Bill Fontana and Hans Ulrich Obrist
In conversation

Bill Fontana at the recordings of *Prince Alfred Bridge*, 1977

Hans Ulrich Obrist: You have been recording sound for 50 years…

Bill Fontana: Yes I have, and the part of technology that's really changed during this time is the recording part of the machines.

HUO: How did you record in the 1970s?

BF: With beautiful handmade Swiss recorders, one called the Nagra and the other the Stellavox. These recorded on tapes and had very good microphone preamps.

HUO: Did the way you recorded change with the digital age?

BF: The first digital recorder I had was in the mid-1980s, and the first digital recorders recorded sound and video tape. This was Betamax. And there was this box, about the size of a video recorder, that was an analogue digital conversion. It would take an analogue input and convert it into a recorded signal on video tape.

HUO: So it was much more voluminous than today?

BF: It was. Also, the early digital recorders didn't sound as good as today, simply because analogue digital conversion was still pretty new.

HUO: Which year did you shift to digital?

BF: I began my first digital recordings in 1985. Then later, into the 1990s, I started to get the new DAT [Digital Audio Tape] recorders.

HUO: And now?

BF: Well, what I have here is very simple, but I have more complex stuff. I basically travel with a portable recording studio because I not only have microphones, I also have hydrophones, which are underwater. My friends and I have these vibration sensors called accelerometers. But the most important equipment is actually between my ears.

HUO: Can you tell me about your memory for sound?

BF: I've been recording thousands of sounds over the 50-year period of my work. When I listen to them, I feel like I'm going through some sort of time travel, like I am re-entering my body and my consciousness from some moment in the past, where I was really listening.

HUO: A lot of the sounds you recorded probably no longer exist. In a way your work also talks about extinction.

BF: Yes, there is extinction. I think my favourite story about that was my experience of the solar eclipse in Australia. In the 1970s I was working for the Australian broadcasting company. The job was to record what Australia sounded like. On October 23rd, 1976 there was a total eclipse of the sun. It went through the rainforest in South Eastern Australia, about 100 miles east of Melbourne. I knew something interesting was going to happen with the effect of the eclipse on the wildlife. I went there, and was totally by myself in this beautiful rainforest. I recorded the effects of the total eclipse of the sun on the birds in the rainforest: starting about seven or eight minutes before the total eclipse actually arrived, the light became completely strange, and the shadows in the rainforest started to sparkle and shimmer. Normally birds in the rainforest, or in any natural landscape, do not sing all at the same time—they sing according to the position of the sun, and things like that. But during these minutes before the total eclipse, they basically all sang collectively. So part of me thought, what the heck is going on here? And then, when the total eclipse arrives, it's not like a sunset, it is like a light switch, it just goes dark. Then they essentially stop. It was really dramatic—10 or 12 minutes of sound and silence.

HUO: Amazing, and not an easily repeated task, I guess.

BF: Yes, that bit of the recording has been stored in the collection of some museum. You know the next time an eclipse is going to happen in this rainforest will be in 5,000 years? So it was a once-in-a-5,000-year opportunity to hear it. So connecting to sounds that disappear—this recording is certainly a very interesting piece.

HUO: Yes the idea of sounds disappearing seems an interesting topic in your work that I am sure we will get back to.
But for now, let´s turn to your biography. You were born in 1947 in Cleveland. I was curious as to how you came to art, how art came to you? Or how you came to sound, how sound came to you?

BF: I grew up in a neighbourhood that was within walking distance of the Cleveland Museum of Art and the Cleveland Orchestra. Ever since I can remember I was interested in music, and had fantasies as a boy of becoming a composer of great music. When I got older, by the time I was at high school and getting into college, I was experimenting a lot with writing music in a very minimalist sort of way. I found that to create music I needed to have a kind of a hyperfocus, as there are ambient sounds in that situation. So, as I was trying to write music, I became more interested in my perception of the ambient sounds. I came to the idea that the act of listening was a way of making music, and found out what kind of hyperfocus I could have. Then I got my first real recorder in 1967. And I started recording sounds and using headphones.

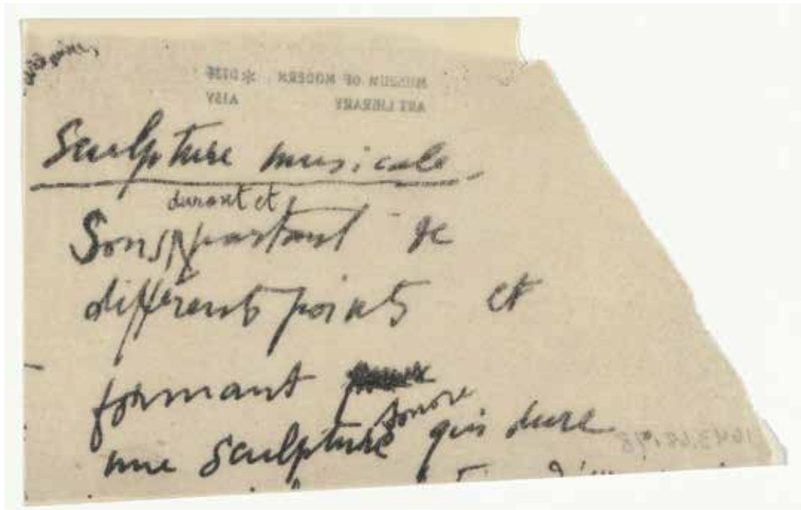
HUO: This is interesting: You said it seemed that you needed a *hyperfocus* to hear music in the ambient sounds. So when you were in a state of mind that was especially focused, you could make music that was a way of experiencing the world. Can you explain that to me?

BF: It has to do with pattern recognition. If you use your brain in a certain way, you start to recognise those patterns. It became a kind of mental habit for me to listen and to hear them. And the more I did it, the more normal it was for me to do that.
When I was a college student the Vietnam war was on, and I wasn't sure what kind of career path I was going to have. In Cleveland I was enrolled at the music conservatory, for composition, but also at the university as a philosophy major. I took all the philosophy classes, as specifically logic and philosophy of speech somehow seemed closer to what I was looking for in music than what I got at the music faculty. When I saw that John Cage was teaching a class in New York called 'Experimental Music Composition', I enrolled in the New School College and went to New York.

HUO: The analytical aspect of the recording and listening is particularly interesting to me. When I became friends with Jonas Mekas in the early 1990s he taught me how to use a camera, which is why I actually record my interviews. There wouldn't be 4,000 hours of conversations if he hadn't taught me to use it as a kind of notebook, daily, so I always film and record, reacting to a constant flux of reality, keeping track of presence. You said that you started to make those first recordings in a similar way to Jonas using a camera. Can you tell me something about this, also because it connects with that famous Cage quote, which came from Thoreau: 'Music is continuous; only listening is intermittent'?

BF: That's kind of a fundamental idea of my work, especially in the later work where, as I got to know Cage, the more I got feedback on some of my ideas. In 1968, there was an exhibition at MoMA in New York called *The Machine as Seen at the End of the Mechanical Age,* and it was the first time in my life that I have ever seen any of Duchamp's work.

HUO: It was the late K.G. Pontus Hultén who curated that show in the year I was born, 1968. I have the wonderful catalogue with its metallic cover. So you saw the musical sculpture by Duchamp there?



Marcel Duchamp, *Untitled (Sculpture musicale)*, from: *The Bride Stripped Bare by Her Bachelors, Even (The Green Box)*, 1934

BF: Yes, I was really inspired by that passage in the *Green Box, Musical Sculpture,* 'Sounds lasting and leaving (4 minutes 17)', a sculpture that was, for me, almost a theorem for my work.
It made a lot of sense to me at that time as I had started treating these recordings basically as found objects. I would make a recording and then put it in a cassette—to be able to play it back at some random place where it was out of context, in order to observe people's interactions with the sound and listening space. I was interested in how most people's perception of the ambient sound was to regard it as noise and to tune it out. That passage about Duchamp's musical sculpture made me call my sound intervention pieces 'sound sculptures'.

HUO: So that´s when you started thinking of the concept of sound sculpture and where the definition for your work comes from?

BF: Yes. What I was doing was essentially different than, say, doing concerts.
I started thinking about the meaning of sculpture. To me, it meant some physical embodiment with an aspect of the human condition. So the first real sound sculptures I made, in the early 1970s, basically consisted of taking several resonant objects, putting small microphones in the objects, positioning them on the roof of a building, and connecting them to a loudspeaker system in the gallery space below.
I did this, for instance, in an alternative art space called the 'Experimental Intermedia Foundation'.

HUO: Would you call this your first valid piece—your number one in your Catalogue Raisonné ? How did it work, exactly? You explained in an interview that you connected the roof to the inside—and the inside to the outside, is that right?

BF: I was interested in the resonant properties of certain objects, and how these objects were, in a sense, listening to the world around. That seemed to symbolise how I felt about the act of listening, making music as a physical embodiment of that idea. That's why these are the first sound sculptures, yes.

Accelerometer on the clockwork of Big Ben

HUO: Italo Calvino wrote this beautiful book about the *Invisible Cities*. I always thought that the *Sonic City*[1] is somehow part of the Invisible City, because very often we don't take notice. I feel that with your work it is . as Paul Klee said, 'art makes visible the invisible'—you seem to do that sonically, would you agree?

BF: Yes, absolutely. But… thinking about New York… I was back in New York maybe three or four years ago, and there was this building I became very interested in, the old Met Life Tower on 23rd Street. It opened around 1909 and was inspired by the Campanile in Venice. At the top of the tower there were four bells that rang the Westminster chimes, and they did that for about 100 years. Then the building was sold, it is now a luxury hotel, and obviously the bells don't ring any more. I went up to where the bells are and did test recordings, where I put these high resolution vibration sensors on the bells and made recordings of the bells essentially hearing New York. It seemed just—what began in the early 1970s, with these objects in the roof of a building—that process continued there. It was just a much more sophisticated, high-tech way of doing that.

HUO: We talked about the way you record. I read that, early on, you also used a tool that structural engineers use…

BF: An accelerometer.

HUO: Yes, an accelerometer, something like a vibration sensor. Can you tell me how you use the accelerometer to find this other dimension? Again, a dimension we don't really perceive with our eyes, because we don't perceive vibrations?

BF: The accelerometer is technically what is called a transducer. It's normally used by structural engineers to measure vibration in structures like bridges, for example. Every airplane you fly on has accelerometers on the engine to monitor whether it's moving correctly. When they're building car engines, for instance, they use them. So they are really designed as measuring tools to get inside the vibrations of structures. I use them as portals into another dimension, and to explore how physical situations are connected through vibration, how they react through vibration. I did a project along these lines here in London with the Millennium Bridge, do you remember the sound sculpture from 2006 in the Turbine Hall at Tate Modern?

HUO: Yes, of course.

BF: I installed a network with these sensors on the Millennium Bridge, with the help of the engineering company that built the bridge. It's a listening tool that has been part of how I work.

HUO: In the beginning, it was just with the roof that you recorded, and now you mentioned the Tate piece: bridges have also played an incredible role in your work. I searched online—so many of your pieces connect to bridges. Huang Yong Ping, the late Chinese artist, said we need always at least two points of view, and to bridge them. Of course, there is your famous bridge in Lisbon, and there is the Tate bridge, but there are also many, many more. When did the bridges enter your work? What was the bridge epiphany, and why bridges?

BF: The first bridge appeared in my work in 1977 in an exhibition at a museum in Melbourne called the National Gallery of Victoria. I was working for the ABC

1
Sonic City was a sound selection compiled by Hans Ulrich Obrist in the frame of the 2000 *Mutation* exhibition curated by Rem Koolhaas, first shown in Bordeaux.

Bill Fontana on the Brooklyn Bridge, 1983

(Australian Broadcast Corporation) then—and had access to eight to sixteen analogue channel recorders, so I was able to take these sometimes into environments. This first bridge I recorded was in a town in Australia, halfway between Sydney and Melbourne, called Gundagai. There was a large wooden trestle bridge that went over a floodplain. The sound it made, the rattling of the wooden panels when the car went over it, I made some recordings of that in 1977. In the US, the first bridge I worked with was actually in Cincinnati, Ohio—there is a suspension bridge designed by the same guy who did the Brooklyn Bridge, John August Roebling. I did a real-time sound sculpture with the bridge in Cincinnati, which was transmitted to the Federal Reserve Plaza. When the Brooklyn Bridge was a hundred years old, in 1983, I did a similar project and transmitted live sounds into the façade of World Trade Center. So the sound of the Brooklyn Bridge was kind of hovering in that space.

HUO: Quite a bit later you did the bridge at the Tate?

BF: Yes, The Tate was in 2006.

HUO: That was, of course, Norman Foster's Millennium Bridge. How did you do the Tate piece?

BF: I was a frequent visitor to London at that time, and I always travel with some kind of recording device. I had accelerometers, and I started my own experiments with making test recordings, putting accelerometers and cables on the Millennium Bridge. This seemed really amazing to me. I started to dream about making this artwork, but I also had good fortune. In a lecture at a conference about sound art in 2004, I played an example of my test recordings of the Millennium Bridge. It happened that an acoustic engineer from Arup Engineering, the company that had built the Millennium Bridge, heard it. He had a lot of experience analysing the wobbling that the bridge used to do, but he never listened to the accelerometer recordings, which is data for him. So he was very excited when he heard these, and said to me: 'What do you think would be interesting to do?' I said: 'I want to bring sound into the Turbine Hall'. So what his company did for me was that they do work for architects who build concert halls and buildings, and they've got this incredible acoustic simulation lab. They can make a model of the acoustic space, and then take a sound and place it in the model,

and simulate what it sounds like. One of the head guys from Arup was on the board of the Tate. We invited Nicholas Serota to come to this lab and hear the simulation of the Millennium Bridge sound piece I was trying to do, and how it would sound in the Turbine Hall. On the spot Nicholas Serota said, 'I want to do this'.

HUO: The installation became a really fascinating experience that I connect to the time I moved to London in 2006.

BF: Currently I am negotiating with the Tate to give them a permanent, recorded version of the piece that they might install on top of the Turbine Hall.

HUO: I have often discussed the lack of sound museums, comparing this fact to the 1990s, when video was still very much marginalised. Jonas Mekas, for example, was very upset with the Whitney showing videos in some other rooms as a programme during the Whitney Biennial. Nobody saw those films in the exhibition context, where they had only painting and sculpture. Today that has changed, now there are video rooms in every museum. Yet sonic works are still often absent from collections, and I was wondering about your perspective on that. I feel it will most probably change in the next 10 years—it is the next frontier. Sound in a museum or a collection context is still somehow unresolved. I was wondering if you believe that there should be a specialised museum of sound? Or do you think that sound works should just enter existing museums? How do you feel about collecting sound works?

BF: I have the experience of having some of my sound pieces in museum collections. I think that probably one of the most interesting of these is in Rome, in a museum called MAXXI ...

HUO: ... by Zaha Hadid.

BF: Yes, she did the architecture. And I did this pretty large-scale immersive and permanent sound piece for her large entrance hall. The piece that flows through Hadid's 'kinetic' architecture is based on recordings I made, many of them in the streets in Rome, and on an old Roman aqueduct called the Aqua Vergine. Visitors really experienced that piece in space and its surroundings .

HUO: I have experienced it—it is indeed exciting and merges effortlessly with the situation.

BF: Even if SFMOMA in San Francisco also have some works of mine in their collection, as well as the Art Gallery of New South Wales in Sydney, which has two sound pieces in its collection—what you say is still interesting and right: Sound art in collections is still in its beginning stages. For the whole process of collecting: I have been operating independently mostly all of my career. The only time I had a gallery was when Haunch of Venison gallery existed in London, and I think they kind of struggled with what to do with sound art. I always felt like I was, in some ways, a token sound artist for them. I still feel that there is a certain ambivalence about a gallery working with sound art.

HUO: Another interesting aspect of your works is the treatment of the urban as much the rural. Rem Koolhaas said: 'The countryside is kind of a blind spot'. Nowadays we talk so much about the city that we have barely any images of the countryside. Which is why he is now doing a big exhibition on the countryside for the Guggenheim. We don't have as many images of the countryside as we do of the city. And this is also

Bill Fontana in the Australian Outback, 1977

true for sounds: sounds of the countryside are much less present than sounds of the city. You have worked in cities, in the countryside. In deserts even. When did you start to think beyond the city?

BF: It began, I think, in Australia, because the landscape in Australia is such a vast countryside. Cities are only a small part of that country: it is about the size of the United States and has maybe the population of New York City. So I did a lot of recordings of the Australian countryside.

HUO: Can you tell me about those?

BF: I have one vivid memory of driving along a country highway. At the side of the road there was a large herd of sheep, and the sheep were agitated, making the kind of 'baa' sounds that sheep make. Their problem was that they were being attacked by a flock of magpies, and the magpies were also making a special kind of sound. So it was a combination of this moment in time, of an unhappy herd of sheep being attacked by a flock of magpies, and the sound of that moment was very special. Then in the distance you would occasionally hear the sound of a gear shifting on a large semi-trailer truck, and that mixture was so special ... this was a moment. Another moment, I was in a field near a forest and because there were some interesting birds. I set up the microphones so that the recorders would record them. I was stepping away and by accident, or destiny, there were a couple of cows that started walking near where my microphone was in this field. I got the gradually increasing sound of those cows walking through the grass, approaching the microphone.

HUO: Chris Watson made me aware of the importance of the sound of animals. In that context I think of your extraordinary piece in Cologne in the Kolumba Museum restored (1997–2007) by Peter Zumthor. I remember that when I was in Cologne in the 1980s or 90s, there were pigeons all over the mostly destroyed old town... For your piece that is now in the museum, which merges old and new, you recorded those pigeons.

BF: Yes, in the 1980s I worked in Cologne, where I did sound art projects (with the WDR, for example) and was a known artist in that community. In 1994, when I was living in Paris, I therefore got an invitation from the Museum of the Archbishop of Cologne to visit what was soon going to be a construction site for their amazing diocesan collection. The site was the mostly destroyed St. Kolumba. Since 'columba' means dove or pigeon in Latin and is the bird of peace, they wanted me to document the sounds of the pigeons living there before it became a construction site.
So I brought a multichannel digital recorder to Cologne and circled my way around the Kolumba, making hours of recordings of the pigeons. Then the museum opened in 2007, and I designed this sound piece in that incredible space out of the old recordings.

HUO: So because of your piece, those long-gone pigeons are still there.

BF: Do you know the Vienna piece *Landscape Soundings*, which I did in 1990? It was installed in Maria-Theresien-Platz, between the Art History Museum and the Natural History Museum. In the mid-1980s the Austrian government was discussing the building of a hydroelectric power plant in the east of Austria, which would have really damaged the Danube.
The Hainburger Au was very much in the news then, and the theme of the Vienna festival in May 99 was 'kunst und natur', 'art and nature'. The idea came about with Heidi Grundmann, a producer from Austrian state radio, who did public art projects. With the help of the Austrian radio we selected a forest in the Danube wetland, installed a network of 16 microphones there, and transmitted the live sounds into the heart of Vienna.

HUO: So the work then was also a form of protest to force the government to abandon the idea?

BF: Yes. The sounds that came to Vienna were directly transmitted to 70 loudspeakers in the façades of these museums and to some of the lighting features on the ground of the park between the buildings. The space was filled with the living voice of this amazing wetland of the Danube. It was definitely striking. Today I am thinking of reworking this idea for an exhibition dealing with the idea of an age of trees. I'm using accelerometers and am actually listening through the trees. Then, it didn't even occur to me that we would listen to the trees of the wetlands too.

HUO: So that brings us to the trees—a big theme right now, also because of extinction, since trees are probably the only chance we have of saving the planet in terms of climate change, through the massive reforestation of billions of trees. Can you tell me about the recording of trees?

BF: I feel it is important to go deeper and look closer because of the climate change issues, and their urgency. I wanted to make an artwork that would really bring out the living voice of one of these very important old world forests. Last time I worked with the forest it was very good in terms of rendering the kind of acoustic sounds you have in that kind of environment. But what was missing was the trees themselves. This time I see it as a great opportunity to put this technology—the accelerometer technology—on the trunks of trees that are several thousand years old; not only to hear some kind of internal vibrations that the trees have from the wind and weather, but more importantly, I regard a tree of that type as an amazing natural and live organisation. In California, in Sequoia National Park, you've got trees that are the

Giant tree in Sequoia
National Parc, California

height of a 10-storey building and 3,000 years old. The massive body of such an old tree is an incredible resonance structure, and if you put accelerometers high up on the trunk, where it is more elastic, the trunk is going to react to the sounds of the environment around it, like interesting bird calls. The massive tree trunk has a harmonic structure with resonant frequency and overtones. The second the trunk vibrates, we essentially hear sounds in a very musical way. When the forest or the wildlife produces an acoustic sound, any of those frequencies match the harmonic structure of the tree trunk. The accelerometers will hear through the trunk that reacts as a kind of resonant filter to the surroundings. Like this, you really hear the inner voice of a tree.

HUO: This means in your work we are basically in the tree?

BF: Yes, you can experience the sound of the forest from the perspective of a tree.

HUO: In this catalogue from Vienna, it seems you actually prompted a question: This idea of the score … not actually writing sheet music, yet at the same time a composition.

BF: I did sheet music when I was in Cleveland.

HUO: Only sheet music?

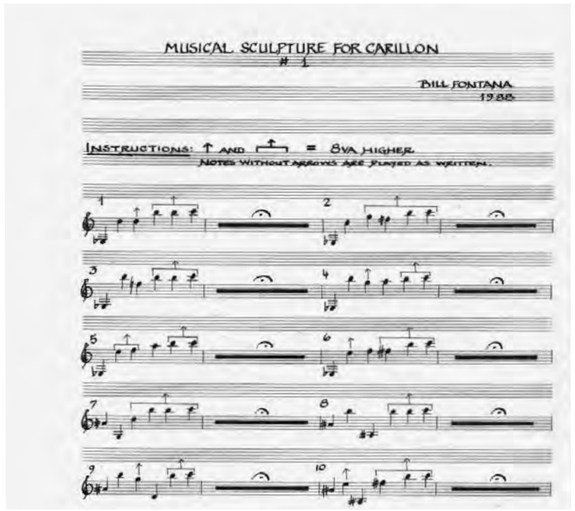
BF: Well, I wrote scores; a string quartet, some piano music … I wanted to be a composer.

HUO: Do they still exist?

BF: In my archive.

HUO: Has it been published?

BF: No.



Excerpt from the score *Musical Sculpture for Carillon*, 1988

Bill Fontana in Radio OB van on Roncalliplatz, *Metropolis Köln*, 1987

HUO: So, what is your early music like?

BF: It's pretty minimal. I was always interested in spatial relations. I have a piece for four pianos. I also have a sound sculpture for a brass band, which is a piece that is to be performed outdoors. I wrote some very minimal orchestral pieces that employed spreading the instruments of the orchestras out to create a spatial piece. That was really the orientation of my thinking.

HUO: Now, for all your later works, do you do scores?

BF: Yes, I make them for myself, really.
They are a combination of technical diagrams. Something that looks like this …

HUO: Like a timeline?

BF: It´s a kind of like a timeline that indicates a mix of different positions of sounds over a period. Different combinations, like these .

HUO: The question of the score is really intriguing. Here you show a noise with a question mark at minute 18:39, and at minute 26, there is an airplane. [B laughs]

HUO: And there is a long water line. So it's like a palimpsest.

BF: Yes, that's what a mixing programme does.

HUO: Of course, you use acoustic microphones. But you also record underwater.

BF: Yes, underwater recordings have played an important role since I've been using hydrophones.
The first time I started using hydrophones was in Cologne, because I was doing a project in Cologne with the radio station, Westdeutscher Rundfunk (*Metropolis Köln,* 1985/1987?). I did this kind of real-time sound portrait—a sound map of the city of Cologne. I was working at this broadcasting company, and I would install a couple of the hydrophones in the ground to hear the movement of the rivers, ship engines and water. That was the first time, but the more dramatic example was in Paris, in 1994.

HUO: You refer to a public art project on the façade of the Arc de Triomphe.

BF: Yes, it was a sound sculpture commissioned by the French Ministry of Culture, for the 50th anniversary of D-Day. I installed a live network of acoustic microphones and hydrophones on the Normandy coast which transmitted the sounds to an eight-channel system on the façade of the Arc de Triomphe. So, basically, the live sound of the sea wrapped around the Arc De Triomphe. The sound .

HUO: .inundated it?

BF: Yes, if you stood on the island of the Arc de Triomphe, you were no longer able to hear the noise of the traffic.

HUO: And then there is, of course, your work connected to architecture. You have interacted with Frank Gehry at the SFMOMA and in Miami. Then you worked with the Whitney Museum in 1991, an interaction between you and Marcel Breuer. We spoke about Hadid. Can you tell me your focus when you react to architecture? At the Whitney Museum, you really altered the context, you actually 'brought' the Niagara Falls.

BF: The reason I did something there was very simple. The media curator of the Whitney was interested in having a work of mine at the Biennial.

HUO: You talk about John G. Hanhardt, the pioneering curator of new media who was for instance, also an an early supporter of Nam June Paik.

BF: Hanhardt was a real advocate for sound art. He invited me to the Whitney Biennial after he had seen the piece with the Brooklyn Bridge on the façade of the World Trade Center in 1983. In 1985, he showed a sound piece of mine in the media room,

produced in Australia in 1976, a recording of wave patterns in Sydney Harbour called *Kirribilli Wharf*. He then invited me in 1991 to do a piece for the Biennial outdoors. The Breuer building has this kind of courtyard in the basement under the façade. While asking myself what sound piece I could do outdoors on Madison Avenue I came to think of the sound of moving water that produces natural white noise. I had a postcard image of the Breuer building, I put it upside down—and it suggested a waterfall to me. So, Niagara Falls were some of the most interesting waterfalls that I could think of using at that time. I went and made extensive recordings of the Niagara Falls and installed a sound system at the Whitney Museum. It's because of that piece that I had the chance to do the piece in Paris, with the Arc de Triomphe.

HUO: It's probably one of your most famous pieces.
Another particularly striking piece is your project at the San Francisco Museum of Modern Art, where the sound 'leaks' out of the main building.

BF: Yes, into an inner courtyard. There is a bridge on the top floor below the Oculus where I was using a special kind of audio technology, because there were other ultrasonic transducers that projected sound waves like lasers into the space, reflecting off the walls. In the boiler room, I installed accelerometers and machinery that would hear all the plumbing and the moving water in the system there.

HUO: What about your connection to Frank Gehry?

BF: Well, I met him in Los Angeles and I had the opportunity in Miami Beach to do a project on one of his buildings, the New World Center. Because it's a concert hall, the architecture of that building has one wall that is designed for video projection.

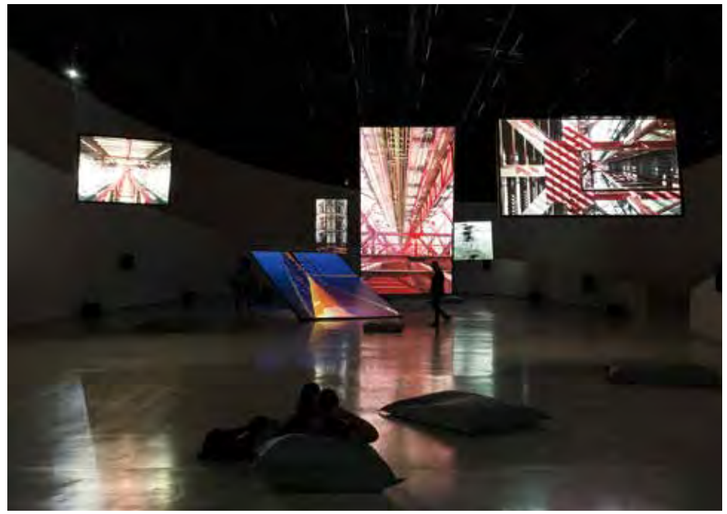
HUO: It´s the outside wall facing the park. Where people go to eat lunch, hang out.

BF: Right. There is also a permanent TV channel and sound system in the park. The symphony uses it to show concerts on the video wall and play the sound. But a lot of the time the system is not used. The City of Miami Beach wanted an artist with a permanent artwork for that situation—and they commissioned me. I was interested in the issues involved in the relationship of South Florida to the coast around it, and the sense of impending doom. I thought of the rising sea levels and I wanted to make an artwork that explored that relationship. I did a lot of filming and sound recording in many different situations in South Florida, exploring the relationship between the coast and the sea. I put accelerometers on structures floating in the water, against the water, and hydrophones on the water, I also had acoustic microphones. I unravelled and found interesting sonic texture with musical language, and the videos were all collages I made, gazing at the situation and layering parts of an image of itself.

HUO: Is it called *Sonic Dreamscapes?*

BF: The work goes in between. While making recordings, there is a sort of suspension of time, where time—normal time—stops. This experience has a kind of perpetual motion to it. I was trying to create media artworks that would get people to think of what surrounds them, but also get immersed into something evocative. Maybe make time stop for them, a little.

HUO: Another of your cooperations with architecture recently is the MAAT in Lisbon, incredible architecture by Amanda Levete.



Shadow Soundings, MAAT, Lisbon, 2017/18, installation view

BF: They asked me to make a piece for the museum because, when I was in New York, I met the first director of the museum, Pedro Gadanho. He asked me in 2016 about doing a sound piece, maybe a sound-video piece in Lisbon for the 25 de Abril Bridge. We agreed I would make my first ever site visit to Lisbon, and work on the construction site of the museum. I came up with the idea of taking this large space at MAAT's Oval Gallery and making an artwork with that bridge for 2018. Coincidentally, the name of the bridge, the 25th of April, also happens to be my birthday.
I made quite a few trips to Lisbon over a period of a year and a half, and spent a lot of time making recordings and studies of that bridge. While working I had reactions to the installations in the building, with the architecture. In the end, the piece was essentially a real-time media artwork. With two concentric rings of speakers they were able to recreate the bridge in the museum. I installed a combination of acoustic microphones and accelerometers on the bridge. It was a real-time data stream sound, with the ability to have a live camera. One of the live cameras was on the bridge.
I chose that camera to be on top of the tower of the bridge, which gave a really amazing perspective. I really wanted to have a sonic choreography in the space. I was lucky that there was a sound company from California that I worked with a lot, called Meyer Sound. They have this digital audio platform called 'D-Mitri' where, if you have a large number of speakers in a space like that—maybe 60 speakers—you can purposely create a sonic choreography by actually drawing.

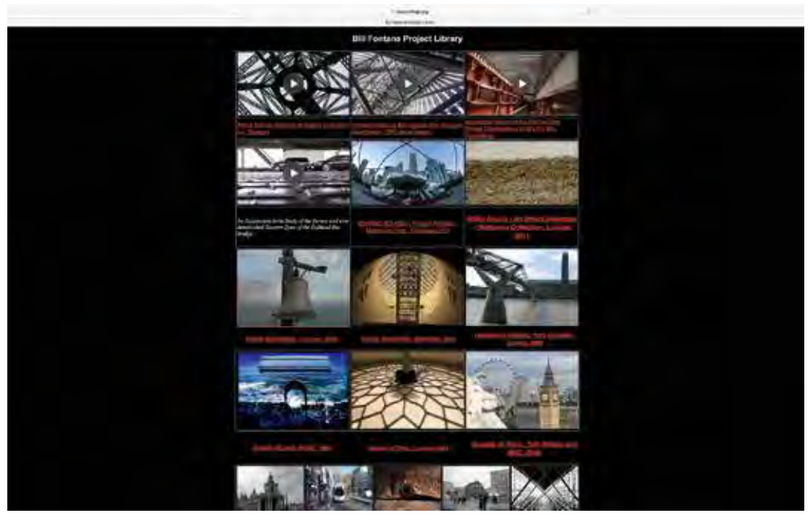
HUO: The 'D-Mitri' programme is like a control brain?

BF: It's very sophisticated. Each sound has its individual orbit through the speaker matrix.

HUO: You have used that technology before, for the Pritzker Pavilion in the Millennium Park in Chicago. Another interesting connection to Gehry´s architecture.

BF: Yes, I was teaching at the artist studio in Chicago. It was another gallery cooperation. As part of my presence in Chicago they wanted me to create an artwork. I was fascinated by the pavilion's remarkable design, where you've got this trellis

Bill Fontana and Clemens Mair working on a video during the preparations for the exhibition *Primal Energie*s, Graz, summer 2017



Project Library on Bill Fontana's website, resoundings.org

that extends from the stage out into the park and carries 104 downwards facing loudspeakers on it. My reaction to the situation was to produce a sound sculpture out of different recordings I made in Chicago earlier and to use the new technology of the D-Mitri system. I remember sitting in Millennium Park under the trellis with my laptop, computer, and drawing—really *drawing*—sound movements. As I was drawing them, I could really hear them from the 102 speakers and their different locations. I drew and controlled the speed, and was basically building the spatial composition through the act of drawing.

HUO: You have recently not only included cutting-edge technology, but also video. In Portugal, for example, you combined moving image with sounds from the outside. In a recent interview[2] you said that you work backwards for this. You create the sound first, and then you add the moving image. We are mostly used to sound following film. Movies, for example, add soundtracks to the image. But in your case, film follows sound. Can you explain that? What was the epiphany of bringing in the moving image to your sound?

BF: The first time was in 2008 and it started because of the development of cameras. From the beginning of my recordings I would always take some pictures of the situations where I was recording sound. So, from the time you could actually do video with the camera I was carrying, I started shooting videos. I started thinking of the moving image as a time-based medium, approaching it in the way I use sound.
The first time I exhibited a work with sound and video was actually at the Haunch of Venison gallery in 2008.

HUO: In your first ever commercial gallery?

BF: Yes, when they once asked me if there was a way of having visual elements in my work I had this idea of going back to Japan to make some new recordings of large Buddhist temple bells in Kyoto and Tokyo. The first audio-visual work I did was very simple. Basically, there was a camera staring at the beautiful hanging Buddhist temple bells. The sound was just the sound of silence of the bell, not ringing.

Nevertheless, with the accelerometer on it you can hear the resonance of the bell reacting to whatever surrounds it. At the Haunch of Venison, you'd go into a room and have this life-sized projection of a beautiful Buddhist temple bell, and you'd have this incredible sound that filled the room. There were several rooms with different bells, and they managed to actually sell one or two editions with that piece. Then in 2010, I did an exhibition at Somerset House about the Thames. It was installed on the lower level. At Somerset House you've got this large plaza as you enter from the Strand. The perimeter of the courtyard one level down is this walkway at the level of the Thames. When the building was created originally as the headquarters for the British Navy during the Napoleonic wars, that area was full of storage chambers for goods, weapons and in each of those caves—they're called 'coalholes'—I installed video projections of different situations on the Thames. The piece was pretty immersive, with all these sounds of the different parts of the Thames moving through the surrounding walkway.

HUO: As your work connects to developments in technology, and as Tim Berners-Lee invented the World Wide Web in 1989—we have just celebrated its 30th anniversary—I would like to ask you about the influence of the Internet on your work? You have an extraordinary website, it is one of the best artist's websites. It includes a lot of your films. It's extremely complete and even has an own name, 'Resoundings', right?

BF: I started to build my website in 1999, when I had a sound sculpture at the Venice Biennale installed on the façade of the Punta della Dogana, and Peggy Guggenheim helped organise that. It was a sound sculpture that explored the idea of hearing as far as you can see. I had live microphones and used them with the immense visual panorama that you'd see from the Dogana. I had microphones in 12 to 16 places.
The sound of these locations—an abstraction of the visual panorama—was transferred to loudspeakers on the façade of the building. When you create a website, you have to register a domain name, and I registered resoundings.org. I liked the word 'resoundings'—that's really what I am doing, in a sense.

HUO: Why do you like this word, why does it summarise your practice?

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'Bill Fontana: Miami sound machine', in: The Art Newspaper, december 2018. See theartnewspaper.com/interview/bill-fontana-miami-sound-machine (accessed 04.02.2020).

BF: Well, so much about my artistic practice is taking sounds from one place and re-sounding them in another context. So to me, as a word, it really summarises what so much of my work has been.

HUO: Have you ever thought of painting or sculpting?

BF: In my early days in Cleveland. I also have a lot of friends who were art students, and for a brief period of my life I wanted to be a painter. People who have seen a lot of the recent videos I am doing, their reaction to it was that I was painting with light.

HUO: These exist too? These paintings?

BF: I have them in my archive, yes. I have never shown them.

HUO: Let's talk about the new show in Graz.

BF: Have you ever seen the building in Graz?

HUO: Yes, I know Graz well. When Peter Pakesch was director of the Joanneum I was invited to do a talk with Michelangelo Pistoletto on social sculpture and the Cittadellarte. I also went to interview Günther Brus, the legendary Viennese Actionist who is from Graz. A part of the Joanneum is now dedicated to him.
The building that you will now work in is by Peter Cook and Colin Fournier, it's one of the few built structures by Cook, who is mostly known for his unbuilt work. He was a founding member of the 1960s neo-futurist architecture group Archigram, and also an amazingly influential teacher. Can you tell us about what you are going to do with *Primal Energies* and *Sonic Projections*?

BF: It's an exhibition that is, in some ways, a reflection on a lot of ideas, and especially on ideas about the environment.

HUO: So it is connected to ecology?

BF: Very much so. The exhibition will combine sound and moving image. It's going to be in that large gallery space on the top floor. When the curator Katrin Bucher Trantow invited me to do something in that space, we were both thinking about learning from the experience in Lisbon, which was on a similar kind of spatial scale, and wanted to bring it together with the local situation in Graz and the globally important environmental questions concerning the production of energy. There will probably be eight to twelve hanging screens with projections on them in the space, and all the images will be from different environmental situations I have worked with. In the large space, as with the work in Lisbon, there will be something like 50 or 60 loudspeakers, and the sound can move around in the space.
A lot of what I am focussing on is renewable energy situations. As something like 80% of Austria's electricity comes from hydroelectric power, I have done a lot of recordings of Austria's hydroelectric power situations—there are beautiful hydroelectric power plants not far from Graz, where I did water recordings. On our tours we detected that the Austrian power company Verbund had set up a pilot project at a local power plant, using sounds in order to monitor the integrity of the turbines. When I saw that they used simple aerial microphones I proposed using accelerometers for their measurements, and the researchers were indeed excited when they heard what they could pick up.

Bill Fontana, *Hydro Power Landscape*, 2019 (video still)

One of the pieces in the space will be from there. It will be a large vertical image based on a video I made of the hydroelectric power plant. The sound I'm using was recorded with hydrophones hearing the sound of the turbines.

HUO: Like a Rorschach test.

BF: In addition to the *Primal Energies* show, they want to re-enact the *Sonic Projections*, a public art project I did in Graz in 1988, which caused a lot of trouble. There was an exhibition at the steirischer herbst festival, reflecting on the 50-year anniversary of the Anschluss. Graz has this history of the 'city of the Volkserhebung', the voluntary joining with Nazi Germany, so in 1988 a few daring curators like Werner Fenz and Heidi Grundman from ORF Radio invited artists for public art projects and to talk about it.
When I went to Graz, I had the feeling that especially older people in Graz didn't want to know anything about this exhibition. They didn't want to think about their history. So I thought that a sound is something that you couldn't ignore. I used this well-known landmark, the Schloßberg, this romantic-looking bell tower on the highest point in the centre of Graz. We installed loudspeakers and projected sounds over the landscape. They were nice sounds, not designed to be aggressive. But it became a symbol of the exhibition, and it caused …

HUO: … a fuss.

BF: Yes. But now, for their 'Year of Culture', they want it back!

HUO: This piece for Graz seems to be a good example of your methodology. On your website there is also a manifesto text, where you say that you create live listening networks. So, you create a live listening network for Graz: 'These all use a hybrid mix of transmission technologies that connect multiple sound retrieval points to a central reception point. What is significant in this process are the conceptual links determining the relationships between the selected listening points and the site-specific qualities of the reception point (sculpture site). Some conceptual strategies have

been acoustic memory, the total transformation of the visible (retinal) by the invisible (sound), hearing as far as one can see, the relationship of the speed of sound to the speed of light, and the deconstruction of our perception of time.' All of that seems to be true for Graz.

BF: Yes, absolutely, but it has been true for all of my work in recent years.

HUO: It went from the Walkman to the iPhone—now people listen to almost everything on the iPhone. Of course, your work also breaks this bubble, because people are often in this bubble and don't notice what is around us. But would it be possible to somehow bring it back, bring your work to mobile listening? Have you ever thought of making mobile pieces? Could you even imagine a Bill Fontana app?

BF: In a way, in the 1970s and 80s, before all this happened, I was already using radio like that. The sound art works I did for radio really brought the sound to you. People listening to radios, thousands and millions of different contacts at the same time—it felt like a chance to make temporary sound sculptures in many places at the same time, as the sounds would logically interact with the situations that people would happen to be in. When, in 1982, I had a grant from the Corporation for Public Broadcasting in the US, it produced 365 formatted radio programmes that were basically structured for three-and-a-half minutes to hear sound without any explanation. Only afterwards there would be a voice to tell you what you had been hearing. This programme was distributed all over the United States on the public radio network. Just this idea that, through the medium of radio, you can kind of place a sound in all these different situations. But what you are saying about the iPhone app is something very thought-provoking, it might be something I'd like to explore.

HUO: Speaking of radio pieces, they have often been a laboratory for literature—the legendary Austrian writer Friederike Mayröcker has done many amazing radio plays—for art. Can you give us another example of one of your pieces for radio?

BF: Two come to mind. I did a sound sculpture in Berlin in 1984 at the Anhalter Bahnhof: I took the sound of the Cologne main train station and planted loudspeakers buried in the empty field behind the Anhalter Bahnhof. What the Westdeutscher Rundfunk did, as a partner in this, was that people alive in Berlin in 1984 who had a memory of the Anhalter Bahnhof as a train station would go to that site, and they recorded interviews. In 1987 I did this piece called the *Soundbridge Cologne – San Francisco*. It basically connected two real-time sound pieces, one at SFMOMA with the Golden Gate Bridge, and one at the Museum Ludwig with a live sound art piece about Cologne. I did this kind of radio concert mixing sounds live, and it was distributed all over Europe and North America, and even to Australia via satellite.

HUO: Please tell me about your archive. Where is it?

BF: It's online and in my house in San Francisco, in my studio.

HUO: Jonas Mekas urged us to have things in different places. How do you archive your work?

BF: Well, what I do is that I have three servers, and I store a lot of files on the servers. What's also useful for me is, if I am working with somebody on a project, I can have a file that is not on a website and I can send a link to someone to see or hear it. I use

Bill Fontana in front of the Anhalter Bahnhof in Berlin, 1984

it as a way of storing a lot of data, a lot of files. It's kind of an ongoing and labour-intensive process. During this work I have often had the idea to take some of the work and maybe sell it as editions. From the money I would perhaps create a foundation.

HUO: That's one of your unrealised ideas then. I wanted to ask you about these. What projects were too big, or too small, or too expensive to be realised?

BF: Ever since the idea of a project for the Hayward on listening through ancient trees came to my mind, I am possessed with it. I would love to do it, but due to time issues I am not sure if it can happen. Apart from this I had a public commission in New York City that failed due to money issues, but would have been amazing. I wanted to do a large sound piece bringing elements of the New York Harbour and its surroundings into a public space.

HUO: Any other projects?

BF: I had the idea to turn the new Berlin Hauptbahnhof into a kind of musical instrument for the Hamburger Bahnhof in Berlin, working with accelerometers. The sounds of the structure of the new station would be interesting, and it would be remarkable to rebuild that station acoustically into the former station and contemporary exhibition space of the Hamburger Bahnhof. So far I didn't get the most favourable reaction. What fascinates me about using these accelerometers and recording vibrations inside a structure, or now in an ancient tree . is that it gives me the feeling of perpetual motion. It's like there is a sense that certain sounds never stop, they keep going. A bit like looking at the night sky, and it's infinite.

HUO: It's cosmic.

BF: Cosmic, yes. An accelerometer placed on a 3,000-year-old tree is hearing a sound that never stops, and is a portal to infinity.