

THE ESSAY

Art in the time of science

Elegant equations, beautiful machines – the scientist and the aesthete make natural friends, writes JOHN CLARE.

A notice in the old Sydney trams, warned: "PAY YOUR FARE!" A few erasures changed this to "PAY YOU APE!", which simply slayed us. Nearby an ad challenged: "Are you mechanically minded?"

"I am!" said my friend Graham Nelson.

This seemed to me to be the rallying cry of a brave new culture, in which I had a half membership at best. While Graham laughed readily, it was unlikely he could have devised the ingenious (to our young minds) joke before us. Conceivably, I might have. Graham's jokes were practical, often involving explosives and lethal projectiles. I liked doing funny drawings and playing with words.

Like Graham, my father had brilliant technical ability. He was also tuneless and had no interest in the arts – except for the idiom of manly, bellowing songs, such as *On the Road to Mandalay*.

My father was Polarised Mechanical Man, a product, you might speculate, of the industrial revolution. Yet his mother had been a famous art teacher. Furthermore, my great aunt, Eliza M. Mutton, wrote a highly regarded textbook, *Plane and Solid Geometry and Perspective Drawing*, for university students. On the last page she advertised her services as a piano and painting teacher.

They are around, these integrated personalities. The important Australian jazz pianist David Martin was also an aeronautical engineer, working on the Concorde, among other things.

If you were looking for a thoroughly modern renaissance man, however, I would direct you to Roger Dean, the vice-chancellor and president of the University of Canberra.

Dean runs a sonic communications research group and still does some "wet" biochemistry. He came to Australia in 1988, from Manchester, to be the foundation director of the Heart Research

Institute. He is also a renowned classical double bassist and has performed some especially difficult works with the Australian Chamber Orchestra.

Dean is also a jazz pianist, a composer and performer of electronic and computer music, and a free improviser. Many of these elements come together in his band *australYSIS*. Confound it, he also has ability in the visual arts!

Dean is comparable, undoubtedly, to Britain's Dr Jonathan Miller (*The Body In Question*), but he doesn't just *know* a lot about art and science: he is a virtuoso performer. We will return to Roger Dean.

It seems highly probable technical and artistic gifts were dealt out just as unequally in the time of Leonardo da Vinci as they are today and that they were found in polarised concentrations or integrated combinations, as now. Since the industrial revolution, what has perhaps changed is our attitude, or rather the polarisation of our attitudes.

Even an object such as a car, in which science, technology and aesthetics combine, can divide us. Some of us see certain cars as great kinetic sculpture. Others dismiss this attitude as a weakness for boys' toys. Some see only the form and colour, and have no interest in the engine. Some think that red cars go faster.

Would these be considerations for people in another time discussing a coach and four? In fact, beauty and practicality would both be sought, as in a car, but with no controversy as to whether transport could be considered beautiful.

Perhaps our neurotic concerns derive from the fact that science (with technology in train) has separated itself from other disciplines and dominated them, where once it was subsumed.

It was not until the late 19th century that the great public schools of England had science teachers and for a long time they were not allowed to sit in the masters' common room.

Dutchman Gerard Mercator was surely a scientist, but there was no such category in the 16th century. Mercator's "projection" addressed the problem that a globe, unlike a cone or cylinder, cannot be cut and unfolded into a flat map without great distortion. His solution involved compromises but, with accompanying tables, it allowed navigators to plot a straight course.

Mercator's discovery has served us for 400 years - it was recently used to map the surface of Mars - but he seemed to draw no more satisfaction from this than he did from his engraving style, or his beautiful globes and instruments, which were prized as works of art as much as for their practical applications. Mercator was an artist and a scientist, but saw himself, above all, as a classical scholar.

Isaac Newton was sure that, for him, immortality lay in his rather offbeat theology, rather than in his formulation of the laws of thermodynamics.

How the emphasis has changed. In our time, science and technology have moved far out in front of the pack of intellectual and cultural disciplines.

Indeed, it seems to me that science is now so advanced that progress can be achieved only by suspending aesthetic considerations, along with the mythology and theology that was once bound up in all intellectual discipline - just sweeping them out of the road and getting down to serious business.

I put this to our modern renaissance man, Roger Dean. Clearly he thought I was referring to scientific myths, but his answer was more interesting for that.

"Mythology? The problem there is that most people don't want to challenge it and one has to do so, but can be unpopular in so doing. And I don't mean in the sense of a Kuhnian revolution. Even if you want to change a minimal portion of the dogma/paradigm, people just presume that it is right and don't want to consider [alternatives] even in the conventional analytical framework ..."

Thomas Kuhn is the author of *The*

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Copernican Revolution (1957) and *The Structure Of Scientific Revolutions* (1962).

"As to aesthetic considerations," Dean continued, "Actually, I find that I enjoy them and they influence the way I present things and the extent to which I enjoy a particular result."

Prominent mathematicians have spoken of "elegant solutions". Lack of elegance can make them suspicious of their results. Many TV programs have shown us that aesthetics are integral to nature. Artistic success and aesthetic pleasure are sought as avidly as ever. But can modern science and technology be reintegrated into the spectrum of artistic endeavour, bearing in mind that the forms of industry are still often seen, in William Blake's terms, as "dark Satanic mills"? Bearing in mind also that beautiful cars are still dismissed as boys' toys, except of course by the women who are attracted to them. Do they just see them as dollar signs? I cannot believe that.

Most artists are interested in science, even when their admirers are not. From early in the 20th century, painters were influenced by the flickering images seen on film and from speeding trains and cars; by

Other painters depicted technology obliquely. Before the photorealists it were the precisionists (1920s-30s), as Americans Charles Demuth and Ch Sheeler. Demuth famously caught energy of New York fire truck No. machine-cut, brass-coloured and bright red and yellow shapes, all separating thrown out at you from a centrifuge. expanding duplications of the numer suggest both speed and noise. She evoked the calm emptiness of unpeopled industrial landscapes. Particularly he ing are his views of empty ships dominated by the searching presence periscope-like vents, with their mysterious, shadowed round eyes or mouths.

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Before he became a champion road cyclist, a scientific instrument maker and finally a systems analyst, the mechanical and very human Graham Nelson led me on many adventures. The sandhills, cliffs, Chinese market gardens and swamp of our region combined with the powerful forms of industry in a thrilling and never-forgotten way. There is geometry out on the flat world of Mascot airport that is still more potent to me than all your alchemy and signs.

Perhaps this is why modernism attracted me at an early age. Nor am I alone. Perhaps this is why the cubist Fernand Leger is such a favourite, of mine and of many others. He worked intimations of machinery into a number of his paintings, with their beautifully jumbled, quasi-geometrical and refracting planes. From his socialist perspective, Leger believed machines would liberate mankind. I was not sure about that. I just loved his art.

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Other painters depicted technology less obliquely. Before the photorealists there were the precisionists (1920s-30s), such as Americans Charles Demuth and Charles Sheeler. Demuth famously caught the energy of New York fire truck No. 5 in machine-cut, brass-coloured and bright red and yellow shapes, all separating as if thrown out at you from a centrifuge. The expanding duplications of the numeral 5 suggest both speed and noise. Sheeler evoked the calm emptiness of unpeopled industrial landscapes. Particularly haunting are his views of empty ships decks dominated by the searching presence of periscope-like vents, with their mysterious, shadowed round eyes or mouths.

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In Australia, Jeffrey Smart is the best known, but not the only, painter to tap the energy of brute geometrical rhythms and the raw, acrid or fluorescent colours of containers and lorries.

Jazz was heard as both modern and primitive (the city as jungle). Jazz and rock and roll songs have been inspired by cars, trains and planes. There is also programmatic concert music about trains, and even a *Spitfire, Prelude and Fugue* by William Walton. Of these the greatest are Duke Ellington's brief *Daybreak Express* and *Happy Go Lucky Local*.

While any literature celebrating science and technology will run certain Stalinesque risks (odes to tractors on the collective, for instance), there is quite a bit of good stuff. My favourite is the American poet Hart Crane's (1899-1932) celebration of Brooklyn Bridge. The surging song of Crane's *The Bridge* sweeps up much of American history and myth. In the *Cape Hatteras* section, where the Wright brothers appear, we encounter this couplet: "Seeing himself an atom in a shroud/Man hears himself an engine in a cloud"

Also: "... but fast in whirling armatures/ As bright as frogs' eyes, giggling in the girth/Of steely gizzards . . . The bearings glint, - O murmurless and shined/ In oil rinsed circles of blind ecstasy!" Yes, it's an ode to ball bearings, but I don't think Stalin would have gone for it.

New technology has always affected and influenced art, but no technology has had the breadth of application in science, industry, commerce and the arts as the computer. I spoke to saxophonist-composer Matt Cee, who can notate music but almost exclusively composes on his computer.

"Bach," he pointed out, "had a choir and instrumentalists in the church so he could hear exactly how new music sounded. It's more complicated now. But with a computer you can hear your work straight back. The way music is composed is changing. It's cut and paste. You don't have to study music for years in order to compose. It's more intuitive. I'm not saying it's better."

I suggested higher levels of sophistication were attained by studying the technology itself.

"Yes, you learn to be a technician, a producer. Take someone like Square Pusher, who is a virtuoso bass player. His technical, electronics virtuosity is also on the surface. People hear it with the awe they feel listening to a great instrumentalist or singer. But there's also insane things going on behind Britney Spears, for instance, but probably only other producers know what they are doing."

Those who are awesomely advanced on the computer are still called geeks or nerds, not always affectionately. But many see them as cool and awesome. In very many important ways, computers have accelerated the acceptance of technology in artistic endeavour.

John Clare is a *Herald* writer.

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