VOX II

for 4 amplified voices (using extended vocal techniques), stereo-tape, harmonizer & delay-system

commissioned by "Electric Phoenix" with funds made available by the Arts Council of Great Britain.

SPECIAL SINGING CONVENTIONS

(J) Vocal model – gidayu-bushi recitative of Japanese Bunraku puppet-theatre. This mode of vocal production involves the consistent & frequent use of high (or very high) & low (or very low) positions of the larynx, constriction of the windpipe (tension effect), harshness in phonation, & the consistent use of subharmonic or gritty coloration (see notation of solo on page 2). The special vowels & the slow vowel transformations are also essential to the style. Singers are advised to acquaint themselves with recordings of this music. Note that it is used consistently for both singing & heightened recitation, & this score combines both uses. Observe carefully the various ranges of the large glissandi indicated in the score – upper end is either high (highest non-falsetto) or very high (falsetto). Note also the use of tension-increase marks (⟹). During the huge-range upglissandi, the tension increase tends to cut off the sound (forced niente) as pitch reaches its highest range.

Note also the controlled use of vibrato & very wide vibrato, lashes (see articulation notes), extended consonants (see score), & direct (→ →) & biased (↝ ↝) glissandi.

(U) Ululation-articulation. The individual notes of scales, arpeggios or ornaments occur as individual units of an ululation – technique used in North Indian vocal music. In making transitions from (J) to (U) voice needs to be gradually relaxed, as the two techniques are incompatible. ((J) produces wide vibrato if ululation is attempted).

(F) Vocal model – Malian music (Fanta Sacko), but with modifications. Most important features retained are projection of high formants, & treatment of pitch in a "relaxed" manner. Pitches almost "glossed over" but with a sense that they are clearly known (not giving the impression that the singer could not manage to produce them clearly!). Not quite so glossed here as in Malian singing.

Also, scales & ornaments remain ululated (as in (U)), or semi-ululated, unless indicated as "legato".

Towards the end of VOX-II, production gradually relaxes towards a more neutral tone suitable for the harmonic blending required there.

(W½B) warp-half breath – strong breath component added to sung notes.

(W¾B) So much breath added to note that although there is a voiced component its pitch is unclear (gritted or multiphonicised via windpipe coloration & relatively quiet).

(W⅔B) Similar to (W¾B), but pitch still detectable.

In (J) sections, (W½B) & (W¾B) should remain compatible with (J)-production.

Breathy production is notated both in the voiced sound line, using ▬▬ for (W½B) and ▭▭ for (W¾B), and sometimes in the noise-band line, as e.g. ▭▭. In many cases the latter notation (of the breath-component only of these sounds) is redundant & is therefore ommitted. In many other cases however, the breath constituent may enter before & sustain beyond the voiced component. In these cases, both sets of graphics are used. This should not cause any ambiguity so long as it is remembered that ▬▬ & ▭▭ indicate presence of (various ammounts of) breath, whether or not this breath is separately notated!

> ❋ During the 2nd & 3rd sections of the piece, the central unvoiced material should appear to "rise out of the plain of", to "fly above" the fixed harmonic field, & return to it. The unvoiced constituents of these sections should be rehearsed SEPARATELY to get a feel for how they contrapuntally link & interact.

BROLGA human imitation of Brolga crane, as used by Australian aborigines in various ceremonies. Male & Female production should be as similar as possible – in particular, pitch & pitch-shape should be identical. Brolga must not mask Voice-1 sob line. (Male falsetto).

This gesture must be related in pitch & sound-quality to the BROLGA sound, appearing as an extension of it (& totally unlike the bouche fermé, slow r̄ production in "Slow-Birds" section).

FROG inhaled upgliss starting in subaudio grit range & rising into falsetto (multiphonic if possible). As "frog-like" & non-human as possible.

MONKEY very high, extremely high-formants, strongly nasalised & possibly with uvular rasp, upgliss (& "ye" formant gliss) – as "animal-like" & non-human as possible.

NOTATIONAL SHORTHAND IN FINAL SECTION

In the final (rhythmic) section of VOX-II, a compromise has been adopted between the detailed graphics of my vocal notation & conventional notation. In general graphics have been ommitted where no ambiguity arises & certain notational shorthand devices employed alongside the conventional notation (details of these can be found in the column to the right of this).

EXTENDED PHONETIC NOTATION

Vox-II uses the same graphic and extended-phonetic notation conventions as Vox-I. The following notes should be read as a supplement only to the instructions provided in Vox-I.

ə o u ɛ (underlined) underlined vowels more akin to Japanese vowels. Produce with tongue arched so that projection is semi-nasal, lips tensed & rounded or pouted (depending on vowel), jaw (possibly) tensed.

ï very highest-formants vowel-type: higher than English sea, & different from i (as in English skin).

[ɯ] Vowel-type as wolf (on tape), approximately ə produced almost entirely nasally.

ɸ Similar to "slow-birds" on tape, u with fundamental only (all harmonics suppressed).

ψ ə with tongue arched so that all harmonics, except (approximately) octave & 12th, suppressed. (Transitional between ɸ and θ).

dy fy ty   y = rapid formant downgliss ï → given vowel

tw   w = rapid formant upgliss from u (very low) → given vowel

(d) suppressed d (much of airflow nasal, bypassing artic.)

dz   z with suppressed d attack.

∫(g)! unvoiced ∫ ⇨ voiced g-stop (See Book of Lost Voices).

‖: t!k! :‖ ‖: d!g! :‖ "double-tonguing", unvoiced & voiced. t! & d! on the beat, k! & g! on off-beat. Assume a ə (neutral) vowel, unless otherwise specified.

N.B. These are plosive (!) tonguings. The tonguing sound should be louder than the voicing in d! & g!. The effect is d(g)! g(d)! or t(k)! k(t)!, and d! & d(g)! should sound like real drums!

‖: ŋn :‖ ⇨ ‖: d!g! :‖ ŋn double tonguing is over a semi-nasal airflow, so doesn't break continuity of air-stream. d!g! is over mouth air-stream which it splits into staccatissimo units. Transition (gradually stop down nasalisation) must be seamless.

(ŋn) used only in transition to & from ŋn. Airflow is completely nasal & hence artic. effect is minimal.

d!g!d!d!g!d! TRIPLE TONGUING, as used in brass & woodwind technique, but plosive!

d!⇩ d! with plosively expelled air, causing windpipe multiphonic.

⇩⇧ Exhale, inhale large draught of air forcefully, tending to produce windpipe multiphonic on exhale ("lower" pitch) & producing "gasp" on inhale ("higher" pitch).

ARTICULATIONS

moltogliss rapid random pitch-glissandi covering the entire vocal range.

vibrato

very wide exaggerated vibrato

increasing width (intensity) of vibrato

All vibrato is throat-produced: NOT operatic vibrato!!

= shake

‡ ¼-tone sharp   ‡‡ ¾-tone sharp

close to indicated pitch, but AVOID specific tempered pitch

lash: very rapid downgliss attack to note

similar, over greater range (often across a break in the voice). Ornaments used in many modern music cultures.

DYNAMICS

>o decrescendo to nothing (niente). NOT to be confused with normal (>) decrescendo. Use microphone decrescendo where necessary to achieve complete niente.

where absolute values (mf, mp etc.) not indicated, to be read as articulations around a mean, & apply only to the musical gesture to which they are attached.

often applied to single constituent of a double-constituent sound, e.g. (W¾B). One constituent fades-up from nothing or niente, while other continues normally.

MIKE CRESC. (or DECRESC) Use distance from microphone to achieve crescendo (decresc.) effect.

TEMPO

accel / **rit** always take place WITHIN tempo i.e. although the given musical gesture may accel or rit, the underlying (clock) pulse continues regularly, and singers must resynchronize themselves with this pulse after the accel or rit.

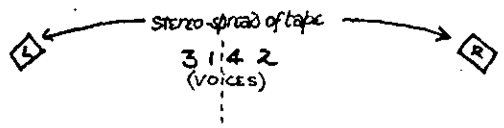
Duration of this note adjustable to permit resynchronisation with clock pulse.

fluid Tempo of musical gesture not rigidly tied to metrical base. e.g. internal distinctions between may be smoothed out by accel, rit, or etc.

CHECK SYNC. Duration of this bar (point of entry of next vocal event) may be adjusted to ensure continued synchronisation with tape.

tiny note-heads indicate duration (only) of noise-bands, glissi etc. which don't have note-head notation.

SPATIAL PROJECTION & BALANCE



(1) The voices should be projected in the relative positions shown, with the male voices (3,4) interleaved with the female voices (1,2) & biased to the left, & the soloists (1,4) in the centre.

(2) The projected voices should form a closely focused group near the centre of the total stereo image, as would normally be the case with a group of vocal soloists set against an orchestra.

(3) Exceptions to this spatial projection are indicated in the Mixer part in the score.

(4) The aural image is that of a small group of people singing within a vast landscape which encloses them. The relative levels of voice-parts & tape should be set so that the voices always tell against, or through (especially in the Canon), the tape-environment, but so that they always appear to be singing from within it.

(5) If necessary, reverberation should be added to the voices so that they appear to be within the tape-environment & not acoustically separated from it.

HARMONIZER & DELAY

For the central (solo + canon) section, a Harmonizer & a Delay system are required. The harmonizer takes as INPUT the Voice-3 solo, and is OUTPUT to the same location as that solo, so that the solo voice appears to be singing in parallel tritones. Using an Eventide Harmonizer, the settings would be as follows:-

PITCH SHIFT 0.707 (i.e. $1/\sqrt{2}$)
ALGORITHM 2
FUNCTION p/c-NORMAL
FEEDBACK MAIN c. "9.30" – "10.00" o'clock
DELAYED Off
LEVEL of shifted pitch c.5dB below level of direct pitch.

The delay is applied to a signal-mix of voice 1, voice 2 & voice 4. The direct mixed signal is routed to the left-hand loudspeaker and the delayed signal to the right-hand loudspeaker. The delayed signal is at the same level as the original signal, & the **delay-time is precisely 3½ seconds.** A 2 tape-recorder delay loop is recommended where high-quality, large-memory digital-delay is not available.

Tape

texture akin to crickets/frogs cf. al. etc.→

Great Northern Diver

"water-drums"

REZERO CLOCK

6s. 10s. 14s. 17s. 18s.

Voice 4

SUBHARMONICS: On this page (only) I have attempted to notate in detail the presence of subharmonics, & transitions into & out of them. Subharmonics may be pure (especially on sustained steady pitches), or more of a gritty coloration to the vocal sound (e.g. in rapid upgliss), but the 2 types should cohere timbrally. On subsequent pages the symbol "J" will implicitly this kind of vocal coloration & details of the subhs will be omitted, to simplify the graphics.

(♩=60)

observe time-indications approximately, except where ⊛ – observe these rather exactly

tape cue

SOLO

(slow gliss!)

(o) dʒo ⇨ ü ⇨ ɪ̈ɪ̈ts o

mo ⇨ tia ⇨ o ⇨ ʏʏ ʏy ⇨ r

Voice 1

Voice 2

Voice 3

mixer very gradual fade to full level over 30 seconds

TAPE

Time 18s. 21s. 25s. 27s. 31s. 32s. 36s. 39s. 42s. 46s. 48s. 51s. 54s. 1m 03s.

Tape

GREAT NORTHERN DIVER p mf

slope of gliss levels off approach is very gradually

(i.e. tension increases causes vocal attenuation as you reach up to lash)

IMITATE contour of WATER-DROM

gradually steepen gliss

v. slow!

15 secs.

Voice 4

(ω) tsu ⇨ ɪ̈ʉ yu ⇨ ə ⇨ ɪ̈ʉ

tsa ⇨ ɪ yu ⇨ ə ⇨ ü

ni tsoʏyə ⇨ u

ko ⇨ u (ω) ⇨ ə ⇨ ɪ̈ʉ iyə ⇨ ɪ̈ʉ dyo

fʉi ⇨ ə ⇨ o

subsidio random grit

Voice 1

Voice 2

Voice 3

mixer

Time 1m09s 1m14s 1m19s 1m24s 1m29s 1m34s 1m39s 1m44s 1m49s 1m54s

Tape

"crickets, frogs" etc. continues

bass-register texture

(just audible)

FLUTTERING

(just audible)

(strong)

Voice 1

microphone crescendo (behind voice-2)

Voice 2

microphone cresc. (behind voice-2)

4=5

4=5

Voice 3

Exactly as voice-4 in previous section!

4=5

4=5

Voice 4

microphone cresc. (behind voice-3)

4=5

7=6

Mixer

Time 1m54s 1m59s 2m04s 2m09s 2m14s 2m19s 2m24s 2m29s 2m34s 2m39s

Tape — flutter (cresc) — FLUTTERING PROMINENT — VERY STRONG — PANNING STRONGLY — SUBSIDING — PITCHES on E(♯5) harmonic series — bau-texture

Voice 1 — W¾B is produced with breath in the throat; Notes for W¾B can be produced (in mouth) simultaneously — seamless!

Voice 2 — decrease by slow closure of lowered lip — ** PITCH MUST BE SUSTAINED LONG ENOUGH TO CONNECT WITH PITCH-ON-TAPE — seamless! — accel (within tempo)

Voice 3 — seamless! — ** PITCH MUST BE SUSTAINED LONG ENOUGH TO CONNECT WITH PITCH-ON-TAPE

Voice 4 — (to pitches grid) — seamless! — ** PITCH MUST BE SUSTAINED LONG ENOUGH TO CONNECT WITH PITCH-ON-TAPE

Mixer

Time 2m39s 2m44s 2m59s 3m04s 3m09s 3m14s 3m19s 3m24s 3m29s 3m34s

Tape

MULTIPHONIC BLAB

ppp "Reiki" Call etc.

[with TUTTI] BLUPLIE (watery flutterings)

CHORD-GLISS WIND

emerging behind voices

Voice 1

mike decrescendo

15 secs

(J) with Transitions to W⅛B & W¾G where necessary (see graphics)

TUTTI

(seamless!)

(slight)

Voice 2

mike decrescendo

15 secs

unless otherwise indicated, (J) with appropriate transitions to W⅛B or W¾B, as indicated in graphics.

TUTTI

(smallest possible)

Voice 3

mike decrescendo

15 secs

unless otherwise indicated (J) with appropriate transitions to W⅛B or W¾B, as indicated in graphics.

TEMPO of articulations approx ♪♪♪ at ♩=144 (i.e. as Final section)

TUTTI

Voice 4

mike decrescendo

15 secs

unless otherwise indicated (J) with appropriate transitions to W⅛B or W¾B, as indicated in graphics.

TEMPO of articulations approx ♪♪♪ at ♩=144 (i.e. as Final section)

mike cresc

(imperceptible entry!!)

TUTTI

from BEHIND VOICE 3

Typical very high (T) voice

TUTTI

Staccato

Miker

Time 3m34s 3m39s 3m44s 3m49s 3m54s 3m59s 4m04s 4m09s

Tape

Voice 1

Voice 2

Voice 3

Voice 4

Mixer

Time 4m09s 4m14s 4m19s 4m24s 4m29s 4m34s 4m59s ⇒ZERO

Tape "fluttering" dying down — pitches on C# (& E) harmonic series — C# BASS DRONE — "fluttering" — "fluttering" — Wolves (5 F 5 F) — Wolf C# CUE — REZERO = CLOCK

Voice 1 — W½B W¾B W — J — U W J — Seamless! — ♩=144 — 25 secs

Voice 2 — W — J — U W J — Seamless! — (ululated figures overlaps end of solo in voice 1) — 'reach top with voice-' — ♩=144 — 25 secs

Voice 3 — J W U — J — U J — Seamless! — (ululated figures overlaps end of solo in voice-2) — reach top with Voice-2 — ♩=144 — 25 secs

Voice 4 — W½ W W¾B — J — absolutely seamless transition into pitch-material on tape! — 4:5 — (MOUTH WIDE OPEN) — ♩=144 — 25 secs

Mixer — Tape pitches anticipate but DO NOT PRECEDE Voice-4's C#. Set level prior to Voice-4's C# accordingly.