

The Intervals of the Azerbaijani *Mugam* : back to the sources

Jean During. CNRS, Paris

A survey of the modal scales used all over Inner Asia shows a clear-cut between the oriental Turkic and the Iranian-Arabic musical cultures : shortly speaking, on one side we find quasi regular chromatic scales, on the other, in addition to intervals of tone or semi-tones, we find the famous neutral tone and third. Beside very rare exceptions, we do not find neutral tones among the Turkic people from Central Asia of either nomadic or sedentary origin.

Biphony or heterophony, that is, the simultaneous production of 2 or more sounds, is an esthetic tendency of Turkic musics which has probably contributed to the resistance to neutral intervals. Biphony is found currently and sometimes systematically on the playing of string instruments, like the Turkmen, Qâraqalpâk or western Khorasan *dotâr*, the Anatolian *cura*, the Azerbaijani *saz*, the Kazakh *dombra*, the Kirghiz *komuz*, etc. This technique which is a distinctive attribute of Turkic music, can hardly work with neutral intervals because it would generate dissonances.

In spite of this evidence, a careful examination leads to the conclusion that during the last hundred years, in several Inner Asian traditions like in Azerbaijan, Uzbekistan and Tajikistan, some specific intervals which seem close to the neutral tone disappeared, replaced by tone or semi tones. The shift from the Arabic-Iranian scales has begun already 2 centuries ago in the Ottoman system for reasons that have not been cleared up, but could have been a matter of taste in relation to the Byzantine or Balkan traditions. In more recent time, this kind of shift in intonations seems due to the contact with the West, sometimes boosted by a cultural policy and by Conservatories, like in soviet Asia. Its purpose was probably to get closer to the Western diatonic scale. Anyway, such an important change has more chances to occur during periods of political, social or cultural turnover.

This assumption leads us to question the interval system of the contemporary Azerbaijani *mugam*. Nearly 20 years ago, in my first researches about this tradition, I could not find a convincing exposition of the fretting of the *tar*. The few references available were cobbling up a diatonic tempered scale with some comma nuances, generating minor and major whole tones, in a non-convincing way.

In addition, we could hear renditions of some *mugam* on a full tempered chromatic scale like that of the accordion (*garmon*) or the piano, though some *mugam* like Shur were considered impossible to perform on these instruments. It is only since 12 or 15 years, that is, after the independence, that emerged a

quite consistent new interval system. Totally empirical, it is rooted in the pre-sovietic epoch, and developed itself to a high degree of complexity.

In a conference devoted to Ottoman music, the case of the Azerbaijani fundamental scale can shed a light on the process of change that occurred in Turkish *makams* in the past and are still going on in our days.

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Considering that the Azeri *mugams* and *dastgahs* are similar in structure to that of the Iranian school (and to some extent to the Iraqi one), the differences in pitches could be considered as a deviation from the standard *maqâm* norms. One could postulate that this shift was favored by the fact that Azerbaijan loosened its connection with Iran and Iraq, and turned towards Turkey, for obvious linguistic reasons. Azerbaijani Segah abandoned its neutral third and adopted the Turkish intonation. The pitches of the chromatic scale, tempered with one or 2 commas, could have been inspired by the modern Turkish theory. But so far, no evidence of such an influence has been found.

I would like to take the opportunity of this conference to address the question to my Turkish or Azerbaijani colleagues: now that it is obvious that an important turn occurred in the beginning of the 20th century, we would like to understand how and why it happened, who were the persons or the authorities implied. Nothing is known about it, to such a point that a great majority of the Caucasian musicians think that the scales of their *mugam* has always been like this. They are so convinced that they accuse the few ones who are using neutral intervals, to betray their tradition under suspected Persian influences. The latter argue that you just have to hear the pre-sovietic recordings to get convinced of the legitimacy of the old near-eastern intervals in Caucasian *mugam* traditions. Another argument in favor of this assumption is that a great vocalist like Alim Qasimov is able to sing *mugams* such as Humayun or even Segah in their original Persian or Arabic scales. Several times I could witness for it, as I was accompanying him on the Persian *târ*.

Among the agents of this change we can identify Uzeyr Hajibeyov, a great composer and influent figure who invented the concept of symphonic *mugam*, that is *mugam* modes adapted to the western classical system. The first step was to temper the main *mugams* (Chargah, Segah, Zabol, Humayun, Shur, etc.) to the 12 semi-tones scale. In itself it was not at all a prejudice for the traditional *mugam* which was always performed with the *tar* and the *kamancha*. But so far, we do not know if he was cheering the *mugam tar* players to move their frets in order to avoid the neutral tone, or if this evolution took place naturally, just like it happened in Ottoman music.

If so, the western influence conveyed by conservatories, music schools, the spread of solfeggio, the concert halls and the Radio, must have been a strong factor.

In addition, the revival of the Mugam at the end of the 19th century, though it happened in circles of literates and bourgeois, was not isolated from

the professional popular rural or urban lore, and involved several great minstrels. With the exception of a few local schools, the *ashiq* of Azerbaijan, like in the large majority of the Turkic bard traditions do not use neutral tones. Their Segah-like mode (*hava*) is on a major third, not a neutral. So their intonation may have open the way for a shift from the feudal scales of the *maqâm*.

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In any event, for years, the official theory did not take in account nuances of intonation and limited itself to the 12 semitones of the tempered chromatic scale. From approximately one decade, the theoretical treatises acknowledge the existence of specific intervals. This is a big step towards the authentic sources and the recognition of the originality of the Muqam. However, the current official system lacks precision, perhaps partly because some of these intervals are variable. To distinguish the pitch nuances, the concept of "quarter tone" has been introduced, and often called *koron*, according to the Iranian terminology.

The intervals commonly found on standard fretted *tars* are the following according to our measurements:

C		
<u>D</u> b	27s (108c)	
<u>D-cc</u>	40s (160c)	
D	50s (200c)	
<u>Eb-cc</u>	66s (264c)	D Eb-cc = 16s (64c)
Eb	75s (300c)	
E	100 (400c)	
<u>E+cc</u>	110 (440c)	
F	125 (500c)	
F#		f# G = 28 (112c)
F# +		f#+ G = 16 (64c)
G	175 (700c)	
Ab	200 (800c)	
A	225 (900c)	
<u>A+c</u>	230 (920c)	<u>A+c</u> Bb = 17 (68c)
Bb	250 (1000c)	
B	275 (1100c)	
C		

Comments

What is typically azerbaijani in this scale is the existence of minor semi-tones, 16s/64c that is approximately a comma lower than the Pythagorean semi tone, and consequently major tones (Tone + comma). The term comma should not be taken in its strict sense here, it is just an approximation. This small half-tone appears mainly in the relation leading tone - fundamental (B C, F# G, A Bb) and generates large tone (A B, Eb F). This specificity is also shared by the

Persian scales, though the contrasts are less sharp. The Azerbaijani *ashiqs* are using the same small or even smaller semi-tone in the cadence leading tone-tonic. Therefore these intervals are deeply rooted in the traditions of this area.

It is not the case of the minor tone C D-cc, which equals 40s (160c) or more. This unusual interval has the same function as the neutral tone, though for an maqamist ear, it is far too high, the average pitch being between 33 and 39s (132 to 156c). The minor tone can not express the dynamic of modes centered on the neutral tone (like Shur, or the Arabic Bayâti or Turkish Huseyni), but if it is used in combination with an apotome semi-tone, it gives a sense of the dynamic of these *maqâms*. For instance the sequence G A-c Bb in ascending motives, and Bb Ab G in descending ones.

In the Persian and old azerbaijani Humayun, the Ap which is quasi the tonic of the mode has been replaced by Ab. (For instance the signature motive E F G Ap (B) Ap, became E F G Ab (B) Ab.) Hesitating to replace Ap by Ab, someone invented a new Humayun called Qafqazi (Caucasian) relying on A or A minus one comma.

In the course of two generations, the ears got accustomed to this kind of intervals, but that did not prevent some musicians from retrieving very quickly a taste of the old intervals, taste which was also that of the freedom of expression. Again, this trend took shape during the political changes that occurred in the country, that is the perestroika, the independence, the Karabagh occupation, the opening to neighbor countries.

In the beginning of the nineties, Malik Mänsurov, a young *tar* Master of international fame, discovered the interval of neutral tone" (p) in recordings of Shekle Alaskar dating from 1914 featuring *mugams* like Shushtar. On this basis, he started to reconsider the basic Azerbaijani scale by moving the frets of his *tar* to the right place. His first rendition was giving the following intervals, that I measured around ten years ago.¹

C	<u>D</u> b	<u>Dp</u>	D	<u>Eb-</u>	Eb	E	<u>E+c</u>	F
	26 s		50			43,5	58	124
.....37,6.....		15.....					
		25.....					
	F#	F#+	SOL	Ab	<u>Ap</u>	A	Bb	
28.....		23	35	49,5	74		
	18.....						

In this system, the interval of minor tone has been replaced by a neutral one that is commonly found in the Persian, Turkish and Arab traditions. From the modern Azeri system, some pitches remain, corresponding to those of the

¹ Note : These measurements were made on the basis of distances between the frets, which can induce a rather great margin of error. They can vary of one savarts up and down (4 cents) but give an clear idea of the new tendency of the Azerbaijani music.

equally tempered scale, and also the minor semi-tones and major tones mentioned above.

For Mänsurov and some musicians of the new generation, it became clear that during the soviet time, the neutral tone get close to a minor Tone, to such a point that some musicians wanted to remove the fret giving intervals other than the tempered chromatic scale. In the common use, the "three quarter tone" or neutral tone appears on the notes Dp and Ap, while the E gives rather a harmonic third (93 savarts - 372 cents in our measurements). This position is essential to the interpretation of *mugam* like Shikästeyi Fars or Zabol, but Mänsurov would sometimes move the E fret downwards in order to obtain an Ep. This note was necessary for performances he would qualify "in the Iranian modes (or ways) *iran yolu*."

With time, this demanding artist refined his perception of modal nuances to such a point that he felt the need not only to move the frets but also to add some. It went to the point that his tar has now 27 frets within one octave. That is 10 more frets than the Iranian-Arabic standards.

The following measurements come from a *tar* played by Malik Mänsurov and represent the new tendency.²

- 1) C Open string
 - 2) Db C-D = 33s :128 c (15/14) ??
 - 3) Dp C-D p = 37.25 s. - 149 c
- Though in this case the interval is set only by ear and without theoretical concert, it is exactly Farabi's definition of the neutral tone. It is used for Humayun and Shur.
- 4) D minus 2 commas, (C-D = 38 or 39s, 194 or 196 c) for some motives of Shur.
 - 5) D
 - 6) D + for Bayat-e Shiraz
 - 7) Eb - For the sequences like si Do ré mib in Bayat-e Shiraz -- It is also used on the middle string (giving a low Eb) for Shur and Shur-Shahnaz.
 - 8) Eb, For the tonic of Bayati Tork.
 - 9) Ep - or Eb + Mänsurov has first added a fret for E p, then noticing that there was still some space for another fret, he added one which he uses in Manand-e Muxalef (a *sho'be* of Zabol).
 - 10) Ep : Mänsurov calls the interval given by this fret : *asas koron* (fundamental half flat). He uses it in Ushaq, a *sho'be* of

² Method: measurement in centimeters are lacking precision due to the distance of the strings from the frets, and the thickness of the frets. Thus the place of the frets defining the fourth, fifth or octave can be false, while the real pitch of these tones is correct. For more precision, one should consider not the distance between the nut and the fret, but from between two neighbor frets giving a tone, a semitone, a three quarter tone, a thirds, etc.

- Mahur and Rast, in a somehow mannered descending motive (E-Ep).
- 11) Temperd E
 - 12) E + It is found between the E and F frets to give a leading tone very close to the fundamental: E-C, E-F
 - 13) Fa lowered. Used in *daramad* of Shur
Mänsurov says : "There is an old wedding dance for the welcoming of the bride in Segah using sometimes E- F, sometimes E- lower F. If so, one must vibrate this note in order temper the interval of major tone produced."
 - 14) F
 - 15) Fp For Zamin Khara on G (Nishaburak genre), and for Esfahan. Malik Mänsurov says that he thought to add this fret after having heard the author of this article playing the Persian *âvâz* Esfahân on the *tar* at the National Radio.
 - 16) F #
 - 17) Gp Corresponds to the 3d fret, but is used only for the middle string, giving a Dp
 - 18) G
 - 19) G + Used for some rare melisma appearing in Hashim Segah on Eb, a *gushe* of Mokhalef
 - 20) Ab
 - 21) Ap For Humayun, Shur, Vilayati and Delkash in Mahur
 - 22) A
 - 23) A + Always used for Bayati Shiraz : A + Bb, sounds softer than A Bb
 - 24) Bb For Bayati Qajar
 - 25) Bp For the conclusion of Choban Bayati or the Awj of Esfahan)
 - 26) B
 - 27) B+ For Ushaq in Rast, in the Mo'alef style
 - 28) C

Another brilliant *tar* player whose name is Elman Sadiqov has also added a great number of frets on his instrument. We did not have the opportunity to discuss in detail their use, and the measurements we made are approximate. However we find here again the neutral tones very close to those of Malik Mänsurov, that is to C-Dp = 37,1 (148c) ; D-Ep = 35s (140c), G-Ap = 40 (160c) (a bit too large).

One also finds two intervals leading tone to tonic (BC and B+C) BC being rather large: BC = 30s (120c) and B+C being very tight = 18s (72c), as usual in the Azerbaijani modes.

Conclusion

This data are not only interesting for an academic definition of the "real" Azerbaijani scales and intervals, they give us a clue on the needs, the motivation and the attitude of the masters regarding the *maqâms*.

Among the reasons for adding frets, we find the need for transposition which can be to accompany a singer. For instance a singer may ask the accompanist to play one tone or a fourth lower, which may need to move one fret. However most of the *mugam* have a steady place on the neck of the instrument : for instance Rast or Shur cannot be played on C but only on a low G. These principles are also found in Persian *maqam* system, but less strictly because instruments like the *ney* or the *santur* are imposing transpositions.

The other reason of transposition is just a matter of taste ; what is at stake here is to shed a new light on a standard rendition of a *maqam* : playing Segah on E, on A or on G will produce a different atmosphere because the open strings of the instrument will provide different drones and resonance effects.

In the case of modal traditions widely open to folk music like those of for Azerbaijan and Iran, as we have seen with Mänsurov's case, the addition of frets can be just a careful adaptation to some local tune or style. The raised leading tone could well have been borrowed from the *ashîq* style, and we have seen that one of the F and B positions have been inspired by folk songs. Let us note that what happens most often is the contrary : in the case of borrowing from folklore, the local intonations are generally flattened in order to fit in a standard academic scale.

The concern for accuracy does not account for all the cases. The esthetic concern is enough for an artist to enlarge his palette of intervals and produce difference by more nuances and contrasts. If one expects a Western violinist to play a C# higher than a Db, then it is all natural that a *maqam* master pays attention to the same nuances of one comma or less.

Yet in the case of the *tar*, ending with 28 frets on a 33 cm portion of neck implies a high degree of mastering, since between 2 frets there is almost no room left for the finger and the risk of missing a note is much higher. Actually the *tar* players are so smart that they do not need to watch their left hand : they play like on a fretless lute. We know that the ancient *'ud* had frets. It is much probably for the reasons evoked here that it ended up without frets.

I hope that these informations and their interpretation will provide keys for a better understanding of the transformation and evolution of the *maqâm* systems in general.