

## Curatorial > PROBES

In this section, RWM continues its line of programmes devoted to exploring the complex map of sound art from different points of view, organised into 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

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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](http://www.ccutler.com/ccutler)

# PROBES #8

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 programme explores ways to coax some highly unusual sounds out of strings.

## 01. Transcript. Studio version

[Gregorio Paniagua, 'Anakrousis', 1978]

[Iannis Xenakis, 'Tetras' (excerpt), 1983]<sup>1</sup>

When we look at the violin, there is a fine line between technique and so-called 'extended technique', since so many of the methods described as the latter are more properly the former.

Here is Jon Rose demonstrating a *smorgasbord* of ways to play a violin – first with stopped harmonics, a bow ricochet, *sul ponticello* (that's playing *on* the bridge), *sul tasto* (that's playing on the body), bowed pizzicato (*arco pizzicato*), bouncing the bow lightly on the string (*spiccato*), lateral bowing, circular bowing and mixed harmonics...

[Violin probe materials supplied to the programme by Jon Rose, assembled by Bob Drake, 2013]

And here he is again, this time playing with a serrated bow – which, he says, goes back at least to Paganini in the West, and is a staple of Korean folk music – with a pencil inserted between his strings, with the string barred on the neck and played on the head side; bowing the pegbox, massively detuning one of the strings, playing with a knife and a fork, moving the violin instead of the bow, some octave *pizzicato*, a little *col legno* (that's hitting the string with the wood of the bow) and lastly, playing with the wood of the bow *underneath* the strings.

[Violin probe materials supplied to the programme by Jon Rose, assembled by Bob Drake, 2013]<sup>2</sup>

And here he is, bowing the bow itself - with another bow:

[Jon Rose, 'Bowing the bow', 2013]

Here's how Salvatore Sciarrino uses some of these possibilities. These are brief extracts from the first three of his 'Six Caprices for Solo Violin':

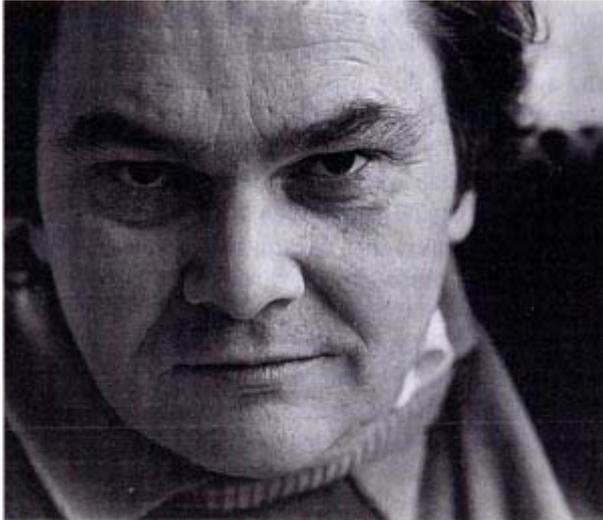
[Salvatore Sciarrino, 'Six Caprices for Solo Violin' (excerpt), 1976]<sup>3</sup>

And finally, Silvia Tarozzi. This is taken from 'Circle process', a piece developed collaboratively with composer Pascale Criton. The violin is tuned in 1/16th tones:

[Silvia Tarozzi and Pascale Criton 'Circle process' (excerpt), 2010]

And of course, everything you can do with a violin, you can extend to every member of its family. This is from Helmut Lachenmann's 'Pression', for solo cello:

[Helmut Lachenmann, 'Pression' (excerpt), 1969-70]



[Horatiu Radulescu]

And here is the virtuoso cellist Frances Marie Uitti, best known for her highly sophisticated double bow technique. This involves controlling two bows completely independently with one hand, while negotiating pitches in the usual way with the other. After a great deal of study, this gives a performer minute control, through exact and independent positioning, over combinations of *timbres* - as well as opening the possibility of there being highly complex rhythmic interplay between two autonomous lines. Scelsi, Cage, Xenakis, Kurtag, Nono and Radulescu are just a few of the composers who, hearing this technique in action, have probed its possibilities. Uitti also developed what she calls difference-tone resonators, which amplify the harmonic beats produced by chordal playing and bring out the "ghost tones" heard below the lowest open string on the cello. This is an acoustic cello, with the resonator:

**[Frances-Marie Uitti, 'Seven track ghost resonator' (excerpt), 2012]<sup>4</sup>**

From the outer fringes of rock, here is the cellist Tom Cora:

**[Tom Cora, 'Embouteillage bruise' (excerpt), 1991]**

From the world of contemporary music contrabassist Fernando Grillo:

**[Fernando Grillo, 'Fluvine Quattro' (excerpt), 1976]**

And from the world of post jazz improvisation contrabassist John Edwards:

**[John Edwards, 'Solo' (excerpt), 2010]**

### String Quartet

The string quartet has long been a showcase for the violin family, and there are few composers who haven't written for one at some time or another<sup>5</sup>. Unlike an orchestra, the string quartet functions as a group. Players negotiate directly with one another - having no conductor or director. A string quartet is a *gestalt*; it can turn on a dime; it can find its own groove. And with only four instruments, every nuance can be made to count. However, as a form, string quartet music has a strong history and an established language. So if pitch is no longer to be a primary means of organisation, listener expectation - and the requirements of length and coherent form - set interesting challenges for a composer. Because, whatever purists might argue, listeners who grew up in the 20th century understand music as a kind of language with rules, and those rules are tonal. So how do we move away from tonality and retain coherence? With what narrative or logic - or pattern - could an unfamiliar concatenation of sounds be made persuasive rather than just a pandemonium of chaotic nonsense? That is the central problem. And all our probes can be thought of as proposals toward the solution of that problem; some are pretty speculative, others extremely confident, but all are instructive. I plan to look more closely at this question of coherent structure in a future programme but, for now, here are one or two probes that seem relevant to our consideration of *timbre* as aesthetic substance.

This is from Helmut Lachenmann's third string quartet 'Gran Torso':

**[Helmut Lachenmann, 'Gran Torso' (excerpt), 1965]**

And this is from Michael Von Biel's 'Quartet No.3':

**[Michael Von Biel, 'Quartet No. 3' (excerpt), 1965]**

And here's a bit of Horatiu Radelescu's 'String Quartet No.4' - for 9 string quartets - one real and eight more pre-recorded and distributed around the room; the other strings are tuned, between them, to 128 different pitches that correspond to the 36<sup>th</sup> to 641<sup>st</sup> frequencies of a vast harmonic spectrum projected from a fundamental C.

The live quartet also begins in a C-based tuning, but shifts continually to scales based on slightly raised or lowered fundamental pitches, while the durations of the delineated sections between the real and virtual quartets constantly change



[Elliott Sharp]

according to a fiendishly arcane mathematical formula. This is from Horatiu Radelescu's fourth string quartet 'Infinite to be cannot be infinite; infinite anti-be could be infinite', composed between 1976 and 1987:

**[Horatiu Radelescu, 'String Quartet No.4' (excerpt), 1976-87]**

And lastly, Elliott Sharp, a polymath whose background lies in the post-everything New York scene of the 1980s. Here he takes the *Wonderful Widow* option and restricts his attentions solely to the instrument's wooden shells:

**[Elliott Sharp, 'Digital' (excerpt), 1986]<sup>6</sup>**

Before we move on, let's just listen to one larger orchestration in which the *timbral* focus is not located in the delicate interplay of a few pellucid lines, but in the shifts and juxtapositions of thick, moving layers. This is from 'Voile', for 20 strings, and is just one of the many probes that Iannis Xenakis flew into the problem of non-tonal structure:

**[Iannis Xenakis, 'Voile' (excerpt), 1995]**

**Footnote**

Before we move on, I'm sure you will have observed that many of these extreme techniques are a common feature of film music – in which any potential aesthetic problems are typically subsumed under a kind of literalism - because the pictures, by force of our perceptive hierarchies, re-contextualise the sounds as representational. So, when a group of strings makes insect noises in a horror movie, these sounds don't need an aesthetic framework because they are instantly rendered metaphorical by the context: they mean insects, and their job is to invoke an instinctual feeling of fear and disgust. Sounds like the screeching violins in the shower scene of *Psycho* – which earned Krystof Penderecki's 'Threnody to the Victims of Hiroshima' the reputation of being difficult and experimental - are admired for their simple genius when in the same year - 1960 - Bernard Herrmann used them in Hitchcock's film. Indeed, Hitchcock himself said that '33 percent of the effect of *Psycho* was due to the music', which I think is almost certainly an understatement. The point here though is, in a movie theatre, audiences seem perfectly happy to listen to sounds that they would never accept in the concert hall.

**[György Ligeti, 'Atmospheres' (excerpt), 1961]**

This is Ligeti's 'Atmospheres', for instance – which is basically a huge cluster. But the public for Stanley Kubrick's 2001 accepted it without question, though few if any of them would have chosen to listen to it in a concert hall. Similarly, thirty years earlier, not many people had wanted to listen to Arnold Schoenberg's music - while movie composers were falling over one another to study with him. It's hard to imagine how deeply depressing it must have been for Schoenberg to hear his 'air from other planets' so quickly become a trope for ugliness and horror. Even respectable critics – and even today - start pontificating about *angst* and neurosis as soon as early probes into dissonance are discussed. Perhaps this should just be seen as an instinctive reification of their own failure to shake free of prejudice and habit? More egregiously, though, such critics are existentially misreading utopian desire for dystopian commentary. And, tragically, it seems that film composers and the general public for the most part agree with them. It was Wittgenstein who defined the *meaning* of a word in terms of the way it can *acceptably* be used; and one thing film composers certainly seem to know is how, acceptably, to use dissonance.

This is Sun Ra – whose roots lie firmly in jazz and popular music – at work with a room full of strings and a trombone:

**[Sun Ra, 'Strange Strange' (excerpt), 1967]**

Now we come to an extended technique that has become enormously influential. Here's 'Maple Leaf Rag', played by the Polish guitarist Adam Fulara. He's unaccompanied and he's playing everything in real time.



[Adam Fulara]

**[Adam Fulara, 'Maple Leaf Rag' (excerpt), recent but date unknown]<sup>7</sup>**

Now, the standard method of playing a string instrument with a neck is to press the string down with one hand while plucking, picking or bowing with the other. Physically, just the act of pushing the string to the neck makes the string vibrate, and produces an audible tone – two tones in fact: one produced by the string measured from the finger to the bridge – which is amplified by the instrument's resonant body - and the other produced by the string measured from the finger to the top of the neck - which goes un-amplified and is normally more-or-less inaudible. Without plucking or picking, even the leading note is extremely quiet. And of course, that's why strings are plucked – to amplify the wanted note and obscure its shadow. Once a string is in motion, however, there's a common technique called hammering-on which consists of pressing the same string to the neck but in a different position – or a run of different positions – without plucking the string again. It's a grace-note effect. Or at least it was until amplifiers came into the picture. With the addition of magnetic pickups and electrical amplification, hammering-on - or just tapping the string to the neck – can be made as loud as you like<sup>8</sup>. And once the picking hand is free, it's only a matter of time before someone thinks to tap on the neck with that too - treating the guitar more like a keyboard and playing two independent parts at the same time. In fact the technique was used by designer Harry DeArmond to demonstrate the sensitivity of his pickups. But the man who wrote the rule-book, and promoted this technique to the public, was Jimmy Webster<sup>9</sup>.

**[Jimmy Webster, 'Night and Day' (excerpt) and another track, title unknown, from the same long out of print LP), 1958]**

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In 1952, Webster, who at the time was working for the Gretsch guitar company, published a two-hand manual called *The Touch System for Electric and Amplified Spanish Guitar*, principally a tutorial and a set of exercises. In 1958 he released *Webster's Un'a-Bridged*, an LP showcase for two-hand tapping. And by 1960 he had invented and patented a stereo pickup in order to separate the top and bottom three strings – so that he could send each independent line to a different amplifier.

**[Jimmy Webster, 'Scarlet Mood', 1958]**

A decade and a half later, the jazz guitarist Emmett Chapman refined this technique even further, evolving a way to play with both hands positioned at 90 degrees to the neck, but on opposite sides. Since normal guitars weren't designed for this, Chapman embarked on a major re-design. First he dispensed with the body – harking back to Les Paul's famous Log - then he widened what was left in order to add 2, 4 or 6 extra strings. The result looked like a long, thinnish, plank, held almost vertically in front of the player who held one hand on either side of it with full access from top to bottom of the elongated neck. The commercial version was launched in 1974, and called the Chapman Stick. It was slow to catch on at first but now it's accepted as a virtuoso's instrument, a kind of guitar-keyboard hybrid. Some players use it to play Bach piano transcriptions, some to play jazz and others heavy rock; there's been interest from various different disciplines – but not, interestingly, from the classical or contemporary art music community. Here's Greg Howard playing an extract from his 'Goya's Dream':

**[Greg Howard, 'Goya's Dream' (excerpt), live recording, 1997]<sup>10</sup>**

By the mid 1980's, tapping had become standard operating procedure in the world of Heavy Metal, alternating freely with normal picking. Here's a classic - with a lot of instantly recognisable two-hand work. This is Eddie Van Halen's 'Eruption'. And listen to that extreme *portamento*.<sup>11</sup>

**[Eddie Van Halen, 'Eruption', 1978]<sup>12</sup>**

Sometime back in the early 1970s, Fred Frith added his own ingenious twist. You'll recall I mentioned that hammering-on actually produces two notes: the one that you want and the very quiet accompanying note that you ignore. Well, Fred stopped ignoring it. In fact, he fitted an extra pickup to the nut of the guitar in order to amplify it. Now, pressing any string automatically establishes a ratio



[Derek Bailey]

between the length of string on one side of your finger and the length of string on the other; and ratios are harmonies – of some sort. Moreover these harmonies move in contrary motion. That is to say, as one part of the string gets longer - and its note deeper -, the other gets shorter and its note higher. Adding the stereo separation pioneered by Jimmy Webster - and aestheticised by the guitarist Derek Bailey – Fred separated the top and bottom pickups, so that, with foot-operated volume pedals - he could blend and switch between all the different inputs.

**[Fred Frith, 'Hello Music' (excerpt), 1974]**

I mentioned Derek Bailey as an influence. Derek had started to move away from jazz in the mid 1960s, and gradually evolved - in the context of a close community of like-minded experimentalists - what amounted to a new language for the guitar. It seemed completely open, but was in fact tightly constructed around a narrow set of very focused and inter-related skills. Internalising stylistic devices from Webern and late serialism – for instance, treating pitch, timbre, volume and shape as independent variables – as well as - rather like Morton Feldman -, eschewing any obvious development or teleology, Bailey evolved a style in which each sound was produced with simple deliberation and precise articulation, but stood only for itself, not obviously connected to its neighbours. Sounds that were going nowhere in particular and seemed to pop in and out of existence as if illustrating some steady-state version of spontaneous musical generation. Bailey was also a master of the floating harmonic and of minutely controlled amplifier feedback. And he pioneered a form of spatial discontinuity, using a stereo pickup with two volume pedals and two wide-spaced amplifiers to constantly shift the location of each successive sound.

This is Derek in 1972:

**[Derek Bailey, 'Taps', 1972]<sup>13</sup>**

And finally, two pieces for harp

The first is an extract from by 'Palindroma', by the Mexican composer Manuel Enriquez which explores some of the less orthodox ways of using the instrument. It's played here by the great Lidia Tamayo.

**[Manuel Enriquez., 'Palindroma' (excerpt), 1984. Harp: Lidia Tamayo]**

And this is Helene Breschand, equally comfortable in the worlds of contemporary music and free improvisation:

**[Helene Breschand 'Improvisation No.2' (excerpt), 2006]**

In the next programme we will look at innovations in wind, percussion and voice.

**[Gregorio Paniagua, 'Anakrousis', 1978]**

<sup>1</sup> www.iannis-xenakis.org

<sup>2</sup> www.jonroseweb.com

<sup>3</sup> www.salvatoresciarrino.eu/Data/index\_eng.html

<sup>4</sup> www.uitti.org

<sup>5</sup> Stockhausen is a rare exception

<sup>6</sup> www.elliottsharp.com

<sup>7</sup> www.adam.fulara.com

<sup>8</sup> Jimmy Hendrix wasn't actually playing with his teeth, he was just tapping and pulling strings on the neck with one hand while he held the back of the guitar with the other. His four 200-watt Marshall stacks were taking care of the rest.

<sup>9</sup> precedents of course,, , paganini, kessel de armond...

<sup>10</sup> www.greghoward.com

<sup>11</sup> Tremolo Arm explain

<sup>12</sup> www.van-halen.com

<sup>13</sup> www.efi.group.shef.ac.uk/mbailey.html

## 02. Selected links

Iannis Xenakis' Website  
www.iannis-xenakis.org



Jon Rose's Website  
[www.jonroseweb.com](http://www.jonroseweb.com)

Francis Marie Uitti's website  
[www.uitti.org](http://www.uitti.org)

Elliot Sharp's website  
[www.elliottsharp.com](http://www.elliottsharp.com)

Adam Fulara's website  
[www.adam.fulara.com](http://www.adam.fulara.com)

Greg Howard's website  
[www.greghoward.com](http://www.greghoward.com)

Eddie Van Halen's website  
[www.van-halen.com](http://www.van-halen.com)

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### 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 [remegacorp@dial.pipex.com](mailto:remegacorp@dial.pipex.com) with subject: Probe Me.

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### 04. Acknowledgments

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