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EEEEEEE         MM   MM    AA    IIIIII LLLL   From: John Bray
 EE   E         MMM MMM   AAAA     II    LL          jbray@cix.compulink.co.uk
 EE E           MMMMMMM  AA  AA    II    LL          28 Russell Court
 EEEE    ****** MMMMMMM  AA  AA    II    LL          Oakhill Crescent
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  AAAA   PP  PP   AAAA   22  22  Down a dirty Line - John Bray
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 AA  AA  PPPP    AA  AA   2222   Tarnover City One - Mark Nelson
 AAAAAA  PP      AAAAAA  22      You Can't Get There From Here - Paul Marrow
 AA  AA  PP      AA  AA  22  22  Solutions for Trope Exhaustion - Neal T
 AA  AA PPPP     AA  AA  222222  The Ballad of Polly Nomial - Anon
                                 Talking Point - Paul Cray
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****
Down a Dirty Line - John Bray
****

Comments to the inaugural issue were favourable, though no-one would risk a beautiful friendship by saying anything else ... would they!

Sorry about the technical problems with splitting 80 character lines, double postings etc. I've shortened everything to 75 columns this time, and won't screw the mailer this time with a 30 userid cc list. Thanks to Paul M, Mel, Tim, Dave, Neal etc for suggestions on it all [Adrian - your offer of formatting text is appreciated, but you're talking to a man who wrote his own word processor - would you like a cosy chat over the source code some time ...]

(Tidied version of #1 available if anyone wants it)

Load of people asked why 'Earth Calling Biscuit Barrel'. I'm not sure, but then I picture you all reading this mid-morning, chomping away. To get into the mood, why not treat youself to the suggested packet and savour the intellectual (and monosodium glutimate) bonding this missive engenders.

Next Time

Thanks for all the response. If this keeps up something should come out every 3-4 weeks, with the next one the week before Mexicon (who's going?). I'd like to do something on the other magazines going the rounds, I've got Quanta 2.3 and 3.1, Neal sent me the first Intertext, but would like to see any others (Eric Klien's ELECTRONIC PROTOCOL - Mark, Dargonzine anyone?)

Who went to Speculation, should I wear shinpads, tell all.

In response to Tim, I accept anything, from anyone. I don't care where else it appears, material from the OUSFG newsletter and proto SFinx would fit in quite well, with not too large an overlap. Just send it as ordinary text and I'll fix it up.

Dave promises a sneak preview of what may be a JBIS paper on SETI type stuff at some point when he's done the maths, and when Tom (the *trombonist*) gives him Artificial Life back.

Could you send in your Maths Purity scores from #1, I want stats.

I'll put in a list of 'SF fans on e-mail' next time. I've got some from Ivan, others promised by Steve, but more would be appreciated.

****** Bollox ******

A big danger of editing something like this, which editors of can fall into, is get your retaliation in first, prempting discussion of articles they've read first. To avoid this I'll try to say nothing on the current articles, but wield my cut-and-paste axe over them all next time round. [My comments are in square brackets].

Dave Clements [Not so much comments as contribs]

Here come some instant reactions to some of the pieces, little more than that really, but no ranting flam-wars here [so tempting to change that to flan-wars] just some sort of 'idea bites' suitable for this new 'instant reply' medium...

Past Shock
==========

Societal change as yet another example of chaotic dynamics, with the infamous 'Butterfly effect' making prediction infinitely hard. Still, if its all dependent on individuals, one person at the right place at the right time could have some very odd effects. Hitler, perhaps, is an example.

Are we seeing an end to the old adage of historical inevitability, and the return of the individual rather than the society as the prime mover of all change?

(NB. The Berlin Wall contains a very high asbestos content... Souvenir collectors be warned).

What is the Drexler book? [Engines of Creation about the wonders of nanotechnology - I've not read it, has anyone]

Reviews
=======

I certainly agree that The Sea and Summer was a great book, despite what John Gribbin said when it was awarded the Clarke Award... [what?]

Sceptics
========

Definitions... What is supernatural? As Clarke said, any sufficiently advanced technology is indistinguishable from magic... Try showing a TV to a cave man and see what reaction you get!

More quibbles... If Godel's Theorem applies to the real world, and I see no reason why it shouldn't, then science can never be complete. Good news for us in the business....

Meanwhile...

As a fellow scientist and astronomer, I should support Paul completely in what he says, and indeed the logical, professional part of me goes along with all of what he says. Science has proved phenomenally more successful that any previous world-view, for that is what it is. Sice Galileo and Newton, we have made such leaps and bounds as to stagger the imagination, and, as Toffler suggests, it frequently does. Just as any of the theisms, science presents a way of looking at the world. Experiment, repeatability, theory, prediction. It is a way that can be applied to *anything*, and its application to areas 'beyond the bounds of science' has caused great problems with the religions it has 'trespassed' on.

(quick aside).... There was a debate here in Oxford on Religion vs Science a few weeks ago. One thing I find gravely disturbing were two Jewish scientists on the religion side who asserted that they believed that the Earth was 10000 years old. And one of these was a guy from NASA who worked on the life-finding experiments on Viking. This really worries the sceptic in me!!!.... (end aside)

And yet there is definitely a part of me that wants more. Call this the dreamer, the SF fan, the intellectual vandal, whatever. This part wants much of the current ediface of scientific theory kicked down. I want FTL drives, I want telepathy and other psionics. Perhaps the fact that I couch these mystical fictions in scientific terms means that I am still basically a scientific sceptic at some deeper level, but these ideas have a very strong attraction. That is why I was so interested when Cold Fusion happened (or, more probably, didn't, but I would suggest that some part of the jury may still be out on that). [A case for what where you doing when, except most of us were at Contrivance]

This deep attraction for a world where solutions are easier, quicker, simpler, I suppose is why the paranormal in all its guises is so powerful.

But there is another aspect to this that I am not a subject to. And that is, basically, envy. The scientists are now like some new high priesthood. We get odd titles (Dr. Prof.) after long aprenticeships in arcane subjects like astrophysics, and talk in a strange tongue the populace cannot understand. We have many of the outward trappings of an arcane school of mystical knowledge! And people outside are dissatisfied with this and want something else, something they find more... wholesome I suppose. Something more on a hman scale, which puts them back in charge.

And also science really doesn't work the way it should. There are 'heretics' in science (Hoyle, Arp, Bienveniste, Pons... how many others?). The facts from experiment are so often open to various interpretations. Doctrines are set up (the Big Bang is perhaps the most obvious) and one faces professional oprobrium if one goes against any of these orthodoxies, even to the point of excommunication and loss of job.

The sceptics do have a role to play, I won't deny it. There is a chance that Western science could go backwards when most of America believes in horoscopes and demons. But scientists also have a duty to make what they do accessible, and bring it down to a human scale perhaps. Maybe this is why chaos has been so powerful in the public imagination. It puts individuals, in some sense, back in charge, as I mentionned above.

But really communication of what we do, how we do it, and why is what's really needed.

Oh... One thing. Paul Marrow... We want you to do a talk at Illumination, if all that John says is true!

Paul Marrow [tapping away again]

John Bray on future shock and Future Shock
==========

Fair enough it is dated- more so than I remember from reading it three or four years ago, but then I guess it read it rather fast. As John himself affirms, the beginning and to a lesser extent the end are the best bits, (slightly obscure metaphor there John?) and the less said about the middle the better. I'm not sure whether Future Shock being dated makes it as bad as all that- after all, you would expect any book of predictions to go seriously wrong in many places.

Look at Herman Kahn's work, for instance [who, what?]. (Whee! Technical fixes for everything, including the environment. World to support 50 billion people with ease, and technology. I have a word for this, and it begins with B...) Assuming that any book of predictions goes wrong then, Future Shock's main strength lies in its categorization and description of the phenomenon of Future Shock, which surely must be on us (or some of us) now, and which needed presenting at the time.

A strange world, the early Seventies, wasn't it? I don't speak personally, being rather young at the time. But whenever I think back to that time it seems so bizarre and antiquated, and yet so similar to today. That's perhaps an example of Past Shock, I don't know. Do we need such a term, now that history is on video?

Paul Cray on skepticism
==========

I am a Jewish Quaker agnostic. (No, I won't explain, it's a long story.) I suppose with such a mixture it is hardly surprising that I find myself agreeing with most of what Paul says. Science does work, and it is the most successful tool for explaining the the universe, although I suspect Paul's experience as a physicist tends to make him overestimate science's success at explaining things. As a biologist, I 'know' that science has only just started, and it has a long way to go (although it has done very well in a few restricted areas - yes, I do mean among other things physics).

I would say that I tend to find myself indifferent to the ideas of supporters of psi-powers, the paranormal, the supernatural, the occult, call it what you will. That is providing it does not interfere with my, or other peoples, lives and freedom. My tolerance for paranormality includes an intolerance to intolerance, and this would extend to religion too (which is a whole other story, but which I couldn't help touching on due to the considerable religous overtones of Paul's article.) However it is pretty irritating to have your intellience insulted numerous times by obviously hare-brained ideas masquerading as 'New Age' for example. There are obviously limits to tolerance- where they lie in the case of skepticism, I don't know. Paul's viewpoint is one of many which could coexist I suppose.

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TARNOVER CITY ONE - Mark Nelson
****

TARNOVER CITY is produced by Mark Nelson (amt5man@Leeds.cms1.ac.uk) for distribution with John Bray's SF APA (jbray@uk.co.compulink.cix) and Eric Klien's ELECTRONIC PROTOCOL (Eric_S_Klien@com.portal.cup).

If the sight of raw speling mishtakes offends thy eye, then either pluck

it out or move on to the next contribution. Seriously, I can not spell and have not yet discovered if there is a spell checker hanging out in Leeds... [I've done bits by hand, though 'furtile' puzzled me for ages]

This is WEST RIDING PRESS PUBLICATIONS 160.

****

Love it or hate it there is no denying that cyperpunk was the `in' thing throughout most of the 1980's. Indeed today it barely seems possible to pick up a critical SF journal without discovering yet another article on cyperpunk; either explaining how wonderful it all is or showing that the appropriate technology is just within our grasp. Yes this is seemingly one SF prediction which is going to come to pass.

VECTOR 159 contains K.Bailey's "CYPER -and some other- SPATIAL METAPHORS", INTERZONE 44 has Bruce Sterling on `The Cyperpunk Bust', VECTOR 158 had Charles Stross on "Myths, Computers and Cyperpunk"... the list is seemingly endless and we have yet to mention the countless interviews with those new-ground breaking authors!

Yet despite all this critical attention and acclaim I can't help feel that Cyperpunk is being hyped above what it deserves and has been jumped on as the latest band-wagon to sell stories (from an author's view-point) and books (from a publisher's viewpoint).

Perhapes I am just a technological luddite but I am not impressed by the majority of cyperpunk fiction that I have read. Perhapes after the hype I expected too much, but whilst the original ideas may have been technologically exciting to SF readers when the material first appeared at this stage in the 1990's it becomes increasingly more difficult to understand what the fuss is all about. Perhapes you really had to be there to understand and appreciate it.

As the technology outlined in the books becomes more attainable and more acceptable to the reader then attention moves away from the shear excitement generated by the ideas present in the technology (and the `real-world' implications thereof) to a more `literary' consideration of the books. And here I have my main problem, Cyperpunk seems to be poorly written and uninspiring (particularly in the case of William Gibson, great short stories but the novels...?).

Still, it may be the case that I have been unlucky in the books that I have read. John tells me that many of the readers of this APA are deeply interested in Cyperpunk...in which case you are all invited to suggest a Cyperpunk reading course, perhapes the five best (or most important) cyperpunk works? I don't promise to read everything that might be suggested but it will at least go onto the `Books To Read Real Soon' list

Having debunked cyperpunk it seems strange to admitt that one of the books which I have enjoyed reading recently is a cyperpunk book, although having first been published in 1975 John Brunner's "The Shockwave Rider" is pre-cyperunk cyperpunk. As a matter of historical interest it would be interesting to know if the likes of Gibson and Sterling read this and if what, if any, influence it had on them.

The background to this book is that everybody has their own personal code which they can use to send instructions to the net, even sending instructions over the veephone by punching in the appropriate sequence of codes. For instance any doctor treating you can have access to your full medical record by punching in the appropriate access code, even more importantly you can ensure that your mail always reaches you regardless of how often you move by sending the right code to the Post Office. Taking

the freedom that all this implies, then mass movements of population becomes straight forward. Want to move to New York for three weeks and then Washington for two? Simply enter the appropriate codes and everything will be taken care of and rerouted to wherever you may be living at the time.

All this freedom of movement has important sociological considerations ...just how does the Goverment keep track of everything, how do people react when their neighbours change every week or even when their own jobs change whenever they want to try something different.

As well as the themes which we might expect to meet in such a book, the book considers the impact of such freedom on Goverment. How does Goverment react to such a large amount of information being available to so many people and how does Goverment remain in control? Further, in an age when many countries have the same standard of technology it becomes increasingly more important to remain that little bit ahead of the field.

The Goverment's answer to the increasing complications is Tarnover. An intensive education centre for bright deprived kids, designed to maximise their ability to answer the increasingly complicated questions that face Goverment. Or is it?

Perhaps the reason why I enjoyed this so much is that the technological base which undermines it rarely comes to the fore. It may be implied, it maybe discussed in conversation where necessary but it remains firmly in the background. As a reader we are not directly concerned with all the ins and outs of it all, we're interested in the implications and the problems. The author is happy to keep to these.

One of the most enjoyable books I have read this year!

Perhaps (speculation) this is the reason why I enjoy the short story rather than the full-blown novel. There isn't room to concentrate on the technology, it must remain in the background. INTERZONE 42 contained Greg Egan's "Blood Sisters", basically an AIDS story. Here the basic virus escapes from an American biological warefare research center and goes on to replicate...having been designed to do just that it continues to do so and whilst only a few strains are infectious to humans it is impossible to keep up with it.

So what is the cyperpunk angle? Well there isn't one. There are no AI's and the technology outlined in the story accordingly has little link to that gushed over by cyperpunkists except in the most trivial of cases.

Perhaps one side-advantage of the prominance of Cyperpunk is that authors in the 1990's can take for granted a certain minimum understanding of computer-technology in their readership that was not possible before. At the end of this piece the heroine hacks into the drug manufacturers network, finds out what is happening and denounces it to the world. (In fact this is very similiar to the ending in "THE SHOCKWAVE RIDER".)

Nothing extreme, nothing startling...the events which are described will be familiar (in `theory' if not in practice!) to many INTERZONE readers. Along with John Christopher's piece in the same issue this was my favourite piece of fiction in this particular issue. It used the technology as a background to the story, and not the opposite way round..

Perhaps I'd better go and read something so I'll have something to mention next time....

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As a postscript I must add that I consider Charles Stross to miss the point in his article in Vector 158. His principle argument seems to be that the failure to consider research in nano-technology and virtual enviroments renders the Cyperpunk experiment uselss as it missed out too many important technological matters which will have a real effect on the real world. My response is, so what? The areas which Stross mentions do intend offer fertile new ground for some good fiction, but it hardly seems credible to criticize a genre for not covering areas which have only so recently become prominent. To claim that "Science Fiction has failed even to reflect the present state of the art" is possibly true, but in an area which moves so fast is it really possible to reflect the present state of the art?

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"You Can't Get There From Here" - Paul Marrow
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(Part 1) Radiation...

[This is Part 1 because it has been split off from a larger piece about the genetic and evolutionary consequences of travelling by generation starship. I thought the editor (and his readers) wouldn't be able to stand it all at once (neither could I really)..... Paul M.]

At this point I'm going to get on one of my personal hobby horses, that of the naevity of physical scientists in solving problems where the biological sciences need to be taken into account. Many people who have read science fiction must often have considered the possibility of travelling to the stars.

Of course many possibilities have been considered in science fiction, but the speed of light does appear to be a pretty universal limit. Of the other two courses, relativistic travel does seem extremely unlikely, at least with current power sources. Long-time travel, via generation starships, is, by contrast, almost easy. However, in the abscence of any useful way of storing unconcious or dead humans for long periods until they can be revived, it does look likely that we are going to have to stay awake all the way. And thus we need a generation starship.

But there are many problems in deep space, for example that of cosmic radiation (which I shall concentrate on here, due to lack of space). Ionizing radiation is inherently damaging to genetic material forming ions of atoms contained in it, which can react to form new unstable configurations, leading possibly to new mutations. Numerous sf stories have described the horrors of radiation-induced mutation, often in greatly exaggerated biologically implausible detail, nevertheless it is a problem. Shielding could alleviate the problem to an extent (especially if something like the inside of an asteroid were used) but there would be bound to be accidents.

Radiation exposure presents several possible genetic effects - apart from the severe physiological damage resulting from very high doses - firstly it would cause somatic (body-cell) mutations, which might lead to cancer, but otherwise would have very little effect. However, mutation of the germ-line, that is the genetic material in the sex cells, sperm and eggs, could have a serious long-term effect. This could cause fatal abnormalities and genetic diseases (the two-headed Joe-Jim in Heinlein's "Orphans of the Sky"), or possibly sterility in the individual concerned. In a small population the loss of just one breeding individual could be a

serious problem.

Breeding individuals might need to be protected in some way- perhaps some sort of social structure in which only a minority of people were actually reproductive. Of course, when one starts talking about human society from a biological point of view, things become rather dodgy- as humans can dodge the effects of natural selection via technology- and human culture is so important in human lifestyle, far more than in any animals. Thus at this point I really start wandering off from science right into science fiction.

Assuming radiation damage, and the consequent mutation load, is a problem, there are several ways around it. The obvious one might be technological, all reproduction in vitro from stores of gametes, thus the 'exposed' in effect, germ cells of workers on the generation starship, would not contribute to future generations.

My own idea was a social structure a lot like certain social insects- where only a few breed and all the rest do the work. This would not at all need the hive-mind characteristics most usually thought of in consideration of social insect-like societies in science fiction (e.g. Frank Herbert's "Hellstrom's Hive"), and indeed most biological study of these insects has concentrated on the reproductive system. How this would be enforced would be a problem- as would be the low reproductive rates (insects have much higher ones)- and conservation of genetic variation would be a problem with such a large nonbreeding population. Probably it wouldn't work.

However, social mammals have been found which are 'eusocial', like the social insects. These are the naked mole rats, which live in burrows in the arid soils of eastern Africa, and are thought to have evolved eusociality as an adaptation for the difficult conditions. Very different from human beings, it is true, but they _are_ mammals, and compared with the diversity of fungi, for example, all mammals are pretty much alike. It's a big universe out there, full of strange and novel environments. Who knows what changes humans will have to make to survive?

Technology isn't the solution to everything.

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Neal Tringham
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SOLUTIONS FOR TROPE EXHAUSTION PARTS ONE, TWO AND THREE

Deep in its cryogenic vault, the creature stirs. Giant brass conducting rods crackle with energy, conducting thousands of paradigms' worth of cognitive shock down from the seething noosphere and into its quivering brain. Shaking with the stress of absorbing a hundred subtly incompatible premises, it lurches to its mismatched podia (one forged from gleaming nickel steel, one a delicate shadow spun from finest Fancy) and shambles towards the exit ramp, infused with a blasphemous pseudo-life. By the door its cannibal siblings lie in wait, the huge swordsman with his cloak and gleaming, mystic eye already struggling with the self-devouring mass of bloody entrails for the rights to the creature's artificial soul. The floor is covered in its children (constantly moving Image who runs faster than the eye can see, proudly strutting Comic Stripling with his thrust-out chest and superhuman sneeze) who break bits off the rotting frame and assimilate them into their own bodies---here a prosthetic tentacle made from the very best extraterrestrial cliche, there a dubious axiom obtained second-hand from a genre long defunct. The sinister (or female) hand wrestles endlessly with the dexter, a battle that never ends even though the latter's greater size and brutality would seem to guarantee its victory. Things, in short, don't look good for the creature. Will it make it through the door? And, more importantly, will it know what to do if it

does? Well, maybe.

Or to put it another way: where do we go from here? Is sf really running out of destinations? Are we all doomed to endlessly run through the same old tropes of alien invasion and hyperspace, hive minds and sentient machines--- or is there something new to say? Well, here are three possibilities, three new organs for the tired old monster. Or perhaps they'll just turn out to be the same old junk, found in a rubbish tip on the fringes of the West. Who can tell?

Part One: The World

This has been the American century.

Art, film, literature; science, technology, scholarship; economics, politics, war. In all of these the USA has been powerful; since the Second World War it has generally been dominant. But the ground rules are changing. Intellectual and artistic fame in a global culture comes to the region with the money and power to fund research, attract the creative, expend resources on the unnecessary. As the West moves from revolving around the American centre towards a stable three-body configuration, so the structure of its arts and sciences will mutate to match. And if the years since 1945 have been those of the American Empire, it is doubly true that they have been those of American science fiction. Even cyberpunk, praised for its global concerns, is in essence the story of the USA in the 1980s. What might a genuinely European sf be like? A marriage between the Soviet social humanist novel, the Eastern European satire, and the British ironic romance? Or an indigenous Japanese strain? At the very least, such shifts in the global economy might make the futures we read about a little less like today's USA.

Part Two: The Flesh

Much of the impetus of good sf has always come from the desire to explore the effects of technological change. These days, many feel that almost every possible science has already been imagined, not to mention recycled into the background of a galactic empire packed with poorly clad princesses and almost entirely naked wishful thinking. But this need not be the end. Much of cyberpunk's freshness came from its use of familiar technologies (computers, telecommunications, electronics) in new ways, ways inspired by how they functioned in the real world rather than the second-hand realities of ancient Hugo winners. Gibson and Sterling abandoned the world-spanning mainframes that dominate fifties sf in favour of complex assemblies of many different systems, controlled by a host of conflicting interests. Which is how it turned out to be, after all. And while the computer wave may have crested, molecular biology is exploding in much the same way electronics did thirty years ago---and with results that resemble the conventional sf images of genetic engineering about as much as UNIVAC did Internet. Where are all the stories about a world transformed by artificial microbes that excrete oil or plastics, plants that have been modified to mop up pollutants, teenage hackers making viruses in their spare time? Who has really considered the implications of gene therapy and cross-species gene swapping, which take our little pools of individual chromosomes and mix them into one human lake, and then let the lakes flow into one another to form a gene sea as wide as life?

Part Three: The Fundamental Epistemological Difficulty

And so we come to sf's fundamental gimmick---its love affair with the scientific method. Where other fantastic genres (such as magic realism) depend solely on the logic of dreams, most sf has tried to combine mythic resonances with a certain degree of rational extrapolation, a feeling of `what if' based on the experimental approach of the working scientist. But

the logic has usually been extremely (sometimes crudely) reductionist, resembling in spirit the intuitions of a 1900s physicist rather than a 1980s psychologist. This sense is embedded in the deepest foundations of the field. Alternate world stories and novels of social change both depend on the notion that the effects of a single event can be predicted, analyzed, traced forward through time. The artificial science of psionics, like the pseudo-sociologies of `Foundation' or `Blowups Happen', is based on an unrealistic attempt to extend the precise language of traditional physics, where cause and effect are almost always separable, into an inappropriate zone. I am not suggesting that we abandon the idea of fusing rational extrapolation with romantic intuition, but that we improve our logics, recognizing the existence of real systems more complicated than Newton's universal clockwork. Complex systems (like chaotic fluids, like global cultures, like the human mind) depend on the interaction of effects at many levels, each one feeding back into all the rest. Crude reductionist strategies help us understand them, but so do empirical rules, and so do `intermediate' theories like Jungian psychiatry. Is it possible to write alternate world novels where many levels of phenomena work together, or soft science puzzle solving stories where the riddle has more than one absolute answer? Well---is it?

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The Ballad of Polly Nomial - Anon
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[I'm not sure who wrote this, as I got an unsigned copy at school many years ago, any ideas on authorship would be appreciated]

Once upon a time (1/t) pretty little Polly Nomial was strolling across a field of vectors when she came to the edge of a singularly large matrix. Now Polly was convergent and her mother had made it an absolute condition that she must never enter an array without her brackets on. Now Polly, however, who had changed her variables that morning and was feeling particularly badly behaved, ignored this condition on the grounds that it was insufficient and made her way amongst the complex elements.

Rows and columns enveloped her on all sides. Tangents approached her surface. She became tensor and tensor. Quite suddenly, three branches of a hyperbola touched her at a single point. She oscillated violently, lost all sense of directrix and went completely divergent. As she reached a turning point she tripped over a square root which was protruding from the erf and plunged headlong down a steep gradient. When she was differentiated once more she found herself, apparently alone, in a non-Euclidean space.

She was being watched however. That smooth operator, Curly Pi, was lurking in a product. As his eyes devoured her curvilinear coordinates a singular expression crossed his face. Was she convergent, he wondered. He decided to integrate improperly at once.

Hearing a vulgar fraction behind her, Polly turned round and saw curly Pi approaching with his power series extrapolated. She could see at once by his degenerate conic and his dissapative terms that he was bent on no good.

"Eureka!" she gasped.

"Ho, ho!" he said. "What a symmetric little polynomial you are. I can see you are absolutely bubbling over with secs."

"Oh sir!" she protested, "Keep away from me. I haven't got my brackets on."

"Calm yourself my dear," said our smooth operator, "Your fears are purely imaginary."

"i i," she thought, "Perhaps he is homogeneous then?"

"What order are you?" the brute demanded.

"Seventeen," replied Polly.

Curly leered. "I suppose you have never been operated on yet?" he said.

"Of course not," Polly cried indignantly. "I'm absolutely convergent."

"Come, come," said Curly. "Let's off to a decimal place I know and I'll take you to the limit."

"Never!" gasped Polly.

"%*/5+=!!" he swore, using the vilest oath he knew. His patience was gone. Coshing her over the coefficient with a log until she was powerless, Curly removed her discontinuities. He started at her significant places and began smoothing her points of inflection. Poor Polly. All was up. She felt his hand tending to her asymptotic limit. Her convergence would soon be gone forever. There was no mercy for Curly was a heavy side operator. He integrated by parts. He integrated by partial fractions. The complex beast even went all the way and did a contour integration. What an indignity! To be multiple connected on her first integration. Curly went on operating until he was absolutely and completely orthogonal.

When Polly got home that evening her mother noticed she had been truncated in several places. But it was too late to differentiate now. As the months went by, Polly increased montonically. Finally she generated a small but pathological function which left surds all over the place until she was driven to distraction.

The moral of the story is this; if you want to keep your expressions convergent, never allow then a single degree of freedom.

The End.

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Talking Point - Paul Cray
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This is a brief note John asked me to write following a conversation we had in the Albert pub, near Victoria, last evening.

"Scientific American" recently sacked its "Amateur Scientist" columnist [Forrest J Minns?] because he is a Creationist. Some people feel (John included) that a person's views on the Origins of the Universe in no way effect his fitness to write a column about the science of everyday phenomenom [communications & electronics]. However to be a Creationist requires a great act of self delusion. The laws of physics not only allow us to explain the phenomenom about us in today's world, they also reveal a self consistent history of the Universe in no literal way compatible with the Biblical account of Creation. The Laws of Physics are inconsistent with Creationism. Someone who can force himself to believe they are not is being intellectually dishonest. Can one trust a person known to be intellectually dishonest in any scientific matters? If seems to me then, that the decision of "Scientific American" is appropriate and just. Anything less would be to allow irrationality a victory.

[I disagreed vehemently in the pub, but then one does. This is another facet of the 'can scientists believe in God' argument. I can't answer that as neither I nor nearly all my scientific friends do believe. I claimed

that while fundamentalists would have problems with astronomy and evolution, why should that affect their competence in electronics. But on reflection, the intellectual dishonesty point is very true.]

What do you think?