THE STUDY OF NON-TEMPERED SYSTEMS : PROBLEMS AND METHODOLOGY

Nathalie Fernando
Laboratory Langues-Musiques-Sociétés from CNRS, Paris, France

In the oral traditional cultures of Central Africa, scales are non-tempered and present some remarkable properties. In Bedzan Pygmies' vocal polyphony for example, the same piece presents a wide mobility of the tuning of the scale degrees from one version to the next, or can be sung either with a tetratonic or a pentatonic scale. In Ouldeme instrumental polyphony, the pentatonic scale which is observed in the low register is not reproduced identically in the higher register, and the octave does not seem to be the frame which structures the entire scale.

When studying such scales, two problems related to measurement and verbalisation occur.

1. Measuring the intervals which separate each degree as well as their margin of production is not satisfactory in the area of musical scales : such measurements merely reflect possible actualisations, but they do not give us access to the model of the scale system. In other terms, they do not enable us to explain the manner in which the system works and its indigenous conception.

2. In such traditional oral cultures, the rules which underline the musical system are rarely verbalised : abstract concepts like "scale", "degree" or "interval", are not just non-verbalised, they are practically unverbalisable ; there is indeed conception, but not conceptualisation. This is why the scale cannot be isolated as a distinct element of the musical system and only exists for the musicians through its materialisation in the polyphony.

Thus, the study of musical scales requires the use of interactive experimental methods. This seems the only way to catch the principles on which these scales are based. Pioneering work in the field of tuning of xylophones and gamelans has been conducted in Central Africa and in Indonesia by Simha Arom since 1989. I will show the innovative ways which the recent development of most sophisticated computerised equipment have enabled us to enlarge the framework of interactive experimentation by adapting it to Bedzan Pygmies' vocal polyphonies as well as hocket instrumental polyphony of the Ouldeme of Cameroon.

ISBN: 3-931852-66-0
ISSN: 1617-6847