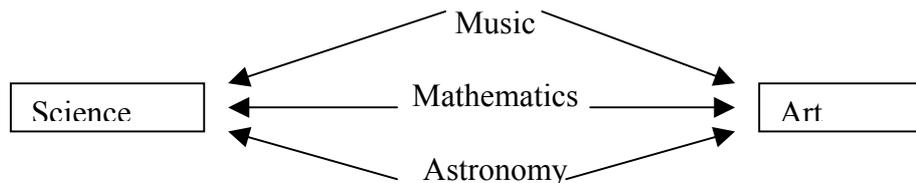


The Humour of Science.

By

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The many links between Science and Art are both well known and well exposed. C.P. Snow talked of the “two cultures”, which of course to the ancient Greek philosophers were just two aspects of the same culture. We have only to look, for example, at the precise scientific markings on a plucked string and our ability to produce harmonious and beautiful music to see the close connection between Science and Art.



There are of course many other connections – we may mention Science Fiction; the use of X-rays to see the guidelines underneath a Leonardo Da Vinci masterpiece; and who can look at a satellite picture of Saturn or Jupiter, a crystal of amethyst, of a living cell under the microscope, and not be utterly overwhelmed by the utter artistic beauty of science?

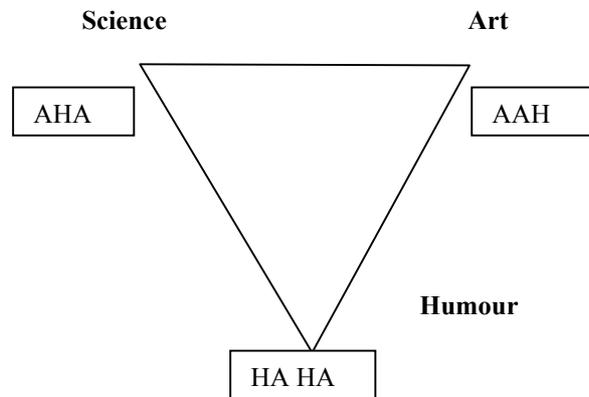
Closer to my own subject of mathematics, I find equations such as $e^{\pi i} + 1 = 0$ and $E = mc^2$ so beautiful in their depth and simplicity and I despair of ever being able to convey my feelings about them to others.

The Science-Art axis however, despite its excitement, is still a one-dimensional structure. There exists a more extensive two-dimensional structure which includes it – a triangle with a third vertex which sadly receives very little academic attention for reasons that are very hard to understand.

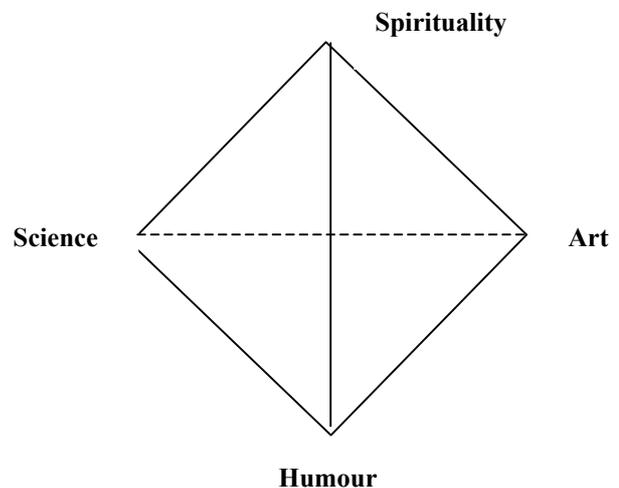
I refer of course to the topic of humour. Perhaps the reason for the neglect of humour is that we all feel we understand it perfectly and take it so much for granted. And there's another funny thing about humour – everyone you meet is an expert on the subject and is not ashamed to admit it. Now, personally, I wouldn't dare correct a Professor of Physics on Quantum Mechanics or a Professor of Medicine on Cardiology, but the fact that I have been studying humour and jokes for over forty years counts for absolutely nothing. My children scoff at my analysis of jokes and really believe that their analysis is more valid than mine. And have you ever heard of anyone admitting to having no sense of humour? People will admit to almost anything – murder, theft, liking jazz, but they will always add “say what you like about me but at least I have a sense of humour”. Yet we all know individuals who don't.

Let us examine the Science, Art, Humour Triangle in more detail. It has been described in various ways including the following: for Art there is the sensual AAH of pleasure; for Science there is the Eureka moment when one shouts AHA! – one of the ultimate pleasures denied to humanity at

except in minor versions such as crossword puzzles and detective stories. Finally humour has the explosive and almost universally experienced HA-HA of laughter, now sadly like many foodstuffs canned in the USA and cheapened and trivialised by overuse.



All are different kinds of pleasure and, without going into neurobiology, probably all experienced in different parts of the mind (humour is the chuckle-muscle according to Ken Dodd). But even this two-dimensional scenario will not satisfy one for long – a three-dimensional pyramid with spirituality at the top is an even more exciting prospect, but that is a discussion for another day.



The Art-Humour axis has of course been well-explored. We may mention the cartoon linking humour and drawing; the LIMERICK and CLERIHUEW linking poetry and humour; and who has ever listened to the great Spike Jones and has band mutilate the William Tell overture and ever felt the same again about classical music. Gerard Hoffnung, Victor Borge and Peter Ustinov and Tom Lehrer and others have also exploited the comic potential of music to a wonderful degree.

All of which brings us at long last to our main theme – Science and Humour. Why is this the weakest and least understood and studied link in the chain! First of all, there are two areas we must not confuse – the Humour of Science and the Science of Humour. As far as many scientists are concerned there is no humour in science and as far as many humorists are concerned there is no science in humour, but the reality is somewhat different.

It has been said that in theory there is no difference between theory and practice but that in practice there is. In theory, humour has no role in science, but in practice it has – every scientific discipline has its own distinctive humorous subculture; however, this does not appear in the textbooks except perhaps in the form of footnotes. Perhaps the reason is that,

SCIENCE IS PERCEIVED AS COMPLETELY SERIOUS
and HUMOUR IS PERCEIVED AS COMPLETELY FLIPPANT
and never the twain shall meet. Yet I remember well from school:

Johnny finding life a bore,
swallowed H_2SO_4 ;
Johnny's father, an MD,
gave him CaCO_3 .
Nowe he's neutralised 'tis true,
But he's full of CO_2 .

This, all will agree is more attractive, and indeed more memorable, than,
 $\text{H}_2\text{SO}_4 + \text{CaCO}_3 = \text{CaSO}_4 + \text{H}_2 + \text{CO}_2$
Which is the standard chemical way of presenting such information.

The Howler, or gross (student) mistake plays a big part in the humour of science. For example.

This substance is so dangerous it cannot be touched by human beings at all – only chemistry teachers.

Or the joint paper supposedly written by Einstein and Pythagoras: $E=mc^2 = m(a^2+b^2)$.
Or the most recent theory in Astronomy – that the rings of Satturn are composed of lost airline luggage.

Or the Biology professor and his research student walking together in the woods. The student stops, picks up a mushroom, and nibbles on it. The pair walk in silence for half an hour through the woods and finally the professor says “Congratulations, you have discovered a new edible fungus”.

Or the world's biggest and fastest computer that has just been built. Its memory is colossal – enough to hold all the books on theology and philosophy ever written, as well as all the works of science and technology. The first question that scientists asked it to answer was “Is there a God?” It whirred and flashed lights for a few minutes and then printed out THERE IS NOW! Or the Engineer, Physicist and Mathematician travelling by train together in a foreign country. They see what appears to be a black sheep. The Engineer says “Hey, all the sheep in this country are black”. The Physicist corrects him saying “You must be more precise – what you mean to say is that some of the sheep in this country are black”. The Mathematician says “I think the statement that you two are groping for is – In this country there exists at least one sheep which is black on at least one side. Now they are overheard by the dining car attendant who happens to heave a Ph.D. in Logic and this is the only job he can get. He adds to the mathematician's statement “- at the moment”.

And what is the difference between an introvert mathematician and an extravert mathematician?

When an introvert mathematician is talking to you he looks at his shoes; when an extravert mathematician is talking to you he looks at your shoes.

And you know there are three kinds of mathematician – those who can count and those who can't.

And what is the greatest unsolved problem in Physics? How one can sit on a damp towel for half an hour and realise that fact only when one stands up.

What is the biggest advantage of owning a computer? There is no law against giving it a good thumping or even a good kicking if it fouls up or won't do what you tell it.

Many comedians, or scientists who fancy themselves as comedians, such as Steven Wright, Dave Barry, Richard Feynman and even Albert Einstein have all either joked about scientific topics or given commentaries about science from a human point of view.

Steven Wright Last week I bought a new phone. I took it out of the box, hooked it up and pressed the redial button. The phone had a nervous breakdown.

Dave Barry My ambition is to buy a new computer that will not be obsolete by the time I take it out of the box.

Richard Feynhan (In answer to a student's question as to will there ever be an anti-gravity machine) You're sitting on one – it's called a chair.
He also described a device for looking through walls. It's called a window.

Albert Einstein The telegraph is like a very long cat. You stand on its tail in New York and it mews in Los Angeles. Radio is exactly the same, only there's no cat.

There are only two things that are infinite – the universe and human ignorance, but I'm not sure about the Universe.

In this vein we also have the following anonymous cracks:

There is a new device for getting dog drippings and chewing gum off the pavement. It's called a shoe.

To combat midges and mosquitoes cover your entire body in a sugar solution. It doesn't stop them biting but it rots their teeth.

And finally a quip from the legendary Samuel Goldwyn.

We've got to take the atomic bomb seriously. That thing is dynamite.

Where does all of this material come from and why? One cannot always tell, but its function is patently obvious. The aim is to humanise science, to make it more palatable, more doable, more attractive, and easier to understand and remember. And yet the "serious" scientist will still frown – while humour may have a humanising role in scientific education and in its communication to non-scientists, it still has no place in science itself and in particular in scientific research.

Such an attitude could not be more wrong!

Any great scientist or mathematician I have met (and I have had the pleasure of meeting quite a few) and every really bright student I have taught (and I have been very lucky in this respect) has had a keenly developed sense of humour and moreover, did not suppress this part of their makeup when doing scientific work. I would go so far as to say that there is a strong correlation between scientific genius and a sense of humour – there is a well-established link between intelligence and sense of humour.

Some scientific theories started their careers almost as jokes. A prime example is the theory of Continental Drift, Ocean Floor Spreading and Tectonic Plates in Geology. When proposed in the early 20th century it was regarded as simplistic, or almost laughably naïve; not it is central to all modern geology.

Chemists struggled to turn base metals into gold – more like magicians, wizards or bizarre comedians. The irony is that modern nuclear physics shows they were on the right track and that it can be done, but at a cost greater than the value of the gold.

Who would have thought that the dreaded Black Death – the Bubonic Plague was spread by fleas living on rats – that sounds like a rather sick joke.

And Darwin's Theory of Evolution - that humans are descended from monkeys? Actually, I'm still laughing at that joke.

Dr. Jenner's theory that people should be inoculated with cowpox or dead smallpox and then they will survive real smallpox. That must have appeared as a bit of a joke until it was seen to work in practice.

(This lecture was delivered at the UCC Science Faculty Public Lecture Series 2002-2003, on November 6, 2002.)