# A COGNITIVE APPROACH TO THE STUDY OF MUSICAL SCALES IN POLYPHONIES OF CENTRAL AFRICA

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Some 15 years ago, a new method for the study of the untempered pentatonic scales of Central Africa was applied to the tuning of traditional xylophones. The idea was to find an interactive simulation device, which would allow different xylophonists to play the music of their respective ethnic groups.

The recent development of most sophisticated acoustical computerised equipment has enabled us to enlarge the framework of this kind of interactive experimentation and adapt it also to vocal music, be it monodic or polyphonic. For two years, we have been investigating in situ – Cameroon – the untempered scales used by the Bedzan Pygmies in their contrapuntal songs and by the Ouldeme in their hocket instrumental polyphony.

After the papers of N. Fernando – related to problematic and methodology – and F. Marandola – about the application of these experiments and their results –, I will emphasise the experimental impact and resources of such interactive methods.

I will examine successively:

- What types of interaction occur during the experimental procedures : 1) between the musicians, and 2) to what extent the use of these methods can change the relationships between the investigators and the musicians.
- How could this methodology be efficient for the comprehension of any orally transmitted scalar system, be it vocal or instrumental.
- The outlook of the use of interactive experiments, not only in ethnomusicology, but in a general manner to any cognitive process related to a musical system.


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