

Curatorial > PROBES

With this section, RWM continues a line of programmes devoted to exploring the complex map of sound art from different points of view organised in curatorial series.

Curated by Chris Cutler, **PROBES** takes Marshall McLuhan's conceptual contrapositions as a starting point to analyse and expose the search for a new sonic language made urgent after the collapse of tonality in the twentieth century. The series looks at the many probes and experiments that were launched in the last century in search of new musical resources, and a new aesthetic; for ways to make music adequate to a world transformed by disorientating technologies.

Curated by Chris Cutler

- PDF Contents:
- 01. Transcript
 - 02. Selected links
 - 03. Notes
 - 04. Acknowledgments
 - 05. Copyright note

At the start of the seventies, Chris Cutler co-founded The Ottawa Music Company – a 22-piece Rock composer's orchestra – before joining British experimental group Henry Cow, with whom he toured, recorded and worked in dance and theatre projects for the next eight years. Subsequently he co-founded a series of mixed national groups: Art Bears, News from Babel, Cassiber, The (ec) Nudes, p53 and The Science Group, and was a permanent member of American bands Pere Ubu, Hail and The Wooden Birds. Outside a succession of special projects for stage, theatre, film and radio he still works consistently in successive projects with Fred Frith, Zeena Parkins, Jon Rose, Tim Hodgkinson, David Thomas, Peter Blegvad, Daan Vandewalle, Ikue Mori, Lotte Anker, Stevan Tickmayer, Annie Gosfield and spectralists Iancu Dumitrescu and Ana Maria Avram. He is a permanent member of The Bad Boys (Cage, Stockhausen, Fluxus &c.) The Artaud Beats and The Artbears Songbook, and turns up with the usual suspects in all the usual improvising contexts. As a soloist he has toured the world with his extended, electrified, kit.

Adjacent projects include commissioned works for radio, various live movie soundtracks, *Signe de Trois* for surround-sound projection, the daily year-long soundscape series *Out of the Blue Radio* for Resonance FM, and p53 for Orchestra and Soloists.

He also founded and runs the independent label ReR Megacorp and the art distribution service Gallery and Academic and is author of the theoretical collection *File Under Popular* – as well as of numerous articles and papers published in 16 languages. www.ccutler.com/ccutler

PROBES #6

In the late nineteenth century two facts conspired to change the face of music: the collapse of common practice tonality (which overturned the certainties underpinning the world of art music), and the invention of a revolutionary new form of memory, sound recording (which redefined and greatly empowered the world of popular music). A tidal wave of probes and experiments into new musical resources and new organisational practices ploughed through both disciplines, bringing parts of each onto shared terrain before rolling on to underpin a new aesthetics able to follow sound and its manipulations beyond the narrow confines of 'music'. This series tries analytically to trace and explain these developments, and to show how, and why, both musical and post-musical genres take the forms they do. This sixth programme continues to explore probes into pitch through the preparation and modification of conventional instruments – looking at the many tapings, wrappings, clappings, clippings, attachments and impairments applied across the family of strings, before moving on to the less familiar territory of prepared winds. Some people get up to some pretty strange behaviour in the pursuit of unusual sounds.

01. Transcript. Studio version

[Gregorio Paniagua, 'Anakrousis', 1978]

[Anne LeBaron, 'Blue Harp Study No. 1', 1992]

In the last programme we looked at extensions and preparations of the piano. Although it's not officially a string instrument, the piano is not so unlike a harp or a guitar¹ – or even a violin, come to that; they are all, essentially, just different ways of stretching a string across a soundbox. So it's hardly surprising that harps and guitars have been prepared in ways similar to pianos – using paper, crocodile clips and clothes-pegs, for instance.

Here's the harpist Joanna Newsom, with a simple strip of paper threaded between her strings:

[Joanna Newsom, 'Untitled' (excerpt), 2004. Introductory voice: Irwin Chusid]²

In her 'Blue Harp Study', recorded in 1991, Anne LeBaron uses a variety of preparations and extended techniques. Although the sounds and the playing are all natural, the piece itself was edited from recordings after the fact – so it wasn't actually performed this way – though, by implication, with a couple of harpists, it could have been.

[Anne LeBaron, 'Blue Harp Study No. 2' (excerpt), 1992]

Back to that strip of paper. Here's the guitarist and instrument inventor Bart Hopkin giving it a try.³

[Bart Hopkin, 'Untitled', 2011]

And here's a guitar, face down and horizontal, with heavy weights attached to the strings.

[Bart Hopkin, 'Untitled', 2011]

Or using a steel bowl as a soundboard:

[Bart Hopkin, 'Untitled', 2011]

The American guitarist Janet Feder was trained classically, and found her way to preparation by chance and instinct. Nothing gaudy here, just small modifications of timbre. On this piece she's using a brass bead threaded onto a string, some key rings and an alligator clip, to effect subtle, rather intimate changes of colour.



[Hans Reichel in concert at KlangArt Wuppertal (in Tony Cragg's 'Skulpturenpark'), 2009. Photo: E. Dieter Fraenzel]

[Janet Feder, 'I Hear Voices' (excerpt), 2004]

And here are Matthew Elgart and Peter Yates, also from classical backgrounds, who have been working quietly on acoustic guitar preparations for nearly forty years, and who wrote between them, in 1990, a pamphlet called *Prepared Guitar Techniques*. This is 'Snack Shop', from 1981.

[Matthew Elgart and Peter Yates, 'Snack Shop' (excerpt), 1981]

Next is what guitarists call a middle bridge – that's when you slide a metal rod or a drumstick under the strings somewhere along the neck. In this example it's a zither that has had the middle bridge inserted, just for a change.

[Bart Hopkin, 'Untitled', 2011]

And here is the German guitarist Hans Reichel, just two very brief extracts the first using a six string guitar with extra frets, the second a cow, a cigar box (almost certainly) and some other unidentified preparations.

[Hans Reichel, 'Death of the Rare Bird Ymir' (excerpt), 1979]

[Hans Reichel, 'Two Small Pieces Announced by a Cigar Box' (excerpt), 1981]

We take a slight detour now. Although I plan to deal with electrification in a later programme, I do want to look at with some electric guitar preparations here – because, by the sixties, the electric guitar had become, to all intents and purposes, a completely new instrument. Not just a louder guitar but – like the theremin or the ondes Martenot – a piece of electronic equipment with a life and a language of its own. Several new genres of music already lay in its, past and it was by this time to rock what the piano was to contemporary composition. Also, these probes have far more to do with the history of mechanical preparation than they do with the very different narrative of electronic processing.

The pathfinder, beyond all others, was Keith Rowe. Rowe was a jazz guitarist who had trained as a visual artist and who, inspired by the painter Jackson Pollock, decided in the early sixties to force himself to abandon conventional technique by laying his guitar flat on a table.⁴ From that position he went on to explore – and to invent – an entirely new vocabulary for the instrument which, amongst other things, included working with various Cage-like preparations – which is to say, resting things on, and attaching things to, the strings of his now horizontal guitar.

[Keith Rowe, unidentified live recording (excerpt), recent but date unknown]

A couple of years later, the guitarist David Toop and percussionist Paul Burwell were experimenting together with preparations and modifications to their respective instruments inspired, Toop says, by the buzzing timbres of various African instruments.⁵ Taking his lead from Cage, Toop attached crocodile clips at calculated positions on his strings.

This is a radio recording of Rain in the Face from 1973.

[Rain in the Face, 'Cloud Studies No. 2' (excerpt), 1973]

But it was Fred Frith, guitarist of the rock band Henry Cow, who took, possibly, the most influential step. His 1974 solo LP, *Guitar Solos*, was not only a catalogue of techniques and preparations, it also came as an aesthetic revelation. Rowe had remade the guitar as a source of noise, electronic disturbance and difference, avoiding everything previously associated with the guitar, but Fred embraced the instrument in all its moods and guises – melodic, harmonic, rhythmic, abstract, ugly, beautiful: not only as a noise machine but also dressed in many of the costumes it more conventionally wore. *Guitar Solos* was a kind of consolidation inasmuch as many of the techniques were already known: laying the guitar flat, using crocodile clips, using glass edges to play glissandi, resting objects on the strings or playing two-handed on the neck – though many of his techniques were new. Most important was the combination and breadth of his applications, which amounted to a recalibration of the instrument; an approach which, far from breaking with the past, included and commented on it.



[Thomas Roth with his harp]

[Fred Frith, 'Out of Their Heads (on Locoweed)' (excerpts), 1974]

It was probably *Guitar Solos*, more than any other record, that inspired a generation of guitarists to experiment with preparations, including... well here's a typical list: chopsticks, battery operated fans, crocodile clips, palette knives, rubber tubes, wire wool, rulers – and assorted *objects trouvees*. Every guitarist evolves his or – very occasionally – her own palette and specialities. Frith himself is seldom seen without hair and paint brushes, chains, springs, small lids, rice, ball bearings, dusters and lengths of thread – which he runs through the strings in the manner of Radulescu's sound icons. And where Cage fixed his preparations to create a range of customised instruments, guitarists mostly use theirs as a mobile, temporary set of tools for use in constant, spontaneous, rotation and combination.

[Fred Frith, 'Solo Concert at Mózg, Bydgoszcz, Poland' (excerpts), 1974]

Here's Henry Cow's bass guitarist, John Greaves, using clothes pegs rather than metal clips to modify his instrument.

[Henry Cow, 'Beginning: the Long March' (excerpt), *Praise of Learning*, 1974]

And here's a violin with clothes pegs attached:

[Jon Rose, 'Untitled', 2013]

It was a combination of chance encounters and happenstance that led the guitarist Paulo Angeli to extend and eventually reconstruct his traditional Sardinian guitar. Citing Fred Frith as a seminal influence – along with the violinist Jon Rose, the cellist Tom Cora and the inveterate instrument builder Harry Partch – Angeli allowed novelty and tradition to blend – not only in his highly adapted instrument, but also in the inspirations behind it. The two banks of sympathetic strings, for instance, and the foot operated hammers that strike each primary string from beneath the bridge, both draw knowingly on baroque prototypes.

[Sri Partha Bose, 'Untitled' (excerpt), 2012]

Although we generally associate sympathetic strings with Indian and Iranian instruments, they are also common in Scandinavian folk instruments such as the Nyckelharpa. Here's a Nyckelharpa, played by Tomas Roth.

[Thomas Roth, 'Nyckelharpa', 2009]

Sympathetic strings were also common in the Baroque period; for instance on the Baryton, which had between nine and twenty of them. Joseph Haydn alone composed at least 175 works for it.¹⁰ Here's a snatch of his 'Trio No. 107'. The baryton is played by Philippe Pierlot.

[Joseph Haydn, 'Trio No. 107' (excerpt), 1757-60]

And the 'Viola d'Amore'. It usually has six or seven played strings with the same number of sympathetic strings below. Here's a recent composition for this exquisite instrument which, like the baryton, is celebrating a new lease of life at the moment – thanks mainly to the revival of period instruments by early music groups. On this recording you will hear not only the timbral effect of the sympathetic strings but also occasionally the strings themselves, as they are directly played. This is the final part of 'Solo for Viola d'Amore' by Georg Frierich Haas. Played here by Garth Knox.

[Georg Friedrich Haas, 'Solo for Viola d'Amore' (excerpt), 2000]

It was seeing Tom Cora, Paulo Angelli says, that gave him the idea of presenting his instrument like a cello – that is to say, vertically, resting on a spike – and played primarily with a bow. Angelli also installed battery-operated propellers – a staple of Keith Rowe's menagerie of modifiers. The result was a unique and extremely flexible instrument.

This is 'Senza parole' – and yes, it's a real time recording with no overdubs.



[Harry Partch]

[Paolo Angeli, 'Senza parole' (excerpt), 2013]

Back on the border now between technique and preparation; here's the American guitarist Eugene Chadbourne who, back in the seventies, began to use grapefruit-sized balloons to play with.

[Eugene Chadbourne, 'Pops Plays Pops' (excerpt), live performance, date unknown]

Mutes⁷ have been applied to violins for centuries, but they didn't become common until the eighteen hundreds, and then mostly in pursuit of orchestral colour. The effect is subtle and narrow, mainly affecting volume. Here's Vivaldi 'Il riposo' composed somewhere in the early 1700s.

[Antonio Vivaldi, 'Concerto for Muted Violin "Il Riposo"' (excerpt), date unknown]

A more interesting modification, evolved in pursuit of *greater* volume, was the Stroh violin, patented in 1899 by John Matthias Augustus Stroh. Unlike the traditional violin, the Stroh was amplified through a resonating metal diaphragm that was attached to an aluminium horn – much like a phonograph horn and based on one. Its prime directive was to improve clarity and volume, but inevitably it had a significant effect on timbre, too.⁸

[Stoll, Flynn & Company, 'I Ain't got Nobody', *The Jazzmania Quintette*, 1928]

Like its rarer relatives – Stroh mandolins, guitars, ukuleles and violas – the Stroh violin was tailored to the frequency limitations of the acoustic recording process. That said, by the twenties, it was also commonly found in pier bands and dance orchestras – in a last ditch attempt, according to Julian Pilling, the author of *Fiddles with Horns*,⁹ to prevent the saxophone from replacing the fiddle as the 'leader of the general dance'.

[Stoll, Flynn & Company, 'I Ain't got Nobody', *The Jazzmania Quintette*, 1928]

When Mauricio Kagel, fifty years later, chanced on an antique photograph of some Strohs in action, he was intrigued enough to investigate further. Experience told him that these metal horns could link the violin family timbrally to orchestral brass, and he was keen to probe that idea. Failing to find an original, he commissioned not just a violin but a complete family of modified replicas to be made. When a stash of Strohs turned up a little later, in Baghdad, Kagel was already working with his own, and decided to stick with them. He used them only in this piece for brass, horned violins, cellos, bass and children's choir.

[Mauricio Kagel, '1898' (excerpt), 1972-73]

Sometime in 1928, Harry Partch removed the fingerboard from an old cello and grafted it onto the body of a discarded viola, and then studded the neck with brads to mark out a 43-tone scale. This was the first of an orchestra of xenharmonic instruments he went on to invent or adapt over the next forty years. The adapted viola, like Paolo Angeli's adapted Sardinian guitar, was played like a cello, upright and spiked to the floor. Here's Partch's setting of 'By the Rivers of Babylon', written in August 1931. Since he only recorded the work later, augmented by other instruments, we'll listen to this perfectly plausible reconstruction of the original, by an ensemble calling itself Partch. This is pretty much the way William Butler Yeats would have heard the work when Partch pitched up at the Abbey Theatre in Dublin and played it for him in 1934.¹⁰

[Harry Partch, 'By the Rivers of Babylon', (excerpt), 1931]

Partch also started to work on guitars and, after many modifications, arrived at the first adapted guitar in 1934 and then, in 1945, the ten-string Hawaiian-type adapted guitar – both of which were played with lead-weighted pyrex rods. Here's what the ten-string sounded like.

[Harry Partch, 'The Adapted Guitar', 1934]



[Duke Ellington]

But it's the British violinist and composer Jon Rose who has been most prolific – and ingenious – in the breadth of his violin modifications. It would take the rest of this programme to cover them all, so I'll briefly summarise. We have the nineteen-string violin, the half-size megaphone violin, the aeolian violin, the tromba-mariner, the double piston, the triple neck wheeling violin, the sixteen-string long-neck microtonal violin, the ten-string double violin, the trapezoidal five-string viola, the Madonna and child – that's a violin nested inside a cello – the double-necked violin, the bicycle-powered double violin, the Windmill violin – and various modified fiddles with metal and polystyrene resonators. Closely related to these were the nineteen-string cello and the Whipolin.¹¹

The Whipolin was made from a disembowelled cello with a hurdy-gurdy mechanism attached – that had fully interchangeable playing wheels – not just the standard version rimmed-with-bowhair, but wheels with spikes, leather thongs and rough serrations. If you hear echoes of Luigi Russolo's *Intonarumori* in this snatch of Whipolin, it's because they share the same basic sound generating principle.

[Jon Rose, 'Spike/Spaghetti Machine' (excerpts), 2000]

[Brenda Hutchinson, 'Star Strangled Banner' (excerpt), performance date unknown]¹²

That was Brenda Hutchinson playing a nine and a half foot metal pipe. Wind instruments are essentially just fixed lengths of pipe; so they can be longer or shorter, or their connecting parts can be diverted. Here's the trumpeter Brae Grimes who's changed his valve slides about and replaced his mouthpiece with a soprano saxophone mouthpiece.

This is 'Wanderment' for prepared trumpet.

[Brae Grimes, 'Wanderment', for prepared trumpet, date unknown]

And here's short trip around the outer fringes of the tuba. This is Michael Vogt, playing with air; with a second bell, with a saxophone mouthpiece, singing and playing at the same time, flutter-tonguing and tapping.

[Michael Vogt and Bob Drake, 'Assembly', 2013]

[Jonathan Harnum, mute demo, Harmon mute with stem, date unknown]

However, the most common preparation for brass is the mute. Of ancient lineage, it is fitted into, or over, the bell to modify the timbre, or the volume even, occasionally, the pitch of the instrument.

[Jonathan Harnum, mute demo, Harmon mute with stem, date unknown]

Mutes were probed most extensively in the world of jazz – perhaps because the expressive, almost human sounds they could make were too profane for most artworld composers. Here's the legendary Cootie Williams, long time trumpeter with the Duke Ellington Orchestra, playing 'Concerto for Cootie', specially written for him by the Duke to showcase his muting skills.

[Duke Ellington, 'Concerto for Cootie' (excerpt), 1973]

And here's Ellington's trombonist, 'Tricky Sam' Nanton, much imitated but never equalled for his talking style with a plunger mute – that's essentially a rubber sink plunger with a hole – and a nickel, to get a bit of a buzz – in it.

[Duke Ellington, 'It Don't Mean a Thing (If It Ain't Got That Swing)' (excerpt), 1931]

And here's an exquisite muted orchestration by Gil Evans of Manuel de Falla's 'Will 'O the Wisp', recorded in 1960 on his *Sketches of Spain* LP. Miles Davis is playing the flugelhorn.

[Manuel De Falla, 'Will 'O the Wisp' (excerpt), 1915-1925, arranged by Gil Evans, 1960]



Se acabó el tiempo... ¡Hasta la siguiente! In the next programme we'll look at vocal and percussion preparations, and move on to unorthodox ways of playing the piano.

[Gregorio Paniagua, 'Anakrousis', 1978]

- ¹ The frame of a piano that holds the strings in tension is called a harp.
- ² Joanna Newsome didn't prepare to play prepared harp, it just came up in a radio interview with Irwin Chusid, whose voice you can hear before she plays, and she jumped right in.
- ³ Bart and Yuri Landman have just written a short book cataloguing a lot of guitar preparations: Hopkins and Landman, *Nice Noise: Preparations and Modifications for Guitar*. Invented Musical Instruments, 2012. Keith Rowe told me he began his long journey into preparations with paper. www.windworld.com
- ⁴ Hawaiians, of course, had been doing this for over 80 years, but to a different purpose. Rowe wanted to stop making guitar sounds, avoid expression and prevent learned techniques from dictating action. The guitar flat was an opportunity to start again...
- ⁵ 'I was fascinated by the buzzification of African instruments at that time, so I took my lead from Cage's prepared piano mixed with bottle tops on sansas and vibrating membranes on xylophones. I have to say that these innovations were collaborative – Paul and I exchanged ideas and information and both tried to invent instruments that utilised similar processes, so Paul was making drums with buzzing membranes at the same time that I was preparing the guitar. I feel it's important to emphasise that these techniques, as they are now known, often emerged from musical imperatives and collective conversations. It can be tiring to see them deployed as necessary clichés of twenty first century contemporary composition or improvisation when they have this history behind them.' Personal communication with the author, 2013.
- ⁶ The Aliquot piano system (1873) added sympathetic strings in the upper register to fill out the tone, and the palme, one of the four loudspeakers to come with the onde martinot is fitted with them.
- ⁷ The violin mute was first described by Marin Mersenne in 1636. One of the earliest examples in the use of muted string instruments is found in 'Act II' of Jean-Baptiste Lully's *Armide*, when the entire string section plays sporadically with mutes.
- ⁸ An additional, smaller horn set close to the player's ear – to act as a monitor in loud environment – was added to later models, probably the first dedicated monitoring system for a musical instrument.
- ⁹ Julian Pilling, 1975
- ¹⁰ Partch got a grant to study of the history of tuning systems and text-setting. He went to Dublin to get permission to use Yeats' translation of 'Sophocles 'Oedipus the King' for an opera. He played him 'Waters of Babylon'. Yeats gave his permission. The poet died in 1939 and when, in 1951, Partch finally completed the work, Yeats' estate refused to allow Partch to use the texts for a projected recording.
- ¹¹ More information, pictures, samples here: www.jonroseweb.com/
- ¹² www.sonicportraits.org

02. Selected links

Paolo Angeli's website
www.paoloangeli.it

Eugene Chadbourne's website
www.eugenechadbourne.com

Janet Feder's website
www.janetfeder.com

Fred Frith's website
www.fredfrith.com

Mauricio Kagel's biography
www.mauricio-kagel.com/gb/biografy.html

Harry Partch's website
www.harrypartch.com

Jon Rose's website
www.jonroseweb.com

David Toop's website
davidtoopblog.com



03. Notes

On length and edits.

The purpose of these programmes is to give some practical impression of the probes we discuss. This necessitates for the most part extracting short stretches of music from longer wholes, which, of course, compromises the integrity and disrupts the context inherent in the original works. I have also, on occasion, edited different sections of a longer work together, better to illustrate the points under discussion. So the examples played in the programmes should not be confused with the works themselves. Wherever the word (excerpt) appears after a title in the programme transcript, this indicates that what follows is an illustration, not a composition as it was conceived or intended. If something catches your ear, please do go back to the source.

Notification

If you want to be notified when a new probe goes up, please mail termegacorp@dial.pipex.com with subject: Probe Me.

04. Acknowledgments

With thanks to Tim Hodgkinson, Michael Vogt, Jon Rose, Bob Drake, David Toop, Janet Feder, Davey Williams, Alex Kolkowsy, Bart Hopkins, Anne Le Baron, Helene Breschand, Paolo Angeli, Anne Le Baron, Eugene Chadbourne, Irwin Chusid, Janet Feder, Steven Gilmore, Lutz Glandien, Brae Grimes, Garth Knox, Bart Hopkin, Chuck O'meara, David Petts, Keith Rowe, Bill Sharp, Ryan Teague, David Toop and Lutz Glandien.

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