How Far Do We Dare to Revise Hornbostel and Sachs?

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The Hornbostel and Sachs *Systematik*, as revised by MIMO, is still the only classification system that we have that is free of any cultural-bias and is also free from language-bias. This, as I discussed with Margaret Kartomi before she published her book on Classification (Kartomi, 1990) is due to its use of numbers rather than words, for the numbers can be translated into any and every one of the world's languages and cultures, without the prejudice that many people have associated with it, due to them looking at the explanatory German or English texts, rather than looking at the numbers. It was also compiled, like all valid classification systems, bottom-up rather than top-down, though, again like all others, it was inevitably published top-down, as described by Nazir Jairazbhoy in *Selected Reports*. (Jairazbhoy, 1990, pp. 81-104)

I would like to present three matters here.

First, for whom did Hornbostel and Sachs intend their Classification System? Was it just for us, we who can recognise most instruments at a glance? Or was it to help those responsible for musical instruments that arrive randomly in a museum or collection of mixed subjects, places where there is no organologist on the staff to help them to sort out what the instruments are and who not have the knowledge to catalogue them properly in the museum's register, nor to label them for their public display. If it is intended for such collections and museums, then perhaps we should consider preparing what biologists and botanists call a key. This is a series of questions that can be answered on a basis of 'if Yes, go to X', and 'if No, go to Y', answering the lists of such questions, one by one, gradually leading towards an identification and a name. John Burton and I published an example of such a key, for he is a biologist, in our abortive attempt to design a new system back in

1970 (Montagu and Burton, 1971, pp. 49-70). This seems to me to be a project that might be worth considering, for it could also be a useful introduction to using the Hornbostel and Sachs system for those who are entering our own profession, as well as for the non-professionals in our field.

The second is a question of definitions. Roger Blench raised a point with me a while ago on what is a string? If the African raft and tube zithers whose cortex is raised to make a 'string', and if our children put rubber bands as 'strings' round a cigar box, if those are strings, then what about the zithers in one of his areas where people use those metal strips that go round packing cases – are these string zithers or are they plucked idiophones? Following from this, it occurred to me that we have on the one hand aeolian harps, which we do consider to be blown chordophones, and on the other hand a miniature version, a strip of rubber band, etc., between two small bits of wood or plastic, which we blow. Are these ribbon reeds, i.e. aerophones, or are they miniature aeolian harps, i.e. chordophones?

But what I want to talk about primarily, is that there remains one major and glaring problem in the system as it stands, that affects both us and the inexpert:

This comes in the Aerophones 'proper' and it is the way in which Hornbostel and Sachs decided to separate the reed instruments.

They decided to divide these by the reed type, distinguishing them by the single reeds, the double reeds, the free reeds, and, although these they ignored, the split-reeds or dilating or retreating reeds. We can ignore the free reeds for the moment, but the dilating or split reeds are so common in South-East Asia and a few other places that they had no excuse for ignoring them. This is why I ensured that they have their place in the new MIMO version of the system.

It would have been far more sensible if they had divided at least the double and single reeds by the bore-shape, because this decision of theirs produces several major problems.

The first is for museum curators in that many ethnographic instruments, and, as we shall see, some from our orchestral culture, arrive in every collection without their reeds, and therefore, if

they wish to classify those instruments they have no way to do so save by research through the illustrated catalogues of other collections, and these they may well not have available in-house. The upper end of the body will probably have a hole in the end which may have held a staple with a double reed on the top, or it may have had a cane reed with a tongue slit in one side, or it may have had a plant stem with two or three vertical slits in it, and there is no way for the non-expert curator to tell which it may have been.

Second, is that there are at least some instruments that use both single and double reeds. In Sumatra, and perhaps in other parts of South-East Asia, there are pairs of shawms where the treble has a single reed, a piece of plant stem, sometimes of cane, with a tongue cut in one side, whereas the tenor has a normal flattened plant-stem double reed. The two are played together in musical performance, but Hornbostel and Sachs separate them into two different classes. In Hungary, folk tárogató (the small shawms, rather than the wooden soprano saxophones) are played with either a double reed, or with a single reed that was made either from a goose quill with a tongue slit in it, or from a similar segment of cane.

Third, in our own orchestral culture, you can go into any good musical instrument store and buy a miniature saxophone mouthpiece to fit on the end of a bassoon crook. In my student days, one of my colleagues used one of these, and I could detect no difference between his sound and that of his neighbour, who used a conventional double reed. With more difficulty, you can buy an even smaller version for an oboe; this I have seen but have not heard. Whether you can buy intermediate sizes for oboe d'amore and cor anglais I do not know, but I am certain that such mouthpieces could be made for any oboist who needed one.

But the point is that both in this and in the pairs of shawms, the instruments remain the same but the major classification points do not. The only difference is an accessory, rather than the instrument, which seems illogical. There is an early nineteenth century bassoon with what appears to be a contemporary single-reed ivory mouthpiece in the Welsh Folk Museum at St Fagans – would

that instrument have to be separated from the other bassoons? And how would the curator know which sort of reed the other bassoons had originally had on the ends of their crooks?

If Hornbostel and Sachs had divided the instruments by the bore shape, at least the first steps towards classification would be obvious to the most inexpert eye, save for a very few borderline cases, and perhaps for those curators who were ignorant of the purpose of the long forked upper insert of the Muslim shawm. That fork provides a stepped cone, and it is this that converts the cylindrical body into an effectively expanding one (Montagu, 1997, pp. 74-9). I call it 'Muslim' because while it is endemic in all Arabic musical cultures, it also extends into some of the Muslim areas of what used to be the USSR, though not into India.

There is also a vital acoustical significance between the two bore shapes, because instruments with an expanding bore overblow octaves and all the overtones, whereas those with a cylindrical bore overblow twefths and only the odd-number overtones, and in addition have, for instruments of the same physical length, a considerably lower fundamental pitch. Also, unless they have additional fingerholes, covering which is difficult for the human hand without adding mechanism, so as to fill the gap between the octave and the twelfth, cylindrical bore instruments without such mechanism tend to have a limited range, being restricted to either the fundamental or the overblown registers – this, after all, is why Denner 'improved' the chalumeau in order to invent the clarinet. The only earlier surviving instrument, that I know of, that anticipated his invention, is the stille shawm that was found in Henry VIII's ship, the *Mary Rose*, from the 1540s, in Portsmouth, which breaks Tinctoris's description of the dulcina in that the Mary Rose shawm does fill that gap and thus does have a complete range (Gardiner, 2005, pp. 233-41).

For anyone who can recognise the difference between an expanding and a cylindrical bore, then all the octave-overblowers would be in one list and all twelfth-overblowers would be in the other, and the two lists would be much tidier.

Pairs of shawms would be together. In Hungary shawms with a goose-quill single reed

would be together with the other shawms from all over southern Europe. In Tribal India, pre-Mughal, shawms with single cane reeds would also be with other shawms. In Sumatra, pairs of shawms would be reunited. In our culture, the saxophone would be where it belongs, as would the Schunda tárogató and other wooden saxophones, among the expanding bore instruments. And the arrival of a bassoon with a single-reed mouthpiece on the end of its crook would cause no alarm in any collection.

So far as I know, most free-reed instruments with fingerholes are of bamboo and have a cylindrical bore; the only free reeds with an expanding bore that I know of, are the Burmese and Thai mythan (buffalo) horns, with, as is usual for all of the free reeds with one or more fingerholes, the reed set or cut in the side of the body. These horns use the open narrow end of the horn as a fingerhole. And all the dilating-reed instruments that I have ever seen have been cylindrical in bore, but that does not mean that we can rule out the possibility of ever meeting one with an expanding bore.

Dare we take so radical a step?

As an individual, I did not have the courage to suggest it, when I produced my revised version of Hornbostel & Sachs (Montagu, 2009 and 2012, pp. 7-27). Many of my proposed revisions were adopted for the new MIMO revised version, but I did not dare then to suggest so major a step as this, to change the numbers for every reed instrument in the System.

If you are prepared also to recognise this problem, and with so many of us present here who are interested in classification, are we prepared, as a group, to present this change to the world?

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A further paper on the problems of Hornbostel & Sachs Systematik, given at the Fondazione Ugo e Olga Levi in Venice in 2015.