest octave one can notate an octave higher and mark the passage 8vb.

Scordatura needs to be indicated at the beginning of the work. Scordatura is not treated as a transposition tuning unless the entire tuning is altered by the same amount. This kind of transposition sometimes occurs, for instance when the tonic Bb is desired; in this case the entire tar is tuned down a whole step, and the notation would be written a whole step higher than concert pitch. One would indicate the scordatura: Bb - f - b_b, followed by: written C = sounded Bb.

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In practice, key signatures for modes with microtonally altered notes utilize the koron (**p** - meaning less than a semitone flat) almost exclusively. Thus, the symbol \flat is more common than \sharp .

By creating key signatures which show which notes are flat, sharp, koron, and sori, the tar player will know exactly what is required.

Since the Persian tradition utilizes many compound rhythms (5's, 7's, 9's, 11's, etc), the rhythmic structure is often written at the beginning as well, for example, for a compound rhythm of 11/16, one may write above the first measure 4+3+4. And so on.

Range

The tar has a range of 2 and 1/2 octaves, from **c** to **g²** (C28 to G59). The approximate range for each double string is:

Double string # 3 - 1 octave

Double strings # 2 - 1 octave plus a major 2nd

Double string #1 - 1 octave and a perfect fifth.

In one hand position on the tar, the range on any string is an octave or a 9th, depending upon the tuning chosen.

General Considerations

The Tar is a Persian lute with a range of around 2 1/2 octaves, from **c** (below middle C on the piano) to **g²**. The 3 strings are in double courses, usually tuned to the same pitches. In some dastgahs (collections of modes) the bass strings may be tuned to different pitches. We are usually dealing with 4th or 5th intervals between strings when playing the tar.

The timbre of the tar is akin to that of the western banjo, thus if one wants sustained notes the tremolo must be called for. The sound projects quite well, and is capable of cutting through other ensemble sounds. Ornamentation is quite idiomatic for the instrument. Intonation can be a problem in ensemble, because the tuning system is unique to Persian music; even when playing with middle eastern instruments intonation is a hurdle, since the quarter tones of Arabic music, for example, differ from the microtones of Persian music. The problem can be overcome in various ways, by choosing those notes which are common, by having other non-fretted instruments adjust to the tar's tuning, and by slightly moving the tar's frets to compensate for small discrepancies.

The cat gut frets are wound around the neck in several wraps. Some have three winds and others have 4 winds, as position markings. The traditional plectrum is made of polished brass in a bee's wax holder. Other materials can be used as plectra, though timbrally these do not make a great difference.

Dynamics

The tar can project itself very well, and also can be quite subdued. *pp* to *ff* is an acceptable dynamic range for the instrument.

Some techniques of subduing the sound include the following:

- a) playing with the finger action only, without the plectrum;
- b) playing on a single string rather than the double;
- c) placing one's palm on the bridge, which mutes the sound somewhat;
- d) finger picking and plucking is a quieter technique and can be utilised.

To create forte and fortissimo the tar player will strike all 6 strings while playing the melody. This gives greater presence to the instrument and increases the sound output tremendously.

Speed of Execution

The speed of execution is quite fast, especially for diatonic progressions. Note that in traditional Persian music there are not many leaps. String crossings are common, tempered only by the tuning chosen - a perfect fifth between double strings #2 and 1 will make it a bit more difficult to move between these strings in a scalar manner. A fast speed for a scalar run is 16th notes at 132mm for the quarter note.

Techniques

I. Traditional Techniques

Note: Symbols used may vary from publication to publication, thus what is most important is the technique involved, and the clear indication to the performer. Most of these techniques can be written out in full, or explained as an expression marking; western notational devices may be utilized, with explanations. Appending the Farsi technical names may be helpful as well.

1. Eshareh beh payeen - lower grace note (lower mordent); pluck a note and hammer off and on.
2. Trill - on one pluck; hammering on and off.
3. Dorab - quick grace notes, on one note, a quick picking down-up, then down on the main note. The main note can be the same note as the grace notes. Usually utilizes two grace notes, but could call for more.
4. Riz - a tremolo
5. Takriz - hit all strings heavily and go into a riz (tremolo) without stopping; a kind of arpeggio catapult into a tremolo
6. Dorab az dastbaz - a dorab where a grace note on an open string. leaps to a main note on the same string at any intervallic distance. *Dastbaz* means open string.
7. Hammering off and on with the fingers, without plucking. This gives a subdued effect.
8. Kandan seem - upper mordent; pluck a note and hammer on and off.
9. Chap rooye seem panjom - an upstroke on the 5th string (the higher of double string #3), left open; it is a rhythmic utterance, done to an extent ad libitum; after plucking some melody on another string the 5th string is given an upstroke to add colour or a kind of pedal point.
10. Rhythmic pattern playing – this is quite idiomatic. It utilizes an open string as a pedal point (or as a kind of drone), sounding it at regular intervals while playing a melody on a different string. The rhythmic contour is retained and given great pulse, together with the melody.

II. *Vibrato, Tremolo, Glissando etc.*

Vibrato - 1. A fingered note can be bent back and forth to create a vibrato. 2. A special vibrato technique is accomplished by pushing on the string at the waste end of the bridge. This tensions and loosens the string one is playing, rendering a convincing vibrato. It is useful for giving a vibrato on an open string.

String Bends - are possible on the tar; they are convincing everywhere on the instrument but assume the more so in lower positions, and where the string tension is lower. Maximum bend is a semitone.

Glissandi are of course performable, as on any fretted lute (e.g. the guitar).

Tremolo is highly idiomatic and effective.

III. *Harmonics*

Not a typical technique but these are possible, at the usual nodes, certainly at the octave and at the 5th.

IV. *Muted Notes*

The subdued effect of placing the palm of the right hand (the plucking hand) on the bridge is very useful. Full muting does not work very well however, the placement of the hand on the string makes plucking difficult.

V. *Accents and Timbres*

All accents can be called for.

Timbral variation is very marked on the tar, and very idiomatic. Several parameters can be utilized.

- a) Playing close to the bridge vs. playing sul tasto.
- b) Due to the different materials from which the double strings are made, different colours can be derived. The same passage can be repeated on a different string rendering a timbrally contrasting effect.
- c) The differing tensions on the various double strings also help give contrasting timbres.
- d) Double string # 3 is actually two strings an octave apart, playing a melody here will have a timbre all its own.

VI. *Other Special Techniques*

Playing on two strings of the same double string. For example double string # 1 is fingered and the higher string is fingered higher, rendering an interval. Certain chordal effects can be achieved in this way.

Related Instruments

1. The most immediate relative of the tar is the Persian **Setar**. For a description see above in 'Descriptions of selected Persian Instruments'.
2. There are other forms of the tar which are found in Azerbaijan, Uzbekistan, and Turkey.

Asian/Middle Eastern Relatives of the Tar

There are many lutes in Asia with frets, many of which are utilized in rendering the modal musics of the Near and Middle East. Here are some notables.

- Bouzouki (Greece)
- Saz (Turkey)
- Pipa (China)