

# Poetic Scientists/Scientific Poets

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*'Art is the tree of life... Science the tree of death'*

This quote is from the 18<sup>th</sup> century poet and painter, William Blake. He expresses a view that literature has humanising aspects while the practice of science is dehumanising. This attitude to science has recurred so often that there has become a stereotype of scientists as people who do not care for, and are ignorant of, literary culture.

Indeed, about 40 years ago, just as it was becoming fashionable to dress in flares and listen to the Stones, another fashionable philosophy emerged: The Two Cultures. It was first clearly spelt out by scientist and novelist C.P. Snow. He said, in short, that there was one culture embracing science and technology, and another embracing literature and the humanities. People sat neatly in one or the other, but rarely in both. Snow urged both sides to communicate more.

## **Contrary Imaginations...**

A few years later the educational psychologist Liam Hudson wrote *Contrary Imaginations* in which – again, to oversimplify – he divided thinkers into two groups: convergent (scientists, engineers, mathematicians, etc.) and divergent (creative, artistic, good communicators).

## **Observational, jumping minds**

People would have probably found these sorts of claims laughable if they were dreamt up two hundred years ago, and in the last few years they have also been challenged. Many of the great advances in science (ideas such as gravitation, evolution, relativity) were the result of creative thinking – minds that observe and jump in directions never before experienced. And there have always been some poets who have written on scientific themes, and some scientists who have written poetry (see *Poems of Science*, attached).

## **A marriage of science and poetry**

October 4 2001 was National Poetry Day. On that evening in the lecture hall of Britain's foremost scientific society, The Royal Society in London, a special reading of science-based poems was held. The readers were four Fellows of the Royal Society and three contemporary poets. The next month a special meeting was held at the Royal Institution in London to read and discuss the poetry of one of the greatest former directors of the Royal Institution, Sir Humphry Davy.

Several suggested poems are presented here as a starting point. The poets include a Nobel Prize Winner in chemistry (Hoffmann); an immunologist, nominated several times for the Nobel Prize for Literature (Holub); a Welsh clergyman, also nominated for the Nobel Prize for Literature (Thomas); and two of our best-known contemporary poets (Clarke and Shapcott).



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## What you need to do

Your teacher will have decided on suitable poems for you to study. A selection is attached for you to look through.

Read your chosen poems. Discuss the background and intent of each poem, and the relation between scientific content and artistic and emotional effect.

## Resources which might help you:

A Quark for Mister Mark, (101 Poems about Science), editor Maurice Riordan and Jon Turney. Faber and Faber, 2000. £6.99

Poems of Science, editor John Heath-Stubbs and Phillips Salman. Penguin, 1984.

Out of print; available from libraries.

## Selected websites:

[www.rsthomas.com](http://www.rsthomas.com)

[www.gillianclarke.co.uk](http://www.gillianclarke.co.uk).

## If you want to go further

Find more poems to illustrate ideas.

**Times Like These**

Too heavy-hearted to go walking  
in beech-woods. At night the children's sleep  
is racked by dreams. They wake crying of war.  
Pushing a pram in 1961,  
I remember how love weighed, anger shored  
against helplessness, how we wrote letters  
to the papers, raged at Strontium 90,  
the bitter rain that stained our mother-milk.

Yet my daughter's beautiful,  
and my daughter's daughter, even then printed  
in the womb of the waking embryo,  
now resolves into her elements.  
Shadow on shining, here she comes dancing  
through the bright window of ultra-sound,  
fiercer than death and kicking to be born.  
In times like these we should praise trees and babies,  
and take the children walking in beech-woods.

**By Gillian Clarke****From: Collected Poems (Carcenet, 1997), by kind permission of Carcanet Press Ltd.**

**Entropy**

Your coffee grows cold on the kitchen table,  
which means the universe is dying.  
Your dress on the carpet is just a dress,  
it has lost all sense of you now.  
I open the window, the sky is dark  
and the house is also cooling, the garden,  
the summer lawn, all of it finding an equilibrium.  
I watch an ice-cube melt in my wine,  
*the heat of the Chardonnay passing into the ice.*  
*It means the universe is dying: the second law*  
*of thermodynamics. Entropy rising.*  
Only the fridge struggles to turn things round  
but even here there's a hidden loss.  
It hums in the corner, the only sound  
on a quiet night. Outside, in the vast sky  
stars are cooling. I think of the sun  
consuming its fuel, the afternoon that is past,  
and your dress that only this morning  
was warm to my touch.

**By Neil Rollinson****From: A Spillage of Mercury (Jonathan Cape, 1996), by kind permission of the author.**

**Brief Reflection on Accuracy**

Fish

Always accurately know where to move and when,  
and likewise  
birds have an accurate built-in time sense  
and orientation.

Humanity, however,

Lacking such instincts resorts to scientific  
research. Its nature is illustrated by the following  
occurrence.

A certain soldier

had to fire a cannon at six o'clock sharp every evening.  
being a soldier he did so. When his accuracy was  
investigated he explained:

I go by

the absolute accurate chronometer in the window  
of the clockmaker down in the city. Every day at seventeen  
forty-five I set my watch by it and  
climb the hill where my cannon stands ready.  
At seventeen fifty-nine precisely I step up to the cannon  
and at eighteen hours sharp I fire.

And it was clear

That this method of firing was absolutely accurate.  
All that was left was to check that chronometer. So  
the clockmaker down in the city was questioned about  
his instrument's accuracy.

Oh, said the clockmaker,

this is one of the most accurate instruments ever, just  
imagine,  
for many years now a cannon has been fired at six o'clock  
sharp.

And every day I look at this chronometer  
and always it shows exactly six.

So much for accuracy.

And fish move in the water, and from the skies  
comes a rushing of wings while

Chronometers tick and cannon boom.

**By Miroslav Holub**

**Translated from the Czech by Ewald Osers**

**From: Miroslav Holub, Poems Before and After: Collected English  
Translations (Bloodaxe, 1990), by kind permission of Bloodaxe.**

**In the Bath**

She was interested in prehistory.  
It didn't seem so long ago and offered  
Pleasant notions of a time before civic duty,  
When disease was accepted and fought through,  
Or not. Hers wasn't a museum interest:  
It was as tight, neat and uncomplicated  
As a reef knot. 'If I came here as a visitor  
From Mars, I would be impressed by the water,  
The relative health of the inhabitants, the indecent  
Urge of atoms for complexity – they don't just split  
Once, think they're clever, and then stop.' She imagined  
Her body cells spreading like a film to cover the earth,  
Coating every frond in the tropical rain forest,  
Every blade of grass on the pampas. Herself  
Spread thin and making the surface of the world  
sparkle. It was a stunning vision of the future.  
She lay in the bath with the water touching  
her all over, and remembered that not even  
the most tender lover could do that. She wondered  
if every molecule on the surface of her skin  
was wet and what wet meant to such very  
tiny matter. To make things worse, or at least  
more difficult for the water, she raised her body  
slightly, building an island chain of hip bones,  
belly, breasts all of which began to dry at once.  
She loved the water trails over her body curves,  
the classical lines between wet and dry  
making graph patterns which she thought might follow  
the activity of her brain – all she wanted  
was to be a good atlas, a bright school map  
*to shine up the world for everyone to see.*

**By Jo Shapcott**

**From: Her Book: Poems 1988-1998 (Faber, 2000), by kind permission of  
Faber and Faber Ltd.**

**At It**

I think he sits at that strange table  
of Eddington's. That is not a table  
at all, but nodes and molecules  
pushing against molecules  
and nodes; and he writes there  
in invisible handwriting the instructions  
the genes follow. I imagine his  
face that is more the face  
of a clock, and the time told by it  
is now, though Greece is referred  
to and Egypt and empires  
not yet begun.

And I would have  
things to say to this God  
at the judgement, storming at him,  
as Job stormed with the eloquence  
of the abused heart. But there will  
be no judgement other than the verdict  
of his calculations, that abstruse  
geometry that proceeds eternally  
in the silence beyond right and wrong.

**By R.S. Thomas**

**From: Collected Poems (J.M. Dent, 1993), by kind permission of The Orion  
Publishing Group Ltd.**

**Modes of Representation**

If you look in old chemistry books  
you see  
all those line cuts  
of laboratory experiments  
in cross-section.  
The sign for water  
is a containing line, the meniscus  
(which rarely curls up the wall of the beaker),  
and below it  
a sea  
of straight horizontal dashes  
carefully unaligned vertically.  
Every cork or rubber stopper  
is cutaway.  
You can see inside  
every vessel  
without reflections, without getting wet,  
and explore every kink  
in a copper condenser.  
Flames are outlined cypresses  
or a tulip at dawn,  
and some Klee arrows  
help to move gases and liquids the right way.  
Sometimes a disembodied hand  
holds up a flask.  
Sometimes there is an unblinking observer's eye.  
Around 1920  
photoengraving  
became economically feasible  
and took over.  
Seven-story distillation columns  
(polished up for the occasion),  
like giant clarinets,  
rose in every text, along  
with heaps of chemicals, eventually in colour.  
Suddenly  
water and glass, all reflection  
became difficult.  
One had to worry about light,  
about the sex  
and length of dress or cut of suit  
of the person sitting at the controls of this impressive  
instrument.  
Car models and hairstyles  
dated the books more  
than the chemistry in them.  
Around that time  
teachers noted a deterioration  
in the student's ability to follow  
a simple experimental procedure.

**By Roald Hoffmann**

**From: Gaps and Verses (Univ. Press of Florida, 1990), by kind permission  
of the author.**

**About Planck Time**

Once upon a time, way back in the infinitesimal  
First fraction of a second attending our creation.  
A tiny drop containing all of it, all energy  
And all its guises, burst upon the scene.  
Exploding out of nothing into everything  
Virtually instantaneously, the way our thoughts  
Leap eagerly to occupy the abhorrent void.  
Once, say ten or twenty billion years ago  
In Planck time, in no time at all, the veil  
Available to our perceptions was flung out  
Over space at such a rate the mere imagination  
Cannot keep up, so rapidly the speed of light  
Lags miraculously behind, producing a series  
Of incongruities that has led our curiosity,  
Like Ariadne's thread, through the dim labyrinth  
Of our conclusions to the Place of our beginning.  
In Planck time, everything that is was spread so thin  
That all distance is enormous, between each star,  
Between subatomic particles, so that we are composed  
Almost entirely of emptiness, so that what separates  
This world, bright ball floating in its midnight blue,  
From the irrefutable logic of no world at all  
Has no more substance than the traveller's dream,  
So that nothing can be said for certain except  
That sometime, call it Planck time, it will all just  
Disappear, a parlor trick, a rabbit back in its hat,  
Will all go up in a flash of light, abracadabra,  
An idea that isn't being had anymore.

**By George Bradley**

**From: Terms to be Met (Yale U.P., 1985), by kind permission of Yale University Press.**