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PROFESSOR BRIAN COX

The man who made science sexy has the answer to life, the universe and everything

Presented by ZenithOptimedia #CannesLions





CAN DATA AND CREATIVITY CO-EXIST?

We live in a complex natural world. However, this complexity often masks an underlying simplicity of scientific principles that make sense of this world. By applying these principles, renowned scientist and broadcaster Professor Brian Cox has developed a highly engaging narrative that helps explain our life on earth. This has become the subject of acclaimed BBC series, *Human Universe*.

In June 2015, ZenithOptimedia partnered with Professor Cox to put on a seminar at Cannes Lions looking at the parallels between how scientists understand the natural world and how the advertising industry is now able to understand consumer behaviour. Professor Cox talked through some of the key scientific principles that help us unlock the mysteries around us. ZenithOptimedia's Global Communications Planning Director Sean Healy then explored this theme with Professor Cox to explain that while many still view advertising as a world of mysterious inspiration, it is actually underpinned by laws that are akin to scientific principles.

The seminar looked at how the new digital world is revealing clear patterns that enable us to develop new forms of creative engagement. Professor Cox and Sean Healy argued that far from restricting creativity, smart use of data is actually leading us into a new era of creative opportunity and effectiveness. The following is an edited transcript of ZenithOptimedia's seminar called *The Creative Universe*.



A PARALLEL BETWEEN SCIENCE AND ADVERTISING

SEAN HEALY:

The idea for this session came to me while watching the BBC's *Human Universe* series and listening to Professor Brian Cox talking about the measurability of the universe and how that measurability doesn't necessarily condition the outcome, in fact it promotes the natural amazing world we see around us. It really struck me after sitting in auditoriums at advertising conferences listening to debates rage about data and creativity that there is a really interesting parallel to me made between the natural world and world of creativity. So, let's start with one of the big questions posed in the *Human Universe*: Why are we here?

PROFESSOR BRIAN COX:

In the Human Universe we posed a series of big questions, such as 'Why are we here', and 'Is it possible to understand what happened before the big bang'. The central idea is a scientific one: that science proceeds by asking simple questions and then makes measurements. Nature is the gold standard against which we test our ideas. Sometimes this involves collecting data about the universe and trying to interpret it, and sometimes it's having a theory and doing experiments to test it. But, crucially, it's about valuing data and valuing measurements. Through data and measurements, we are able to create theoretical frameworks that suggest there may be answers to questions such as 'Why does life exist on this planet?' So, respect the data, look at the data, and analyse the data. From such humble beginnings you can be led to profound conclusions.



EVIDENCE CAN CREATE BETTER REVELATION

SEAN HEALY:

So picking up on that, there was a debate going on at Cannes Lions last year that suggested that data is not necessarily a force for good in our industry. It was suggested that science and creativity don't co-exist. It struck me that we are in danger of setting up a false antithesis in our industry - particularly given the digital data vapour trail that we are spending an awful time looking at. It also struck me that maybe that there is still a battle between evidence and revelation going on in our industry that in other walks of life was put to bed between the 16th and 19th centuries. I'm sure there are plenty of people in our industry who, on the one hand, have the latest wearable tech, monitoring their every heartbeat and move, but on the other are still not embracing all of the insights that data can bring to the creative process.

I think we need to go beyond a battle between evidence and revelation and at look at how evidence can create better revelation. There is a huge opportunity for account planning - in the broadest sense: creative agency, media agency etc- to make use of the goldmine of brilliant data that tech companies and media agencies have at their fingertips. We find measurable patterns in this data, but too often those measurable patterns don't get further than a search engine optimisation project. At ZenithOptimedia, we believe that they can actually make a strategic difference to the creative story. It's interesting that we talk a lot about big data, but sometimes it's the 'smaller' data that can make a real difference. We have great examples of where we have analysed our clients' customer data and discovered a breakthrough insight that has determined or shaped the creative strategy. Often, we find that it is the clients that are driving this data agenda. So, moving on, let's look at recurring patterns in the natural world, and the patterns we see in behavioural data. Brian, would you care to expand on patterns?



UNDERSTANDING PATTERNS IN THE NATURAL WORLD

PROFESSOR BRIAN COX:

One of the most beautiful examples of this from history is Johannes Kepler. You may have heard of him, he pre-dated Newton, and he was, in a sense, the first theoretical physicist. He came up with the idea that planets move in elliptical orbits, and really paved the way for Newton to lay down his theory of gravity in the 1680s. But there is another story about Kepler, which is that while walking across a bridge in Prague one day a snow flake landed on his jacket. He looked at it and he started to think: 'these all have something in common. They're all different but there is a commonality to them: they all have six-fold symmetry and a common structure'. He thought about this – in a startlingly modern way - and realised that structure, that similarity, that pattern was telling him something about the building blocks of the snow flake. It was telling him something fundamental about the laws of nature. He didn't know what that was though - he didn't know about molecules or atoms. But, beautifully, when you read what he wrote, he said that there's something here that he was not equipped - in fact that the human race was not equipped - to answer.

The question facing him - why the snowflakes have something similar about them - was an interesting one. We now know that the similarity is due to the structure of the water molecule, but the important point was that he was thinking very much like a modern scientist. Modern scientists when faced with regularity in nature will understand that it is a reflection of something deeper. Finding out what that deeper thing is, however, can be very difficult - you need to build the right theories. But noticing the regularities is the first step.



AN EVIDENCE-BASED BLUEPRINT DRIVES CREATIVITY

SEAN HEALY:

That's really interesting. In advertising and communications, we are looking for regularities when we scrutinise behavioural data - regularities that can help build a creative strategy, if not influence, execution. So, let's look at how those patterns build up into simple laws and how those simple laws create a blueprint for the natural world. There's a really interesting parallel for us here, as we're trying to understanding consumer behaviour and how consumers' interactions with a brand can help us to build an evidence-based blueprint that will give rise to fantastic creative output.

PROFESSOR BRIAN COX:

Essentially, there are two ways of doing science. Both require data. One way is that you notice regularities: you make an observation and try to explain it. To understand the other way, let's look at Einstein. He was the archetypal dreamer, the lone genius. One of our fundamental laws is Einstein's theory of general relativity. This is his theory of gravity, but it's also the theory through which we understand cosmology. Einstein's theory of relativity was built on an aesthetic judgement - it's a work of true scientific genius. The story goes one day he was sat in his office - not long after he had written down E=MC2 - and he was watching someone working on a roof across the road. He thought that if that man falls off the roof and on his way down he doesn't feel anything, he won't be experiencing gravity. The man's perfectly at ease with the world, until of course he hits the ground. That insight, that the man doesn't feel as if gravity is acting on him when he's in freefall, Einstein later described as the happiest thought of his life. And it was the happiest thought of his life because Einstein's Theory of General Relativity does remove gravity when you are in free fall. Einstein had a flash of genius that there is not a force of gravity acting on you in freefall at all, in fact the thing that's doing the accelerating, the thing that has the force acting on it, is the ground. The point for our purpose is that this was an aesthetic leap that subsequently built a theory. That's the other way of doing science. Both ways require creative genius and both require data.



CAN DATA PRE-DETERMINE A CREATIVE OUTCOME?

SEAN HEALY:

I think we are now forging a nice link between measurable patterns and the creative process, so let's to take this a step further now, and ask if those patterns constrain the outcome: do they determine what our view of creativity might be or is there still room for chance? A lot of people fear what data tells us, because they think it predetermines the outcome. Brian, what is the intersection between measurable frameworks and chance outcomes?

PROFESSOR BRIAN COX:

I think the main point is you can't derive the existence of human beings from the laws of nature. We're talking about hugely complex systems here. In fact, the advertising industry deals with the most complex system we know, human behaviour. So there's never going to be a way of predicting that with any precision. What we can do - which we can do with the laws of nature - is to predict statistically.

SEAN HEALY:

So what we are suggesting then is that data can shape the brief for whatever experience we need to create for consumers. And data can frame how we deliver it, but the executional idea is a human thing. Magic is created at the intersection of analysis and inspiration.

We're now going to look at the conditions for creativity. Brian, one of the really fascinating parts of the *Human Universe* features a Japanese sword-making family who have been working at their craft for 800 years. What's really interesting is the family understands the exact conditions that are required to produce the perfect sword, and I think there's something really interesting in the parallel that we can take from that. A big question for the advertising industry is whether we should be pursuing constants - are they a friend, or a foe? Can we hone down the things that we know to frame a process for better creativity? So, maybe Brian you can expand on constants and the brilliance of the natural world?



SHOULD ADVERTISING PURSUE 'CONSTANTS'?

PROFESSOR BRIAN COX:

There are constants of nature - numbers, like the strength of the gravitational force - that we can't derive. We don't know how to derive them. So we can't from the first principles, say the speed of light is 186,000 miles per second. We don't know how to derive that. It's the way the universe is. And there are a series of these things - the masses and the fundamental particles, most of which are not derivable - that are in this category.

A philosophical problem exists: constants have to be, apparently, very finely tuned indeed. If you make gravity a little bit stronger or weaker, or change the mass of the electron a little bit, or change the strength of some of the other forces, you end up with a universe where there may be no stars, stars might not form, or where those stars might not make carbon, and therefore you would have a universe that couldn't support life.

So at first glance, it appears that the constants of nature have been fine tuned in the same way the swordsmith fine tunes his craft to make the perfect Japanese sword. From this you might come to the conclusion that the universe was created, in some sense, for life to exist. And it looks like that superficially as we live in a universe that not only that has the building blocks of life, like carbon and oxygen and iron present, but actually a universe that has anything in it at all.

So these constants are the things you measure, that you have to put in by hand to our theoretical framework and the origin of them is not known. And this raises a profound and interesting problem: where did they come from?

SEAN HEALY:

That's a fascinating insight into scientific constants. I believe that in our industry we are looking to hone down the things that frame a process. As the ROI Agency, we are always pursuing the factors of success in everything we do. Whether that is the channel mix for a client or the composition and distribution of a piece of content. Through our content auditing approach, we are identifying the 'constants' of creative success within the sphere of digital brand publishing. To deliver this we analyse the consumer appetite for content via search and social conversation, together with the engagement rates for published content. This provides an empirical framework for more successful creative work. So, finally, we are going to return to the original question of 'Why are we here?'



SCIENCE REQUIRES INTERPRETATION AND CREATIVITY

PROFESSOR BRIAN COX:

Ok, so I'm going to talk a little bit about Inflationary Cosmology. The best explanation of the universe that we see today, the way galaxies cluster together or the fact that galaxies formed in the first place, is that there is something happening before the big bang. What is the big bang? Well it's the time that the universe was very hot and very dense - and we've measured the time back to that point and its 13.82 billion years, so it's a precise measurement.

The question is how did the universe come into existence, with the properties that we have observed? And the best theory that we have is that there was something going on before that; an exponential expansion of the universe; an expansion faster than the speed of light. Then that expansion stops, and in stopping the energy that's been driving that expansion gets dumped into space. The stars, the galaxies and the particles of which we are made come from that energy. So we measure time back to the point when inflation stops. And that's called inflationary cosmology.

So, you might ask the question 'how long is that inflationary expansion going on for before the big bang?'. The answer is, we don't know. We only know the minimum time. And here is a strange thing; most of the theories that tell us what may have be driving that inflationary expansion, also tell us that it doesn't all just stop at once. They tell us that it's more natural for that expansion to stop in patches, and with every patch you get a universe. So there was not just one big bang, but actually lots of big bangs. And they will still be going on now because somewhere out there, this inflationary expansion is still happening, and it's stopping in patches, and every time it stops you get a universe.

The interesting thing, that goes back to creativity, frameworks and data, and all the things with which we started the talk is that what are we to make of this? Interpretation is made by creative people: by artists, musicians, philosophers and theologians, because the meaning of discoveries is not really the province of physics. You don't find meaning in the universe through the end of a telescope, you find meaning by thinking about the framework that we've discovered. We have to work within the framework to discover the 'real framework', and that requires creative thought. For me that is where cosmology is leading at the moment. It requires interpretation and it requires creativity.



IT'S TIME TO RETHINK THE CREATIVE PROCESS

SEAN HEALY:

I think it's clear that data and creativity are inextricably linked. Physics - whether that's traditional physics, or social physics – are in essence creative practices and there is an awful lot we can learn as practitioners in the creative world from the focus on measureable patterns, laws and frameworks. No outcome is certain, but it is certain that there is a framework that can get agencies in our industry to a better outcome. Do we really believe after what we've heard today that creativity is a parallel universe, and that universal patterns, simple laws and frameworks don't have a place to play at a strategic level in our industry? My contention would be that we have never had a greater opportunity to reframe and rethink the creative process and to take advantage of the wealth of intent-based insight that media and technology companies are sitting on. And there's never been an easier time to deeply understand how consumers live their lives.



