RESEARCH REPORT

'Bowhorn In Space:' An Australian Artistic Collaboration

Ros McMillan

In 1994, in the Victorian city of Wangaratta, two of Australia's leading contemporary artists, Brian Brown and Garry Greenwood met for the first time. Brown's ensemble was performing at the Wangaratta Jazz Festival while Greenwood was staging an exhibition of his leather sculptures in conjunction with the Festival. Both men are committed to the notion of an Australian artistic style and both have produced a large volume of material in many years of creative work. The meeting in Wangaratta was significant because it marked the beginning of a collaboration which, in less than five years, has pushed the boundaries of Australian intermedia arts through the production of unique forms and sounds. Greenwood's work is the subject of my current research, which focuses specifically on the musical instruments he makes from leather. This report will outline the development of a new instrument, the bowhorn, from its commissioning to the production of the first CD on which it can be heard.

Garry Greenwood, who lives and works in Launceston, emigrated to Australia in 1962, first working as a freelance artist/designer in Sydney. His career includes the establishment of the Bowerbank Mill Gallery in Deloraine in 1973, which he directed until 1985, his position as Head of Leather Workshop in the Canberra School of Art (1985–1989) and over thirty solo exhibitions throughout Australia and internationally. He has also exhibited in more than thirty major group exhibitions throughout the world and, amongst numerous awards, gained the first prize in the Public Choice Award at the international leather conference, 'Leder 98,' in Switzerland in 1998. His leather sculptures are represented in forty public collections throughout the world and his instruments made from leather are in the private collections of Barry Tuckwell and Don Burrows, amongst others.

Greenwood's interest in making musical instruments began with an appreciation of the design of stringed instruments and a desire to capture their qualities. He did this through producing non-sounding sculptures, out of which grew an interest to create objects which sounded. His first instruments were leather drums and stringed instruments. The latter were inspired by the North Indian *ek-tar*, in which the resonator is a flat pumpkin or gourd, with a

bamboo tube through it projecting slightly on one side. A metal string tied to the tube passes over a bridge on the gourd to a peg at the upper end of the instrument. The *ek-tar* is held in one hand and the string is plucked by the second finger of the same hand.[1] With Greenwood's instruments there are no rules as to how the sound should be produced. Thus, the string can be plucked rapidly, bowed conventionally or, indeed, played in any manner the performer chooses.

From stringed instruments, drums and other instruments known as 'Suspended Harmonics' (which incorporate two bowls, one of which is enclosed in the other), Greenwood turned his attention to wind instruments. These, he reasoned, were basically a tube through which air passed. His first creations were a set of four bowhorns, named for their shape, similar to the bow used to shoot an arrow. A carved leather 'string' is attached close to both ends of the instrument. Although this string is far more substantial (and decorative) than the strings of a traditional bow it is used for the same effect, to force the instrument into its characteristic shape. The main purpose of the string is to bring the long length of the tube to a manageable size, as shown in the following photograph.

The bowhorn is played with the curve descending from the mouthpiece. This is unlike other curved instruments such as the Renaissance cornett, the kombu of South India or instruments made from animals' horns such as the *shofar*, which are played with an ascending curve. The body of the instrument, which is slim at the mouthpiece, widens at the bell-end in a flare of overlapping pieces, reminiscent of an arum lily. In order to accommodate the

[1] B. Chaitanya Deva, *Musical Instruments of India* (Calcutta: Firma KLM, 1978) 150–51.

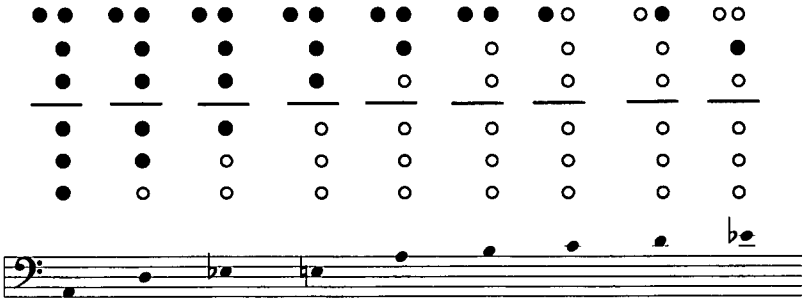
downward curve of the bowhorn, the performer plays the instrument with a similar posture to that of a bassoonist. All of the first set of bowhorns are played without fingerholes or mouthpieces. The performer uses his or her lips to produce sound through an opening of approximately 2.5 cm, in a similar manner to a didgeridu player.

As a result of Brown's and Greenwood's meeting in Wangaratta and mutual admiration for each other's work, the commissioning of a new bowhorn took place. The instrument was to have fingerholes and be fitted around the mouthpiece of a tenor saxophone. (Brown plays soprano saxophone but the tenor mouthpiece was selected because of the acoustic power and timbral possibilities to be gained from a larger mouthpiece.) Greenwood had previously made a bowhorn with finger holes for the Tasmanian composer and performer Karlin Love.[2] This instrument, which is approximately one metre in length, was originally fitted with a clarinet mouthpiece but Love has recently found that a tenor saxophone mouthpiece gives a better sound. It was decided that the new instrument should be longer than Love's bowhorn, as much for visual aesthetics as for the aural possibilities.

Early in 1995, three months after the Wangaratta Festival, the basic construction of the instrument was completed. It had been made from a long, slim wedge-shaped leather piece which was rolled into a tube with the sides glued together. Layers of leather were then applied with the purpose of keeping the body as rigid as possible when played. The length of the instrument as measured over its outer curve was 152 cm and on its inner curve it measured 128 cm. The bell, with its flower-like form, had an opening of approximately 18 cm.

In order to set the tuning Brown travelled to Launceston, where he and Greenwood spent a ten-hour day working on the new instrument. Greenwood had placed ten finger holes (nine on the face and a thumbhole at the back) over 30 cm of the barrel, the spaces between each determined by his own finger stretch. With Brown covering seven finger-holes, the rest were plugged with disks of leather and the first note was blown. It was an approximate A. This, then, became the fundamental note from which Brown selected another eight using cross-fingering typically used to play wind instruments (see Ex. 1).

Example 1: Chosen notes with their fingerings.



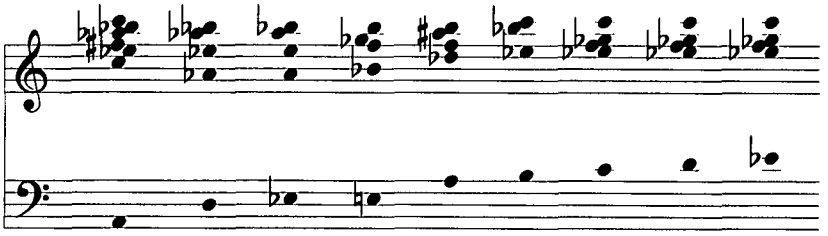
[2] An account of the development of this bowhorn appears in Karlin Love, 'No Repertoire, But the Smell is Good: Improvising with Leather Bow Horns,' *Australian Clarinet and Saxophone* 1.4 (1998): 8–10.

This 'scale' was selected because it suited Brown's compositional style. His music has the rhythmic momentum of African-American music and incorporates improvisation to a large extent, thus the 'blues' quality of the selected notes seemed likely to provide appropriate melodic sounds.

To complete the instrument, Greenwood reformed the leather by plugging the unwanted holes with discs, filing them flat to the instrument's surface and gluing them into place. A further operation consisted of realigning three of the existing holes, which had been placed in a straight line, to more readily suit a typical hand grip and placement of fingers.

As soon as he took posession of the instrument Brown began a systematic practice schedule, setting himself fifty hours of work before the bowhorn would be played publicly. He first discovered that there was an overtone series on each note with a range so great that it was possible to play melodies on them (see Ex. 2).

Example 2: Harmonics for each note.



Another discovery was the instrument's ability to produce glissandi without the need to move the fingers but rather using embouchure and throat manipulation. The multiphonics which could be produced were far greater than any saxophone Brown had played and there was more variety of tone that any single instrument known to him.[3]

In its lowest register (the nine notes of Example 1) the sound is reminiscent of a bass clarinet. However, when the embouchure and throat are adjusted the instrument can produce the timbral qualities of a didgeridu. The middle register (a' to d'') moves from a bassoon timbre in its lowest notes through the qualities of a C melody saxophone with a more piercing sound as it ascends. In its upper register, using chromatic fingering, the bowhorn sound is a synthesis of trumpet and soprano saxophone but it is also in this register that Brown produces the instrument's unique sound. This is obtained through playing the overtone series of the fundamental A (that is, with all holes closed). The actual sound is difficult to describe. Brown's description of it is 'a kind of screaming wail but it's not sad. It can be really aggressive but it also can produce a soft haunting sound.' This variety, according to Brown, gives the instrument substantial potential for personalised expression.[4]

Brown's first public performance with the bowhorn was in the State Theatre of the Victorian Arts Centre, performing a fanfare he composed for the opening of the Graduation Ceremony

[3] Interview with Brian Brown, 21 Feb. 1999.
[4] Interview with Brian Brown, 28 Aug. 1999.

of the Victorian College of the Arts on 25 June 1995. The work consisted of the bowhorn, with an inbuilt microphone, playing an improvisation over a pre-recorded tape recording. The recording was a work engineered by Rob Vincs, consisting of an electronic pulse overdubbed with the opening intervals of Copland's *Fanfare for the Common Man* treated electronically, over which Brown had recorded himself playing the bowhorn. The performer stood alone on an empty stage wearing a double-faced mask, also made by Greenwood. The combination of pulse, electronics and double bowhorn, in addition to the setting, was a dramatic event with which to launch a repertoire.

Since then Brown has released a CD of his ensemble Flight, on which there is one track with the bowhorn.[5] This is titled *Bowhorn in Space* and consists of a free improvisation over a tonal and rhythmic structure performed by an ensemble of piano, bass and multiple percussion. A solo CD which includes three tracks for the bowhorn is shortly to be released.

Observing a musical instrument from its creation as visual expression through its development as a vehicle for aural expression has been a remarkable experience but the research has barely begun. Two smaller instruments, named Shwaahorns, have recently been created by Greenwood, and Brown is now in the process of discovering their voices. In addition, Brown has recently been experimenting with new ways of playing his bowhorn, finding dozens of quartertones and microtones, all of which are yet to be codified.

Garry Greenwood's work in producing unique artforms and Brian Brown's constant striving for new sounds provide an exciting dimension to Australian creative practice and research.

[5] Brian Brown, *Flight*, New Market Music, NEW3014.2, 1997.