The Aotearoa Digital Arts Reader
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Interdisciplinary Moments: A History in Glimpses

Andrew Clifford

Digital art has a legacy interweaving the histories of visual art, media and screen culture, music, dance, theatre and science. Gathered here are a series of fragments that either recall an interdisciplinary spirit, or have clearly glimpsed it on the horizon.

Technological developments have shifted modes of practice. New media can require the artist, if that is what they call themselves, to look beyond their own artform into other fields; to act more like a director, corralling content and collaborators—including writers, designers, musicians, scientists, programmers and photographers—towards the final production. There are moments too where it would be tempting to generalise about the role of fabled kiwi ingenuity in projects requiring unconventional combinations of expertise and resulting in unusual collaborations. When support might not have been present within an artist's chosen practice but could be found in surprising new locations, new resources and expertise developed, along with new frameworks from which to think about cultural production, collaboration and authorship. This shift has often also meant moving beyond the usual modes and venues of presentation to create new spaces for new kinds of experiences.

The Happiness Acid

From film to sculpture to photograpy and batik, Len Lye's multi-stranded career looms large across any discussion of interdisciplinary art in New Zealand. Born in 1901, as a child Lye was fascinated by the mechanical motion of the lighthouse he lived in.[1] By the age of twenty he was deeply interested in tribal art and already considering ways to compose motion in the way "musicians compose sound."[2] On moving to Australia in 1922 he began experimenting with kinetic sculptures and scratching directly onto film. Fascinated by Aboriginal and Polynesian objects, he decided to focus entirely on "black art" rather than "Western style draftmanship."[3] After a brief return to New Zealand, he spent two years in Western Samoa and Australia, arriving in London in 1926. He completed his first film, *Tusalava*, in 1929. Hand-painted frame by frame, *Tusalava* is a greyscale animation of primordial, cellular forms, the result of both Lye's interest in tribal artforms and his incessant doodling, a habit he saw as being able to free the hand from conscious impulses and connect with the 'old brain'—subconscious memories of primal instincts and images.[4]

Lacking funding to pursue his projects, Lye had realised that by scratching, painting and printing directly onto individual film frames, he could do away with the need for a camera. He recognised the potential for a technique that would seem too jittery and unpredictable for traditional animators but could produce colours much more intense than those realised through conventional processing. Much of Lye's film output during the thirties was in the form of advertising for the General Post Office, tagged with exhortations to send letters by 2pm or use the right postcode. Although fitting the commercial imperatives of short advertisements shown in cinemas, these snappy vignettes, cut to music,

1. Roger Horrocks, *Len Lye: A Biography* (Auckland: Auckland University Press, 2001), 13.
2. Wystan Curnow and Roger Horrocks, "Introduction," *Figures of Motion* (Auckland Auckland University Press, 1984), xi.
3. Curnow and Horrocks, "Introduction," xii.
4. Curnow and Horrocks, "Introduction," xiii.

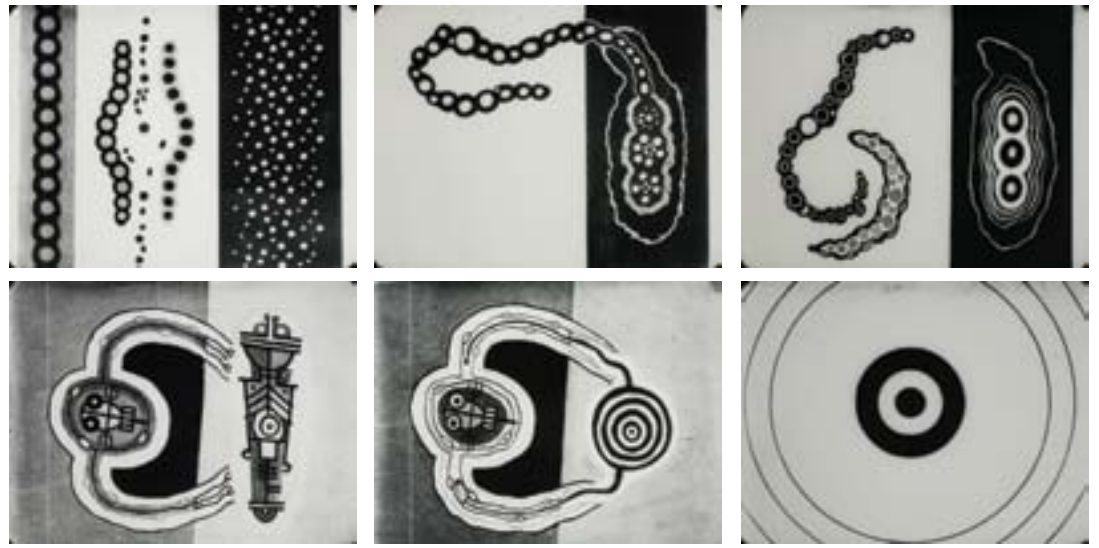


fig. 1

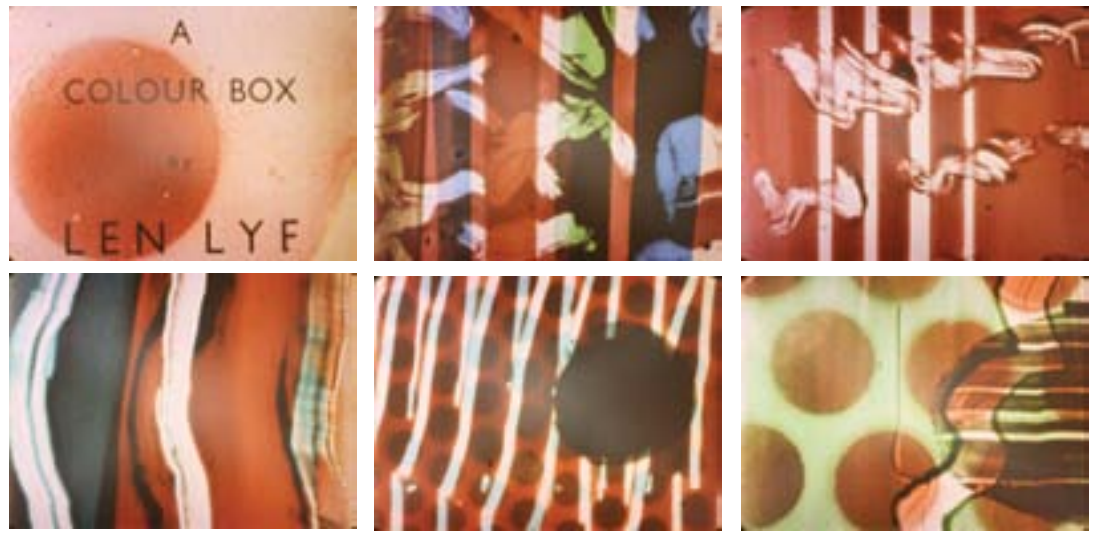


fig. 2

fig. 3

fig. 4

gave him an opportunity to experiment with combinations of image and sound; much like later practitioners, who would cut their film-making teeth making promotional videos for bands.

Lye was also experimenting with photograms, directly exposing objects onto the light-sensitive surface of photographic paper without a camera.[5] In the late 1940s, having moved from London to New York, he produced photogram portraits of his friends, including painters Joan Miró and Georgia O'Keeffe, architect Le Corbusier and poet W. H. Auden. He had his first exhibition of kinetic sculptures at the Museum of Modern Art in New York in 1961; a one-night showcase featuring ten models of his motorised steel constructions that crashed, flipped and wobbled their way through choreographed sequences accompanied by recordings including that of music by Pierre Boulez and African drumming.[6] These dancing machines provided more tangible ways of composing motion, articulating energy through the steel's ephemeral harmonic forms. Lye also showed at the Howard Wise Gallery, which was presenting high-tech work by such artists as Nam June Paik, Group Zero, Pol Bury and Billy Apple, but by 1967 Lye stopped developing new pieces, preferring to focus on theory and plans for enormous works that exceeded the material technologies of the time.[7] His writing ranged from poetry, prose and word-games to auto-biographical anecdotes and sense-based reminisces; from manifestos and essays to theories of art, television, film, genetics, and anything else that sparked his active brain.[8]

It was around this time that Lye participated in a lecture tour of New York State campuses with an eclectic group of six others, including composer John Cage, poet Robert Creeley, choreographer Merce Cunningham and electronics engineer Billy Kluver, who was then the organiser of EAT (Experiments in Art and Technology, Inc.). These kindred spirits, who already knew each other in New York, by day lectured in classrooms, by night combined to present chaotic, multi-sensory happenings.[9]

A New Vocabulary

In the late 1950s, Frederick Page, then Professor of Music at Victoria University College in Wellington and a keen follower of new developments in Europe, played a recording of Karlheinz Stockhausen's landmark 1956 electronic composition *Gesang der Jünglinge* to New Zealand's pre-eminent composer, Douglas Lilburn.[10] Lilburn was already a nationally celebrated senior composer with two symphonies under his belt and a third nearly finished. He described the new electronic medium as a "zombie on the horizon," worrying it would condemn him to "musical inconsequence" if he could not keep up with new developments.[11]

1961 was a pivotal year for Lilburn, who not only completed his third symphony but also produced his first tape composition: incidental music to accompany Allen Curnow's play *The Axe*. Lilburn was no stranger to working collaboratively in order to step outside the boundaries of conventional musical presentation. New Zealand writers continued to play a key role in Lilburn's electronic works. His 1965 treatment of Alistair Campbell's poem *The Return* was his first major electronic work and featured experiments such as wrapping cellophane around the tape drives. As early as 1949 he was involved in an expedition to Mt Aspiring with poet James K. Baxter, photographer Brian Brake and artist John Drawbridge.[12] Led by Brake, with support from the National Film

5: Douglas Lilburn in the Electronic Music Studio at Victoria University, Wellington, 1969, Dominion Post Collection, Alexander Turnbull Library, ref. EP/1969/3689/18.
6: Detail. Electronic Music Studio at Victoria University.

5. Horrocks, *Len Lye: A Biography*, 236 – 237.
6. Horrocks, *Len Lye: A Biography*, 288 – 289.
7. Horrocks, *Len Lye: A Biography*, 287.
8. One lecture Lye delivered was titled 'The Absolute Truth of the Happiness Acid', referring to nucleic acids (DNA), see Horrocks, *Len Lye: A Biography*, 340.
9. Horrocks, *Len Lye: A Biography*, 321 – 323.
10. Chris Bourke, "Douglas Lilburn: An Interview," *Music in New Zealand* 31, (Summer 1995/1996): 35.
11. Philip Norman, *Douglas Lilburn: His Life and Music* (Christchurch: Canterbury University Press, 2006), 199.
12. Gregory O'Brien, "High Country Weather," *New Zealand Listener*, vol. 203, no. 3447, 3 June (2006): 35.

fig. 5

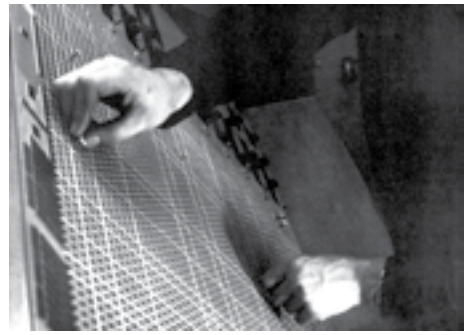


fig. 6

Unit, they attempted to create a collaborative multi-media documentary, but bad weather postponed filming after only a few days and the project was later abandoned after the death of one of the actors.

Electronic music held several advantages for Lilburn: it made him less eliant on performers, allowing him a freedom from unsympathetic musicians who might not appreciate a work's more challenging aspects, and it expanded the palette he was able to call upon, introducing new aural textures and environmental sounds, which he considered far more appropriate for evoking the local landscape and indigenous themes than classical instruments with their European associations.[13]

In 1963, Lilburn, by then Associate Professor of Music at Victoria, took a short sabbatical. The trip mostly focussed on visiting electronic studios: in Toronto he met Boyd Neel and Myron Schaeffer, in New York he visited the Columbia-Princeton studios, in London he visited the BBC Radiophonic Workshop as well as Workshop founder Daphne Oram's own studio, and he experienced Stockhausen's teaching in Darmstadt. After spending an additional three months at the University of Toronto, where he studied with Schaeffer and produced a number of studio sketches, he returned home. He then quickly set to work securing surplus and abandoned equipment from the New Zealand Broadcasting Corporation (NZBC) and the Victoria University Physics Department. With the help of enthusiastic NZBC Technical Officer Wallace Ryrie, he set himself up in a vacant basement at Victoria with borrowed gear and a can-do attitude to establish what has been described as "the most advanced electronic music studio in the southern hemisphere, outclassing anything in both Australia and Britain."[14] A later upgrade was overseen by staff of the Department of Scientific and Industrial Research, with added know-how provided by the Victoria Computer Centre.[15] This facility became a site of pilgrimage for a new generation of composers, including Jack Body, John Cousins, John Rimmer and Phil Dadson, many of whom then went overseas to learn more, returning to set up their own studios in other parts of the country.[16]

Television goes live at agricultural showcase

The Auckland Agricultural & Pastoral Association's shows, held since 1843, have predominantly been known as a display of agrarian prowess, featuring wood-chopping competitions and livestock exhibits, but they have also been an important showcase for New Zealand industry.

Although New Zealand television broadcasting officially began in black and white in June 1960, there had been experimental broadcasts throughout the 1950s. The New Zealand Broadcasting Service ran closed-circuit demonstrations in 1951 and Canterbury University College licensed their own self-built transmitter in 1952, but without many receivers in homes, audience was limited. Some of the first moving image transmissions to reach a substantial audience took place at the Royal Wellington Show and the Auckland A&P Easter Show in 1954, seen by an estimated 275,000 people. In the absence of a government commitment to the new medium, demonstrations and experimental broadcasts were also undertaken by private individuals and companies, including Pye and the Bell Radio-Television Corporation, both motivated by the desire to sell TV sets. Programming included quiz shows, sports simulcasts, medical operations,

13. Bourke, "Douglas Lilburn: An Interview," 35.
14. Tom Rodwell, "Space Waltz," *New Zealand Listener*, vol. 196, no. 3368, 27 November (2004): 44 – 45.
15. Douglas Lilburn, "EMS/VUW: A Personal Note," in *Douglas Lilburn Complete Electro-Acoustic Works*, ed. Wayne Laird and Jack Body (Auckland: Atoll, 2004).
16. Jack Body, interview with the author, 5 October 2001.

political addresses and 'educational' material from oil companies and airlines.[17]

Television promised to distribute and democratise culture, bringing images, entertainment and information from around the world into the homes of anyone who could afford a set. Although television came to be uniformly installed in living rooms, isolating the passive viewers arranged around this oracular presence,[18] these early A&P Show demonstrations seem to anticipate a more interactive future for the medium, conflating community events into a strange mix of live, pre-recorded and simulcast components.

The NZBC previewed its permanent colour television service at the 1973 Show. As well as setting up a 200-seater theatrette for viewers, colour monitors were placed at strategic points around the expo pavilion. The 1973 guide also carried a full-page ad for a "Colour Television Exhibition and Electronic Sound Display" to be held at the Mandalay in Newmarket, sponsored by The Television Electronic Service Association (TESA) and involving a roll-call of early consumer electronics companies (Philips, Murphy Colour Television (Fisher & Paykel), Majestic, AWA, Shaft, Pye, Sanyo, Bell Radio—TV, Orion and Sonophone), all eager to sell the virtues of television to the public and open visual portals to the nation's living rooms. Although A&P Shows were considered a means for townies to keep in touch with their rural heritage, there is little doubt that, for a period, they became a commercial forum for parading the biggest brands with the flashest, newest technologies.

Building the Brand

Another seemingly incongruous feature of the A&P shows was the art competitions. Better known for such handicrafts as wood-carving and lace-making, participants were also able to demonstrate draughtsmanship in pencil, watercolour, and oils, and at least as early as 1910 the Auckland Winter Show was staging a photography exhibition.[19] A young Barrie Bates took a number of prizes in the 1958 Easter show, including first prize for poster and catalogue design, book jacket design, pencil still-life, pen or wash study and dinner plate design.[20]

Bates left New Zealand for London in 1959, eventually changing his name to Billy Apple. Studying design at the Royal College of Art, Bates challenged the institution by working more like an art director than an artist, sub-contracting his production to staff in the sculpture foundry, ceramics school, fashion school, typography and photography departments; a "hands off and head on" approach still integral to his practice.[21] Billy Apple recalls the RCA also had a film school but that they didn't actually have any movie cameras yet. Nevertheless, Bates' early works photographically documenting performers shaving, bathing, shampooing, and drinking were envisaged as storyboards for potential film pieces.[22]

His final student work was also his last as Barrie Bates: a re-branding exercise with the artist bleaching his hair, eyebrows and eyelashes blonde, titled *Billy Apple Bleaching with Lady Clairol Instant Cream Whip, November 1962*. In addition to photographic documentation, later pieces were recorded on film, including the 1970 *Manhattan Street Glass Accumulation,* broadcast on the American Broadcasting Corporation's 6pm TV news. Other glass pieces were recorded on audio tape in collaboration with New Zealand-born composer Annea Lockwood.[23] Works recording everyday activities such as window cleaning, floor washing, nose blowing and bowel movements challenged the division

17. Robert Boyd-Bell, *New Zealand Television: The First 25 Years* (Auckland: Reed Methuen, 1985), 61 – 71.
18. Laurence Simmons, "Television Then," in *Television in New Zealand: Programming the Nation,* ed. Roger Horrocks (Melbourne: Oxford University Press, 2004), 44 – 73.
19. Agricultural, Pastoral & Industrial Shows Board, *Winter Exhibition Show Guide* (Auckland: The Auckland A&P Association, 1910), 93.
20. Agricultural, Pastoral & Industrial Shows Board, *NZ 1958 Easter Show Catalogue and Programme* (Auckland: The Auckland A&P Association, 1958), 101 – 105.
21. Billy Apple, interview with the author, 9 October 2005.
22. Billy Apple, conversation with the author, 7 September 2007.
23. Douglas Maxwell ed., *From Barrie Bates to Billy Apple* (London: Serpentine Gallery, 1974), 54 – 55.
24. Paul Stitelman, "From Barrie Bates to Billy Apple: An Overview," in *From Barrie Bates to Billy Apple,* ed. Douglas Maxwell (London: Serpentine Gallery, 1974), 1 – 3.
25. The Poster for this event stated that "Billy Apple presents" 'A' (for Apple), a film produced by Cammell [sic] Hudson Associates Limited, 'The Apple', produced by TV Cartoons Limited, and 'Billy's Apple and Friends', produced by Appthorp/ Craddock.

between art and life, artist and audience—the distinction being the artist (the brand) who transforms these activities into something else.[24]

On 29 October 1963, just prior to leaving London for New York, Billy Apple staged a one-night event, *Motion Picture Meets the Apple*, at the Institute of Contemporary Arts. The focus was the screening of his first complete moving-image work, *Billy's Apple and Friends*. The New Zealand Apple & Pear board provided boxes of apples, Bulmers provided two types of cider, and the 16mm film *Billy's Apple and Friends* was shown with two others[25] in a continuous television-style programme of screenings, interspersed with found apple-related footage including television commercials, horticultural documentaries and dentists endorsing apples. The resulting show-reel was a kind of typological, keyword-driven zeitgeist-montage now easily recreated with the results screen of an Internet image search.[26]

In New York, Billy Apple made headlines with his pioneering use of new technologies, a preoccupation perhaps attributable to his early ambition to be an engineer and an aversion to turpentine.[27] His first New York solo show was *Apples to Xerox*, which used the toning capabilities of this new process to create a silkscreen-like result on fabric that was then stretched like a painting. A year later, in 1966, a Ford Foundation Fellowship took him to Idaho, where he was hosted by scientist Robert Nertney, second-in-charge at the nearby Atomic Energy Commission research facility. Nertney produced works for Billy Apple on the facility's photocopier and related his experience of attending a UFO crash site, thus inspiring Billy Apple's 1967 *U.F.O. (Unidentified Fluorescent Objects)* show. Nertney later contributed the foreword to the catalogue of a Billy Apple neon exhibition at the Pepsi Cola Gallery, New York, a show which put Billy Apple on the front page of the New York Times. Many other artists in New York were also working with emerging technologies at this time, including Nam June Paik and Robert Rauschenberg who was collaborating with Bell Telephone Labs. Over the next few years there was a string of group shows across the USA and Europe focussing on electric art and including Billy Apple's neons.[28]

In 1969, Apple established his own gallery, 161 West 23rd Street, one of New York's first non-commercial, artist-run galleries.[29] From here he was able to experiment more freely, bringing an increasingly conceptual approach to his use of space. In a 1970 exhibition he bounced a laser light between pillars and walls to delineate new surfaces while later shows involved more quotidian carpet removal, vacuuming and window cleaning. In February 1972 he staged what he describes as a 'mental retrospective', counting, cataloguing and often destroying the works he had accumulated at his gallery, but not displaying any. A few months later he created the video and audio tape work *Alpha State* at the Montefiore Hospital and Medical Centre, where he recorded himself transmitting Alpha Waves from electrodes attached to his head.[30]

In what could be considered a return to those early A&P show beginnings, Billy Apple is now working with horticultural researchers, apple growers and Saatchi & Saatchi to produce and market his own distinct breed of apple.[31] Throughout his career he has been quick to experiment with new technologies, but only as a means to an end. Much like in the world of advertising where he once worked, it has always been a case of finding the most effective tool—be it drawing, photography, laser or ozone generator—to convey an idea.

7: Billy Apple with *Neon Floor #1*, Apple, 161 West 23rd Street, New York, November 20 – December 7, 1969. Argon, neon and mercury gas discharge tubes.

8: Billy Apple, *Ozone #2: Low Room Temperature*, Apple, February 21 – 22, 1970. Three ozone generators with slide projection of previous installation *Ozone #1: High Room Temperature*, October 25 – 26, 1969. The ozone produced in the closed, heated or chilled space made objects appear blurred, an effect combined with a distinctive air quality described by Apple as being like the aftermath of an electric storm.

9: Billy Apple, *U.F.O.s (Unidentified Fluorescent Objects)*, Howard Wise Gallery, New York, November 11 – December 2, 1967. Argon, neon and mercury gas discharge tubes.

10: Billy Apple, *Laser Beam Wall*, Apple, February 7 – 8, 1970. Helium-neon laser and front surface projection mirrors. Produced in association with Dr Stanley Shapiro, physicist at General Telephone and Electronics and, in 1969, co-inventor of the supercontinuum generated broadband white light laser.

26. Billy Apple, conversation with the author, 25 September 2007.
27. Robert Pincus-Witten, "A Times Square of the Mind," *Time*, 18 March (1966). http://www.time.com/time/magazine/article/0,9171,941980-2,00.html
28. Billy Apple, conversation with the author, 3 December 2007.
29. Although originally named for its address, the gallery became known as Apple in order to appease the protocols of some publications' free exhibition listings. Billy Apple, conversation with the author, 7 September, 2007.
30. Maxwell ed., *From Barrie Bates to Billy Apple*, 46.
31. Christina Barton, "Billy Apple," in *Speculation*, ed. Brian Butler (Auckland: Venice Project, 2007), 196.

fig. 7

fig. 8

fig. 9

fig. 10

Rewiring the gallery

As art moved away from self-contained, singular pieces in the 1970s (a movement known in New Zealand as post-object art) technology helped it reconstruct its role in the gallery—or escape the gallery altogether. Rather than presenting static works, artists would set up interactive environments, stage performances, or present recordings of events that took place elsewhere. As well as providing documentation, these devices allowed artists or participants to have experiences detached from the physical performance, such as the disembodied voice of a walkie talkie.[32] Duration also became a significant factor, evidenced by artists staging dawn-to-dusk endurance events or fleeting activities that could only be seen after the fact through documentation.

Concerned with processes rather than products, and situations rather than aesthetics, artists sought to engage with lived experience where anything could be the raw material of art, and viewers actively participated in the creation of meaning.[33] Underlying the work of this era is a sense of democratisation, opening up the potential of everyday objects to replace precious art materials, closing the gap between the artist (as creator of the work) and the audience. Post-object art extended the range of production and presentation, rupturing the division between what happened in the everyday and what occurred within the gallery. In the case of David Mealing's 1975 *Jumble Sale: A Market Place*, the artist opened the ground floor of the Auckland Art Gallery to stallholders, repurposing the open spaces of the gallery for a more informal and unsublimated exchange of value. Significantly, the work's success as a social sculpture relied upon the public's sincere support and engagement with the project as more than viewers.[34]

Co-edited by critic Wystan Curnow and teacher-artist Jim Allen, the 1976 book *New Art* is a good start for considering this period—in large part because it captures and fixes the practices of artists whose work is otherwise difficult to access, mostly due to its contingent, ephemeral nature.[35] It begins with a dedication to Len Lye. Projects featured include Kieran Lyons' *Superimpression*, which wired participants up for sensory tests using tape loops and closed-circuit television broadcasts on behalf of the anonymous corporate entity E-Z-GRO; Leon Narbey's neon light environments; Bruce Barber's Whatipu Beach and Mt Eden Crater group performances using walkie-talkies, megaphones, portapack video and audio recorders and Maree Horner's *Chair* which electrified an armchair using a battery and electric fence unit. Many works documented in *New Art* took place as performances at the Auckland City Art Gallery, part of a programme of contemporary artists' projects. This was fostered by Allen's ally, gallery exhibitions officer John Maynard, giving radical art by emerging artists (mostly Allen's students) major institutional endorsement. Other key artists of the time not featured in *New Art* include Andrew Drummond, who conducted solitary rituals in remote sites, Pauline Rhodes, who would make fleeting interventions in the landscape, and Di Ffrench, who would freely shift between performance, sculpture and photography.

Allen's own contribution to *New Art* was his group performance *Contact*, staged at the Auckland City Art Gallery as part of the 1974 exhibition *Four Men in a Boat*. *Contact* comprised three parts: *Computer Dance*, *Parangole Capes* and *Body Articulation/Imprint*. Set in an intentionally disorientating environment of flashing lights and cobweb-like hanging strings, *Computer Dance* required eight

fig. 11 (left)

11: Billy Apple, *Alpha State: A Video and Audio Tape Work*, Montefiore Hospital and Medical Centre, Bronx, New York, May 18, 1972. "Session began at 4.16pm and ended at 5.01pm. It was conducted by psychologist Dr Gene Smith. I lay motionless on a bed. Electrodes attached to my head transmitted Alpha Waves. The Alpha State is between beta (consciousness) and theta (light sleep). It is a condition of receptivity and acceptance without conscious effort. To achieve it and stay in it one must not seek it. Production of Alpha waves was signified by a buzzer sounding." (Billy Apple, 1972)

32. Tony Green, "New New Zealand 'New Art'," in *Intervention: Post Object and Performance Art in New Zealand in 1970 and Beyond*, ed. Robert McDougall Art Gallery (Christchurch: Robert McDougall Art Gallery and Annex, 2000), 61 – 63.
33. Christina Barton, "Framing the Real: Postmodern Discourses in Recent New Zealand Art," in *Headlands: Thinking Through New Zealand Art*, ed Mary Barr (Sydney: Museum of Contemporary Art, 1992), 173 – 175.
34. Bruce Barber, "The Gift in Littoral Art Practice," in *Intervention: Post Object and Performance Art in New Zealand in 1970 and Beyond*, ed. Robert McDougall Art Gallery (Christchurch: Robert McDougall Art Gallery and Annex, 2000), 51.
35. Wystan Curnow and Jim Allen, *New Art: Some Recent New Zealand Sculpture and Post-Object Art* (Auckland: Heinemann Educational Books, 1976); see also Green, "New New Zealand 'New Art'," 59.

fig. 12

(four male, four female) scantily-clad, blindfolded participants to connect their respective infra-red emitter and receiver units by painstakingly lining up the beams. Contact was confirmed by a shrill tone from a chest-mounted speaker.[36]

For those in the North Island, Jim Allen's sculpture department at the Elam School of Fine Arts was the locus of much of this activity. Allen—who helped establish an international context for the school, bringing visiting artists in to teach—himself began gathering international experience and contacts while studying at the Royal College of Art (1949 – 1952). On returning, he worked for the Education Department before becoming head of sculpture at Elam. This experience, especially working with children in provincial communities, led to a distinct approach to both his teaching style and his art-making—establishing open, social situations for interactive and critical dialogue, rather than asserting specific skills.[37] The establishment of a serious library at Elam, with a focus on periodicals, also helped students keep up-to-date with overseas developments.[38]

Of particular interest to Allen was the field of cybernetics, defined in Jasia Reichardt's seminal exhibition *Cybernetic Serendipity* (1968, ICA London) as "systems of communication and control in complex electronic devices like computers, which have very definite similarities with the processes of communication and control in the human nervous system."[39] Allen encountered this show in London during a sabbatical that took him to Europe, Mexico, and the United States. In London he also experienced the work of kinetic and conceptual artists, especially South Americans Lygia Clark and Hélio Oiticica.[40] This influence can be seen in Allen's *Parangole Capes* performance, echoing Oiticica's expansion of pictorial space by enveloping the viewer within the work, its title borrowed from Oiticica.[41] While in the States, Allen met Len Lye and Billy Apple, who had both had little contact with New Zealand at that time.[42] During this formative trip Allen also had first-hand encouters of riots and student protests in France, England and the USA. In retrospect, it seems clear that Allen's experience of this turbulent political milieu connected with the radical new art he found. For Allen, as well as making connections between science and art, *Cybernetic Serendipity* sparked an interest in psychological and social processes that would have a lasting effect on his work.

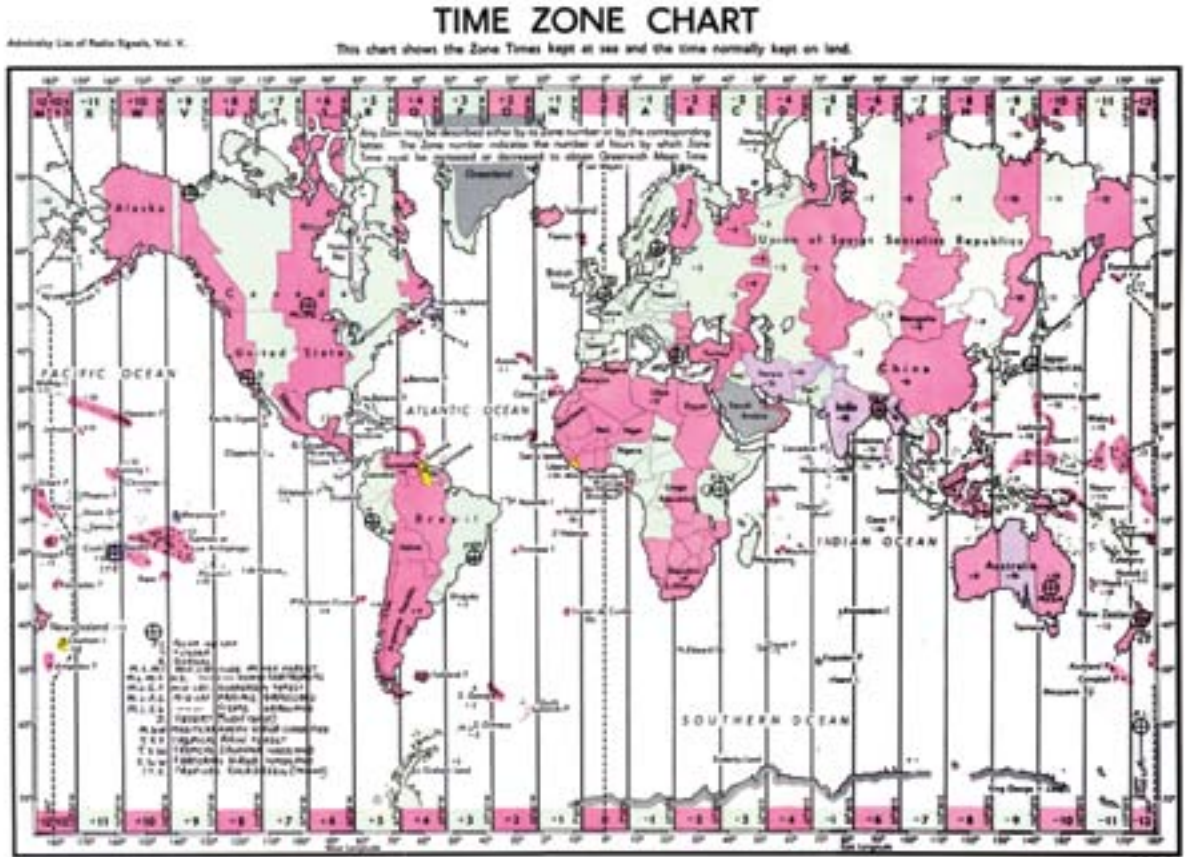
World-wide Networks

At 6pm Greenwich Mean Time on 23 September 1971, people in fifteen different locations around the world simultaneously participated in Phil Dadson's *Earthworks* composition. The performers, mostly unknown to Dadson or each other, were mailed audio tape, film and instructions to document the weather, the conditions of the immediate earth and air, sounds of the environment, information about the tidal, solar and lunar cycle, the local time and a description of the location. This international, ten minute performance was planned to coincide with the equinox—spring in the southern and autumn in the northern hemisphere, a time when the sun is directly above the Earth's equator and day and night are of equal length in most places.

Unlike contemporary equivalents, such as global internet chat or webcam hook-ups, at the time of *Earthworks*, Dadson did not know if anyone was participating beyond the group he had assembled in New Zealand. Dadson's local team used the central North Island's volcanic plateau as a site to observe and

12: Jim Allen, *Computer Dance*, part of *Contact*, Auckland City Art Gallery, 1974, photos: Bryony Dalefield.

36. Jim Allen, "Contact," in *New Art: Some Recent New Zealand Sculpture and Post-Object Art*, ed. Wystan Curnow and Jim Allen (Auckland: Heinemann Educational Books, 1976), unpaginated.
37. Christina Barton, "In and Out of Sight/Site: Jim Allen and the World Picture," paper presented at *Crossing Horizons: Context and Community in the South*, the South Project conference, Santiago gathering, 3 October 2006. http://www.southproject.org/Santiago/Biographies/Barton_paper.htm
38. Wystan Curnow and Robert Leonard, "Contact: Jim Allen Talks to Wystan Curnow and Robert Leonard," *Art New Zealand* 95 (Winter 2000): 49.
39. Green, "New New Zealand 'New Art'," 61 – 63. See Jasia Reichardt, "Cybernetic Serendipity" [exhibition statement] (London: Institute of Contemporary Art, 1968), reproduced at: http://www.medienkunstnetz.de/exhibitions/serendipity/
40. Curnow and Leonard, "Contact: Jim Allen Talks to Wystan Curnow and Robert Leonard," 51.
41. Barton, "In and Out of Sight/Site: Jim Allen and the World Picture."
42. Curnow and Leonard, "Contact: Jim Allen talks to Wystan Curnow and Robert Leonard," 50 – 51.



13: Phil Dadson, *Earthworks: A simultaneous global linkup in real time*, 23/24th September 1971. Time zone chart indicating location of the participants instructed to make synchronised ten-minute audio tape recordings and a series of photographs.
Photos: Brian Porter, Antarctica, 6am, 23 September; Jim Baltaxe, Rarotonga, 7.30am 23 September; Ken Friedman, San Diego, USA; 10am, 23 September.

record New Zealand's place in the "universal ebb and flow."[43] Of the fifteen countries invited, completed documentation later arrived from Australia, Sweden, England, San Diego, Rarotonga and Antarctica (Canada was left out because their instructions arrived two days too late). As well as being an observation of planetary rhythms, *Earthworks* is intended as an exploration of media, designed to capture results characteristic of the different tools and materials available.[44]

Earthworks adopts the performative and postal strategies typical of Fluxus activities, whilst also evoking Nam June Paik's exploration of broadcast media.[45] Dadson was familiar with Paik, having seen him perform in London in the late 1960s. While in London, Dadson had established an association with composer Cornelius Cardew through an experimental music course Cardew was teaching at Morley College, which attracted not only musicians but also visual artists and theatre people. This brought a conceptual edge to the course, further influenced by Cardew's Fluxus colleagues who would often participate, favouring a playful, task-based approach to performing that didn't emphasise instruments or ability. The Morley cohort became the foundation for Cardew's Scratch Orchestra, which, on his return, led to Dadson establishing a New Zealand Scratch Orchestra back in Auckland.[46]

Performance only became a major strand in contemporary art last century but, conversely, it is only in the last century—since the invention of recordable media and programmable instruments—that performance has ceased to be an intrinsic part of music. Bearing in mind these trajectories, it is probably no coincidence that artists such as Phil Dadson and John Cousins established careers with equal footprints in the worlds of music and art at a time when those paths crossed. Both took encouragement from Lilburn's electronic work and both executed performance works in outdoor environments, but Cousins' practice has become increasingly studio-based whereas Dadson continues to explore environments through improvisation.

Although primarily known and trained as a composer, Cousins' work has been as much about actions, ideas and images as it is sound. Like Dadson, time plays a key role in Cousins' pieces, particularly in regard to bodily endurance. Installation works like the *Sunwalk* series (1989) and *Reciprocal Transverses* (1988) document his experience of the turning of the earth through shadow, stride and breath, using slides, video and recorded sound.[47]

Cousins is interested in the sound of things, of humans and their experience of and relationship with the natural world. Recording technology has allowed access to a range of sounds previously inaccessible to composers and performers of traditionally notated music. In works like *Harps at Arthurs Pass* (1991) he sets up devices (in this case tripod-suspended bowls of water that visually and sonically amplify the passing of the sun and air-currents) to evoke and extend our perception.[48] In works like *Membrane* (1984) and *Bowed Peace* (1986), this extension is more literal, extrapolating and supplementing the functions of the body through apparatus that could be considered a cyborg hybrid of human and machine.[49] For *Bowed Peace*, Cousins is stretched over a sling, with the sound of his heart amplified. Raising his body through a system of pulleys, he can bring himself to a position where he can read from a text, although the exertion of doing this makes the reading difficult for more than just short extracts.

43. Dadson, "Earthworks," in *New Art: Some Recent New Zealand Sculpture and Post-Object Art*, ed. Wystan Curnow and Jim Allen (Auckland: Heinemann Educational Books, 1976), unpaginated.
44. Phil Dadson, conversation with the author, 31 July 2007.
45. This furthers Paik's vision, stated in his 1973 *Global Groove* video, of a future global society where any TV station on earth is accessible and where there is no division between art, life and technology. Anne Kirker, "Nam June Paik—Whimsical Encounters Without End," in *APT 2002: Asia-Pacific Triennial of Contemporary Art*, ed. Lynne Seear (Brisbane: Queensland Art Gallery, 2002), 78 – 81.
46. At Elam, Dadson worked with Jim Allen in the sculpture department to create an Intermedia option at the school, a time-based discipline exploring the connection between image, sound and performance, which eventually became a subject in its own right and the source of many media events. Phil Dadson, interview with the author, 19 October 2003, originally recorded for Radio New Zealand.
47. Pat Unger, "Christchurch," *Art New Zealand* 51 (Winter 1989), 47.
48. Jonathan Bywater, "Natural Choices: The Art of John Cousins," *Music in New Zealand* 29 (Winter 1995), 14 – 19.
49. Donna Haraway, "A Cyborg Manifesto," in *Simians, Cyborgs, Women: The Reinvention of Nature* (New York: Routledge, 1991), 149 – 181.

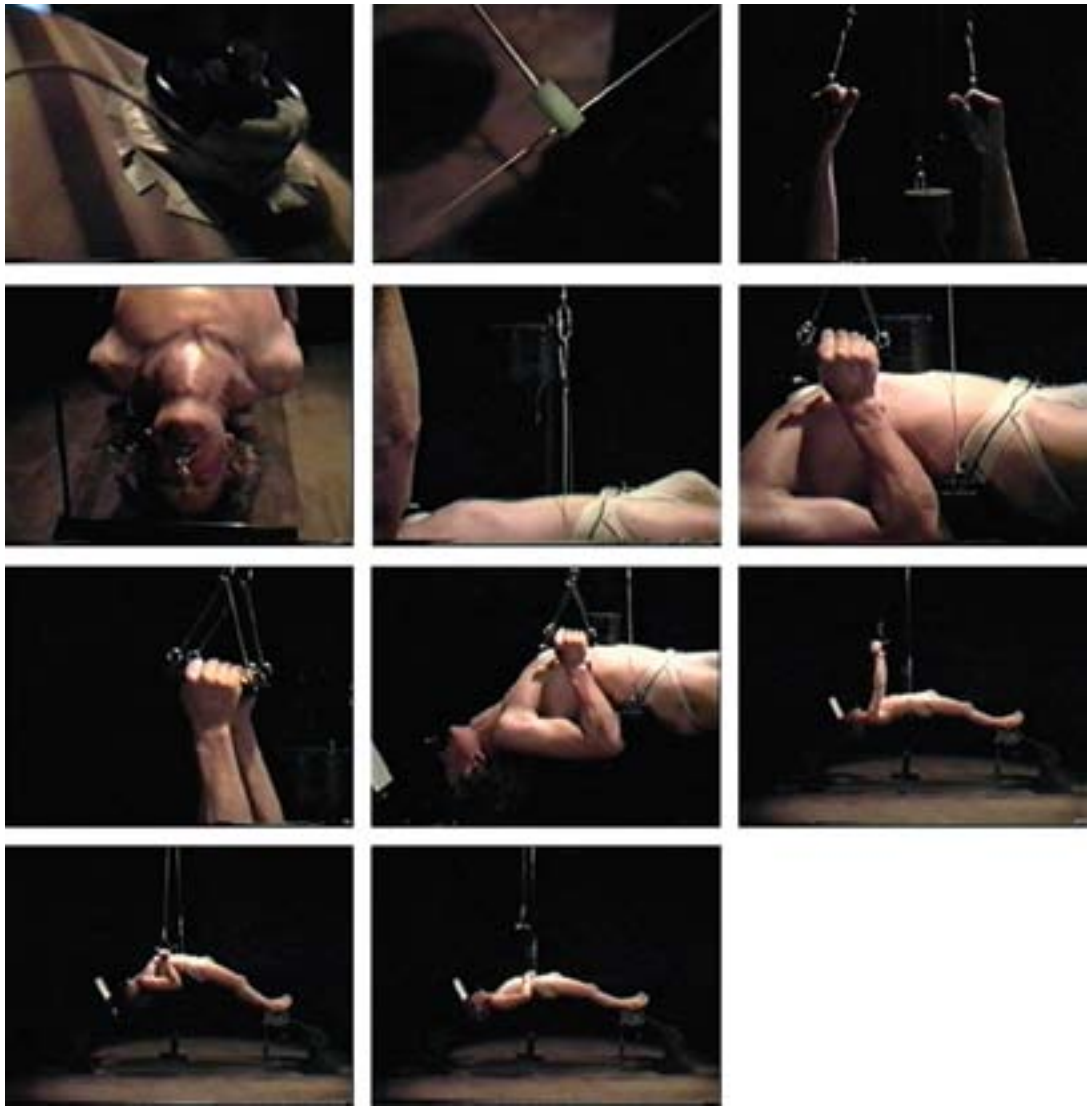


fig. 14

Membrane uses the urinary cycle to create chiming, aleatoric percussion music, again using an organic, hydraulic machine that he is harnessed to as the central processing unit, consuming, processing and outputting biological data.

Good Vibrations / Tellurian Love

Whether psychedelia is invoked to describe a musical genre, trippy light shows or the fashions of the late 1960s and early 70s, a druggy, non-conformist counter-culture, combined with growing political unrest permeated the arts. This was a period of expanded possibilities and cross-pollination where rock bands were taking inspiration from the structures of jazz and classical music (and vice-versa), happenings involved poetry, theatre and performance art, and artists produced experimental light shows and stage sets. In Europe in the 1970s, environmental and expanded cinema artist Jeffrey Shaw worked on rock shows for Pink Floyd and Genesis, while in New Zealand Raewyn Turner was doing lighting design for Split Enz. Electric instrumentation was evolving, providing new sound palettes for mind-expanding music, and cybernetic, kinetic and electric-art survey shows proliferated.

As the exploratory musical tendencies of psychedelia evolved into more technically-focussed progressive rock in the northern hemisphere, most New Zealand 'prog' took the form of extended Hendrix-influenced heavy blues jams, rather than the complex, extended structures typified by the likes of Yes, Frank Zappa or King Crimson. One notable exception is Alastair Riddell's Space Waltz, a group melding the progressive tendencies of Yes, the glam rock of Roxy Music and the effeminate stage theatre of David Bowie. Riddell, who was studying art history at the University of Auckland and was closely associated with the scene at Elam, shocked conservative critics with his glittering, long-haired androgyny. In the 1960s he had been observing developments from the likes of Stockhausen and experimenting with tape loops, and sound textures, experiments which never saw public performance or release but brought an edge to his later work. His early 1970s group Orb, with drummer Paul Crowther and keyboard player Eddie Rayner (who used one of country's first synthesisers, hand-made by Crowther) evolved into the band Space Waltz.[50] In contrast to the ubiquitous blue denim of the day, on stage Space Waltz wore custom suits made by Riddell from curtains, anticipating the now-famous look of Split Enz (who eventually poached Rayner for their own group, along with Mike and Geoff Chunn, Wally Wilkinson and Crowther, who had all previously played with Riddell). Space Waltz songs featured lyrics based on science fiction stories by Riddell about an imaginary planet named Telluria, populated by droids and genetically engineered, androgynous clones.[51]

Although their first release, 1974 single *Out on the Street*, was New Zealand's first indigenous number one in many years, the band barely outlasted the release of their 1975 self-titled album, which remains one of New Zealand's only serious concept albums of the era. Whereas albums were once collections of songs recorded in a day or two, they became a platform for elaborate compositions reliant on a studio-based layering of sounds that could take weeks or months and had a distinct existence, separate from a group's live routine. Supporting this development was the evolution of recording technology and an increasing use of the studio to shape production, rather than as a simple tool to capture the sound of a live band. In recording the Space Waltz album, Riddell wrestled with

50. Alastair Riddell, interview with the author, 9 May 2002, originally recorded for Radio New Zealand.
51. Alastair Riddell, interview with the author, 9 May 2002, originally recorded for Radio New Zealand.

14: John Cousins, *Bowed Peace*, 1986, video stills from performance at Studio 174, Christchurch.

fig. 15

fig. 16

fig. 17

fig. 18

15: Cover of first Space Waltz album, 1974.
16: Dick Frizzell, Dragon and Space Waltz concert poster, 1975.
17: Nambassa main stage 1979, image correction: Peter Terry.
18: The Plague performing main stage, Nambassa, 1979, photo: Gerard Couper.

an old system that saw the record company appoint a producer to deliver the product they wanted. Whereas traditionally musicians were essentially treated as contractors with their input expected to end with the performing of their songs, Riddell was from a new generation of artists with his own vision of what he wanted to achieve in production and presentation. The Space Waltz album is more than a collection of songs, it is concept, image and theatre; operatic in its delivery. After barely ten days, the record company brought the project to an early conclusion, which seemed generous by New Zealand standards, but paltry compared to what was taking place overseas or is commonplace now. Nevertheless, Riddell managed to release one of the smartest albums New Zealand had yet seen. Made from more than just sound; it is a *gesamtkunstwerk*, a total work of art.

Entertainment to go

In the 1970s, beyond the pub-based entertainment circuit and dealer galleries, festivals promised to become a new context for the gathering of the free-thinking, alternative-lifestyle set. In the popular music world this would usually mean de-camping to the country, where a temporary city would be built, accommodating the transient community for the duration of the long-form entertainment event. One of the first in New Zealand was Redwood (1970), which presented both the Bee Gees and a string quartet. However, very quickly beer culture became the main feature and hard rock was all that could satisfy the rioting, liquor-soaked audience. The next significant effort was The Great Ngaruawahia Music Festival in 1973, which similarly fell short of utopian ideals and was a disillusioning experience for the likes of Blerta who, as a combined theatre-dance-film-music group, should have been a fit for such an idyllic, rural venture. Commercial demands and crowd mentality took charge, prompting Blerta to pack their own travelling festival into a bus and hit the road.[52]

Although a little late, with punk nihilism having already superseded flower power, the Nambassa Music, Crafts and Alternative Festival of 1978 was organised "by hippies for hippies."[53] Main-stage entertainment for the second Nambassa festival in 1979 ranged from local country singer John Hore to Split Enz via the Little River Band and The Plague, including Sarah Fort (later of Fetus Productions) and Richard von Sturmer parodying hippy nudity in full body paint.[54] A workshop programme offered sessions on topics from solar heating to the I Ching.[55] Nambassa even had its own 'cosmic architect', Rob Meurant, who erected a 70-foot wide, 12-sided rainbow mandala, 'Nambala', to unify the spiritual area.[56] Nambassa '79 was so successful that it attracted competition of a much more commercial nature in the form of the Sweetwaters festival, which quickly made Nambassa redundant.[57]

Despite more conventional performance contexts, arts festivals are long-form events creating communities of interest. Most arts festivals then, and today, have multiple simultaneous stages or venues that splinter the gaze. For example, Wellington's Sonic Circus began in 1974, organised by composer Jack Body. The first Circus took place simultaneously in eight venues over six hours, featuring works by the likes of John Cousins, Jenny McLeod and Douglas Lilburn.[58] Phil Dadson's performance group From Scratch also made their first public appearance.[59] The second Circus in 1975 added theatre groups, including Red Mole.

52. David Eggleton, *Ready to Fly: The Story of New Zealand Rock Music* (Nelson: Craig Potton Publishing, 2003), 53.
53. John Dix, *Stranded in Paradise: New Zealand Rock'n Roll 1955 – 1988* (Palmerston North and Wellington: Paradise Productions, 1988), 253.
54. Colin Broadley and Judith Jones, *Nambassa: A New Direction* (Wellington: A.H. & A.W. Reed, 1979), 120.
55. Nambassa Trust, *The Nambassa Sun* 1, no.6 (1979), 11 – 15.
56. Broadley and Jones, *Nambassa: A New Direction*, 54.
57. Dix, *Stranded in Paradise*, 253.
58. Rachel Barrowman, *Victoria University of Wellington 1899 – 1999: A History* (Wellington: Victoria University Press, 1999), 308.
59. Wystan Curnow, "Writing and the Post Object," in Action Replay: Post-script, edited by Stella Brennan, Robert Leonard and Hanna Scott (Auckland: Artspace; New Plymouth: Govett-Brewster Gallery, c2002), 42.

Sonic Circus continued until 1987.[60] These were new spaces for art and new experiences for audiences.

After playing Soundwatching in Tokyo with From Scratch, Dadson was inspired to start a festival of his own.[61] Instigated with guitarist Ivan Zagni, and intially held largely at Artspace, Auckland's Sound/Watch festival began in 1989. Performers included John Cousins, Drone, and John Lyall's People Who Hit Things, and the show included an exhibition of photo documentation of the annual Solar Plexus events held at winter Solstice in Maungawhau crater. The 1992 festival was larger, more international and more interdisciplinary, including video, lectures, installation and dance, with participants including Jim Allen, Jack Body, John Daly-Peoples, Adrian Hall, Sean Kerr, Chris Knox and Julainne Sumich.[62] Sound/Watch morphed into SoundCulture, touring the Pacific Rim, from Sydney (1991), to Tokyo (1993), San Francisco (1996) and Auckland (1999). Events and exhibitions spread throughout the city and included John Lyall's cyber-opera, *Requiem for Electronic Moa*, featuring tent-pitching, bacon frying, the live construction of a waterfall, and generative music from computers and kinetic sculptures.

At the same time, the popular music scene was becoming more electronic and experimental. Of particular note were industrial group Fetus Productions and later, Tinnitus, centred on Michael Hodgson and Angus McNaughton. Pioneers in what became known as VJ culture, from early on Tinnitus incorporated video as a key part of their performances, often staged as elaborate party nights that came to be known as *Rotate Your State*. The first public *Rotate Your State* took place in 1992 at the Gluepot in Ponsonby where, as Hodgson recalls, they would re-configure the venue, creating an environment with a café, a bar with artists' works for sale and a performance area.[63] Video projections were used as backdrops or integrated into performances; TVs were liberally spread around and also built into a large video wall near the entrance.[64] Performers included Compulsory Joy, Godstar and Tinnitus; video interludes were provided by artists including Lisa Reihana, Stuart Page, Kirsty Cameron and Hodgson.[65] At the end of the nineties Hodgson established *Soliton*, a series of events with a similar structure, but working within the then-ascendant nightclub culture.

Running in parallel to *Rotate Your State* and *Soliton*, in 1990 Dadson's Intermedia department established *Interdigitate*. *Interdigitate's* main attraction was a 36-screen video wall, which could be triggered in conjunction with live performances. To interdigitate means to interweave, and it is this performative interlocking of media that was the focus, much like the live video performances Hodgson was organising.

As an evolution of the light-shows essential to dance culture, from the mirror balls of the ball room, to psychedelia and later disco, multi-media would play a major role in visual content and atmospherics of the emerging rave scene and, eventually, to outdoor festivals entirely focussed on electronic music such as The Gathering and Splore. Technology (from generators and electric guitars to video synthesisers and data projectors) has been a key part of creating these total environments, new social spaces and new modes of presentation and reception.

Cultural Industrialisation

Fetus Productions offer us a final glimpse of an approach that encompasses

60. The finale included more than 60 performances, including from the New Zealand Symphony Orchestra, in twelve venues providing a ten-hour continuous and simultaneous marathon of events.
61. Mark Amery, "Art in your Ear," *Stamp* 33 (July 1992): 14 – 15.
62. A third and final Sound/Watch festival took place in 1994.
63. Mike Hodgson, conversation with the author, September 27, 2007.
64. Jo Schmidt, "A View from a Different Perspective," *Stamp* 32, June (1992): 40.
65. Advertisement, *Stamp* 32, June (1992): 2.

19: John Lyall, *Requiem for Electronic Moa*, opera, Soundculture 99, photo: Laura Sunderland.
20: Soliton99 curated and produced by Michael Hodgson and Lara Bowen; images clockwise from top left: *On Growth and Form*, by Lattice (Chris Cheland, Bruce Ferguson, Andrew Manning/ Kog Transmissions); Goblin; *Behind Me is Black*, Lovely Midget and Seductor Productions, Lovely Midget performing live film soundtrack on lathe-cut records; *Strips*, performance by Becca Wood, Kelly Moynihan, Ben Harris, Anja Packham and Tasha Alpe; *Machine Code*, live cinema performance by Unit 23; Mood Unit (Angus McNaughton).
21: Sean Kerr and James McCarthy, *Turning Blue*, 1995, 36-monitor video work and performance at Interdigitate.

fig. 19

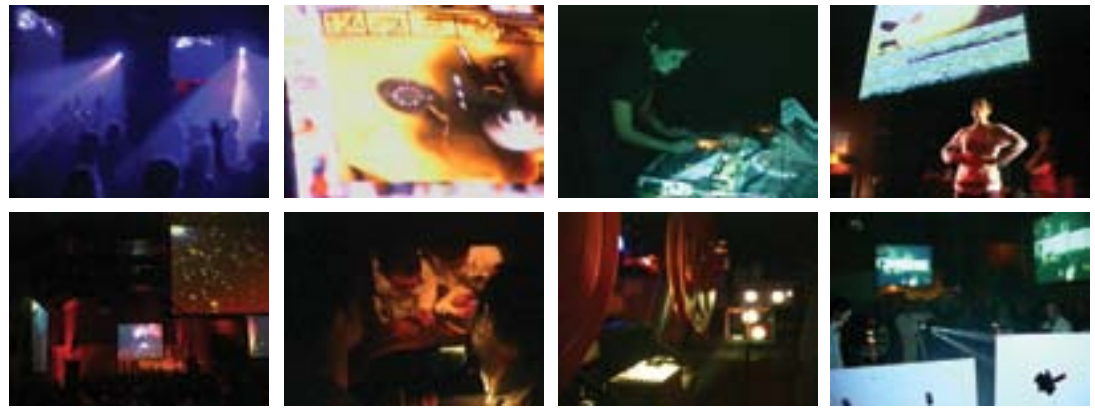


fig. 20

fig. 21

media including sound and experimental film.[66] Although later in their career Fetus Productions was primarily driven by Jed Town, to start with there was input from Sarah Fort, Mike Brookfied and James Pinker. For a period, Fetus operated as a dispersed entity with members in different parts of the world still using their brand to work remotely, producing events, manifestos and albums. They created videos, screenprints and merchandise, and staged exhibitions and multi-media concerts. Evolving out of post-punk group The Features, the first official Fetus event took place in 1980: an exhibition featuring fluorescent screenprints of medical deformities by Brookfield (who was studying at Elam), accompanied by the sounds of waterfalls, crying babies and scraping metal. This collage was designed to produce sensory shock, intended as a slap across the face of a sleepy nation living under the illusion of tranquillity.

Fetus acted like magpies, hijacking medical footage and photos. They processed these along with found sounds, superimposing and shifting content from tape to samplers and between Super-8, 16mm and VHS. Their gritty realism borrowed equally from futurist noise manifestos and William S. Burroughs' dissection of language and media. Rather than the illusion of perfection offered by TV stars and soft-focus magazine spreads, Fetus wanted to show humanity for what it was—fleshy machines made from brightly-coloured internal organs.

The arrival of the Sony Walkman allowed them to point a microphone at the world around them, gathering sounds in the same way they collected images, processing them like a sonic screenprint to emphasise grain and hiss. Pioneers of electronic music in the local rock scene, they were quick to start using samplers, sequencers and synthesisers. Concerts integrating music with moving images was also key and Fetus found like minds in the fledgling industrial music scene of Sydney, characterised by bleak mechanical rhythms and a dystopian futurist aesthetic, with bands such as SPK and Severed Heads all using film projection as part of their hi-tech man-machine performances. These methodologies would later be adopted in New Zealand by the likes of the Skeptics, Tinnitus and Headless Chickens, who saw the relentless electro-mechanical rhythms of the industrial music scene plant the seeds of much local contemporary dance culture.

For a period, electronic music existed live as a group presentation of drum machines, samplers, sequencers and synthesisers, as well as more conventional instruments, all being triggered by human performers. In light of the increasing pervasiveness of laptops and turntables as the dominant culture of electronic music, it is tempting to see this moment, including events like Interdigitate and Rotate Your State, as a resistance to musical performance disappearing entirely into the black box of new technology.

From Lilburn's work with poets and playwrights to Dadson's global link-ups to Fetus Productions' collisions of image, sound and design, what becomes apparent in this pre-history of digital art is the impossibility of separating media, of unpicking sound from image from performance. Anticipating art's shift into the new spaces created by technology, these episodes demonstrate new expressions for new contexts, from the possibilities of film and electronic music, to the increased scope offered by long-playing records and portable recording devices. Intertwining aural and visual, much of the practice detailed through these fragments is collective. These works recall an interdisciplinary and collaborative spirit that is more than the sum of its parts.

66. Roger Horrocks, "Fetus: Moving Images," in *Fetus Reproductions: Fetus Productions 1981 – 2002*, ed. Stella Brennan and Hanna Scott (Auckland: Artspace, 2002), 10.

22: Fetus Productions posters 1981–89, various artists including Jed Town, Sarah Fort, Mike Brookfield, Tone Cornaga and David Mitchell.

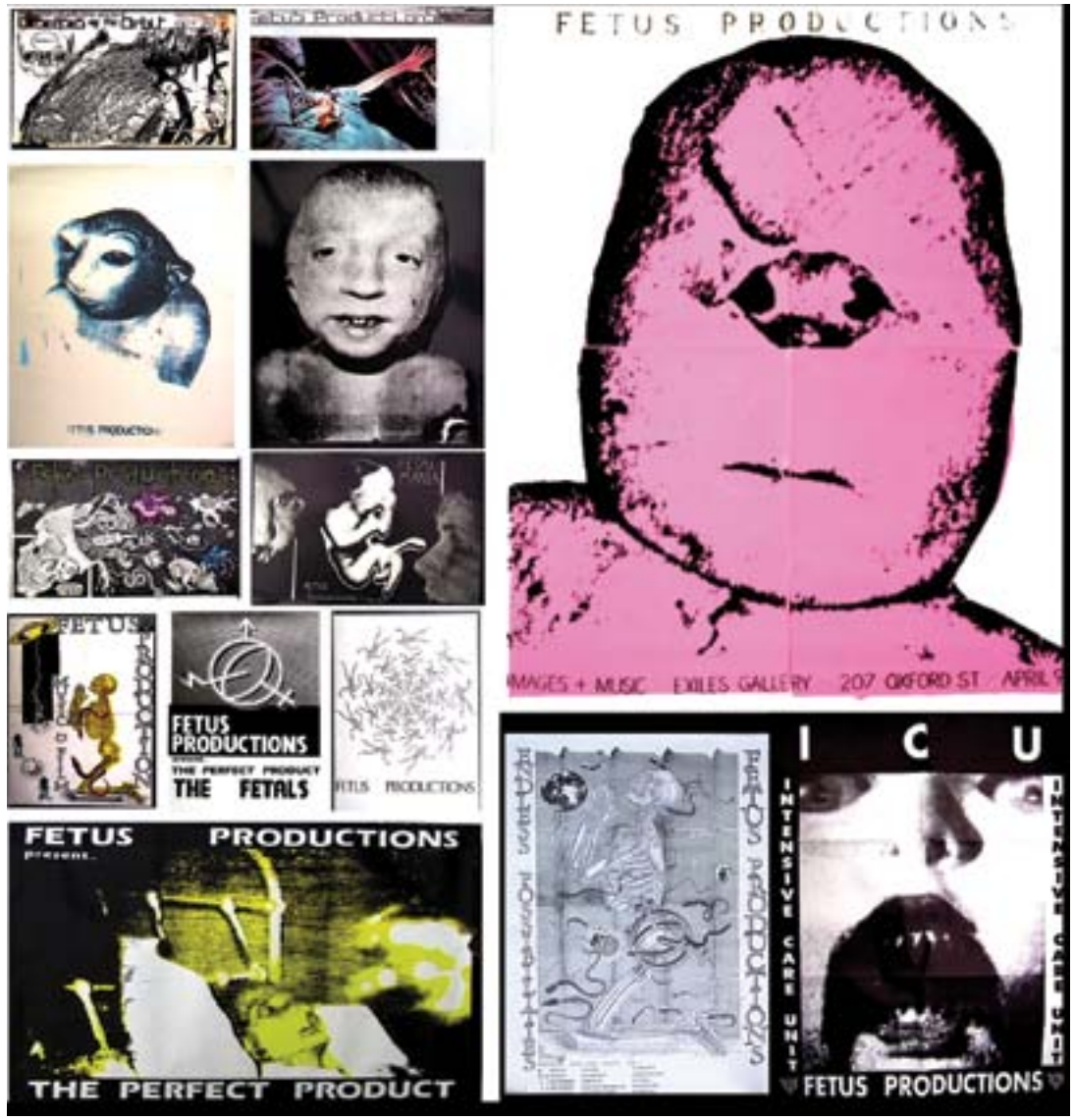


fig. 22