

Light Variations **'Variation 2'**

By Jamie Hancock

'Light Variations: Variation 2' is composed for cello, piano, electronics, samples and birdsong. Chris Hancock is on cello. Recorded in Northleach July to December 2020.

Performance Notes

For the cello, slight jeté and extreme jeté are used. Slight jeté has less attack and fewer bounces than extreme jeté, which has significant attack and should continue into the following bar. Slight jeté and extreme jeté vary in volume according to the different dynamic markings specified.

The electronics, samples and birdsong will all be pre-programmed in a laptop so these elements can be integrated with the cello and piano in a live setting.

Commentary: Key Areas where 'Variation 2' Differs from 'Variation 1'

The inspiration and themes for 'Variation 2' are consistent with those introduced in the commentary for 'Variation 1'. Much of the material, form and structure and the exploration of Messiaen's Third Mode of Limited Transposition in 'Variation 2' more or less follows that explained in the commentary for 'Variation 1'. What follows now is an explanation of key areas where 'Variation 2' differs from 'Variation 1'.

The cello part in the opening Big Bang Section A uses the experimental performance technique extreme jeté over the route note of the final chord - Ab. Along with the piano chord being held by the sustain pedal into the following bar, this adds to the atmosphere. The contrast between slight jeté and extreme jeté becomes a feature in the first statement of Equivalence Section B1.

Apart from the samples recorded using: the *Moog Ladder Filter* gen~ Max/MSP patch by Peter McCulloch; the *Granular Synthesiser v4.0 2011* Max/MSP patch by Nobuyasu Sakonda when it is used for the opening of 'Variations 1' and '2'; the recording made using an ultrasonic detector (Bat Box); the sample processed using the *GMEM Microsound Universe (GMU)* external bufGranul~ object in Max/MSP and then the birdsong; 'Variations 1' and '2' draw on different samples. Unlike with 'Variation 1', at the beginning and end of 'Variation 2', there is no cut, edit, splice and manipulation of: an electronically treated chord through Nobuyasu Sakonda's *Granular 2.5*; a sample from NASA's 'Song of Earth' from the album *Symphonies of the Planets*; or a 'New Light' sample, which comes from the London Community Gospel Choir. The samples appearing in 'Variation 2' are discussed in more detail below.

Another influence is thought about the mathematics used in constructing bridges and how weight, density and the distribution and dissipation of pressures is taken into account. The pizzicato cello line in the first statement of Equivalence Section B2, is akin to the pattering of feet walking over the Vanšu Bridge in Riga, Latvia.

'Variation 2' differs to 'Variation 1' at Relativity Section C1 as the fugue is extended with cello accompaniment. Also at Relativity Section C1 there is the first use of sul ponticello in the cello part, which combined with electronic treatment gives the sound a harsh, rough edge.

The cello part at Relativity Section C2 places emphasis on the bass line. Much of the cello part for this passage has specified down bows and accents.

The return of Equivalence Section B1 in 'Variation 2', particularly to start with, is even more stripped back, crystallised and chordal than that in 'Variation 1'. Though, in 'Variation 2', the texture does become fuller as the electronic treatment builds, contributing to the misterioso atmosphere. The return of Equivalence Section B1 takes some inspiration from 'Sonata for Cello and Mixing Desk', which is part of the album *Rêve* by Brian Lock.

The cello line at Equivalence Section B2, specifically bars 212, 215 and 218 up to and including 225, is reminiscent of the initial fanfare, 'Sunrise', opening Richard Strauss' *sprach Zarathustra*, Op. 30 composed 1896, which was used in Stanly Kubrick's 1968 (the two dates are an anagram) film *2001: A Space Odyssey*.

For the return of Big Bang Section A, the cello part plays three long notes, one for each chord and motif in the piano part. It has dynamic and tonal variation, which is suggestive of rays of light and shadows of darkness. To achieve this tonal variation, the extended performance technique *sul ponticello*, is used to produce experimental, rougher sounds. Before the next piano chord and long note in the cello, the motif first stated by the piano is repeated *cantabile* by the cello - more rays of light here.

To finish, is a sample from Beatrice Harrison's 'Londonderry Air with Nightingales' - cello accompanied by birdsong.

The Use of Electronics and Samples

All audio is treated with Ableton Live's 'Reverb-Concert Hall(TrueStereo)' effect. The opening Big Bang Section A incorporates first, a sample created through recording audio using the *Moog Ladder Filter* gen~ Max/MSP patch by Peter McCulloch and then processing this audio further using the *Granular Synthesiser v4.0 2011* Max/MSP patch by Nobuyasu Sakonda from bars 8 up to and including 13 followed by a bar's rest; second, a sample created through recording audio only using the *Moog Ladder Filter* gen~ Max/MSP patch by Peter McCulloch stated from bars 15 up to and including 20 followed by a bar's rest; third, a recording made using an ultrasonic detector (Bat Box) edited in Ableton from bars 22 up to and including 27, which is immediately followed by fourth, a sample processed using the *GMEM Microsound Universe (GMU)* external *bufGranul~* object in Max/MSP from bars 28 up to and including 39 and after this there is another bar's rest before the next section. The birdsong recorded in the Cotswolds using a rifle microphone and processed through software for spatialisation called *Spat* or *Spatialisateur* in French, developed by the Institute for Research and Coordination in Acoustics/Music (IRCAM), is also treated with the *SoundHack* freeware plugin '++compand' to increase the gain a little. This plugin is implemented in Ableton Live. At various points the cello part is coloured by electronic treatment. The recurring falling glissando feature in the first statement of Equivalence Section B1 is treated with *SoundHack* freeware plugins implemented in Ableton Live - '++delay' from half way through bar 43 up to half way through bar 45 and bars 49 up to and including 50 and '+pitchdelay' from bars 55 up to and including 56 and half way through bar 61 up to half way through bar 63. The falling glissando feature is also treated with the *Granular Synthesiser v4.0 2011* Max/MSP patch by Nobuyasu Sakonda and then the sample is edited in Ableton Live and it appears at bars 68 up to and including 69 and half way through bar 74 up to half way through bar 76. At bars 78 up to and including 79 the cello chord is electronically treated using Christopher Dobrian's *Random Access Sound* Max/MSP patch - this sample is subsequently put into Ableton Live. Bar 80 is a bar's rest and from bars 81 up to and including 92 there is a repeat of the sample processed using the *GMEM Microsound Universe (GMU)* external *bufGranul~* object in Max/MSP and this is then followed by a bar's rest before the next section. The final pizzicato note in the cello at bar 115 is treated with the *SoundHack* freeware plugin '++delay', implemented in Ableton Live, and Ableton Live's Auto Pan 'Around The Head' with a triangular low-frequency oscillation (LFO) waveform. At bars 146, 153 and 160 the cello is treated with *SoundHack* freeware plugin '+pitchdelay' implemented in Ableton Live. At bar 186 the final cello note is treated with *SoundHack* freeware plugin '++pitchdelay' - compared with previous use of this plugin the plugin parameters are altered on this occasion. At bar 187 the birdsong pauses for dramatic effect and then resumes again at bar 188. At bars 193 and 195, to enhance the mysterious atmosphere, the *SoundHack* freeware plugin '++pitchdelay' is used again with the parameters of the plugin set as they were at bar 160 and earlier. At bars 200 up to and including 211 the cello audio is treated with the *Granular Synthesiser v4.0 2011* Max/MSP patch by Nobuyasu Sakonda and then the sample is edited in Ableton Live. The final note in the cello at bar 226 is treated with the *SoundHack* freeware plugin '++delay', implemented in Ableton Live, and Ableton Live's Auto Pan 'Around The Head' with a triangular LFO waveform. There is the sound of the clap of a bird's wings before the sample from Beatrice Harrison's 'Londonderry Air with Nightingales'.