

Case Study

10

RDM in the Performing Arts: Living Symphonies by Daniel Jones & James Bulley (Unit for Sound Practice Research, Goldsmiths, University of London)

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10.1. INTRODUCTION

*Living Symphonies*¹ is a landscape sound installation by James Bulley and Daniel Jones², which toured across four different forests³ in the UK in the summer of 2014. The work portrays the thriving activity of the forest's wildlife, plants and atmospheric conditions, creating an ever-changing sound symphony heard from a network of 24 speakers hidden throughout the forest itself. Working with ecologists and wildlife experts across the UK, Jones/Bulley developed highly detailed maps of the flora and fauna that inhabited each forest site where the installation was to take place.

Each species in the surveyed area was depicted by a unique set of musical motifs that portrayed their changing behaviour over day and night, coming to life as the species awakened; moving, developing and interacting just as the organism would. Dozens of these motifs were heard at any moment when the piece was live, spatialised across the space of the forest and heard back through a three-dimensional speaker system. In total there were some 15,000 fragments of sound within the sound score, making up musical movements for over a hundred different organisms.

10.2. FUNDER REQUIREMENTS

The piece was commissioned and funded as a collaborative work by Sound and Music, the Arts Council England and the Forestry Commission England. All copyright in the work, including that of the datasets, remained with the artists and there was no requirement to make any such data publicly available. A required outcome was a toolkit for touring public artworks, produced and published by the Forestry Commission England. This toolkit is openly accessible and available here⁴.

10.3. SURVEY DATA

In order to undertake the piece, the artists collected a large array of datasets over a year-long period of in-depth research and development. This data was used both to create and contextualize the artwork. A table of datasets captured during the project is shown in Figure 10.1.

¹ Living symphonies: <http://www.livingsymphonies.com>; last accessed 5 March 2017.

² James Bulley (b. 1984) and Daniel Jones (b. 1983) are an artist duo whose collaborative practice explores the boundaries of sound art, music, and process-based composition: <http://jones-bulley.com/biography/>; last accessed 5 March 2017.

³ The forest sites for the 2014 tour were as follows; Thetford Forest (24–30 May 2014), Fineshade Woods (20–26 June 2014), Cannock Chase (26 July–1 August 2014), and Bedgebury Pinetum (26 August–7 September 2014).

⁴ Sound and Music: <http://soundandmusic.org/create/planningandproducingartworksinthenaturalenvironmenttoolkit>; last accessed 5 March 2017.

Type of dataset	Format	Size	Capture Tools/ Software	Backup/Storage	Raw	Prepared	Shared with	Archived	Accessible
Detailed ecological surveys of four forest sites captured by teams of volunteers.	.xls / .csv	20 Mb	Google Docs / iPad	Google Drive / download onto Dropbox < > hard drives	Yes	No	Internal	Yes - onto hard drives	Not currently
Photographic surveys of the four forest sites (each metre square of the 30x20m forest sites), used for survey reference and as documentation	.tiff / .jpeg	30 Gb	Canon 6D DSLR camera / Photoshop	Dropbox < > hard drives	Yes	Yes as collage images of each site	Internal mainly (but some on website / used for press)	Yes - onto hard drives	Not currently
Illustrations of selected organisms by the artist Katie Scott. This material was used in visual explanations for the audience and in various marketing materials.	.tiff / .eps	400Mb	Adobe Illustrator / Hand drawn	Dropbox < > hard drives	Yes	Yes print versions etc available	Internal mainly (but some on website / used for press)	Yes - onto hard drives	Not currently
Reference field recordings of the four forest sites. These recordings were used to identify bird song and animal calls, and as an aid in balancing the sound mix of the piece.	.wav	30 Gb	Zoom H6, Tascam P2, DPA4060 Microphones / Pro Tools	Dropbox < > hard drives	Yes	Yes (edited selection available for use)	Internal only	Yes - onto hard drives	Not currently
Site and development documentation, across the four sites. This material was used as a documentation of the process of the creation of the piece for future papers and presentations about the piece.	HD film in .mov format and HR photography in .tiff format	10 Gb	Canon 6D DSLR camera / Photoshop	Dropbox < > hard drives	Yes	Yes (edited selection available for use)	Internal mainly (but some on website / used for documentation film)	Yes - onto hard drives	Not currently
Recordings of the scored musical fragments that make up the piece, derived from sessions with over 50 musicians in studios across the UK.	.wav / Pro Tools sessions (.pts) / Ableton Live sessions (.als)	150 Gb	Numerous microphones. Recorded into Pro Tools (.pts) as .wav files and then worked in Ableton Live (.als)	Dropbox < > hard drives	Yes	Yes (but only for use within the master score for the piece)	Internal only	Yes - onto hard drives	Not currently
3D software simulations of the forest sites created from the survey data	software package - python, C++, MaxForLive	500Mb	Custom software	Dropbox < > hard drives	Yes	/	Internal only	Yes - onto hard drives	Not currently

Figure 10.1 Table of datasets

10.4. BACKUP AND STORAGE

Working in remote forests across England was a challenge for capturing and storing data, as Internet/network access was extremely limited. As a result, the data was regularly backed up and duplicated onto hard drive storage, before then being synchronized to cloud storage at a later point. For immediate 'transfer' purposes all data gathered was placed into Dropbox (for sharing with partners including press organisations, Sound and Music and Forestry Commission England) and then transferred to external hard drive storage (copies were synced and held both at the Jones/Bulley studio and in personal artist studios offsite). Dropbox was used for its ease of use, stability and simple sharing interface.



Figure 10.2 Thetford Forest Photographic Survey, 2014 (Photograph: James Bulley)

10.5. ANCILLARY DATA

During the live period as the installation toured, there were a number of additional datasets that were captured by the artists and the production team as part of the project.

A table of datasets captured during the project is included in Figure 10.3

Type of dataset	Format	Size	Capture Tools/ Software	Backup/ Storage	Raw	Prepared	Shared with	Archived	Accessible
Written testimonials (blogposts, handwritten feedback forms regarding audience experience)	.doc / paper	5Mb	Journal articles / written testimonies on paper	Dropbox < > Hard disks / physical backup in studio boxes	Yes	Yes	Some public, some internal only	Yes - onto hard drives	Not currently
Press articles and coverage (BBC news, Nature Journal video feature, Guardian feature etc)	.pdf captures	3Gb	Paparazzi .pdf screen capture software / print to .pdf function on Google Chrome. Videos as downloads (or sent in links from producers)	Dropbox < > Hard disks	Yes	Yes	Internal only	Yes - onto hard drives	Not currently
Video documentation of the sites (both with and without audience presence)	.mov HR files	150Gb	Canon 6D DSLR camera	Dropbox < > Hard disks	Yes	No	Internal only (possible future use)	Yes - onto hard drives	Not currently
Audio documentation of the piece live at each site	.wav files	50Gb	recorded on ZoomH6 with DPA4060 microphones (and various others)	Dropbox < > Hard disks	Yes	Yes (edited highlights selected and used on video documentation)	Internal only (possible future use)	Yes - onto hard drives	Not currently
Photographic documentation of the piece and the forest sites	.tiff files / .jpeg files	10Gb	Canon 6D DSLR camera	Dropbox < > Hard disks	Yes	Yes (edited highlights package created for press use and website use)	Internal only (possible future use)	Yes - onto hard drives	Not currently
Captures of the weather data	.csv files / .xls files	20Mb	Weather station through custom software	Dropbox < > Hard disks	Yes	No	Internal only	Yes - onto hard drives	Not currently

Figure 10.3 Table of ancillary datasets

Class	Behaviour Group	Family	Code	breviatio	Species	Latin name	Scientific Family	Scientific Genus	Dominance	Radius	Length [1]	Wingspan	Speed [2]	Activity Pattern	Weather	Social Behaviour [3]	Food Sources	Flowers
Mammal	Individual	Deer	M.01		Red Deer	<i>Cervulus capreolus</i>	Cervidae	Cervulus	5	8	120		0.42 [4]	crepuscular, nocturnal		social (4)	grass, leaves, berries, ivy, heather	
					Fallow Deer	<i>Dama dama</i>	Cervidae	Dama										
					Reeves' Muntjac	<i>Muntiacus reevesi</i>	Cervidae	Muntiacus										
Mammal	Individual	Fox	M.02		Red Fox	<i>Vulpes vulpes</i>	Canidae	Vulpes	4	8	70		0.5	nocturnal, crepuscular		territorial	mammals, birds, berries, nuts, worm	
Mammal	Individual	Rabbit	M.03		European Rabbit	<i>Oryctolagus cuniculus</i>	Leporidae	Oryctolagus	3	8	38		3 [5]	nocturnal, crepuscular		solitary	grass	
Mammal	Individual	Hare	M.04		European Brown Hare	<i>Lepus europaeus</i>	Leporidae	Lepus	3	8	60		4	nocturnal, crepuscular [6]		solitary	grass, berries, moss	
Mammal	Individual	Badger	M.05		European Badger	<i>Meles meles</i>	Mustelidae	Meles	4	8	75		0.25	nocturnal, crepuscular		social (6)	worm, mammals, insects, reptiles, birds, berries	
Mammal	Individual	Weasel	M.06		Least Weasel	<i>Mustela nivalis</i>	Mustelidae	Mustela	3	8	20		1.7 [7]	continuous		territorial	vole, mouse, frog	
Mammal	Individual	Mouse	M.07		Woodmouse	<i>Apodemus sylvaticus</i>	Muridae	Apodemus	2	8	9		0.9 [8]	nocturnal [9]	less active when cold/wet	solitary	seeds, berries, insects, worms, snails, fungus	
Mammal	Individual	Shrew	M.08		Common Shrew	<i>Sorex araneus</i>	Soricidae	Sorex	2	8	7		0.9 [10]	continuous [11]		territorial [12]	snail, spider, worm, frog, mouse, vole	
Mammal	Individual	Vole	M.09		Field Vole	<i>Microtus agrestis</i>	Cricetidae	Microtus	2	8	11		0.9	crepuscular, nocturnal [13]		solitary	grass	
Mammal	Individual	Mole	M.10		European Mole	<i>Talpa europaea</i>	Talpidae	Talpa	3	8	14		0.9	continuous		territorial	worm, nuts	
Mammal	Individual	Squirrel	M.11		Grey Squirrel	<i>Sciurus carolinensis</i>	Sciuridae	Sciurus	3	8	21		2.5 [14]	diurnal [15]		solitary	seeds, nuts, berries, fungus, bark	
Mammal	Individual	Hedgehog	M.12		European Hedgehog	<i>Eriacacus europaeus</i>	Eriacacidae	Eriacacus	3	8	20		0.05 [16]	nocturnal		solitary	beetle, worm, snail	
Mammal	Individual	Bat	M.13		Brown Long-eared Bat	<i>Plecotus auritus</i>	Vespertilionidae	Plecotus	4	8	40		5 [17]	nocturnal [18]		social (4)	fly, moth	
					Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	Vespertilionidae	Pipistrellus										
					Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Vespertilionidae	Myotis										
Reptile	Individual	Lizard	R.01		Common Lizard	<i>Lacerta vivipera</i>	Lacertidae	Lacerta	2	8	10		0.2 (move in bursts of 0.5-1.5s)	diurnal	bask in sun; speed and pause duration change logarithmically below 25C (0.01 @ 15C - 0.2 @ 25C; 1 @ 30C - 0.1 @ 35C) [19]	solitary	insects	
Reptile	Individual	Snake	R.02		Grass Snake	<i>Natrix natrix</i>	Colubridae	Natrix	3	8	80		0.5	diurnal	bask in sun; speed 0.25 m/s @ 15C; 0.45 m/s @ 30C	solitary	reptiles, mouse, vole, shrew	
Reptile	Individual	Slow Worm	R.03		Slow Worm	<i>Anguis fragilis</i>	Anguillidae	Anguis	2	8	35		slow moving when started	diurnal	bask in sun	solitary	worm, spider, insects, snail	
Reptile	Individual	Frog	R.04		Smooth Newt	<i>Amphibia</i>	Salamandridae	Lissoklilton	2	8	8			nocturnal [20]	diurnal during wet weather	solitary	snail, spider, insects	
Bird	Individual	Wren	B.01		Wren	<i>Troglodytes troglodytes</i>	Certhiidae		2	8	10	15	6.5 [21]	diurnal		solitary	insects	
Bird	Individual	Robin	B.02		Robin	<i>Erithacus rubecula</i>	Mniotiltidae		2	8	14	21	11	diurnal		solitary	insects, worm [22]	
Bird	Individual	Finch	B.03		Bullfinch	<i>Carduelis bullfinch</i>	Fringillidae		2	8	15	26	11	diurnal		territorial	insects, seeds	
Bird	Individual	Tit	B.04		Great Tit	<i>Parus major</i>	Paridae		2	8	12	22	8	diurnal		social	insects, spiders	
Bird	Individual	Goldcrest	B.05		Goldcrest	<i>Regulus regulus</i>	Regulidae		2	8	9	15	6.5	diurnal		solitary	insects, spiders	
Bird	Individual	Thrush	B.06		Song Thrush	<i>Turdus philomelos</i>	Turdidae		2	8	23	36	11 [23]	diurnal		solitary	insects, worms, spiders, seeds	
Bird	Individual	Nighthawk	B.07		European Nighthawk	<i>Caprimulgus europaeus</i>	Caprimulgidae		3	8	26	60		crepuscular, nocturnal [24]	prefer warm, dry, still nights	solitary	moth, fly, dragonfly	
Bird	Individual	Warbler	B.08		Blackcap	<i>Sylvia atricapilla</i>	Sylviidae		2	8	11	19		diurnal		solitary	insects, berries	
Bird	Individual	Dove	B.09		Stock Dove	<i>Columba oenas</i>	Columbidae		2	8	40	70		diurnal		gregarious	berries, nuts, seeds, insects	
Bird	Individual	Woodpecker	B.10		Green Woodpecker	<i>Picus viridis</i>	Picidae		3	8	24	40		diurnal [25]		solitary	ants, nuts, seeds, berries, leaves	
Bird	Individual	Magpie	B.11		Jay	<i>Garrulus garrulus</i>	Corvidae		2	8	40	60		diurnal		solitary	insects, mouse, vole, shrew, berries, nuts	
Bird	Individual	Cuckoo	B.12		Cuckoo	<i>Cuculus canorus</i>	Cuculidae		3	8	32	58		diurnal		solitary	spider, beetle, moth, butterfly, insects	
Bird	Individual	Rook	B.13		Rook	<i>Corvus frugilegus</i>	Corvidae		3	8	45	80		diurnal		solitary	worms, insects, seeds	
Bird	Individual	Jackdaw	B.14		Jackdaw	<i>Corvus monedula</i>	Corvidae		3	8	33	70		diurnal		solitary	insects, worms, mouse, berries	
Bird	Individual	Crow	B.15		Common Crow	<i>Corvus corone</i>	Corvidae		3	8	46	100		diurnal		solitary	insects, worms, mouse, vole, berries	
Bird	Individual	Pheasant	B.16		Golden Pheasant	<i>Phasianus torquatus</i>	Phasianidae		3	8	30	85		diurnal		solitary	seeds, berries, leaves, insects	

10.4 Excerpt from Living Symphonies full organism survey, 2014

Flowers	Berries	Nuts	Theford	Finshade	Cannock	Bedgebury	Composition Notes	Instrumentation	Composition description	Players	Tone Row	Hz	Root BPM	BPM range	Metre
			3	1				Trombone, Timpani	French Horn prepared techniques, dynamic, interlocking patterns with timpani - opening of Jeanes's Sinfonia?	Hywel Jones, James Bulley	[Bb], C, D, Eb, F, G, A	87.3-1000	105	95-115	3/4
			3		3	2		Euphonium	clarinet melodies - rhythmic, complex not obvious, jump structure. Trumpet avoids of prepared technique embrace material in harmony. trombone low soft rhythmic notes underly	Hywel Jones	[F], G, A, Bb, C, D, Eb, E	140-1900	110	100-120	4/4
			3		3	1		Euphonium (extended techniques)	Euphonium - detailed interlocking patterns of slide sounds on 1st, 3rd then 4th... melody from breath sounds on long drawn out high notes (top end of range) /	Hywel Jones	[D], E, F, G, A, Bb, C	140-1300	115	105-125	3/4
			3					Female Voice, Alto	triple, counter rhythms, leaping parts, advanced	Herve Bastie, Laurel Sills	[A], B, C, D, E, F, F#, G, G#	164-680	70	60-80	4/4
			3		2	3		5-part male voice choir with off-beat percussive rhythms and tambourine	Irish rhythm, punctuations by clap, lurch winding eastern sounding grouped voice melody, fast counterpoints, 5/7 above variations etc. tambourine to add to clap over time. shaker to add to percussion over time also	Milo Fitzpatrick (D.Bass), Tenor Voices, Rose Bergonzi, J.B.D.J.J.	[G], Bb, A, C, D, F	50-1200	90	80-100	5/4
			3		1	3		Alto Clarinet	Glissando, leaping clarinet	Charly Richardson	[F], G, Ab, Bb, C, D, E	800-5,000	110	100-120	4/4
			3		1	3		Extended percussive improvised fragments using the keys of the clarinet	filtered to be fairly high frequency... rhythmic	Charly Richardson	Non-tonal	1200+	95	85-105	4/4
			3		3	3		Piano prepared	Short, punctuated fragments of high pitched sound, glimmering, sharp	Keir studio - Prepared piano - Keir Vine	?	1200+	117	117	3/4
			3		2	2		Prepared Chimes, Prepared Piano, metatphone	Short, punctuated fragments of high pitched sound, glimmering, sharp	Keir Vine	Non-tonal	1200+	110	100-120	4/4
			3		3	1		Hang and Steel Drum chords and rhythms	Chance based rhythms, with underly of prepared sustained textures and pad (from contact mic scrape material)	Keir Vine	Bb, Eb, G, F, D, B, E	whole	110	100-120	4/4
			3	2	3	3		Tambourine and Castanet phase rhythms	scraping, rattling, bright, fast, using varying rhythm motifs, complex - textural backing by prepared techniques, heavily generative, quite rapid patterns	Rose Bergonzi, J.B.D.J.J. Keir Vine	Non-tonal	1000-10,000	110	100-120	7/4
			2	2	3	1		Soprano Sax & Cello quartet	short rhythmic breath like patterns, layered, snarl, simple quiet melody on clarinet above - mid range pitch-wise	Charly Richardson, Peter Gregson	[G], C, D, A, B, E, F#	1000-7,000	115	105-125	4/4
			3		3	3		Glass Harmonica duet	based on vespers, textural, synthetic	James Bulley	Ab, B, Eb, C, E, Gb	2,500-10,000	120	110-130	4/4
			3		2	2		Double-stopped violin and extended techniques including glissando and harmonics	double stopped, dragged out light motifs, scally, extended techniques, harmonics, gliss notes, scrapes	Simon	[D], F#, A, E, G, B, C#	196-4,400	95	85-105	4/4
			3	3	3	1		Double-stopped cello and extended techniques including glissando and harmonics	Slides, gliss.	Peter Gregson	[C], A, E, G, B	100-4,000	90	80-100	4/4
						1		Cello	double bass harmonics, dragged, gritty notes, sustained, bowed, cello extended techniques, bow, any sounds etc. & harmonics - low pitch range for bowed	Peter Gregson	[C], E, G, A, B	100-4,000	90	80	4/4
			3		3	2		Peter Gregson	extended techniques, reed flutes, melodic, oblate, guttural low end of the oboe	Cello	[Bb], Db, F, C, Eb, Gb, A	100-4,000	100	90-110	3/4
			3		3	3		Concert flute duet, short descending melodies and arpeggiated sequences	virtuoso conversation - arpeggiated on flute, processed live, ready, addition of breathy textures, sequences	Kate English	[D], G, A, E, C	>	100	90-110	4/4
			3		3	3		Short clarinet motifs, rapid trills and short melodies	Spectral composition - short melodies on flute, processed live, ready, addition of breathy textures, arpeggios, spectral	Charly Richardson	[Eb], G, Bb; Ab, C, D, F	>	100	90-110	4/4
			3	2	3	3		Arabic influenced legato flute melodies		Kate English	[A], B, C, E, F, G, D	>	100	90-110	4/4
			3		3	3		Cello trills, extended techniques, rapid melodic motifs		Peter Gregson	[Bb], Db, F, Eb, Gb, A, C	>	110	100-120	4/4
			3	3	3	3		Soprano Saxophone melodies and rhythms		Charly Richardson	[F#], B, C#, F, G#, Ab, D#,	>	100	90-110	4/4
			3	3	3	3		Ascending and descending violin melodies with counterpoint		Simon Hewitt Jones	[G], D, F#, A, B, C, E, F,	>	100	90-110	4/4
			3					Tuba, Euphonium	spectrally composed, textural - extended techniques on both instruments, overblows, breath timbres, sung notes etc.	David Aird, Hywel Jones	[Bb], C, D, Eb, F, G, A	>	110	100-120	4/4
			3	3	3	3		Bass Flute melodies and counterpoints	spectrally composed, textural - extended techniques on both instruments, overblows, breath timbres, sung notes etc.	Kate English	[Bb], D, C, Eb, F, G, A	>	95	85-105	4/4
			3	3	3	3		Clarinet quartet with tuba and euphonium	rumor surge swerve on notes - tone harmonious, but dampened (bass/melodious) pedal, prepared slightly? Very light dipping short melodic	Hywel Jones, David Aird, Charly Richardson	[Bb], F, A, Eb, G, C	500-4,000	100	80-100	4/4
			3		3	3	Lesser Spotted is very rare	Rapid marimba rhythms, with cabasa counterpoint on the off-beat	Not mapped off woodpecker rhythms, but a much griller natural version built from 4-5 layers of interlocking rhythms	Keir Vine	D#, G#, Ab, C,	500-4,000	110	100-120	4/4
			3		3	3		Extended techniques on the harmonium, mechanical percussive sounds and pedal wheezing	Extended techniques	Keir Vine	Non-tonal	100-5,000	110	100-120	4/4
			1		3	3		Flute melodies with faster-forward trills and rhythmic extended techniques on flute keys	Sax plianoff similar to messian's oration. A play on the cuckoo's call - also ponderous... possible duet with cello chords?	Kate English	[C#], G#, E, D#, F#, A, B, C	800-1400	95	85-105	4/4
			3		3	3		Accordion	Whizzing... grabbled chords, half melodies, creak - extended techniques	James Bulley	?	100-8,000	110	100-120	4/4
			3		3	3		Harmonica	moff id	Theo Lampert-Crook	? A, C, D, F	100-8,000	100	90-110	4/4
			3		3	3		Melodica	Minor	Theo Lampert-Crook	[C], D, Eb, F, G, Ab, Bb	100-8,000	110	100-120	3/4
			3					Trombone	Sung & played notes (extended techniques)	Hywel Jones	Bb, F, D, A	100-8,000	105	95-115	4/4

10.4 Excerpt from *Living Symphonies* full organism survey, 2014

[This taxonomy details every living organism (in genus groups) and its related music across all four sites of the 2014 tour of *Living Symphonies*]

10.6. SHARING OF DATA

The sharing of the data that underpins *Living Symphonies* has been a complex and near impossible task. Whilst the partner organisations did create a toolkit that explored the touring of the piece (which was a prerequisite of the Arts Council funding that the piece obtained), it has not been possible to make available the vast majority of the above data in any coherent way. It is clear that most of this data would be very useful to many other researchers and artists (as proven by the interest of numerous academics, musicians and ecologists). However, in order to achieve this there would need to be funding allocated to provide the time for the adequate preparation of the datasets with related material to explain and contextualise them. Some of the photography and video has been used to make short reference films and to provide visual context to document the occurrence of the work, but it has not been possible for the artists to make the following datasets available due to a lack of funding, time constraints surrounding its curation and contextualization, i.e. ranges of data and editing of documentation material, and issues in hosting such large quantities of material. Bracketed after these datasets are the avenues that the artists would hope and plan to make the material available through if possible:

- *forest survey data* (Goldsmiths Data Repository – data.gold.ac.uk, livingsymphonies.com)
- *field recordings* (Goldsmiths Data Repository – data.gold.ac.uk, freesound.org)
- *weather datasets* (Goldsmiths Data Repository – data.gold.ac.uk, livingsymphonies.com)
- *photography* (Goldsmiths Data Repository – data.gold.ac.uk, flickr.com)
- *film* (Goldsmiths Data Repository – data.gold.ac.uk, livingsymphonies.com)
- *custom unique software* (Goldsmiths Data Repository – data.gold.ac.uk, github)
- *sound score materials* (Goldsmiths Data Repository – data.gold.ac.uk, freesound.org)

10.7. CONCLUSION

Whilst much discussion has occurred in recent years surrounding research data management in the context of science-centred and text-based research outputs, very little of this has involved confronting the problems facing artist-researchers working outside these areas. As a result of fundamental differences in the commissioning and funding structures for art projects, there is insufficient funding and understanding on the part of the artists and institutions involved as to how or even why it is worth making this data available. *Living Symphonies* provides a case study that highlights a large and wide-ranging array of datasets that would undoubtedly be useful for researchers across numerous disciplines. In this instance the artists/researchers are comfortable with the vast majority of the data being made available under one of the more openly accessible of Creative Commons licenses – in this instance this would not affect any further income for the artists as the pieces in themselves are unrepeatable due to their site-specific nature. The artists believe this would be the right thing to do, given the publicly funded nature of the project. This data will remain unavailable unless there is adequate funding and planning from the outset for projects such as these.



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