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Björk: Biophilia

words by Steve Moles

Within 20 minutes, Björk had reduced this admittedly intimate audience to a trance-like state, me included. Two thousand strong, the audience at the Campfield Market Hall swayed, delirious with pleasure. A man behind me who'd come all the way from Scotland for the occasion had long since given up his soul to Björk's hypnotic chants. Mouthing the words - rather flatly it has to be said - he was serene. What we heard was beautiful in every sense, what we saw often magical.

On stage, 24 ululating girls from Iceland provided the ethereal choir; littered all about them were phantasmagorical musical instruments, with Björk in a wire wool wig that only she could make rakish. Here too were rare images of nature as we never see it; that the softened voice of Sir David Attenborough often accompanied them seemed the most natural thing in the world. The experience was totally immersive. Björk's *Biophilia* is making love to nature. It is quite simply rapture.

That she chose Manchester's nascent International Festival (MIF) for its world premiere is our good fortune; for Manchester her gesture confirms the rapidly growing significance of this event. Damon Albarn was up the road at the Palace Theatre premiering *Dr Dee*, his latest opera; Blow me, even Victoria Wood was here staging a premiere. For all those BBC employees fearful of the move from White City to Salford Keys, look no further than MIF. This is not London, it is very, very different; but it can take you places you might otherwise never get to enjoy.

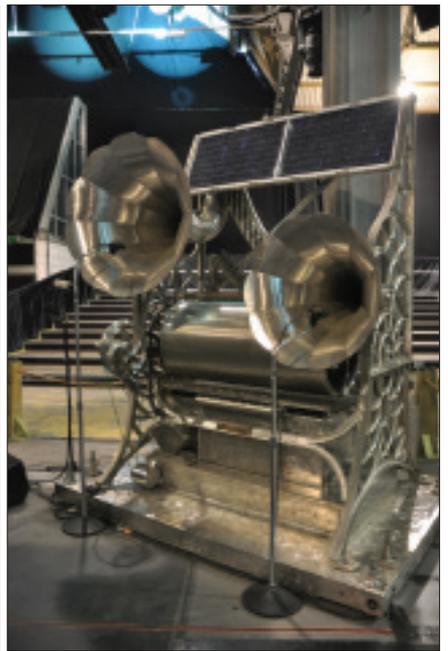
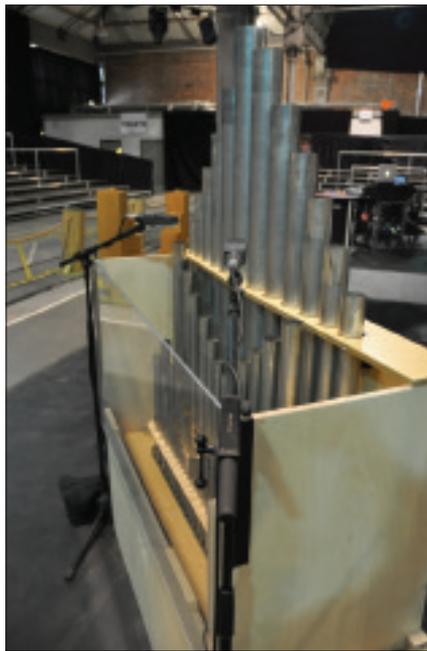
Sound

Conceptually, this latest offering from Björk is wound intimately into the iPod'osphere: Apps will be appearing concurrently with the album, the intention being that as you noodle away your train journey listening to the MP3 you will be able to riff along with the stunning visuals of the show. I shrugged my shoulders with indifference when I heard this, 'more navel-gazing for the disconnected generation' I thought. Hearing the show cleared my mind of such cynicism. While you indulge your ears and eyes in App in isolation, you might just be sucked down into a closer harmony with the natural world, and you won't be alone in there. If all that sounds rather pious, let's look at what you'll hear.

Having surveyed the weirder instruments - Sharpsichord, Pendulum Harp and Gameleste - and spotted the Tesla device lurking in its metal cage, I began by suggesting to house engineer Dave Bracey that he must be having something of a contentious time with mics and gain. "I wouldn't say that, Massive Attack also produce a lot of unusual sounds," Bracey has mixed MA for years, "though their sounds do come from more traditional sources. This is an amazing show - a mix of electronic technical instruments, and old-fashioned acoustic ones. Some have only been created in the last 12 months. The acoustic instruments are very quiet, and we are playing in the round so there are some difficulties."

The venue didn't look like it would be kind to Bracey; an old and frankly shabby Victorian cast-iron market hall, cruciform in plan with a central high lantern above the stage position. "When I first visited in May it was used for storage for the Science Museum and was lively to say the least, but we have had a lot of drape masking hung and it's now quite dry," he told me.

Bracey had only been approached to take on the job in April: Björk is normally the gig of Kevin Pruce but he's busy elsewhere. "I didn't take too much time thinking about it,"



said Bracey, "this was what I wanted to do. The opportunity to work with Björk couldn't be missed."

I'm not the least surprised: Björk's show is no easy task, but for the thinking soundman she is always a challenge one way or another, and in my experience Bracey is a highly skilled practitioner. "Listening to near-field monitors at rehearsals in Iceland doesn't tell you very much; until you get a PA into a building like this you don't know quite how hard it will be to capture a tiny pipe organ. There are very few engineers who could say they have lots of experience of in-the-round shows, especially at this scale, so yes it does create challenges that don't exist in normal shows. You have an artist on stage in very close proximity to eight Subs at her feet, and 12 points of PA immediately above."

Wigwam provides the PA, as they have done "since Björk first appeared on these shores in the Sugar Cubes," as Wigwam's MD Chris Hill informed. "The system is all d&b audiotechnik Q Series."

Each side of the square central stage sports a stereo hang of Q1s with a Q10 at the bottom pointing almost vertically down and barely two metres above head height - hence Bracey's comment about proximity. At the corners a Q7; the eight Subs are all B2s laid flat around the stage perimeter. Bracey didn't choose a cardioid sub system to help with the acoustic environment on stage: "She's a big fan of Subs and while I'm a big fan of the inherently cardioid J-Sub, the choice of B2s is deliberate to give her that feel on stage."

I imagined Pruce had probably forewarned Bracey of that requirement? "Kevin had never done this kind of show with her; he'd always had to contend with huge side-fills. So I figured if she was going to start with new engineers for house and monitors she might as well start with our approach. I have it all matrixed at the desk, including the subs, so for example I can close the closest sub to the pipe organ when it's in use."

So you can moderate the level from the PA at any point around the compass of the stage

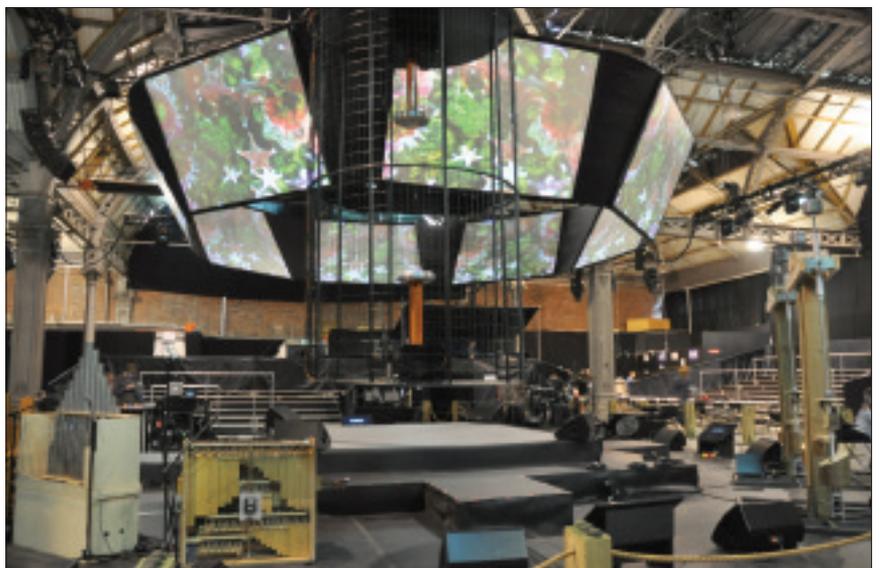
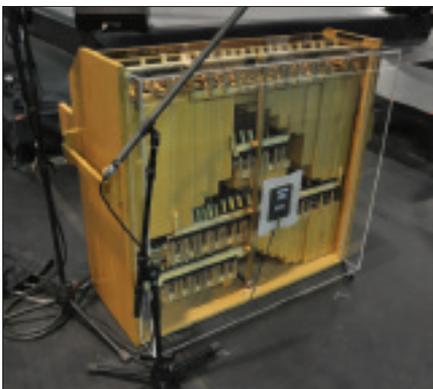
should she stray into field? "I haven't had to do that too much, but I've constructed it this way so I have that flexibility; there is a lot of gain on many of those microphones." You could argue the Q Series is ideally suited to such a room, fairly unique as a line system at 75° wide, and 15° per box on the Q1; more to the point, Bracey was able to drive at very comfortable levels. Mingling with the audience before the show I found many who were there for a second helping; two ladies from BBC Manchester with whom I shared the first hour of the show were typical and commented - without prompting - that the sound was not just "magical, but excellent in its rendering".

But how did Bracey contrive to capture all the weirdness? "The Pendulum Harps all have Schertler contact mics with Sennheiser transmitters." The four pendulums are three metres long, with a cylindrical arrangement of strings at their low end; the cylinder rotates for different notes to be plucked by the stationary plectrum as they pass it. "I chose Schertlers for the quality of the

Top, from left to right: The Pendulum Harps; The Pipe Organ; The Sharpsichord.

Below: The Gameleste.

Right: The stage set.



pick-up and it doesn't need phantom power; the rotating cylinder makes a wired mic' totally impractical. Björk has all wedges for her monitors so I do hear the low end of her voice in the sound board of the Pendulum, but they're only used in one song where it's just her voice and them. We did have to do some experimentation with the Pendulums; the plectrum was originally mounted to a wooden support at the side, but this plucked too rigidly and I need lots of compression to handle it; eventually we mounted the pick to a cable tie which gave just the right flexibility to apply a less pressured pluck. It's a quieter but much sweeter sound."

What about the Sharpsichord, it looks like the bastard child of an industrial laundry mangle mated to a giant pin-cylinder music box with a pair of old gramophone horns stuck on for ears? "There's a Schertler in the sound box with a pair of SM57s in the horns. Gives a nice stereo image and you can't do a show without 57s somewhere."

For all its size the Sharpsichord doesn't make a lot of sound, but the show is quiet, and the audience respectful enough that its contribution is not lost; I heard it alone in the afternoon and what I heard on the night missed nothing of its unusual character.

"Probably the pipe organ was the hardest to capture, we tried six or seven approaches. It's affectionately known as Albert; there's a 414 inside Albert, and a stereo pair of 414s above the extra pipe set. When still in Iceland I put Perspex across the front to funnel the sound up to the pair of 414s. The low pipes have a PZM on the curved wood.

The Gameleste was also tricky; it's a Celeste with the strike plates replaced with Brass ones and wooden hammers. Again I found I was a dab hand at attaching Perspex to the front. With an SM91 taped inside it sounds wonderful. Perspex because the instruments are beautiful and they wanted the exposed look." This exotic collection is

rounded off with a rifle mic for the Tesla, but what's it for? "The spark is triggered by a Sine wave and it provides the bass line to the opening song." You couldn't wish for a more exciting show opener.

Bracey has a DiGiCo SD7 for mix duties: "It's the desk I always mix from these days, it's not here just for all the matrix handling. Lots of things leave my desk and go to Matt [Robertson] the MD, sub-mixes of the electronic drums, for example, which he will filter and send back to me. Same with the choir mix, or the organ, or Gameleste - he may or may not modify; when he does it's deliberate. It's just all routed that way because for me to learn it all would be too time-consuming - I wouldn't be able to focus on anything else at the desk, a musical input like that would occupy me entirely."

The dynamic range of this show was vast, from *Oh So Quiet* to the voice of volcanoes. For me it was the concert equivalent of reading a medieval parchment in a quiet corner of the British Library: it wasn't just the words that were beautiful, the whole experience was a delight.

Monitors

Finnur Ragnarsson has only been working for Björk since the start of this project; like Bracey he is totally engaged by it and he cut straight to the chase. "The drummer and the electronic musician are both on in-ears, Sennheiser 300 series. Everyone else - the choir and Björk - use the wedges, d&b M4s, a very good wedge for this. For a small wedge the voicing is especially good. Like Dave I have a DiGiCo desk, an SD8; I'm entirely new to it. I have a fair bit of experience with the original D5 but not for some time."

As you're new to the role were the technology decisions taken for you? "No, it was more a choice by me and the guys at Wigwam. They have been really helpful. With the desk, for example, I'm a believer in figuring it out for yourself. I will go to the manual if I have to, but

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Björk Scratchings . . .

● **Dave Bracey:** "She is very hands-on and helpful with the FOH mix," said Bracey. "She stands out front and listens, knows what she wants to hear, and almost signs off on the mixes." So she's detailed and informative: useful for a musical structure that's unfamiliar? "It's similar with Massive Attack; the mixes are not obvious, even more so with Björk. I do get clues from the recorded version, but then, for example, there are string parts in the recording that have been replaced by the 24-voice choir. Some of the quirkiness of the drum beats and other sounds that pop up I got from the recording, but others you just have to learn from the played rendition. Having her input is very useful."

● **Lite beginnings:** It was Björk that gave Normandale his break into the touring industry and ultimately led to the formation of Lite Alternative. He recalls: "I was crewing at Scarborough, she was playing with the Sugarcubes ['Birthday' era, their first successful single c.1988] and the tour manager asked if I was interested in lighting the show. You do one show, someone sees it, and off you go."

● **The Sharpsichord** was built by Henry Dagg [[//plasa.me/sharp](http://plasa.me/sharp)]. He would be mortified if I described it as a giant musical box, for while the visual allusion is accurate, the musical rendition is far more subtle than the twang of sprung tynes - it's more a piano hammer action on strings. Dagg refers to it as a "pin barrel harp".

● **The Pendulum Harp** was conceived by Björk. [[//plasa.me/pendh](http://plasa.me/pendh), [//plasa.me/pend2](http://plasa.me/pend2)]

● **Gameleste** - again, built at the behest of Björk. [[//plasa.me/gamele](http://plasa.me/gamele)]

● **Pipe Organ:** A conventional instrument, known affectionately as Albert, it has its own pipe set with the keyboard, and is augmented by an off-board set of larger metal Bass pipes. It is here where you will see in the photos that Bracey has rigged a pair of 414s above the pipe tops behind the Perspex enclosure. For the main body (built-in) pipes of Albert, the pipes are wooden and Bracey said "more of the sound emerges at the whistle hole rather than the pipe tops," the mics here are rigged accordingly, which is not clear in the photo.

● **MIDI control, Paul Eastman:** "We have created a wireless MIDI network around stage so Björk can use the iPad to independently step through a sequence of tones from the pipe organ (Albert). The app I've developed to enable her to do this sends a trigger to me here in the Ice shed (a blacked-out bivouac between drums and keys), via MAX MSP patch (with input by Damian Taylor who collaborated with Björk on the album). That generates random sequences to play the organ for one song sequence." Eastman is almost a third member of the band, overseeing and maintaining the more complex technology artifacts of the show.



Photo: Carsten Windhorst

generally learning is about how to do something you achieve one way on another desk and the question is, how do you do it on this one? The guys at Wigwam could often answer that question for me, and Dave [Bracey] was really helpful. Of course, I have a Snapshot for every song; I'm producing nine mixes in total - three for in-ears, including my own. It's pretty much a full musical mix for everyone, Björk especially likes it full, the choir obviously need to hear themselves."

The girls, by the way, all use wired SM58s, although they do meandering all over the stage platform and around it: I saw just one mic cable snag all night. For novice live performers they have tuned their stage awareness pretty quickly. "The biggest challenge is that they all move, it's not like the choir is in one place while she's in another. I move their mixes with them, especially Björk's, manually cross-fading from East to North, from North to West, one fader up, one down, as she moves. It's completely un-choreographed, she goes wherever she wants, but she does help me in that she looks for a wedge if she needs to hear something in particular."

Even though you are adjacent the North side of stage you are operating in what we might call the FOH position, alongside Dave Bracey. Is that helpful? "Keeping a stable sound environment in a circular performance like this is made possible only by working together; more so than is true with a normal stage presentation. If I overdo it I'm in trouble." At which Bracey interrupted, "and there are times when I look to Finn . . . he helps me too."

For third show in, these two were completely on top of things, not because they had it nailed down, but - and it's a subtle difference - because they were confident in dealing with things. "Being the new monitor man isn't a problem, the main thing is to be

able to take what the day brings, and each day is different. That confidence comes from many things. When we rehearsed here, having Wigwam just one hour away was important; with some of the instruments we were making it up as we went along. They also gave us a pair of opto' mics - like conference mics that open their own gate when the user puts their face in close proximity - which we gave to the two musicians so they could talk-back directly to us during rehearsals. All those things meant we could quickly and comfortably solve problems." And, in turn, build and keep the confidence of the performers.

"The choir are also first-timers to amplified performance and we did have to school them in mic technique; they learned fast and all quickly mastered how to pull it away as they turn on their own power."

I commented to Ragnarsson that he seemed right at home with this show. "I got the job through my work with Sigur Ros, though in the last two years I've been working with Placebo." Lucky chap. "But a lot of Icelandic bands are like this - weird instruments I mean - so it's good training, especially with the mic selection thing; there's nothing in the manual for a Pendulum Harp."

Lighting

Before going to Manchester I took the time to read several national press reviews of the show's premiere the previous week. It seemed to me that the combination of Björk's established quirkiness and the exotic flavour of the instrumentation meant a lighting designer of Normandale's pedigree must be having the time of his life? "Oh no, my bit is easy," he said, with his usual propriety.

The circular impression of this square central stage is given by the flown screens above. Although an octagon of eight RP screens angled down at

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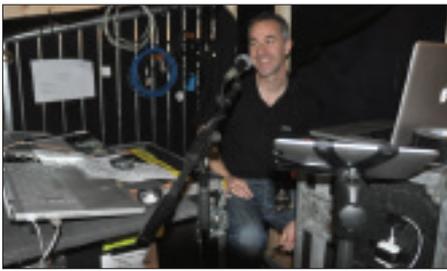
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Photo: Carsten Windhorst



From top: Dave Bracey (house engineer) with the DiGiCo SD7.

Lucy Ockenden (video programmer) and Andy Rhymes (Catalyst operator).

Paul Eastman (MIDI control).

Finnur Ragnarsson (monitors).

30° like a cupcake, the connections between them make it appear more circular than polygonal. Light trusses in short lengths are rigged independently round the four sides, with more rigged very high that Normandale might aim the odd moving light down through the halo of the screen assembly onto the centre section. He also has four further trusses out from the cardinal points: from each is suspended a Lycian followspot operator.

Easy in what way? "Her initial request was for no lighting, then maybe just a profile for each instrument," he says. Fortunately, Björk was Normandale's first ever client and he knew her well enough to know this lighting posture would be evolving. "As the show takes shape she realises she needs people, her audience, to be involved. Once she starts dealing with the reality of people in the room then the notion that nothing looks dark until you see something bright, begins to apply."

Is that always the case with her? "This is also her first 360° show, so it is a process of learning for her; learning that the choir are scenery in themselves. For me, the challenge is to light for the drama but the content on the screens and unusual instruments set the atmosphere, so it's important I try to not spoil that. I keep out of the way; the lighting is muted but not cautious. Where my lighting for Shakira [see LSi January 2011] is extravagant, this is the opposite."

The scattered trusses have a small variety of instruments: single-cell 1kW scoop lights are house lights for the audience, Wybron Superbeams, Profiles, MAC TW1s and MAC 700s. "She does like vivid colours, so we do run them quite hard; the choice of TW1s was perhaps a mistake in that respect. I chose them for

the choir, thinking along the lines of flesh tones to warm them up, but she doesn't like soft pastel tones, she wants them to glow." And glow they do: some deep, deep colours, not primaries, but still a rich confection for the eye when they emerged out from the dark stage.

"Emma Westerberg runs the Full Boar for me; she did Rufus [Wainwright] for me last time. She knows much more about theatre lighting than me and is ideal for this show."

"When an artist comes with a whole concept," he said of Björk, but also with reference to Wainwright, "it's bigger than just a concert." And this certainly was.

Video

As Normandale indicated, the visual element to this show is quite dominant. It is, however, pretty much exclusively un-doctored playback, and also not without its own little idiosyncrasies. I spoke to Lucy Ockenden, video programmer, and Andy Rhymes who runs the Catalyst off a second Full Boar. "Equipment is supplied by Stage Sound Services," began Ockenden. "We actually have 10 projectors, eight back-projecting from centre for the screens, and two rigged vertically projecting down onto the stage. The projectors are Panasonic, eight 5700s for the screens and a pair of 10000s onto the stage. It's all SMPTE time-coded, except for two songs; they can't be because they run to the Pendulum and the Sharpsichord, neither of which keep precise time. Andy has set that up so we can control speed of the video with a fader."

"It's simply one fader to speed up, one to slow down, with 'latest takes precedence'," added Rhymes.



Photo: Carsten Windhorst

Bottom: LD Paul Normandale's pre-visualisation of the set (Martin ShowDesigner software).

"My remit is to look after the content," continued Ockenden, "and to make sure it's in the right format ready for Andy. The trickiest thing is setting the projectors because they are so close together and they're only throwing two metres. They're rigged tilted to project flat onto the angled screens, the lenses are 0.8 to 1 Zoom, if they were fixed at 0.8 it wouldn't work. In here, every performance day they need a tweak; the screens are dead hung off the roof, the projectors off a flown circular truss within. Heat expansion makes the roof flex so the screens move with it. I've redesigned the set so at the next venue both screens and projectors will be flown off two independent trusses. The roof also leaks here, and right over the desk; well actually when it first rained there were leaks in quite a few places, but the one above where we operate from seems to be the only one that refuses to be sealed so we operate in a bit of a tent. That would be fine but with 2,000 people in here it gets unbelievably hot." She wasn't joking: I was amazed no-one fainted during this night's performance, and it was nowhere near the heat of the previous week.

"Content is designed and created by Snibbe [Scott Snibbe]. Their actual job is to design the Apps - the Apps came first, so you can interact with the music; they are kinda cute. On the back of that we then have to bring in something that image-wise is very similar to the apps."

I thought it was all BBC Bristol wildlife footage? "No, actually quite a lot is app-based animation. Upscaling an image that's crafted for iPad to what we want for projectors was a problem. From Snibbe's perspective, they don't have any experience of what's needed for a live show environment, but we got there. We also have something called Cymatic projection, it's that pattern generated with sand on a drumskin-like surface; you pass bass tones through it and it reacts in different patterns. That's projected down onto stage, that part of the content was filmed. There are also four LED flat screens around the floor. They're ostensibly for teleprompt, but they also have their own content."

Easily visible to the audience across what is a small stage barely above floor level, the addition of content is a small act of kindness to the punters in the immediate vicinity of the stage; more than anything it relieves them of a dominant word string scrolling across their line of sight. "The animations are by Steve Malinowski, it's a graphic visualisation of the music itself. Malinowski developed this software, Music Animation Machine. It's very good visually. It communicates strongly the notation of the music. We sometimes put it on the screens overhead as well."

"That's where my speed control is used most," said Rhymes, "it follows the music. The only thing you have to be careful of is not forgetting about the words. If the music has moved along faster, then obviously you need to speed along the words as a second function."

Neither Rhymes nor Ockenden had previously spent much time running teleprompts, certainly not prompts imprinted below a graphic animation that they were having to keep in time to the music as well. I can't say I ever noticed Björk waving frantically to them as she ran out of words. The pair has also added some POV cameras, "to give shots of the instrumental exotica, these are alternated with the content running screens above stage."

It was all rather lovely to watch, and Snibbe's animations could at times rival the genuine wildlife footage for colour and beauty.

And that was the over-weening sense of *Biophilia*: this was not a rock concert, but in its own way, no less involving than the grand spectacular presented by Take That just up the road at Man City Stadium barely a month earlier.

