

2016 Conference Transcription

Date	Thursday 31 March 2016
Session Title	Fireside Chat
Session Time	15:00 - 15:40
Speakers	Ed Carter, David Cranmer, Joeli Brearley
Notes	n/a

Intro	<p>Hello and welcome to FutureEverything 2016 Festival Podcast Series. Over two days, in Manchester's iconic Town Hall, we tasked designers, artists, scientists and many more, to rethink our resources from life, earth and intelligence, to community and uncertainty, our speakers asked what we might need less, and more of, in our near future.</p> <p>In this session Joeli Brearly, from FutureEverything, welcomed artist Ed Carter and technologist David Cranmer for an intimate conversation delving behind the scenes of their latest work, 'Smoke Signals', a FutureEverything commission that takes data beyond the confines of the screen.</p>
Joeli Brearly	<p>So over the next forty minutes, I'm going to be interviewing these brilliant artists ,Ed Carter and Dave Cranmer, who have produced 'Smoke Signals', which ran last night and is running for the next three days at the Anthony Burgess Foundation, and you can see it between 10am and 4pm. It's on every hour and there's performances each night, so make sure you go and see it.</p> <p>The reason why I was asked to do this interview is not because everyone at FutureEverything missed me so terribly because I'm on maternity leave, or because I'm any good at interviewing, it's because I was the project manager for Art's API which was the R&D project that we did which Smoke Signals came out of.</p> <p>Arts API was a digital R&D project which is funded by the Arts Council, Nesta and the Arts and Humanities Research Council. It was a year long project led by FutureEverything, and it was an R&D project in the truest sense of the word, in that it started from a premise and we didn't have enough time or enough money to create something that was going to be rolled out across the arts sector, but we did create a proof of concept and we got to test loads of interesting ideas.</p> <p>So just to give you a little bit of background about Arts API, before we talk to Ed and Dave, the premise that we started from was that we believe some arts organisations have inherent value in the networks that they create and sustain.</p>

	<p>So this isn't about their audiences, this is about all the many relationships that arts organisations nurture in order to get to the point of having a programme. So at FutureEverything we believe that we're brokers, we're intermediaries, we create relationships between people with different skills between different sectors, and from there projects start, innovation starts. Yet, we couldn't articulate this or demonstrate this. We have no way of doing that. So we wanted to find a way of doing that, because we thought if we could, hopefully it would secure some new types of support for us.</p> <p>So we went through a process with the University of Dundee and Swirrl, trying to figure out how we would do that. We ended up using email data, which obviously is the richest dataset if you're talking about networks, but a really, really complicated dataset to work with. We had six arts partners that we tested things with and that acted as case studies who also act as intermediaries and brokers between different sectors. They were Redeye, Culture24, Forma, Blast Theory, Islington Mill and Baltic, and they donated their email data to us so that we could put it into the system. We ended up creating a proof of concept that you can see online at: artsapi.com. Here you can input your email data and it will tell you how well connected you are to different sectors, people with different skills and organisations in different locations, cities and countries. Then we used algorithms that were created for social network analysis so that we could see how information was travelling around an organisation. So that's the foundation from which Smoke Signals came out of.</p> <p>Smoke Signals was something we always wanted to do, we wanted to do an artwork. We thought we're an arts organisation, we're working with data, we want to do a really good artwork, and so Smoke Signals happened and you can go and see it.</p> <p>I think we'll start with the video. While we're doing that we'll talk about it. If you haven't seen it, please do go and see it. The video doesn't do it justice at all. So firstly, Ed and Dave, do you want to tell us about Smoke Signals?</p>
Ed Carter	<p>As you said, the starting point was the context of the ArtsAPI, but I suppose we approached it and wanted to look at the data, not as the end in itself, but use it as a tool or a mechanism for looking at a broader context about communication. To place digital communication in its place of chronology, of long distance communication, and that's where the idea for Smoke Signals really came about.</p> <p>I think that datasets on their own, unless you place it into a broader context and use it as a tool or a mechanism, it's often quite dry and not really of any interest or use. I think you can do something that just becomes an excel spreadsheet, and that doesn't necessarily use it to tell a different story, to tell a broader narrative. That was our approach with this project, was to use the data as a starting point for a broader narrative.</p>
Joeli Brearly	<p>What did you use from the email data, or what was the data that you pulled from it?</p>

David Cranmer	I think it was the subject, the time of when it was sent, and the recipient, all abbreviated into letters and stuff.
Ed Carter	So the way that's translated into the way that it's communicated by the piece of the work is that the whole system is based around the Polybius Square cypher, which is a really simple cypher which distributes letters and numbers across a six by six grid. So pairs of smoke rings and the tones that are created are representing different letters and numbers. So it's just more of a translation into a different medium, taking that information and representing it in a different medium.
Joeli Brearly	Why was that so interesting for ArtsAPI and the premise behind ArtsAPI?
Ed Carter	Hopefully it was interesting [laughter]. I suppose because it places that network that you were looking at and looks at it not just as a standalone thing, it places it into a broader field. Also, it was about looking at as part of a continuum and looking at that information, not as an end point but just as something that's like a constant changing approach to long distance communication.
Joeli Brearly	I really like the idea that because we were talking about email data, we were talking about digital communication, and the idea that you put an email out there and that can be distorted and changed by anyone, and you don't really know what happens to it once you send it. What you've written stops being yours and people can change that and distort that in any way that they want to, in that smoke rings start off as rings and then distort.
Ed Carter	It's something that evolves over time and is completely out of your control. As it develops for people who come to see, you'll see it starts off as quite a clear dataset when there's no smoke in the room, and you could theoretically decipher what the messages are that are being sent. Then, as more and more data gets thrown into the mix, it becomes cloudier and cloudier and becomes more of a blur. It's a bit of reflection on data and encryption and all these things together into one.
David Cranmer	Also, smoke rings are cool, so that was part of the reason [inaudible 08:55].
Joeli Brearly	Nobody can deny that. Has anyone got any questions about Smoke Signals, those that have seen it?
Unknown	Is there anything that you've seen that might have influenced the presentation of that piece in Manchester already?
Ed Carter	I'm not based in Manchester.
David Cranmer	Are you saying that there's another one that is exactly the same?

Ed Carter	Has someone else done it?
Unknown	It's just that I've seen a couple of pieces that remind me of it. It stands out on its own, which is great, but there's been two other things that I've seen in Manchester at Arts Festivals. There was Liam Gillick in the First Manchester International Festival [inaudible 09:42] where he did a thing called Castles and Factories in the Snow, a grand piano with thick snow drifting down under a spotlight on the stage and then there's like...
David Cranmer	You're thinking of Snow Signals. That's a completely different project.
Ed Carter	The grand piano is actually only there because of the performance in the evening. That's actually in the Anthony Burgess Foundation, and on the video the grand piano is not there. That's there for the performances.
Unknown	[Question, inaudible 10:08].
Ed Carter	There are three improvised performances, one each night, so that's why the grand piano is there. So the Smoke Signals piece and that have only come together because of the context that it's being shown in. In the Anthony Burgess Foundation, it's his piano.
Question 1	So how do you feel about such a big aesthetic place whenever you're there in the audience looking at it? When I walked in, I saw a piano, and then I saw smoke [inaudible 10:33].
David Cranmer	I think it's almost like an historic surrealistic object, like putting a donkey in it, like a Darli video. So I think it's a nice silhouette and it coincidentally fitted that angle, the L shape of the installation. So at least it wasn't a bouncy castle or something that wouldn't quite work.
Ed Carter	It probably wouldn't have been too good for the improvising musicians either.
David Cranmer	No, it would have been a different [inaudible 11:03].
Joeli Brearly	Has anyone else got any other questions? I'm not going to do this with all the projects, I just think because it's Smoke Signals and everyone's going to get a chance to see it.
Unknown	Can you talk a bit more about how you transferred the email data into the data you used more specifically? What kind of data you were looking for?

Ed Carter	From that email headers. So the idea was that we simplified because we just wanted to really look at it as a communication network and not really go into the depth of exactly what people were asking each other, but more about the relationships between them. So it just looked at who sent the email, the title of it, who was the recipient, and then the date and time. The date and time orders it. Then there's a punctuation if the previous message has the same title, then there's a different effect within the smoke rings and the sound, because we wanted to look at where there are communication chains, and that having a disruption. It has a disrupted event in terms of the way the smoke is created.
Question 2	What did you use, the code or software did you use?
Ed Carter	It is Arduino controlled.
David Cranmer	So I received the email data as a text file and then that is embedded into the code as an array where it will refer to each letter. Then, depending on what letter is being processed, it will work out the coordinates of which of the speakers come on. So the letter E will be a certain pair of speakers that will fire together, and so it's connected to relay boards to make that work. The speaker retracts as well as going forward, so you hear two clicks, one is the speaker going backwards, and the other is it going forwards to create the [Polarsal? 13:07] Vortex which is the best name ever for a band, I think. [Laughter]. So I think if one thing comes out of this project it's starting a band called Polarsal Vortex.
Ed Carter	Then it's translated through the Polybius Square, so that's the encryption or translation method, so that it becomes the code that is building the smoke signals.
Question 3	I have a question about the use of data in this way. When you explain the project, conceptually, it's all quite interesting that different bits of data do different things within the mechanism, but does it really matter?
David Cranmer	Does anything matter really? [Laughter].
Question 3	Does the data really matter to the experience of the artwork on its own?
Ed Carter	I think what we tried to do is use the data as something that ties it to the context of the ArtsAPI programme, but using it just as a tool and as a mechanism for looking at digital communication in the broader context and over a longer period of time, and trying to place it chronologically. So the specific dataset is a starting point and that's like the instrument. It's not like we're using such detailed data, it's not data visualisation, it's not something which is trying to retell that story, it is just using that as a template.

Question 3	Would you describe the data as an art material in this context?
Ed Carter	Yes, I suppose that makes sense.
Joeli Brearly	I'm going to move on, I'll come back to Smoke Signals. I first met Ed when he was working on Flow Mill, which was in the North East of England. So Ed, tell us a bit about Flow.
Ed Carter	<p>Flow was a collaboration with Owl Project who are based here in Manchester, and it was a floating tidemill on the River Tyne. The concept for that was about looking at something to represent the cyclical relationship that society, and particularly in the North East has, with the River Tyne, with the water ways.</p> <p>It was on a tidal stretch of the river in the River Tyne, so the flow of the water is moving in two directions, so it's almost like a play head on the river. Owl Project created these amazing instruments that responded to the river. Simon Blackmore, in particular, created the Salinity Sampler Sequencer which sampled the level of salt in the water over the changing course of the tide. So it was like a play head which responded to the changing information within the river. I suppose, in the context of this conversation, which was billed as a discussion about data and its relationship to creative practice, it wasn't conceived as let's do a data artwork, but for people who are interested in that area, it could be perceived as such. But it's really an analogue approach to looking at changes in the tidal flow.</p>
Joeli Brearly	Flow had a massive budget, didn't it? Do you want to tell us about managing an artwork with a budget that's that large?
Ed Carter	I suppose it sounds massive, but when you're building boats, it gets really expensive very quickly.
David Cranmer	I did notice you had that cane with a diamond on the table after that project. [Laughter].
Ed Carter	It was a series of commissions as part of the Culture Olympiad. There were twelve commissions as part of this programme called Artists Taking the Lead, which was funded by Arts Council England, and ours was the commission for the North East. The original commission was five hundred thousand pounds. Then we received additional funds from the Arts Council, but also from the Royal Academy of Engineers, and the Council for a surrounding programme which was fantastic and run by Tom Higham and Beth Bate. It was a big project, but the infrastructure behind it was a floating artwork, a big mechanical artwork that was created in a harbour up the North East Coast in a place called Amble, and then towed down into position. It was on the river for six months and it had to be staffed. Essentially we built a floating mechanical artwork that was also a

	venue, so it needed staffing. Actually, I think we were probably too ambitious for the budget, really, in retrospect, and it was very tiring.
Joeli Brearly	Barographic, tell us a bit about Barographic.
Ed Carter	<p>I'm interested in the relationship between architecture and [inaudible 18:18] and dynamics in their work, and their relationship with that and urban environments. So I did a project which is a composition project really. Really a graphic score project, in some ways, where I used the 3D model of the venue as a sequencer to use that to control sounds. So the proportions of the building could dictate the rhythms within the music. So that's looking at how architects create centre rhythm visually and physically in the space. Then I also installed a mechanical barograph in the gallery space which records these charts over time and then used that as another graphic score tool really. So again, it's really analogue, this was at the Lowry in Salford. It was billed as part of a digital art exhibition. It was a 1970s mechanical clockwork barograph that was actually collecting the information.</p> <p>I think maybe one of the other things is just that data is represented as something that's a new thing, or something that is only digital specific, and it's not, it's just a way of capturing or storing, or representing information.</p>
Joeli Brearly	The first time you did it was at Sage Gateshead, which is a huge Norman Foster building, and then you did it in the Lowry. How did you change it and adapt it between? It was 2012 in the Sage and then it was 2016 in the Lowry.
Ed Carter	They were just so different. That's such a smooth form. The Lowry was a really different proposition just because of the proportions of it. They're all geometric shapes in plan, so it's triangles, squares, rectangles, and so it was really musical in the way that it was designed because it just had a natural syncopation so it fit within a musical framework, which made it loads easier to play. The Sage one was horrible. It was really difficult. So always do square buildings in future.
Joeli Brearly	How did the audiences respond to it, because you've got very different audiences for those two different venues?
Ed Carter	Yeah, but they were also billed in quite different situations. The first one was part of a thing called the Festival of the North East and was billed alongside a new piece of music by Paul Smith and Peter Brewis, and so it was a really different audience to the Lowry one, which was more of a gallery audience. So I think it would be unfair to say, because they were presented in such different situations. But I think people have a natural interest in architecture, and there's a quote by an architect called Stephen Holm. He says something along the lines of how architecture is like music, because you can look at a painting or a piece of sculpture, but music and architecture both envelop the body and space or something similar to that. I find that a really interesting approach to both disciplines.

Joeli Brearly	I once heard a quote that said talking about music is like dancing to architecture.
Ed Carter	That's been attributed to a lot of people, including Frank Zappa.
Joeli Brearly	Inhibitor was one of your projects, tell us about Inhibitor.
Ed Carter	<p>That was a project with the Northern Institute for Cancer Research. It was presented in the North Tower of the Tyne Bridge, which for anyone who's interested in doing a project there, it costs quite a lot of money to clear out the forty bags of Guano that's on the floor before you can do anything in there.</p> <p>So the visual is two cell strands. NICR developed a new cancer treatment which was very targeted and left healthy cells undamaged, BRCA1 and BRCA2 cells. It was targeted towards specific cancer cells. So the visual was images of the two cell strands undergoing the treatment, so the one that survives and one that dies. The sound was a composition for a brass quintet, which used the protein strand, the amino acid chain that created the protein that was central to this piece of research and it's a thousand and fourteen long, and that was basically used as a linear tool, as a composition tool. So each of the twenty amino acids that were in this thousand and fourteen long chain, each one was attributed a note and so that was how the composition came about.</p>
Joeli Brearly	You're talking about pioneering scientific research here. So I imagine you had lots of sensitivities around what you were going to do with it. Was it quite a difficult project to manage?
Ed Carter	It was really interesting. They were really open. Also, because they don't realise that the stuff they look at every day is so interesting to people outside of their area. So it was like, yes, we've got these images and the way we look into the research is like this. It's immediately interesting and something that very few people wouldn't find it a fascinating area of working in. I think they were just quite keen to have that represented in a different way, especially because research bodies don't have the greatest track record in terms of articulating their work outside of the research environment.
Joeli Brearly	What was the audience's response to that when you did it? How did it go down with the people that came to see it?
Ed Carter	<p>One of the brass players said, I thought you were making a film [laughter]. I said, I thought this is a film.</p> <p>In fact, my wife's great uncle happened to be over in the UK and went to it. He'd lost his wife to cancer and it was quite nice because it was obviously something of a really emotive topic for him, and that made you feel you were doing something vaguely valuable.</p>

Joeli Brearly	This is the first time that you two had worked together, is that right?
David Cranmer	Yes, that's right.
Joeli Brearly	We've got a video here again, are you going to tell us what we're seeing?
Ed Carter	<p>This is called FL10S which is a project based in Seaham on the North East coastline. It was a kind of follow up to a project called False Lights of Durham, a short film I shot in Durham Cathedral, which was a composition and light installation. That was looking at the lighthouse patterns along the North East coastline and there was a narrative about the period of when the electric lighthouses were installed, the local fishing communities were being accused of being wreckers and luring ships onto the rocks to steal their cargo. So it was a very social story really.</p> <p>On the back of that one of the lighthouses within that was the Seaham lighthouse and FL10S is how the Admiralty List of Lights lists it's pattern, so it flashes once every ten seconds. Seaham wanted to do a piece of work that looked at the history of their coastline. There was a lifeboat disaster in 1963 which is a horrible very sad story where the only survivor lost his own son and brother-in-law. So the lifeboat went out, rescued a fishing vessel that was in trouble, but about thirty yards from their lifeboat they got turned and it was a tragic disaster, and it's in living memory for a lot of the people who live there.</p> <p>The idea was to create an instrument and a composition that may be abstract, but told that narrative in some way. So it created a bell plate instrument, where the number of bell plates, in the form of composition, tells that narrative in a mathematical way, because there are a lot of reports about the order in which things happened and how people moving from boat to boat. I won't go into too much detail, but there was a numerical approach to the composition. The idea was to create these bell plates, but rather than them being struck, I wanted to do something where they would have a softer tone and were vibrated. So they were like EBow's on a guitar, something that they do, they were just a tone. So I had this idea for using magnets to turn on and off at the resonant frequency to make them resonate, but I didn't know how to do that but Dave did.</p>
David Cranmer	<p>We figured it out in the end. It was basically a powerful electromagnet was pulsing audio frequency about a millimetre away from the steel, which was tricky because in the beginning, the magnet kept sticking to the steel. So we had to make an arm that came off one of the points where it vibrated the least and held the magnet at just the right distance. Then we made a little control unit where you could tune the frequency and press a save a button, then when you record, that you could turn on that magnet and it would pulse to induce a tone within that metal plate. They sound really cool. We had a few R&D sessions where we were trying to figure out how to make it work, but then when we hit that right frequency they really sang out, and we were relieved that it worked. We worked with a cool percussionist making chap, who was very good, liked him.</p>

Ed Carter	Yes, Matt, what's Matt's last name?
David Cranmer	I've forgotten.
Ed Carter	Great percussion maker based in Bristol. I think there's a picture of the control as well.
David Cranmer	There was two frequencies per plate and then you had a controller that would save all the tones. Then Ed's composition could then be played into it via a midi and it would play all the plates. Then, rather ambitiously, it was played on a beach, which was cool.
Ed Carter	We played live. So that performance was actually viewing out to the lighthouse and to the site of the incident. It was quite poignant because it was on the anniversary of the accident.
Joeli Brearly	It's a beautiful piece. Dave, Duck Machine, I love Duck Machine. We've got a video, shall I put I put the video on?
David Cranmer	If you like, yes. Does it need any explaining?
Joeli Brearly	No, but I love the video. Do you want to talk us through it?
David Cranmer	<p>This was a commission from a motor manufacturer in Turkey and they had a trade show coming up, and they quite astutely realised that it was going to be excruciatingly boring for everyone involved, because they make parts for bus ventilation systems and stuff. So they said we've got all these motors and we'd like to get people over to our stand so that we can talk to them and not be too boring.</p> <p>The first idea was what about a load of ducks going up and down on rods, and they immediately just said, oh yeah, great. So that project had a naught to sixty time of just two tiny conversations and suddenly a lot of big box motors in post. So it's fibre glass rods going through little brass tubes that were silver soldered onto a steel frame, and we had forty nine motors and that's it. It's the same thing repeated lots of times, it looks complicated, but actually it wasn't, because it's just the same thing lots of times.</p>
Joeli Brearly	Why ducks?

David Cranmer	Just because it's fun, I guess. Then at the trade show they handed out little ducks with their company details printed on the side, which is quite nice. So everyone got a duck to take home with them. That was a fun one.
Question 4	Do they only go that slowly, can they dance [inaudible 32:52]?
David Cranmer	You could if you turned up the speed, but it was so that it didn't wear out over the time that it was installed.
Ed Carter	[Inaudible 33:02].
David Cranmer	Totally, yes. You could change the speed and it had a few pre-set patterns on it, so it cycled through. But it was a really nice moment when it was the first pattern test, turned it on and they all started moving for the first time, it was quite satisfying.
Joeli Brearly	Would you try that with other things besides ducks, do you think it would work with anything else? Like mini cakes or...?
David Cranmer	I did one with four garden gnomes going up and down, that was a good while ago. If you can think of any other objects, I'm willing to make them go up and down, that's a service I offer.
Joeli Brearly	[Inaudible 33:42] you're prepared to say?
David Carter	Not the one with the voice that's not that good, but its fine, it's got a bloke talking over it. This was a machine controlled by the weather. A weather station took six parameters humidity and wind speed. It was for a composer called Nick Ryan and he wrote a piece of music that was aleatoric, it took the weather elements. Then I made the machine, which took the data, that's the word of this week, and made these various percussive instruments come to life. So there was a tongue drum thing in the centre, there was two light control synthesisers which were quite cool. They were analogue synthesisers with LDR light detectors on and there were these bronze singing bowls that rotated with a felt thing on the side which made it resonate. There was also a mechanism to strike the bowl with the beater thing. When the wind picked up, the tempo increased, and if it was raining or whatever, the composition would change to how the weather was behaving. It had to go to Tasmania, so it had to breakdown into parts, and also we couldn't use any timber at all because they have very strict timber import laws on that in case there's any little grubs inside it. This was a bit tricky, because the composer wanted it to be completely surrounded with a timber

	frame, so that had to be made by local carpenters and put together once it got there, but it all worked alright, and survived the journey etc.
Joeli Brearly	It looks beautiful.
David Cranmer	That was a fun one.
Joeli Brearly	We've got five minutes left, because I'm a terrible time manager. Tell us about [inaudible 36:07] people.
David Cranmer	<p>This is a current project for myself, so it's not commissioned by anyone. I've just started making these. They're going to be a series of little creatures, they're made out of compressor tanks and gas cylinders, they're made of steel so they're quite robust and they're just a little exercise in welding and messing about making these different creatures.</p> <p>I imagine there being maybe twenty of them and each one has different audio capabilities. They have a little control panel on the back which allows you to use it to produce music. So some are little synthesisers. Some are echo units, so they would process a signal from another creature, but what I'm really hoping to do is to get a load of people together and have a big jam session and plug them all in together. There's no rules about how to play it well, you can just twiddle the knobs and it will produce something interesting. So if anyone wants to come along.</p>
Joeli Brearly	Have you got them with you?
David Cranmer	They're heavy.
Joeli Brearly	Anyone up for that?
David Cranmer	If anyone fancies coming along for a jam session when they're done then get in touch because that would be cool.

Ed Carter	It's worth mentioning that Dave has got a homemade modular synth, which is one of the most impressive synthesisers, probably in the UK. His expertise in this is something that he's quite well versed in.
David Carter	Synthesisers are fun.
Joeli Brearly	Any other questions on any of the projects, or Smoke Signals?
Unknown	I sort of got a thing about that there's this philosophy of [inaudible 38:05] particular compositions which seem to give you a lot [inaudible 38:10] meaningless. When you take [inaudible 38:12] and put it together with a machine [inaudible 38:16] and it sounds sh*t, do you feel that you should change the machine or that you should edit the data?
Ed Carter	If it's from my point, if I'm using it for composition, because the data is a tool, normally it's within a broader framework, then I'll change the system. So for example, with the Inhibitor, which was the project with Northern Institute for Cancer Research, there was a twenty note scale based on the number of amino acids that were involved and there is a twenty note scale out there which is the scale which was used in mechanical barrel organs. So rather than just placing it across a keyboard, there was a shaping of it, so it was placed within a scale that I knew was going to be somewhat musical. So I suppose not changing the data, but changing how it's applied.
Joelie Brearly	Anyone else?
Unknown	Going back to the Smoke Signals, can you say something about the relationship between the installation, and the performances, and the data? Are the performances responding to the data or are they responding...?
Ed Carter	The performances are responding to the installation. So they know how we've interpreted and represented the data, so they know the system that has been applied. But they are, I guess, improvising around the behaviour of the instrument but with that background knowledge.
Joeli Brearly	Time is up, but quickly tell people why they should go and see Smoke Signals.

David Cranmer	Because there will be trouble if they don't.
Joeli Brearly	Okay, good. Ed?
Ed Carter	You should go if you like a smoky room, it's very smoky.
Joeli Brearly	Thank you so much.
Moderator	We hope you enjoyed this fireside chat and thanks for listening. You can hear the rest of the talks from 2016 at futureeverything.org/2016podcasts .

[Transcription ends]