

**ACOUSTICS2008/1995**  
**Characterisation of brass musical instrument designs using the**  
**brassiness parameter**

Arnold Myers

University of Edinburgh, Reid Concert Hall, Bristo Square, EH8 9AG Edinburgh, UK

Recent work has established a "brassiness" parameter as a measure of the support given over the sounding length of a brass instrument to non-linear propagation in sound production. This parameter is a function of the geometry (bore profile) of an instrument, and provides a useful means of relating the timbral characters to the designs of the various kinds of brass instrument.

The geometries of over 1000 brass instruments belonging to museums worldwide and to individual musicians have been measured to determine the values of their brassiness parameter. Comparisons of these enable not only a more precise taxonomy but also provide a tool for studying the evolution of instrument design. This paper explores both the taxonomic analysis of the whole brasswind field and also gives examples of the use of brassiness in historical research.