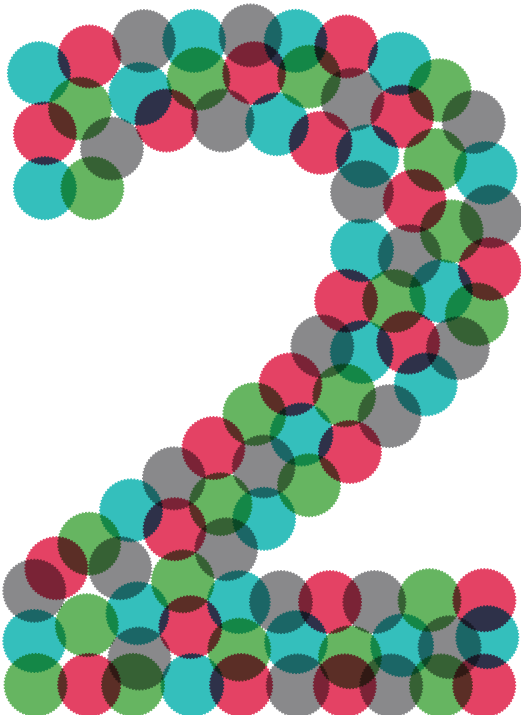SYNC
TANK

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WELCOME BACK

Welcome to the second edition of SyncTank, the print companion to welcometosync.com

SyncTank is the ideas and innovation magazine for people and organisations working in the arts and culture sector in Scotland. It is produced by Sync, a programme of activities that includes Culture Hack Scotland and Geeks-in-Residence.

The pieces in this publication are part of a bigger set of features, comment and reports you can find on the Sync website. We hope you'll be informed, entertained and excited by what you read.

SYNC TEAM, JULY 2013

welcometosync.com
@synchq

SYNC TEAM

ROHAN GUNATILLAKE
ERIN MAGUIRE
DEVON WALSHE
SUZY GLASS
EMMIE McKAY
CHRIS SHARRATT

CONTRIBUTORS

HONOR HARGER
DAVID KETTLE
ROB ALLEN
JAKE ORR
STEPHEN REDMAN
CATHERINE ROCHE

If you would like to contribute
to SyncTank please email:
hello@welcometosync.com

Sign up to our mailing list:
welcometosync.com

Designed by Rydo
Edited by Chris Sharratt

LOTTERY FUNDED

THINGS WILL APPEAR THE SAME —UNLESS YOU KNOW HOW TO LOOK

→ Image: Submarine cable map depicting 244 cable systems that are currently active or due to enter service by 2014. Courtesy of TeleGeography, licensed under Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License.

Digital technologies are changing our world in profound ways. In order to fully understand exactly how and why, we need to develop new skills of comprehension.

HONOR HARGER

When asked what the future would look like, the Finnish author and mathematician Hannu Rajaniemi said: "Things will appear the same — unless you know how to look." This might seem like a trivial statement, but it embodies one of the biggest challenges we face when navigating the future — that is, how to look.

My job as Artistic Director at Lighthouse, Brighton is all about trying to show that digital culture means more than just tools and gadgets — it's about perceiving the societal transformations being created by technology. As an organisation, we think a lot about exactly what our digital world is, how it's made, and where it is.

It seems to us that the more heavily encoded this world is, the harder it is to read: our technologised society is becoming opaque. As technology becomes more ubiquitous and our relationship with digital devices ever more seamless, the technical infrastructure seems to be increasingly intangible.

We now refer to the vast server-banks that store our personal data as 'the Cloud'. This has become a very pervasive and, I would argue, misleading metaphor, that is perfectly summarised by the fact that a 2012 survey revealed that 51% of Americans think that bad weather affects cloud computing.

But all that is solid has not melted into air. On the contrary — our digital world is very much bricks and mortar. It is made up of immense physical infrastructure, such as Google and Amazon's colossal data centres. These are real buildings with a clear and visible footprint, not ethereal manifestations in the air. This digital network is enabled by thousands of miles of submarine cables — that quintessential 19th century technology — that transport data from one building to another, one continent to the next.

We unquestionably rely on this infrastructure for the communication and information that helps us orientate ourselves in the world, but we are dangerously unaware of how it works. We can't even see it — it is invisible. ⋈

> "Seeing the digital world for what it is — tangible, material, and made by us — is the first step. But we also have to learn how to describe it, how to read it."

▷ Seeing the digital world for what it is — tangible, material, and made by us — is the first step. But we also have to learn how to describe it, how to read it. The most effective explorers of that world, the people we work with at Lighthouse — media artists, critical engineers and speculative designers — are giving us tactics, tools and prisms that can make this world more legible.

And they are going further. They are making work with the new materials of the post-digital age: synthetic biology, nanotechnology and 3D printing.

In the past couple of years alone, Ars Electronica, the world's biggest media art festival, has awarded prizes to artists making solar powered 3D printers; paintings with nanotechnology; radio stations made of bacteria; and sailing drones that collect oil from spills. These works embody the dominant social, political and environmental issues of the near future.

We can begin to see this play out on a grand scale outside the arena of art, too. For example, the European Space Agency and architect Norman Foster have announced plans to build a new 3D printed moonbase constructed entirely of moondust.

If you're not looking closely, as Hannu Rajaniemi has warned us, things may appear to be the same. But there are profound and lasting transformations happening due to digital technology and these are ripping through everything from manufacturing to medicine, food to shopping.

So as a sector, but also as a society, we must take Rajaniemi's words to heart. We must learn how to look. □

Simon Kirby of FOUND
art collective is Professor
of Language Evolution at
the University of Edinburgh
and a full-time academic
and scientist. We talk to
him about transferring his
computational skills and
research ideas into an
arts context.

CHRIS SHARRATT

ART & SCIENCE: "DIFFERENT WAYS OF ENGAGING WITH WHAT MATTERS"

▷ **It should come as no surprise that, as well as being rather clever, Simon Kirby is a good talker.** He is, after all, a Professor of Language Evolution — "Possibly the only one in the world," he says, without a hint of braggadocio.

We're chatting in his small and neat modern office in the University of Edinburgh's Dugald Stewart building, home to the School of Philosophy, Psychology and Language Sciences. To his right, a shiny iMac pings as emails deluge his inbox; to his left, a white board reveals a series of curious diagrams — evidence of Kirby's latest extra-curricular project as part of FOUND, the art and music collective best known for Cybraphon, an emotional, internet-connected robotic band housed in a Victorian display case.

"The drawings are for a project with Dewar's, the whisky makers," smiles Kirby. "They've commissioned us to develop a device around music and whisky tasting." Drawing on research into synesthesia, the project connects memory, taste and language through a digital interface that visually — as with all of FOUND's work to date — gives no hint of the computational work going on beneath its skin. "It will be made out of wood and brass," says Kirby, "and will allow people to enjoy a bespoke piece of music based around their experience of tasting the whisky."

The patronage of Dewar's — "a fabulous patron, we're very happy to be working with them" — is an illustration of how far FOUND has come since 2007's Etiquette, a sound installation for Edinburgh Sculpture Workshop. In the six years since he started working with FOUND's Ziggy Campbell and Tommy Perman, Kirby has played a key role in shaping the collective's output, in particular through his background in computing — he studied artificial intelligence and uses computational simulation extensively in his academic work.

↗ Cybraphon. Pictures courtesy of FOUND

"To start with, my thinking was very much that I enjoy being a bit of a nerd and I can help out with some art projects," he says. "Ziggy and Tommy were tackling questions I was interested in, but at the time they were using techniques that to me seemed cumbersome. I felt it could be done a lot more elegantly."

After Etiquette — which involved moving blocks around a table, the choice of blocks and their location determining the music being played — came Three Pieces, a robotic composition housed in the Victorian Palm House of the Royal Botanic Gardens, Edinburgh. But it was Cybraphon, which combined and finessed the ideas expressed in the previous pieces, that really announced FOUND's arrival.

Launched at the Edinburgh Art Festival, it gained international attention and went on to win a Scottish BAFTA. Later this year, it will be donated to the National Museum of Scotland. "One of the things I'm really happy with is that people recognize themselves in Cybraphon," says Kirby. "They feel warmth towards this object, because they see some of their own obsessions in the way it works — and that's entirely the point."

Crucial to Cybraphon is the way it channels our relationship with the online sphere through a physical entity that appears entirely analogue — pre-electric, even. But rather than some kind of skeuomorphic deception, the point of all that wood and brass is to break down the fourth wall of technology, to remove the glass and metal frame that, believes Kirby, distances us from the real nature of the entirely public environment behind the screen.

"We're so used to interacting with these hard, shiny devices that are our portal into this social world. And yet if we get a bunch of junk shop instruments and an old Victorian wardrobe, it seems to kick us into thinking about what that relationship means." ▷
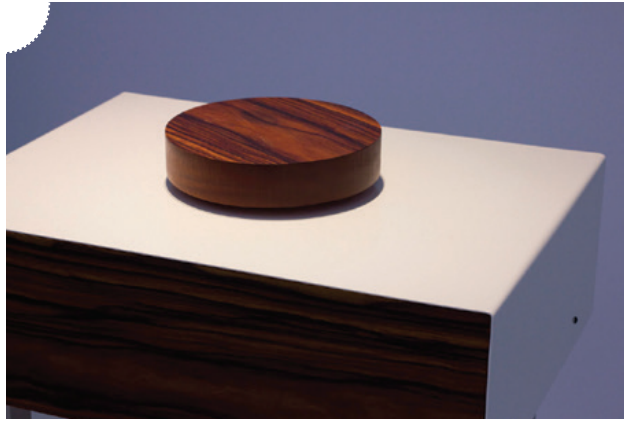
"One of the things that fascinates me is how happy we are living in this new [online] realm and how natural it seems to us, without us really considering it."

▷ For Kirby, the social networks that we're developing online, and the way these are influencing the nature of communication, language and society, represent a huge cultural shift. He talks in terms of it being a change on a par with the origins of language and writing, or the creation of human civilizations. A big deal, then, and an area of interest that bridges both his artistic and academic life.

"One of the things that fascinates me is how happy we are living in this new [online] realm and how natural it seems to us, without us really considering it. We don't think about what it means to use this new technology in a new way, so one of the things I want to do with the art projects is just open up a little space for people to think about themselves in."

Although Cybraphon is FOUND's best-known creation, for Kirby it's another, far less lauded piece that best addresses this disconnect between the intangibility of online and the realities of the physical world. "The piece I'm most happy with is End of Forgetting, which we made in 2011," he says. "It's the closest distillation of a single, clear idea."

Influenced by a 2010 New York Times article headlined 'The web means the end of fogetting', the piece puts you face-to-face with the results of publicly sharing our 'private' selves. "What's really interesting about people willingly putting all this information out about themselves is they don't think about where the delete button is. So with End of Forgetting, we just tried to create a physical manifestation of that idea in a gallery."

The device, which resembles a piece of sleek, minimalist furniture, does one simple thing — it remembers everything it hears. What it records can then be listened to by turning a wooden dial on top. "It's a quite unsettling piece," says Kirby. "When people turn the dial and hear their voice back, they initially think it's funny. But when they turn it back further and realise that it's storing what it hears, people go a little bit quiet around it." He laughs. "When we saw that happening, it was like, 'Job done!'"

Kirby has so far been involved in nine FOUND projects. These include 2012's #UNRAVEL with Aidan Moffat, which premiered at Glasgow International Festival of Visual Art and, most recently, Great Circle, an audio-visual iPhone app for the 2014 Glasgow Commonwealth Games. Yet he still remains unsure about the nature of his relationship with the arts. "It's still a little bit of a novelty," he says. "I rather like the idea that these are pieces of art, but sometimes I wonder if my attitude to it is a little bit naïve — I'm not sure what artists are meant to think about their work!"

But as science and the arts increasingly rub shoulders — in no small part due to the creative possibilities afforded by digital technologies — Kirby is clear on the benefits of a closer, meaningful relationship between the two worlds. ◁

← Clockwise from top left: The End of Forgetting; #Unravel; (left to right) Simon Kirby, Aidan Moffat, Tommy Perman, Ziggy Campbell. Pictures courtesy of FOUND

"It's fun when you're thinking about it and fun when you're experimenting, but it's incredibly stressful when you're trying to deliver something that works, on time."

▷ "What would be exciting is a better understanding between practitioners in both areas about what it is people do — that's something that's not well understood," he says. "The less satisfying art/science crossovers are when a scientist says, 'Well, I've done this work and I'd like an artist to interpret it'. Or when an artist uses a scientist to implement some technical aspect of their work. It seems to me that where it's really exciting is that moment of realization when you go, 'Hang on a minute, we're actually interested in the exact same things — they're just different ways of engaging with questions that matter to us."

There are clear barriers to this closer relationship, and Kirby admits that as a scientist with one foot in the arts, he has been surprised by the "amazing differences" between the worlds. From funding levels ("I write grant applications for research and it's like taking an arts grant and adding a couple of zeros") and the culture of peer review ("It's all about surviving the gauntlet of people trying to tear your ideas apart — that doesn't happen with an arts audience"), to scrutinizing outcomes ("In science, they really care about the outcome of their funding — I don't get the same impression in the arts"), science and the arts are still very far apart.

Not that Kirby sees these observations as any reason to retreat from his own involvement with the arts — although he confesses there is usually a point in any FOUND commission when the cry of "never again" can be heard.

"About three quarters of the way through every project, Ziggy will say he's never going to do this again, just because of the stress of it all — it's just awful! It's fun when you're thinking about it and fun when you're experimenting, but it's incredibly stressful when you're trying to deliver something that works, on time. So who knows, maybe next year I'll just be a scientist again."

Kirby smiles, and it's clear that — stress or no stress — this is one science/art crossover that is likely to run and run. □

For details of all FOUND's projects to date foundcollective.com

Chris Sharratt is a writer and editor based in Glasgow. He is the editor of SyncTank. @chrissharratt

''THERE'S NOTHING THAT SAYS ART SHOULD LAST FOREVER''

Peter Gregson, a classically trained cellist, works at the intersection of music and technology. He talks about his recent commissions, collaborating with Google and why digital art should be allowed to decay and disappear.

DAVID KETTLE

▷ **"Is this the future? Well, it bloody well should be, because Beethoven isn't."** Edinburgh-born cellist Peter Gregson is clear about the significance of his journeys into interactive technology and live electronics — and he's got good reason to be confident. He's one of a rare but growing breed of classically trained, acoustic musicians entirely at home with linking up their instruments to laptops and other devices to discover what new possibilities they can offer.

As such, he's worked with figures such as Steve Reich, Gabriel Prokofiev and Tod Machover, and collaborated with Microsoft and the MIT Media Lab. In May, he presented a pioneering Aldeburgh Festival performance, and — although since postponed due to 'unforeseen circumstances' — a commission for the Edinburgh International Festival hints at more exciting developments to come. Under the guise of The Electric Creative Colab, Gregson is also currently developing work with Google.

"Google are funding me to develop projects at the intersection of the arts and technology," he says. "Right now, I'm working with a fabulous group in London on a project to live visualise performances — it means really digging into what notation is, what it's for and what it needs to tell us. There are two other projects in development, but they're at the, "oh and what about THIS?" stage."

While a commitment to working with new technologies is central to Gregson's approach, he feels no sense of rebellion against the classical greats. "I don't think technology is suddenly going to take over music, but if it's not done, and classical music moves exclusively to re-creations of things from the past, that's a huge issue for artistic development. If we're basically left with archive performances, what are archivists going to do in 150 years time?"

It's a fair point — indeed, a vital question. It also raises the issue of whether the technological collaborations that Gregson is involved in can really be called classical — and whether such terminology even matters. He admits that some of the music he plays — both self-composed and written by others — comes under fire from more hardline contemporary composers for being, well, not hardline enough. Which, even if hardly justified, is understandable, given some of the lush washes of sound, rippling textures and post-minimalist, jazzy tonalities that make up the immediately attractive surface of some of it.

"My music is a bit more accessible," Gregson admits, and he's unapologetic about accepting influences from pop and indie. "If you look into high-end popular music, what's interesting at the moment is not that classical music is dumbing down, but that pop and indie are really skilling up."

Nevertheless, at the core of what he does is a classical sensibility, and he believes that the label does still matter. "The term 'classical' should say that it's high-value, high-quality, well-made, that it's got a long, solid background. I think of it as a long safety rope behind you — if you were going to take the risk doing a bungee jump, you wouldn't want to do it on a thin elastic band."

Gregson started the cello early — "I saw a cello case when I was about four, and I really wanted one. But I was told that in that case I'd need to learn the cello, so I did." His crucial first encounter with electronics came at the age of 14. "I did a course at the Oxford Cello School, where I met a cellist called Phillip Sheppard who did lots of cool things with brightly coloured boxes and computers on stage. We kept in touch, and I later studied with him at the Royal Academy of Music in London." ◁

> "I don't like overly exposing the tech. If I've done my job right, it's a piece of music. After all, you wouldn't ask a composer: how did you write this particular phrase?"

▷ Gregson's immersion in historical performance practice at the RAM was another nudge, if an unlikely one, in the direction of new technology. "What I took away," he explains, "was that stuff changed all the time. The cello bow changed shape and length; steel strings came along; the piano arrived and itself developed; music was played in concert halls instead of churches. All these things brought huge evolutionary shifts, and the music being written took account of those changes. But all that seemed to stop more recently, and I wondered why."

It was through the RAM that Gregson ended up working on several projects with MIT's Media Lab, and with composer and technologist Tod Machover on his hyperbow, a cello bow with a Wii-style sensor that can detect pressure, speed and location and transform them into music. Numerous other collaborations and cutting-edge technological projects followed — including Gregson's first ballet score, FLOW, and a recording of Gabriel Prokofiev's Cello Multitracks, written specially for him.

Gregson's postponed EIF project, To Dream Again, was commissioned by New Media Scotland, as part of his role as artist-in-residence at the University of Edinburgh's School of Design Informatics. The piece was intended to run for five performances during the festival and, although it will not be premiering at the 2013 festival, the hope is that it will still happen at some point. Each performance in the series, Gregson explains, will be unique.

"Each night the audience will be different, and that in itself will have an impact on the piece. The audience will provide some data on their way in, which will trigger our algorithms in different ways." Although the technical back end is clearly complex, Gregson is keen that the mechanics of the piece don't dominate.

"I don't like overly exposing the tech," he explains. "If I've done my job right, it's a piece of music. After all, if you commissioned an orchestral piece, you wouldn't ask the composer: how did you write this particular phrase?"

It's envisaged that To Dream Again will continue to have a life online after it is performed — a long life, but one that will slowly decay and die. And that's one of the points of the piece, says Gregson. "My concern with digital art is that you can watch a video on YouTube a billion times and it'll always be the same. There's nothing that says that art should last forever. My idea was to create something that would degrade — the piece will spread out and dissipate until you can no longer hear it. People will be able to access it online, but the rate of decay will be influenced by how many people do that."

Gregson recently collaborated with Finnish violinist Pekka Kuusisto on a performance as part of Aldeburgh's Faster than Sound experimental strand in May. There was a third member to their experimental trio: the goPlay software that Gregson is developing with technology company Reactify.

"The idea is that you can just play, and goPlay will understand what you're playing. It can pick up pitch and rhythm, and if we tell it the score to a piece, then when it hears something it can trigger some specific action itself."

The aim, Gregson explains, was to move away from playing against a click-track, and towards something more flexible and responsive: 'It's like playing with a new collaborator — it feels like it has a personality," he says. Three composers — Martin Suckling, Yann Seznec and Nick Ryan — have written contrasting works for the electronic-acoustic combination, and Gregson and Kuusisto are also contributing pieces.

Performances are proliferating, and audiences increasing. But what kinds of listeners does Gregson expect at one of his gigs? It's a broad audience, he explains: "There are people who go simply because it's the cello — people like the cello. And there are a lot of people from the tech world — people who are more likely to read Wired than they are to read Gramophone."

To cap an already hectic year, Gregson is about to start work on his first film score, and he has a new album out in early 2014. In terms of future plans, though, he admits that he seldom thinks more than a couple of years ahead. That's not so much a question of being unable to predict what possibilities future technology might open up for him — although he admits that's a factor. It's more to do with fully exploiting the technology we already have.

"I think now is a pretty exciting time," he says. "There's nothing stopping you doing some really exciting things. There are more skilled people than ever before, and people are interested and excited by this. People talk about the future as if it's somehow preferable to what we have now. But look around you at what we can do already — it's insane!" □

David Kettle is a writer, editor and classical music specialist. His work has appeared in numerous publications including: The Times, BBC Music Magazine, The Scotsman, Scotland on Sunday, The Strad, Classical Music and The List.

petergregson.co.uk

LUCKY FRAME: PLAYING GAMES WITH THE ARTS

Yann Seznec, director of Edinburgh-based creative studio Lucky Frame, works across music, games and the arts. But despite global acclaim for mobile games such as Wave Trip, he explains why he's more at home collaborating with arts organisations than working with the games industry.

CHRIS SHARRATT

Yann Seznec has a confession to make. "I'm not very good at many, many things," he smiles, "and that's great, I'm happy with that. I want to see more people in the world who do a lot of things very badly."

Of course Seznec, the Franco-American founder and director of Edinburgh-based creative studio Lucky Frame, and one half of folk duo The Seznec Brothers, actually does a lot of things rather well. Most recently, Lucky Frame's iOS game, Wave Trip, has been garnering gushing reviews for its soundtrack-generating musical ingenuity and beautifully simple, angular aesthetic. The game that preceded it, the Scottish BAFTA-winning Bad Hotel, was nominated for a 2013 Independent Games Festival award for excellence in audio. The same honour was bestowed on Pugs Luv Beats in 2012.

So, when it comes to iOS games with a beating musical heart, Seznec and company cohorts Jonathan Brodsky (chief technical officer/developer) and Sean McIlroy (lead artist/designer) are doing a lot of things right. But while that in itself is worth shouting about, there's something else that sets Lucky Frame apart from other innovative indies — a genuine and active interest in the arts.

"I think working with arts organisations is a really great thing — I'd really like to do more," says Seznec. "Lucky Frame is about creative solutions and ideas that can be focused in any number of directions. We have core concepts that really interest us, though. In particular, my personal excitement in what I make stems from interaction, interface and audience."

Seznec is actually more musician than games developer; he has been writing, playing and performing music for over 20 years. It's this artistic background that forms the bedrock of Lucky Frame's approach. Whether working with a publicly-funded organisation like Dundee Contemporary Arts (DCA), developing mobile games for the App Store, or designing, building and then playing a bespoke musical instrument (the 'Sty Harp') for experimental musician Matthew Herbert's One Pig Live tour, Lucky Frame's focus is always on finding unusual and creative ways to capture and engage with an audience's imagination. ◁

↖ Stills from Wave Trip (top) and Bad Hotel. Courtesy of Lucky Frame

↑ The Lucky Frame team with Yann Seznec (centre). Picture courtesy of Lucky Frame

▷ And while the diverse nature of the projects may present the kind of organisational challenges that your average developer isn't likely to face, for Seznec — who is also working with Scottish Opera as one of Sync's Geeks-in Residence — everything is connected.

"It does all feed in," he says. "Sure, logistically it can be tricky — over the next three months I'm only going to be in Edinburgh half the time because I'm touring with Matthew Herbert and away doing some other stuff, which is tough. But from a company philosophy standpoint, it's not really an issue because it's all about creating, and everything ties in with the questions that we're addressing."

As if to emphasise this point, Seznec describes how touring with Herbert, and specifically the daily routine of late nights, early mornings and the rush from hotel to tour bus, led to the prototype for Silver Medal — a game where winning is all about finishing in second place.

"There's this whole set of things you have to do every morning when you're on tour," he explains, "from getting up as late as possible to make sure you get as much sleep as you can, to having the hotel breakfast and taking some food for the journey, to making the tour bus on time. I realised after a few days that the person who wins this mini game is the person who arrives on the bus second to last — they're not holding anyone up but they've managed to take as long as possible to get there."

When it came to developing the idea into a game, finishing second to last didn't really work, so instead it became about bagging the silver medal position. "There's a funny philosophical thing that the game raises which I think is interesting from an interaction and human standpoint," says Seznec. "If you redefine what you are telling people is the definition of success in a given situation, people will totally latch on to that — when anybody plays Silver Medal, the person who finishes first feels crap!"

Philosophical conundrums and questions around the nature of human behaviour aren't exactly top of the list of concerns for most in the games industry. So, despite Lucky Frame being best known internationally for its music-focused mobile apps, what's the company's relationship with the sector? Does Seznec feel part of the industry?

"It's quite funny," he says. "Whenever we get invited to games industry events, I look at the list of people and I'm like, God, this feels boring! So if it doesn't interest me, maybe we're not in the industry. But in some ways, yes, we're blatantly part of it: we make games, we put them out, they make us money — what else is there? But we're definitely on the fringes, partly because of our music focus, but also because our games are quite quirky and original which, in the context of the Scottish games scene, sets us apart." ▷
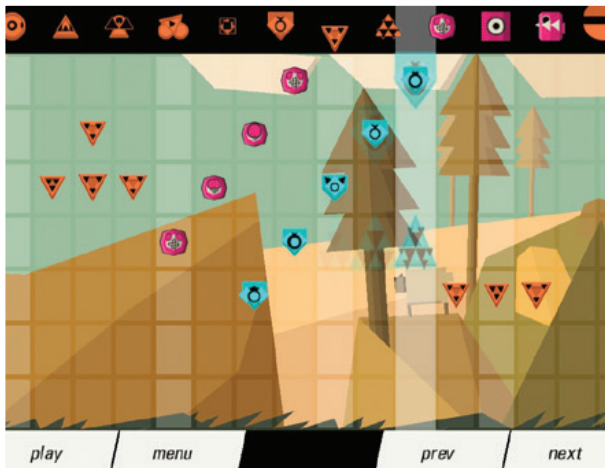
↖ Stills from Wave Trip. Courtesy
of Lucky Frame

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"We're definitely on the fringes of the games industry, partly because of our music focus, but also because our games are quite quirky and original which, in the context of the Scottish games scene, sets us apart."

▷ Seznec has no intention of departing from the winding path Lucky Frame has been pursuing since it was founded in 2008 on the back of the Wii LoopMachine — music software for Nintendo Wii remotes that he created while studying for an MSc in Sound Design at the University of Edinburgh. (His creation even led to an appearance on the BBC's Dragons' Den: "It was real nonsense, but I'm very thankful to the BBC — it led to a huge distrust of business strategists.")

Back then, Seznec was still part-time on Lucky Frame and felt that focusing on a particular software was the way forward. Brodsky (who Seznec had met when he was studying at Carnegie Mellon University in Pittsburgh) was holding down a day job and working on Lucky Frame in the evenings. (He joined full-time in 2011).

After a year or so, Seznec started to realise that a more diverse approach was needed. "It was just a realization that we were much more interested in a wider approach to creation," he says. "If I hadn't been more flexible about what defined us, we wouldn't be here now."

Typically, then, while the indie games sector is abuzz with praise for Wave Trip, and with Brodsky having just worked on the recently released OSX version of Ed Key's widely praised Proteus, Seznec has his eye on developing Lucky Frame's arts-oriented work. Although still early days, he says he's been talking with "two or three" arts organisations in Scotland about working together on "some large scale projects". Clearly, the positive experience at Dundee Contemporary Arts has whetted his appetite for more — as well as providing a template for future projects of this kind.

"Working with DCA is really interesting because we're doubling as consultants and developers," he says. "They came to us with no preconceived ideas about what they wanted, just that they had a set of possible issues they wanted to look at with us. That's a really great position to be in. People are really scared about open collaboration and saying, 'We know we need something but we don't know what it is'. But that's the relationship that needs to happen."

The issue Lucky Frame is addressing at DCA is around the arts organisation's membership cards and in particular their infrequent use. The UPC barcode on the cards will be used to trigger visual interaction at certain points within the building, creating "fun environments" — and, of course, giving people a reason to carry their card with them and use it more.

"In general, I want to work with other organisations. It's certainly a challenge, but I always say that I didn't start my own company in order to work for other people. I don't want someone to say, 'Hey, do this now'. I want it to be a collaborative relationship."

Collaboration in the arts? It's the kind of talk that, in theory at least, rests easy with many working in the sector; the kind of talk that makes a Franco-American who does a lot of things very badly sound like a very good thing for the arts in Scotland. ☐

Sync's Geeks-in-Residence programme teams up imaginative developers and designers with some of Scotland's leading cultural organisations. Now in its second year, we take stock of what's happened so far and introduce the second round of geeks and hosts.

CHRIS SHARRATT

GEEKS-IN-RESIDENCE: THE WHO, WHAT AND WHY

"The approach was completely new to us all. It just goes
to show what can be achieved when there are no set goals,
and when creativity and innovation are the driving forces."

▷ **Being one of Sync's Geeks-in-Residence is,
as Stef Lewandowski puts it, 'eventful'.** In the first
round of residencies in 2012, Stef, a designer and
software developer based in London, was hosted by
Eigg Box, a creative workspace on Eigg, a small island
off the north west coast of Scotland.

Lewandowski documented his time on the island
extensively in the Diaries section of the Sync website.
The residency was clearly a rewarding and fruitful
experience: 'One of the main problems is having too
many ideas and too little time,' he wrote. 'What we're
doing isn't "here's something fancy on the internet",
but actually a process of being part of the island…
and doing things that relate directly to the people
and things in the place.'

The Geeks programme teams up developers and
designers with forward-looking cultural organisations
in Scotland, who then work together to define a
project that best serves the needs of the host and the
skills of the geek. It's a process of experimentation
and innovation, a chance for the cultural sector to
utilise digital tools effectively, and for the geeks
to work in a creative environment free from
commercial pressures.

Andy Young was Geek-in-Residence at the
Edinburgh Tattoo and MacRobert arts centre, Stirling.
"For me, these residencies are invaluable," he wrote
in his Sync Diary. "I get to work with two developers
(Alistair MacDonald and Phil Leggetter) to help
produce 'something' for our hosts."

In the end, the 'something' was an app that
enables MacRobert to effectively target audiences
via Twitter for a range of different events; and for
the Tattoo, a mobile app that turns your phone into
a pixel, which will — potentially — bring a new level
of audience engagement and visual spectacle to this
world-renowned event.

Glasgow-based UI (user interface) designer
and UX (user experience) specialist Denise Ross is
similarly enthusiastic about her Geek experience.
"I was delighted when I found out I had been selected
to take part," she says. "It came at just the right time
as I'd recently completed a long corporate contract
and was craving a more creative project within the
cultural sector."

Ross worked with Stills gallery in Edinburgh
and her residency resulted in a digital visual timeline
that documents the history of Stills from 1977 to the
present day. "The approach was completely new to
us all," she explains. "Usually an organisation comes
to me with requirements and I try my best to provide
a valuable service. It just goes to show what can be
achieved when there are no set goals, and when
creativity and innovation are the driving forces."

The first round of the Geeks-in-Residence
programme also included Edinburgh-based musician
and developer Yann Seznec. He is involved in a project
with Scottish Opera that is still in development.

Geeks and hosts for round two

For 2013, five developers/technical designers will be working with five exceptional host organisations. Ranging from a recent graduate to a well-established UX and games designer, they all share a passion for collaboration, innovation — and of course, a love of arts and culture.

Supporting the geeks will be Andy Young, who will bring his experience from the first round of residencies to provide help and advice during the early, exploratory phases of projects.

Geek: Alasdair Campbell
Host: Bodysurf Scotland

Alasdair Campbell is a Glasgow-based software and hardware developer. He recently completed an honours degree in Computing Science at Glasgow University. His final-year project at university involved developing autonomous optical tracking software for motion-controlled cameras, in order to develop the potential of routine live streaming from theatres. Alasdair is also a performing musician and has built various hand and foot controllers using Arduino.

Bodysurf Scotland promotes and produces events involving dance, movement and art. This small and innovative arts company is based in the Findhorn Bay area of Moray, north-east Scotland.

www.bodysurfscotland.co.uk

Geek: Trevor Fountain
Host: Edinburgh Art Festival

Trevor Fountain is an Edinburgh-based software developer and maker with experience in web, mobile, enterprise, and game development. He completed a PhD in Cognitive Science at the University of Edinburgh in 2012. Trevor is also the co-founder of the games studio, Blazing Griffin, which explores new ways to produce, market and distribute mobile games. He also manages a literary magazine, Far Off Places, which focuses on new ways to publish poetry and short prose.

Edinburgh Art Festival is Scotland's largest annual festival of contemporary art. Founded in 2004, it takes place from 1 August to 1 September in venues and public sites across Edinburgh.

www.edinburghartfestival.com ▷

▷

Geek: Kate Ho
Host: National Theatre of Scotland

Kate Ho is the MD of technology-specialist production agency Interface3. Based in Edinburgh, Kate's experience is primarily around UX and games design, in particular how to build unique and interesting experiences on mobile. Kate also codes and hacks prototypes in Javascript, and last year won Will's Hack with a second screen theatre app. She is the co-designer of the two-player iPad game Equator, which was nominated for Best Serious Game in the International Mobile Gaming Awards.

The National Theatre of Scotland was founded in 2006. A national theatre without the constraints of a venue, it creates incredible theatre experiences across Scotland and beyond, and describes itself as 'a theatre of the imagination: a Theatre Without Walls.'

www.nationaltheatrescotland.com

Geek: Alexander Laing
Host: Visible Fictions

Alexander Laing is an Edinburgh-based interaction, systems and sound designer/programmer. Earlier this year he completed a three-week residency at Summerhall, Edinburgh, which involved designing a bespoke digital programme for theatre sound design. Alexander's past projects include an augmented ping-pong table with wireless mic'd bats that triggered audio samples, detecting rhythmic play for generative sequences; and an interactive, haunted doll's house using webcams to track audience motion.

Visible Fictions is a small but dynamic Glasgow-based theatre company that tours productions and also works in schools, institutions, communities and work places. It is one of the UK's leading theatre companies for children and young people.

www.visiblefictions.co.uk

Geek: Hassy Veldstra
Host: The Arches

Hassy Veldstra is a full-stack web developer with a focus on UX. Based in Edinburgh, he has experience of both development and design, with a background in startups. Hassy is currently working on two projects that combine a love of music and software: wonderwheel.fm — a visual way to find new music on Spotify; and heyso.im — a chat app for Spotify. In 2010, Hassy was part of IDEA lab at the University of Edinburgh.

The Arches is one of Scotland's leading cultural venues hosting theatre, club nights and gigs. Based in the railway arches below Glasgow Central station, it opened in 1991 and has since become a key cultural hub for Scotland's largest city and beyond.

www.thearches.co.uk ☐

Fi Scott has turned Make Works, a final-year design project, into an ambitious summer tour of Scotland to search out the best in manufacturing. Her Mission? To create a responsive, online directory of creative talent.

CHRIS SHARRATT

MAKE WORKS: "A DATING SERVICE FOR MANUFACTURERS & DESIGNERS"

▷ **Fi Scott isn't afraid of a challenge.** "I spent six months filling out a lot of funding applications and got a lot of rejections," she says. "Eventually I thought, 'You know what, I'm just going to get on and do this'. Hopefully, the funding will come afterwards."

What Scott, a 2012 graduate of Glasgow School of Art's Product Design course, is getting on with is her Make Works Tour. It's a project that involves meticulous planning and research, a team of committed advisors, plenty of in-kind support, copious amounts of goodwill — and an old-school VW camper van with a surfboard on top.

While the surfboard isn't strictly necessary for the job she's undertaking — well, everyone needs a bit of downtime and the tour will provide some opportunities for wave riding — the style of transport is the kind of detail that is indicative of this young designer's approach.

← (Previous page) The Make Works logo, laser cut in plywood.

↓ Fi Scott in the Make Works VW camper van. Photo by Ross Fraser McLean

↘ Fi Scott and Vana Coleman. Photo by Ross Fraser McLean

Taking place from 1 July to early October, the tour will see Scott and fellow GSA graduate Vana Coleman visiting factories, small businesses, foundries and workshops in all 32 council areas in Scotland. The purpose? To compile an online directory of makers and manufacturers, in the process connecting them with the country's wider art and design community.

"I spent ages looking and thinking that there's got to be something out there that does this," says Scott, originally from Edinburgh and now based in Glasgow. "But although Craft Scotland have a directory of craftspeople in the country — which is cool — it's very much a guide for buying finished products. There's nothing about connecting people who want to make things."

A map on the wall of Scott's workspace at The Lighthouse gives an indication of how many visits she's got lined up for the summer. Peppered with wall pins, it reveals a route that will take her south to the borders and as far north as Shetland. "I've got a long list of people that I definitely want to go and see," she says, "but then I've also left enough space in the schedule for those who want to get in touch with us. And there's definitely an interest there."

Scott hopes to visit 180 manufacturers during her 90 days on the road, and plans to document the tour with a daily blog and online films made with the help of the Edinburgh Film Company. She'll also be inviting artists, writers and makers to join the tour for one-week residencies. ▷

"It's really exciting and interesting to be taking this very
physical world of manufacturing and using the Internet
as a communication tool to celebrate it."

▷ "Make Works is in part about reuniting designers with industry," she says. "Once you understand the materials and the processes, it makes what you design a hundred times better. And of course, doing that manufacturing locally makes it more sustainable and the story behind the product is a whole lot better."

Surely, though, most of these makers and manufacturers already have an online presence — so is the Make Works directory really needed? Can't this information just be Googled? Scott disagrees.

"What I find, particularly with manufacturers, is that yes, they have a website, but they're hard to read and often written in very technical speak — as a designer or artist they're very difficult to understand. A lot of these companies really want artists and designers to come and work with them, but the impression the websites give — particularly those of the big companies — is that you can only use their services if you want thousands of something produced. But that's often not the case."

Crucially, Scott envisages Make Works as a dynamic, opinionated service rather than a faceless, static directory that will be left to gather dust once it's been compiled. "It will be more than just a list of people and services," she says. "It's more about pointing out those manufacturers who are maker-friendly and explaining what they do — it will be a trusted directory that only includes people that we think are really good."

The Make Works idea began life in 2011 as a final-year degree project, for which Scott was shortlisted for the 2012 Deutsche Bank Award for Creative Practice. It's an indication of her organisational tenacity and creative energy that she has gathered together an impressive level of support for the project, including a six-strong Advisory Group that features Roanne Dods (Artistic Director, PAL), Sarah Drummond (Director, Snook), Richard Clifford (Studio Director, MAKLab), Catherine Docherty (Centre for Design Innovation) and designers Roy Mohan Shearer and Neil McGuire.

Such credible support within Scotland's creative sector can only help in her bid to secure funds for Make Works, which has been set up as a not-for-profit company. But whether money is forthcoming or not, Scott is committed to her fact-finding tour and convinced that Make Works will benefit Scotland's arts and design community.

"For me, it's really exciting and interesting to be taking this very physical world of manufacturing and using the Internet as a communication tool to celebrate it," she says. "At the moment it really is so hidden away, but there's just so much amazing stuff out there. Make Works is really a kind of dating service for manufacturers and designers — it's bringing people together who can work with each other." □
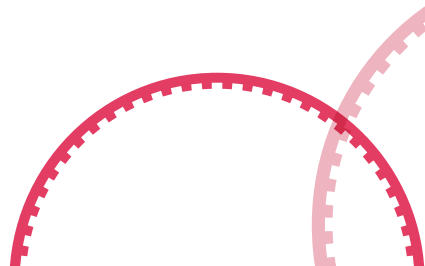
Follow the Make Works tour at
makeworks.co.uk
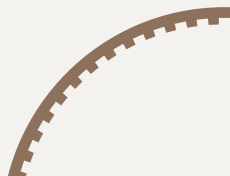
CRAFT+TECH RESIDENCIES: FROM IDEAS TO PROTOTYPES

In January, three UK makers began Watershed's Craft + Technology Residencies, bringing together making and design with digital, networked technologies. We talk to the participants and discover how digital tools are influencing their practice.

CATHERINE ROCHE

In January 2013, **Bristol's Watershed launched its inaugural Craft + Technology residencies.** Funded by the Esmée Fairbairn Foundation and run in collaboration with the Crafts Council, i-DAT in Plymouth and Autonomatic in Falmouth, the programme supports three UK makers to develop innovative projects, bringing together making and design with digital, networked technologies.

Heidi Hinder, Patrick Laing and Chloe Meineck are exploring the arena known as the internet of things, where physical objects become embedded with smart technologies, enabling communication between objects themselves and users. Artist-maker Hinder looks at ideas of value in a digital age where obsolete monetary tokens may hold narrative capacity; 3D designer Meineck's Music Memory Box integrates audio triggers and objects as a means to stimulate memories for dementia sufferers; and product designer Laing hopes to develop large-scale, networked lampshades whose changing forms will create unfolding, physical dialogues in public spaces. ▷

▷ These residencies respond to the current global interest in interactive objects. Research and investment in the sector is high. However, questions regarding craft's contribution to this discussion have emerged. What can the material sensibilities of contemporary makers bring to this area?

"Governments and technology companies are investing heavily in the infrastructure of the internet of things," says Clare Reddington, Director of Watershed's Pervasive Media Studio. "At Watershed, we think that exploring the potential of this area in terms of look, feel and experience design is also really important, and one way to do that is to invite makers to contribute to this emerging field."

Collaboration is key to the three residencies. The makers have been embedded within specialist supporting organisations and allocated a technology mentor to help navigate their projects. "The residencies support makers to work with technologists, exchange skills and knowledge, and turn ideas into tangible prototypes," explains Reddington.

Resident at Watershed, Hinder's desk is situated in the Pervasive Media Studio, a contemporary, open-plan hub. "The fluidity of ideas and free information and knowledge that are within the Studio is really inspiring and really valuable," says Hinder.

Coming from a silversmithing background, Hinder's making is small scale and she is encouraged to work physically in the space, generating much interest from her diverse neighbours, which include mobile app developers, artists, programmers, academics, a space scientist and a robotics specialist. The strong conceptual focus of her project will be manifested through crafted interactive coins. Three weeks into the residency, she is still at the research stage; conversations with the Curator of Modern Money at the British Museum, the Technology Manager at the Royal Mint and futurologist Bill Sharpe have provided important insight for her project development.

Hinder's prior experience of networked technology is limited; her exposure at Watershed to these new potentials will, she says, be key in directing her future practice. She is exploring the use of RFID, a system currently used in Oyster cards. This tag and reader technology will enable her to embed narrative data into her objects or perhaps track their social journeys. For Hinder, using networked technologies opens up the potential of her intricately made sculptures, while still maintaining the crucial sensory experience in the materiality of the handmade.

Hinder admits that there are challenges ahead. "It can be daunting as a craftsperson, technology is quite mysterious," she says. "Whilst in some ways this is a limitation, it is also an opportunity — I don't have inhibiting factors of 'I can't do that'. That can be a positive thing."

"The fluidity of ideas and free information and knowledge that are within the Studio is really inspiring and really valuable."

Like Hinder, recent graduate Chloe Meineck is exploring RFID technology within her socially engaged project, the Music Memory Box. Meineck's project is widening its scope from the personal in an attempt to create a social product to assist dementia sufferers. She has been placed with Autonomatic, a research group in Falmouth University, and is situated in the Academy for Innovation and Research, a busy, open hub. As with all the host institutions, it is the creative conversations generated by this environment that resonates. "The residency will give me confidence in my abilities and hopefully lead to further collaborations," she says. "It adds a seriousness to the project."

The Music Memory Box will be filled with hand-made, evocative objects embedded with data to activate songs via the RFID system. Part of Meineck's week is spent working in the community — practical workshops in a day centre, memory café, sheltered housing and hospital help her evaluate and identify the most effective memory stimuli, which she sees as her greatest challenge.

"I hope to overcome these challenges by developing kits that people and families can make together and produce a personal, bespoke box," she explains. Material experimentation is ongoing; air-drying modeling clay, laser cutting, 3D scanning and marquetry may be employed. "I always think about people, especially older people, in my work, and 'craft' is something they understand and 'get'. In a way, I'm making technology accessible for them."
▷

← Heidi Hinder. Picture courtesy of Watershed

↗ (Next page) Patrick Laing makes adjustments to his networked lampshade. Photo by Tas Kyprianou

▷ Patrick Laing's project deals with industrial-scale making. He is placed in the tech-orientated environment of i-DAT at Plymouth University. An established product designer, material play is key to his practice. "Technology is another material challenge that offers new potential," he says. Laing has already sourced fabric that suits networked manipulation, to be used for the lampshade skirt. Tibex, a plasticised version of felt, offers longevity to the spinning lampshade forms; materiality and technology must co-exist. "The material is key to the development of the project in relation to networked entities in corporate spaces," says Laing. "They need to maintain function."

Laing sees the Watershed residency as significant to his career, saying that "opportunities like this allow a bridge to occur that otherwise might take too long on your own." He feels lucky to be engaging with expert technologists and learning new skills; his current research examines proximity sensor communication to create this body of sentient forms affected by air movement and human presence. 3D scanning of adjacent skirt surfaces may be introduced, creating an interactive dialogue as one form influences another.

Laing sees the physical act of making as crucial in the relationship with new technology, packaging and substantiating the immaterial. As he says: "In order to reconcile physical problems one needs to deal with the material."

Craft is no stranger to technology. The Power of Making exhibition at the V&A in 2011 and the Crafts Council's Assemble Conference in 2012 reflect an increasing level of craft activity around networked technologies. The work of leading makers such as Hazel White and Michael Eden is evidence of this emerging interest in developing smart objects within craft.

At a grassroots level, Maker Faires, fab labs, hackspaces and open-source working have provided a rich environment for makers and technologists to explore network potentials on an individual scale. The Watershed residencies place this innovative collaboration within a professional, product-led context — Hinder, Meineck and Laing will develop prototype products using smart technologies, placing them right at the heart of the internet of things. □

Since 2010, Edinburgh's Electric Bookshop has been celebrating the possibilities of new technology in publishing. Prior to the ninth edition in the series in March, we talked to the talented trio behind these inspirational events.

STEPHEN REDMAN

BROWSING THE FUTURE AT ELECTRIC BOOKSHOP

▷ **There's no shortage of places to find out about the history of books and book publishing;** there are plenty of stats about the present too, about ebook versus physical book sales and the rise of the Kindle and tablets.

But where should you go to learn about the future of the medium? Where can you celebrate how technological innovations are changing publishing and providing new and complementary ways to enjoy the written word? One answer to that question is the Electric Bookshop in Edinburgh.

Launched in April 2010, this quarterly event at Inspace was founded by three women embedded in the here and now of the literary world, but who also have a keen eye on what's coming next.

Peggy Hughes, formerly of Edinburgh City of Literature, is Development Officer at Literary Dundee; Claire Stewart is Reader Development Coordinator at the Scottish Book Trust; Padmini Ray Murray lectures in publishing studies at the University of Stirling. Electric Bookshop stems from what they saw as a gaping gap in the market for an event aimed at people just as interested in digital as Dostoyevsky or Diaz (Junot, not Cameron).

Electric Bookshop provides a discussion and demonstration forum; a place to debate, a literary/technology think tank. But it's also a place to socialize — somewhere to drink cocktails and chat while you grapple with the big challenges and opportunities facing publishing in the 21st century.

"What we want to do is provide a social space for people interested in technology, publishing, design and narrative," says Hughes. "To bring them together and have a blether, basically; to involve people who are doing interesting things in the field, people who are not being constricted by borders."

"What we want to do is provide a social space for people interested in technology, publishing, design and narrative — to bring them together and have a blether, basically."

While informed speakers and interesting discussion are clearly crucial to the Electric Bookshop's appeal, the organisers are equally focused on making sure that the events are lively and genuinely social affairs.

"One of us is always aware what's going on," smiles Hughes. "Someone is looking quite lonely? We just kind of go up and chat to them. That makes it a more cosy event and not intimidating." She laughs. "If someone comes in off the street, we go up to them and say: 'Come in, come in, come in — have a Bellini!'"

Guests at the events so far have included former McSweeney's publisher Eli Horowitz; Sophie Rochester, founding editor of The Literary Platform; and designer/researcher David Benque. There have been presentations by, amongst others, Scottish epublishers Blasted Heath, the Stirling Centre for International Publishing (discussing The Book Abound project), and the makers of the Palimpsest: Literary Edinburgh app. If speakers can't appear in person, they're brought in via Skype to give talks and take part in live Q&As with audience members.

At the eighth Electric Bookshop, Gavin Inglis talked about his latest work, Eerie Estate Agent, available from iTunes and on Android from Choice of Games. An interactive story that changes depending on the readers' choices, while it is not in itself an evolution of the novel (given its origins in the 'choose your own adventure' books of the late 1980s and early 1990s), it does begin to explore the boundaries between gaming and the novel.

Appearing via Skype at the same event were Max Whitby of Touch Press, and Henry Volans, head of digital at Faber and Faber. They talked about the apps for The Waste Land and Shakespeare's Sonnets, examples, says Ray Murray, of the kind of innovative collaborations taking place in publishing: "There is a synergy occurring in book invention between traditional publishers and technology partners," she says.

While such high-profile players are a big selling point, it is the infectious enthusiasm of the organisers that really sets the Electric Bookshop apart. So, what do they want those who attend to get out of it? "We want people to enjoy themselves," says Hughes, "and to engage both with each other and with the ideas being shared."

"We also want people to learn, as well as have a good time and a couple of cocktails," adds Ray Murray. "I think people do learn about things they might not have been thinking about before, or maybe go home finding they have been exposed to something new. We always wanted Electric Bookshop to be more than an event — sometimes I talk about it being a think tank, but a think tank that's open to all."

This innovative and open approach, underpinned by the trio's warm personalities, has been key to the Electric Bookshop's success. There are new developments on the horizon too, funded by New Media Scotland. Its Alt-w fund is enabling the launch of Pressed For Time, described as a 'publishing time machine, providing unexpected and immersive experiences for intrepid book readers'. Using a combination of human interaction and artificial intelligence, it will create custom 'books'. ◁

▷ As traditional publishing models look evermore outdated, it's people like the organisers and participants in the Electric Bookshop who are optimistically exploring what the future of books will look like. Electric Bookshop is a place where people who want to publish and get creative can find inspiration, whether it's close to home or from around the world. And when you've had enough of being bookish, you can always bury your head in a Bellini. □

Stephen Redman is a writer and theatre director — 2013 sees the launch of his latest project GeoLit, a new tool connecting readers and writers with the world they live in.

↓ Electric Bookshop founders (left to right) Padmini Ray Murray, Peggy Hughes and Claire Stewart. Photo by Chris Scott

WEAVE WAVES: EXPLORING THE FABRIC OF SOUND

Weave Waves is a Crafts Council commission that brought together sound artist Scanner and textile designer Ismini Samanidou. We talked to the pair prior to its first public airing at the FutureEverything summit in Manchester.

ROB ALLEN

▷ Structure, scale, geography, systems, code
— all play their part in **Weave Waves**, an ambitious
partnership between sound artist Scanner and textile
designer/maker Ismini Samanidou. Commissioned by
the Crafts Council, the first fruits of the project got
a public airing in an 'immersive slideshow' at
Manchester's FutureEverything summit, before
the completed work went on tour.

The project flickered into life when the Crafts
Council approached Scanner — real name Robin
Rimbaud — with a proposal that would involve him
working with a maker of any description. Having
taken on projects as diverse as ballet scores and
soundtracking musical comedies, alongside a
personal practice that has seen him previously
commissioned by Artangel and Tate, the prospect
left him typically unfazed. The only question was:
what kind of maker would he choose to work with?

"It could have been any kind of maker," he explains.
"They could have worked in ceramics, glass or even
jewellery. Then I had a kind of epiphany. We don't
just listen to sound, we see sound too. Like a rock
being thrown into a pool, you see ripples appear.
I thought it would be fantastic to be able to see
those sound waves appear in textile form."

Numerous artists have worked with found
sounds, but Scanner's career has been built on
literally plucking material out of the air, from mobile
phone signals to radio transmissions. Finding a maker
who could match his aptitude for innovation might
have been a challenge, but with Samanidou there
was a ready and willing foil for his intervention into
contemporary craft.

↗ Images show a detail of
Weave Waves, Scanner and Ismini
Samanidou, 2013, cotton, silk.
Photos: Nick Moss/Crafts Council
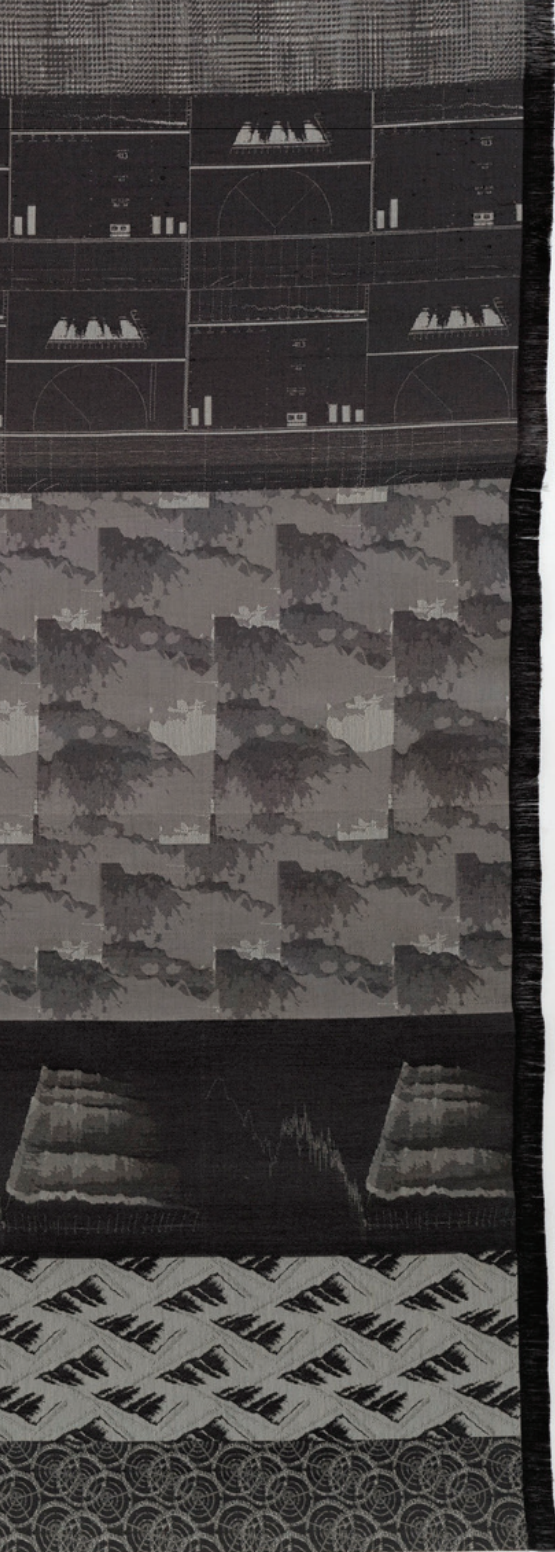
Often utilising technology to transpose photographic imagery onto fabric, the Athens-born, Cornwall-based artist works with digitised looms, occasionally adjusting the weave while it is in progress. The adoption of digital tools gave both artists common ground to work from.

"We talked about computerised production very early on," explains Samanidou. "We realised we shared an interest in the way sound and textiles have hidden codes. For me, code is very much the construction method for the textiles, and I see it as something tangible, something I can easily visualise and control."

Where the two found similarities they also found differences — Scanner highlights a "very helpful tension" between the artist's backgrounds. "You can see a pattern in textiles," he says. "Like with knitting, you understand that there is a structure. Music has a similarity to textiles in that a pop record also has structure, but you lose focus on the structure and begin to enjoy it as a whole.

"The same can be said for a beautiful piece of textile work. Although the outcomes are very different, the code used for making textiles is still binary, it remains ones and zeros and it's the same for making music."

Weave Waves has been allowed to develop in front of its audiences eyes, with Scanner and Samanidou documenting each stage of their collaboration online. Captured sounds, photography depicting accidental patterns and examples of woven work all provide traces of Scanner and Samanidou's journey, which included a visit to Manchester earlier in the year. Large conurbations and their sounds and structures offer a central point of inspiration. ▷

"I want to seduce people into recognising the relationship between our two practices and lead them into a sense of being surprised by it."

▷ "One of the planned outcomes is lots of small textiles where the detail will be overhead views of cities," explains Scanner. "They'll be displayed in their own vitrine, with the viewer invited to observe each with a magnifying glass. As they lean over the piece, the sound from the city will play."

The presentation of this idea is still to be realised, and the issue of making sound work in an exhibition space without it disturbing people viewing other pieces is yet to be resolved. Headphones, believes Scanner, aren't the solution. "I don't think they ever work in an exhibition environment," he says.

Further exploring ideas of contrasting scale, the pair have also worked on a large textile piece that, by using spectrograph software, will represent the sound of their own breathing. The intimacy of this most basic act, contrasted with the impersonal rush of city life, underpins the work.

"Looking at scale between cities and individuals, we wanted to juxtapose the hum of the city with the sound of an individual person," explains Samanidou. "It made sense to use our own breath as the origins of the work."

Weave Waves is part of a Crafts Council touring exhibition, Sound Matters: Exploring sound through forms. Scanner, who describes his leap into the crafts world as an informed risk, remains curious about how people will respond to the work.

"I want to seduce people into recognising the relationship between mine and Ismini's practices and lead them into a sense of being surprised by it," he says. "But, at the same time, I'm thinking: How will the crafts world read this?" □
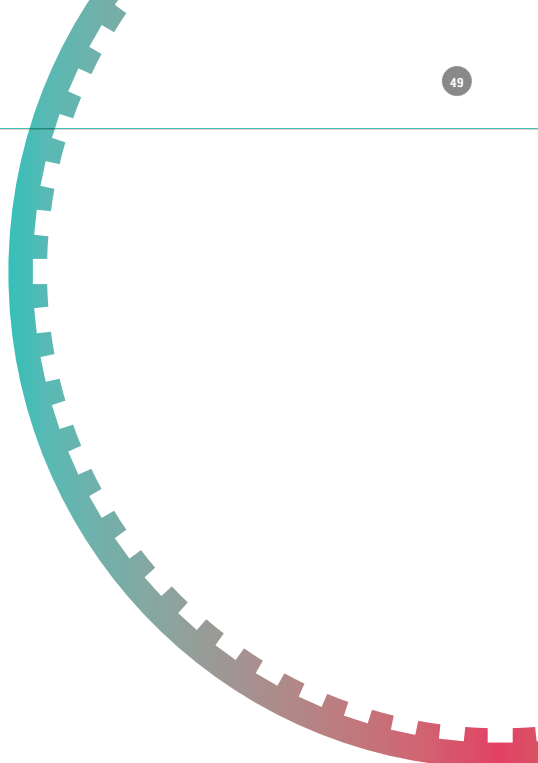
Sync invited three senior
cultural practitioners and
managers in Scotland to
discuss the concept of 'digital
fear'. Talking anonymously
in order to ensure candid
and fruitful discussion, what
they had to say highlighted
a range of issues rarely
spoken about in the context
of digital innovation.

ROHAN GUNATILLAKE

FROM DIGITAL FEAR TO DIGITAL EXCITEMENT

▷ Digital innovation and experimentation are central to the Sync agenda. When cultural organisations talk about embracing this agenda, the barriers they commonly tend to articulate are time, money and business case.

At Sync, we repeatedly stumble across fundamental human issues that lie beneath these more resource-oriented ones. Most commonly, we find ourselves asking what it is that makes some people react to digital opportunities with fear rather than excitement?

So what is it that creates excitement in one person and fear in another? What creates the conditions for flow, learning and experience? And what are the conditions that lead to aversion, tension and anxiety?

To help us better understand this, we invited three senior cultural practitioners and managers to talk anonymously to us about 'digital fear' — anonymity was given in order to allow them to be open and speak freely.

We began our conversation by asking 'Do you recognise the concept of digital fear, and if so what does it mean to you?' What follows are edited sections from the transcript of the session. Each focuses on a different barrier that's instrumental in preventing cultural organisations from behaving progressively with regards to digital practice.

Maintaining curatorial voice in a world of user content and participation.

"With so many perspectives available, whose voice do you listen to? Having a strong curatorial voice and emphasis on quality is such a central value to many of us. In this glorious and messy Wikipedia world, there is an assumption that being participative means dumbing down artistically. This doesn't have to be the case as long as we can find a way to protect expertise and protect practice.

"My concern is that curators and artists are wary of this kind of work because they feel they might lose their voice and not see their experience and skill reflected back in projects. This is particularly important when many senior people in the arts are used to being experts. But when it comes to digital stuff they are not experts, and that can be intimidating or threatening."

Creating thrill by having more peer-recognised examples.

"I think there's an opportunity to change this fear into thrill — but that has to be at an organisational level. Rather than participative being marginal or gimmicky, I'd like to see more high-quality, curated digital projects where artists and curators with reputations outside of the digital domain evolve their signature practice towards it. For that we need two things to happen — firstly as organisations we need to be savvy enough to talk the technology, and secondly, whether you're a curator or an artist, you have to see your peers doing similar things. I don't think that type of person is scared of technology, just not ready to take the leap. So having more meaningful reference points would make a big difference."

The limitations of the default view.

"The culture and feeling of always being too busy on the day-to-day stuff and not having time for any innovation work is quite easy to cling to. What is the point… if we cling to it too much then how are we going to develop? How can we create more space for innovation within our organisations when they feel they don't have that space?"

How can I make the right decisions?

"In the past I've definitely gone out there and made the wrong choices and projects have not been very well future-proofed. How do we know how to make the right decisions when it comes to digital projects — is it about having producers? We've brought in advisors to talk through projects and sit in on a supply interview but they are working on very limited information and nothing beats knowing more about our organisation.

"We write contingency into projects so maybe we make budget lines for producers and also budget lines for flexibility and iteration. Our funders tend to only support one-off build projects without any resources for iteration or improvement, which means that we can be left with a website that becomes more of a burden than an asset as the world changes around it."

Events like Culture Hack Scotland require open mindsets.

"Providing data to an event like Culture Hack Scotland is very telling of the mindset or values of an organisation. You don't know how it's going to be used or indeed if it's going to be used at all, and that can be quite scary. When our organisation participated it took some discussion because we started by asking questions such as 'What is the direct return?' This may not be the most appropriate attitude to start with for such an experimental exploratory event."

Why open data is like public speaking.

"In a way open data is quite like public speaking, which is famously one of the most common fears out there. You run the risk of being embarrassed or misrepresented and some people don't want to be exposed in that way, especially those that don't intuitively understand the benefits of taking part in an event like Culture Hack Scotland, nor indeed recognise how supportive an environment it is for risk taking. Interestingly, the developers and designers also have the same fear of failure in that they attend an event not knowing what they are going to do and if it is going to be of any value or interest. But what is perhaps most different for them is that they are more happy taking those risks since it's more common in their everyday work and culture." ▷
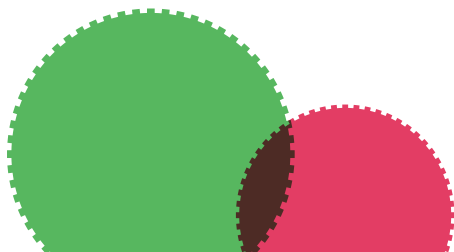
▷ **Reasons why digital innovation is like environmental action.**

"Having an environmental policy is of course now common and many organisations are active in working towards reducing their impact either through their venues, their productions or their audiences. Why can't we as organisations have a similar approach with digital - digital policies that are exploratory rather than just responsive? Spending time and energy on digital exploration can feel like a luxury but it's not, it's crazy not to. It's crazy not to have some function within your own organisation that addresses digital practice and innovation. In a way there is maybe a similarity with the environmental agenda — it's a system-wide issue, it has both a business case and an ethical case and some people feel it more urgently than others."

Changing the narrative around technology to being only about better.

"Technologists can tend to frame technology as being all about doing things faster and bigger and more efficiently, on the assumption that this makes it better. That isn't necessarily always the case and that attitude can be off-putting to a lot of people who work in the arts. So maybe we should focus on how we can be sure interventions with technology make things better."

More people-friendly ways to learn about technology.

"It's interesting how the three of us here — while being of similar age — have very different backgrounds and therefore possibly quite different capacities. For example, my background is performance and that is very different from literature or the visual arts. I think our different backgrounds and training mean that we have different learning styles, and that is perhaps more important than whether we're digitally native or not.

"The story of computing is fascinating and the fact that they have been historically developed by people with strong mathematic and engineering backgrounds means that they are still dominated by technically-oriented learning styles or aesthetics. That needs to be taken into account with people who work in the arts — with people who work in visual or physical or even musical ways. Can we relearn how we learn about technology so it's not dominated by screens and words?

"That same approach comes across in how workshops or organisational development related to digital technology is presented. It can be very directional and uncreative. Culture Hack Scotland is exciting because it's about discovery through creative exploration and not knowing, rather than being told: 'This is how you do it and this is what's good for you.' Please, if [Sync] is going to do more projects to help us work better with this stuff, I have one request — don't make it a one-size-fits-all bootcamp!"

The separation between technology and no-technology isn't working.

"Sometimes I feel like a split personality. There's part of me that absolutely loves technology, and there's the other part that wants to run away and be in a very quiet place. I think everyone has that joy of when they haven't had to check their emails for a whole week because they were on holiday. That mentality and that tension is maybe within everyone. Sometimes we embrace it and other times we just need to get away. When does it all come together? I do feel like eventually it will integrate, but will it? Will it ever integrate or will there always be this dichotomy? At work I have a curatorial role but I'm also responsible for IT at the moment. They are kept quite separate but why can't they be the same? Why is there competition between technology and what I might label my calling? We have to get away from the either-or perspective."

Technology is associated with work rather than play and love.

"I'm not a person who uses technology in a great way — I only have a basic computer at home. But I think my reason for not using it at home is because I've mainly used technology as part of my work — certainly the majority of my interactions with it in the last ten years have been work. I haven't used it for my passions and I think I could really do with being a little more tech-savvy so I can follow my passion and create new ways of doing things within the spheres I'm really interested in. And I wonder if why I'm yet to use technology to pursue my passions is because one of my main relationships to it is of disappointment. I get so disappointed, especially with my phone. This doesn't sync with that and when I look for advice online it's just too many words. It's really disappointing."

The need for Digital Therapy

The richness of this initial 'digital fear' conversation demonstrated the range of issues rarely spoken about in the context of digital innovation.

It also began to highlight an appetite for a space to explore digital creativity in a supported fashion. Perhaps too much digital development practice is predicated on diagnosis and treatment.

We create dependencies on external agencies and very rarely focus on developing people's confidence in their own powers and abilities. ☐

MATERIAL MATTERS: "WE DON'T KNOW WHAT IS POSSIBLE YET"

If we're to realise the true potential of the relationship between the arts and digital, we need to embrace the notion of digital as a material.

JAKE ORR

As a producer and commentator on digital projects for the arts, I am constantly reminded of digital's infancy. With every project undertaken, as a sector we often find ourselves exploring and experimenting in unchartered territory.

At times, it appears that digital calls for something unique, a different approach that turns the arts upside down. Seen through a digital lens, this can be at first difficult to comprehend. How do organisations think and play with a material and medium that is in a constant state of flux, evolving and enhancing every month?

For me, there are three distinct aspects of digital and the arts: digital as a material; digital as a medium; digital as a tool. Each of these aspects offer slightly different approaches to thinking about the relationship between digital and an art form.

"We have to encapsulate the idea of digital as a tangible and experimental material for artists to make work with."

As a material, digital becomes ingrained within the art itself and can be shaped and cut to an artist's need; it is something tangible. As a medium, digital offers a form of communication. As a tool, digital allows us to focus that communication.

We have, I think it's fair to say, conquered digital as both a tool and medium. It is the notion of digital as a material that we have yet to fully understand — how it can become something for artists to truly play and engage with.

In a recent discussion with Katherine Jewkes, the digital associate at the National Theatre of Wales (NTW), she made the case for digital "becoming just another material for theatre makers [to] use to make their work." That doesn't mean we forget the intention or story of the art itself; digital must be an enhancer for the work, not the sole driving force.

From my experience working with artistic leaders, there is a desire to work with digital, but a gap in the knowledge and purpose to make this possible. Digital is considered a specialism that requires a new language of work. My role as a digital producer is often to bridge this gap between the artist and the technology — to act as the middle ground. The producer aids the journey, allowing artists to explore and experiment.

There are some great examples of arts organisations pushing their explorations into digital through the introduction of technologists — such as a programme like Sync's Geeks-in-Residence. This is exciting because it acts as a form of education; a way to realise and understand the potential digital has for creative output.

It's often the case though that digital is bolted onto the core activity of an organisation, rather than something that is central to its ethos. But if the arts are to really progress further with the aid of digital, there has to be some important shifts of perspective.

We have to encapsulate the idea of digital as a tangible and experimental material for artists to make work with. We need to see it as central to an organisation's artistic statement and output; the lifeblood that runs through its veins.

And we should do this, not because funders demand it, but because we don't know what is possible yet. □

Jake Orr is a London-based freelance digital producer, theatre maker, thinker and writer. He is director and founder of A Younger Theatre and co-curator of Dialogue.

WHAT'S NEXT FOR SYNC?

Sync is a set of activities designed to support cultural organisations in Scotland to develop a more progressive relationship with technology and technologists. Generously supported by Creative Scotland, Sync is now in its second year and 2013 is proving to be a busy one indeed.

You may have picked up this copy of Sync's magazine at Culture Hack Scotland, our major annual event held this year in Glasgow. But if you were unable to attend the weekend of imagining, collaborating and making, you can hear all about it at our website welcometosync.com.

Another central part of Sync is the Geeks-in-Residence programme, and last year's geeks and their hosts created some genuinely imaginative and rewarding results. In the recently announced second round of residencies, developers and designers will be busy working with a new set of five amazing organisations. These new project ideas will be delivered before the end of the year — we can't wait to see what they come up with.

If Geeks-in-Residence is about making then the Sync Sessions are about conversation, pure and simple. We've hosted two sessions so far, bringing people in senior roles from a range of organisations around the table to discuss the human side of working with digital. What we discover then helps shape Sync's continuing work to encourage more experimentation and risk-taking in how the arts in Scotland engages with digital tools and thinking.

We hope, then, that you can join us for the rest of the Sync journey — and we look forward to sharing more projects, ideas and inspiration through our website and also in the third Sync publication later in the year.

We'd also love to hear from you with any feedback or suggestions.

You can email us at hello@welcometosync.com or get in contact via Twitter @synchq

SYNC TEAM, JULY 2013

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THE DIGITAL CULTURE MAGAZINE YOU'VE ALWAYS WANTED