# 2016 Conference Transcription

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| Date | Friday 1 April, 2016 |
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| Session Time | 10:15 - 12:15 |
| Moderator | Matthew Cobb |
| Speakers | David Benque |
| Notes | n/a |

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| Intro | Hello and welcome to FutureEverything 2016 Festival Podcast Series. Over two days, in Manchester's iconic Town Hall, we task designers, artists, scientists, and many more, to rethink our resources from life, earth and intelligence to community and uncertainty. Our speakers ask what we might need less and more of in our new future. Is life itself a resource and where do the ethics come in.<br><br>In this Life session we heard from designer and researcher David Benque, who joined us from the Royal College of Arts Design Interactions Department. His work focuses on synthetic biology and environments. His recent curatorial projects, 'Blueprints of the Unknown', look to how synthetic biology comes into contact with economics, politics and human beliefs. David's work looks at what happens when you put synthetic biology into systems that already exist. |
| David Benque | Thank you Matthew for this introduction and thank FutureEverything for the invitation.<br><br>If you're here, you've probably heard the phrase 'designing life'. In fact, I know you've heard it at least once because it's in your programmes as part of the description for this session. So in this talk, I'm going to try and give a quick overview of my readings of this phrase, which comes back quite often as a designer myself, and the different implications behind that.<br><br>So designing life is about synthetic biology and manipulating, editing and creating new living organisms, from scratch, we are told. So again, using this as a starting point, it's interesting that the word 'design' has come to be used as part of this of narrative, and the story that it tells about what we're trying to do in the life sciences. So this design is about manipulating the building blocks of life, and it's often represented as Lego, and who doesn't love Lego? I love Lego, as a designer. I love the idea that I'll be able to manipulate blocks of living organisms to create whatever I want. A bit like when I use Photoshop, I'm not concerned with machine code, but I'm just able to express my creativity. |

We're coming closer to these building blocks. Last week Craig Venter announced Synthia 3.0, which is the latest development in this quest to reduce life to its core components. In 2010, Synthia 1.0 had in order of magnitude more genes, and now we're zeroing in on these building blocks. In 2010, Venter named his discovery 'The Dawn of Synthetic Life'. This narrative is really interesting to me, and no doubt biology is breaking a lot of ground recently, but actually, this idea of synthetic life and artificial life is not new at all. In 1911, a French scientist called Stéphan Leduc, also talked about synthetic biology and designing life from scratch. By today's standards Leduc's work is more like chemistry. We don't consider this to be artificial life anymore. In fact, you can buy similar experiments in the gift shops of science museums and they are called Crystal Gardens. They are pretty, they grow, they simulate life, but again, we consider this chemistry and we're not satisfied that this is artificial life.

We've come a long way since Leduc, but it's fascinating to me that behind each step, each new discovery, we're claiming these get closer to this goal of artificial life, and the story stays the same, more or less, throughout centuries of scientific discovery. In this latest episode, or version of the story, design is playing a central role in the discourse and story that is being told. The previous episode was genetic engineering, and it was all about the engineer. But that didn't sit too well, especially in Europe with imaginaries of hard hats and cold precise practices. We weren't comfortable with imagining these guys messing around with life. The designer is a much friendlier figure. Design conjures up much friendlier, softer narratives about human creativity in which the control is not so much centre stage, but it's kind of assumed. Again, if you're using Photoshop, you're confident that you know how a computer works. So it's almost taking the science for granted. We have the tools, we have the CAT software, and we can just let our creativity run wild.

The other aspect in this story is that design sits within a process that we're familiar with. It starts on a sketching pad, there are prototypes, and then at the end we get a product to market. This is a big change in this story, where actually by using design, we're promising products rather than experiments. It's not about blue sky research anymore, but real applications for the real world. How much of this will turn out to be chemical gardens again, we don't know. Either way, even if it ends up being more like chemistry and growing stuff in vats, chemistry did have a pretty big impact since Leduc.

So that's pretty much where my work comes in. It's like, fair enough, or taking these products as a given, what happens when these hit the shelves? What happens when they come out of this narrative of production and they start clashing with the realities, both of life, that doesn't always want to follow our agenda, but also of other types of designs, other meanings of the word design? Like human intentions, conflicting motivations and interests, profits, and existing systems of healthcare, commerce, politics, etc.? So, what I've been trying to do is use design as well to try and ask these questions, and to look at how that future might look like on the messy part of this image.

That's what I've been trying to do, for example, with the project 'Blueprints for the Unknown' which was an EU funded research project that I ran at the Royal College of Art. This was about myself and six other designers coming together to use design as a problem finding tool, rather than the problem solving narrative we so often hear about. As Benjamin Britten said recently, these technologies are like pharmakon, part remedy but part poison as well. So any perspective where that emphasises one without the other is incomplete or dishonest. So we're trying to complete this view by using design against these materialised different notions of the future.

There were three main questions that we were asking. The first is the mutant products, so this was very much concerned with industry. What happens to your warranty, or to your business plan, when your product mutates at every generation? The second idea was this aesthetic relationship to nature and the role of the hobbyist gardener in the grand scheme of evolution. How does that play out? The third theme was this idea of the system and this notion that synthetic biology tries to look like electronics, tries to replicate down to the kinds of diagrams that are used; this computer analogy that keeps coming back. So seeing when that breaks and what the actual bugs in that system might be.

Some quick examples of the work that came out is 'Dynamic Genetics VS Mann' by a studio superflux which imagines the NHS as a provider of insurance, personalised based on your genome. So Arnold Mann in this neo-future is diagnosed with a high probability of disease and his premium goes through the roof. So he resorts to black market clinic to counteract this, and of course, he's caught. The project actually details all the evidence presented in court against him as a way to give us a glimpse into this disturbing future.

The second example is 'A Series of Reasonable Intentions' by Koby Barhad. Barhad arranged existing technologies, like 3D printing and an emerging ecosystem of bio DIY kits, into a really disturbing proposal that aims to take an artificial intelligence called Clever But and to print it out as an actual being. This is all speculative, but it's based on actual technologies. So we can see here how shifting different narratives which make perfect reasonable sense on their own and putting them together into this ethical monster can help us to ask these questions.

The last example is my own work called 'The New Weathermen'. In this project, I was interested in exploring this relationship between green activism and science, two things which are normally opposed. So I imagine this fictional group of activists who use synthetic biology as a form of direct action to either infect the petrol distribution system with bacteria, to convince people to boycott palm oil by giving them diarrhoea, or messing with copyrighted species of grass that are used on golf courses and lawns. This was an exercise, and also experimenting with the rhetoric of the maim and this new activism that we see everywhere, which is using jokes and pranks and humours, but to the service of strong political ideals.

There are seven projects in total, so I encourage you to visit the website for 'Blueprints for the Unknown'. They were presented as an exhibition, presenting all these specific but very different viewpoints on the topic.

As I mentioned, I'm interested in recurring myths and goals for the science, the stories that we aim towards and the science follows that path. Another one is this idea of growing meat in the lab, which we'll hear a lot more of from Abi. There is another project that I was involved in, starting right after August 2013, where this first tasting for a lab-grown burger took place in this highly televised setting. The burger costs three hundred and fifty thousand dollars and took three months to grow, so we have a way to go. Nevertheless, the story is taking hold, and comes back a few times a year as a priming our imagination for this new type of meat. No doubt, when you look at the present, between horse lasagne scandals and the fictional farms of Tesco, there is no doubt a need for a new narrative about the future of meat, and maybe a dire need for that. So can there be other ways? Science is not just used to DNA test what may be hiding in your burger, but to provide a reassuringly clean supply of burger meat. The problem though, when you look closer at in vitro meat, is that that story also has its problems. For example, the main obstacle to scaling up these productions is that they all use fetal bovine serum, which is the stuff that feeds baby cows in the womb. All of a sudden, this clean idea also becomes ethically questionable. No matter whether in vitro meat manages to scale or not, or whether it becomes successful or not, it tells a story again about science, and food, and culture, and about science feeding a growing population in the environmental climate that we're currently in.

Lots of people have thought about what this meat of the future might look like. Artists or [inaudible 14:21] were actually the first ones to grow a steak out of frog cells. Designers like myself and James King, or the people who run Next Nature, have speculated on different appearances that this meat might take. Actually, for this project, the stories around the food and about the power of technology to feed people became the subject almost as much as the technology itself. This was in part thanks to workshops that we ran with engineering students, and in part from this book from Warren Belasco who does a history of the future of food and details the different strands within that history. So he talks about the Corn Utopian Future, starting with [Marc La Condesa? 15:08] who is basically arguing that science will always manage to feed the world. [Maltes? 15:15] who is the opposite, saying that the population will grow exponentially and that we're headed for a famine. Then Godwin, who is the egalitarianism advocate, which says it's not about more forks or less plates, it's just about better table manners, and that if we split the food in a better way, then we'll manage to feed everyone.

So this helped us to situate in vitro meat as a kind of corn utopian story, which is the latest chapter in this long history of stories of science and technology feeding people. So we started to think about different formats that these stories have taken over the years. The World's Fair Exhibit emerged as an interesting example of using design and models to communicate visions of the future. Especially this example from New York in 1939, where a chain of winged Lobsters and a great transatlantic aqueduct, spilling roses into a desert, an avocado with five jewels growing from its skin, and a clock which races madly

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| | backward from inside an open tinned can, detailed these fantastical visions of the future and this infinite confidence that people had in technology at the time. So we decided to subvert this format and to use it to tell stories about in vitro meat, which are in the middle between utopia and dystopia, trying to bring these questions out basically into this grey area. Again, using design as tool to imagine, rather than prescribe, in many ways. So there are three dioramas that bore the aesthetic of the World's Fair and give different glimpses of scenarios where everything is going well, but no one is actually sure what goes on behind the scenes; or meat has disappeared completely and people have moved onto other types of protein, but specific niches still enjoy coming to private clubs to witness for slaughter procedures of cows. Or the fetal bovine serum becoming the crystallised commodity which we haven't found a replacement for and becoming the subject of this speculation, or high frequency trading crystallising the costs of this new meat.<br><br>These again are not trying to predict what will or will not happen. They are actually treating the future as a kind of design brief and imagining the multiplicity of that. So each scenario is based on different mixtures of Belasco's strands and also other research on whether animals and production methods are abstracted or presented. Each of these generated a design brief to imagine what a certain type of future might look like.<br><br>To summarise, designing life is about a story for me. It's one of these multiple stories that we're bombarded with every day about science and breakthroughs and technology. I hope I have given you an idea of how design can also be used as a tool to question these hypes and to use these different projects and approaches as a lance to understand where they come from, so the history behind them, where they might be headed, and the trade-offs and compromises that are hiding behind these optimistic promises. So I want to leave you with this brilliant classification system for Science News by Dean Bernard in the Guardian. So I encourage you to think about this the next time you hear the phrase 'designing life', and to think about whether any, or if any which ones of these labels might apply. Thank you. |
| Outro | We hope you enjoyed David's talk and thanks for listening. You can hear the rest of the talks from 2016 at futureeverything.org/2016podcasts. |

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