PROBE 134

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While looking at “Universe Today” on the net I followed a link which took me to George P. Dvorsky’s Blog. Its subtitle is Transhumanist and transprogressive perspectives on science, philosophy, ethics and the future of intelligent life. He does indeed seem to have a very clear way of looking at the universe.

In this particular post of May 31 2007, he gives his views as to why the Drake Equation is obsolete. Briefly, the equations developed by Frank Drake in 1961 uses 6 factors which when multiplied together should give us an indication of how many civilizations we might find in our galaxy with which we might be able to communicate. He then goes on to point out that the integers used in this equation are often “arbitrary” at best. For instance it does not take into consideration such factors as the age of the Galaxy, the time at which intelligence first emerged, or the variables necessary for the emergence of life. The extreme age of the Galaxy and the potential for intelligence to have emerged and sent out radio signals gives us a very narrow window for detecting these signals.

Another concern is when it asks us to guess the number of Earth-like planets, but it does not ask us *when* there were Earth-like planets. Its whole premise depends on there being radio emitting civilizations transmitting within a similar time span as ours. He points out that although in the 1960’s it seemed that radio was an ubiquitous means of communication, it would now appear that will only be a matter of time before Earth stops transmitting these signals, at least unintentionally. He says that SETI should try to predict future means of communication and ways of identifying these signals.

He goes on to that of advanced intelligence may be beyond the scope of what we can even imagine. Are they even in the Galaxy? Can they phase-shift outside what we consider as habitable space? I find it interesting to speculate if we might not even recognize a different intelligence based on a completely system from the one that ours is based on. SF has speculated on beings made up of light or electricity or even thought waves. It might be fun to think up ways to communicate with them.

TIME TRAVEL BOOK REVIEWS

Adele Meyer

Not long ago a friend lent me a book about time travel. Suddenly I remembered how intriguing time travel is, and that I had not thought about it for a while. So I borrowed another time travel novel, and pretty soon I was well into my new craze. So here is a short review of stories involving time travel.

To Say Nothing of the Dog by Connie Willis

To Say Nothing of the Dog is a light and funny book, poking fun at Victorian novels and characters. The plot makes use of time travel paradoxes as the main character attempts to solve the mystery of a missing object. He meets up with a colleague on a similar mission, and they have plenty of farcical moments.

The novel is set in Oxford University in the future. The premise is that time-physics and time travel are the sphere of historians. This is because the physics of time travel do not allow the past to be looted, and so there is no real money to be made from it. So traveling to the past is left to academics.

The time-machine is called the net, and it is a sort of “Beam me up Scotty” experience. The historian, plus baggage, stands inside the perimeter of the net. A technician calculates the time and space co-ordinates, and then sends the time traveler on their way. However, the accuracy is never exact, and the technician then has to calculate exactly where and when they did arrive. They must be at a pre-arranged time and location when the net opens again, and they can go back to the present. This kind of travel involves a lot of homework for the time traveler. They have to study the language and customs of the place they are visiting, as well as make sure that they are wearing the correct fabrics.

The story involves Ned, a time-traveling historian in search of a hideous vase-like object in Coventry Cathedral in 1940. However, Ned cannot find the object because he is always there either too late or too early, or in the wrong location entirely. He makes so many trips that he is suffering from time-lag, a type of exhaustion similar to jet-lag.

The reason that Ned cannot reach that particular point in space-time is that Nature will not allow certain events to be tampered with. This is because certain

seemingly unimportant events have large repercussions, and Nature will not allow important historical outcomes to be changed.

This view of history is that it is something like a buffered system. If there is a small perturbation, the system corrects for it, and maintains the equilibrium. So if a time-traveler changes something in the past that could affect the course of history (say like the outcome of the Napoleonic Wars) then something else adjusts, and the Big Picture is preserved. However, if there is a big perturbation, then the system might not return to equilibrium, and history will be really stuffed up.

Returning things to the past, hunting for missing objects, evading domineering matrons, match-making, time-lag and trying not to change the course of history, all combine in this highly enjoyable book. *To Say Nothing of the Dog* is funny, convoluted, and a spoof of things Victorian. You should probably also reread *Three Men in a Boat*.

The Doomsday Book by Connie Willis

The Doomsday Book is another good book about time travel. The story is set in the same future Oxford University as *To Say Nothing of the Dog* but it is far gloomier.

The plot involves a trip backwards in time, two parallel stories (then and now), and the return trip. The story set in the past is very interesting, but extremely sad. The parallel story in the present is not as interesting, but it does tie up the loose ends.

The problem with this book is that it is too full of tedious details that detract from the story. We don't really need a blow-by-blow account of someone's movements as they go about advancing the plot. It should have been shortened.

The Doomsday Book is not particularly convoluted in terms of the paradoxes of time travel, but it is still a good read.

The Time Traveler's Wife by Audrey Niffenegger

The Time Traveler's Wife is basically a love story, but with a difference. What make a story about people and their relationships interesting are the obstacles that the characters face. In this book, the challenge is that one of the main characters (Henry) is a time-traveler.

The book is full of time travel paradoxes where cause and effect are circular. Some of these are minor, and some are central to the plot.

The reason for Henry's time travel is a genetic condition called chrono-displacement disorder. It is something related to epilepsy and is triggered by stress, alcohol, etc. His time travel trips are beyond his control - he cannot choose where he wants to be, he just disappears, leaving behind a pile of clothes. In the different time and location, he suddenly appears, naked and very hungry. For this reason, he has to learn to steal clothes, pickpocket, and evade the law.

The adult Henry visits his future wife, Clare, when she is a small child and on-and-off all through her childhood and teenage years. He is very lucky that she has wealthy parents, with enough rooms in their house for him to hide in, and enough grounds outside not to be spotted. They then meet up in real time, and develop a more permanent relationship - except for the fact that he is always popping off somewhere else (often to visit her).

Henry cannot consciously choose when or where he goes, but he does keep visiting and revisiting traumatic events of his life. He also pops in for visits to friends and loved-ones, and places where his life as he knows it threatens to be derailed. This suggests that his life is pre-determined, and it is essential that he does not stuff up critical moments. Otherwise his life would take a different path.

Apart from social calls, he also spends a lot of time stealing, breaking-and-entering, evading the police and getting into fights. Despite being something of a tsotsi, Henry is always able to behave like a normal person in the new space-time, and can even meet up with himself.

The Time Traveler's Wife is a real page-turner, taking the view that history/ fate/ life happens the way it is meant to, and free will only leads to the intended outcome anyway. It's a great read.

All You Zombies by Robert Heinlein

All You Zombies is a short story that excellently captures the central paradox of time travel. In fact, it takes it to the logical extreme. The mechanism of the time travel consists of something like a metal fishing net that encloses the travelers, and a small machine disguised as a suitcase. It is easy to operate and very precise.

Unfortunately, this story suffers from extreme sexism. The female characters seem to be victims or prostitutes who are there to service the desires of men, while the male characters are out there being macho and doing manly things.

Anyway. The gist of the story is that the central character is his own mother and his own father. This happens after a sex change and some time travel. He is also the person who abducts his infant self and puts her into an orphanage. Very intriguing.

The Technicolor Time Machine by Harry Harrison

The Technicolor Time Machine is a spoof of the film industry. Written in the 1960's, it is about a film crew making a movie in the past, in order to meet a deadline and save the production company from financial collapse.

The time machine of the title consists of valves, knobs and a lot of static. It is the invention of a lone genius scientist. Like the time machine in Connie Willis's books, it can transport a lot of equipment back and forth in time and space. But unlike her time machine, the precision is excellent, allowing the crew to arrive at their exact location at the exact time they want.

The book is very well thought out in terms of explaining time-travel paradoxes and the limitations of time-travel, which include not being able to arrive back in the present earlier than you left. This is presumably so as not to bump into yourself as you are leaving, even though meeting up with yourself in the past is perfectly acceptable.

The downside of the book is that the characters are all stereotypes (the handsome stupid male lead, the macho war veterans, etc.) and the writing is wooden. Even the picture on the cover shows the stereotypical sci-fi naked woman with abnormal spinal curvature. It is an interesting story, but not particularly well-told.

There is a wealth of time-travel literature out there - the classics, old stuff, and also a lot of new books. If anyone would like to review or recommend any in particular, I would love to hear from you. Please send your comments to the Probe editor.

"Heavy Metal Thunder" **AL Du Pisani, Ron Cowley, Carla Martins, Norman Pringle**

'There is no logic in this,' Spock complained. 'How can political structures be determined by a gladiatorial race between candidates riding these two-wheeled suicide machines?'
'I agree, ' said Kirk, 'but if we are the bring this lost colony back into the Federation, we have to gain power their way.'
He moved his special, Scotty-enhanced vehicle to the start line.
The flag dropped, and the four finalists are off. As the ultra-charger kicksin, Kirk moves into the lead.
And stays there, crossing the finish line as Senator Kirk, of the Heavy Metal Assembly on Cretin V.
Another day, another mission accomplished.

Discussion Evening

Good science, bad science and science fiction

A small and appreciative crowd gathered for a fascinating discussion. FTL, Hyperspace and Warp Drive were the subjects of discussion.

We agreed that FTL – or rather an equivalent – is an essential for a far-flung galactic civilization and the attendant sf. Most authors handled this with discretion, using it, not defining it.

Future science was also well-handled. Even a rather unlikely planet like Mesklin was well-worked out.

We decided that science fiction in books was well done, except in exo-biology – but that is the subject of many books and talks.

In movies. Oh dear – the boot is on a very other foot here. Space-ships have brakes that squeal; they stop instantaneously and ignore basic physics. Energies are unlimited; nothing is conserved and the sense of disbelief is …

Oh and computer viruses can be passed on to alien computers… the list is endless.

So, science in science fiction is well worked out. Science in movies reflects popular misconception and is just a very bad joke…

In order to make an apple pie from scratch, you must first create the universe.
Carl Sagan

Movie Review: The Prestige Carla Martins

The club got together to see The Prestige starring Christian Bale, Hugh Jackman, Michael Caine, Rebecca Hall and Scarlett Johansson directed by Christopher Nolan, on a Sunday afternoon at Nu Metro Monte Casino.

From the get go, you are sucked into the story which I can say is likened to peeling layers off an onion and the excellent performances by the leads. Now you may wonder why the science fiction club would go out to see a movie about dueling magicians but dear reader fear not, for this movie's plot has a dash of a science fiction element to it which catches you buy surprise and is very intriguing but I will not spoil it for you.

The story follows the rise and fall of two magicians in Victorian era London (Robert Angier played by Hugh Jackman and Alfred Borden played by Christian Bale) who start off as friends but as the story goes on become bitter and deadly enemies because of an fatal accident that befalls a member of their group when a trick goes wrong. In middle of these two we have their mentor Cutter (who is a creator of stage illusions) played Michael Caine, Sarah played by Rebecca Hall who is Alfred Borden's wife and Olivia played by Scarlett Johansson who becomes Angier's assistant and lover.

We get drawn into their obsession of trying to outdo one another's tricks and it is one trick that Christian Bale's character performs that sends Hugh Jackman's character on a quest to try and find out how it was performed and to try and top it.

There is an intriguing cameo by David Bowie who plays the scientist Nikola Tesla to whom Hugh Jackman's character goes to, to uncover the mystery of the trick performed by Christian Bale's Character.

All in all, at the heart of this movie is a mystery which will keep you guessing until the end because the twists are done in a masterly way.

Space isn't remote at all. It's only an hour's drive away if your car could go straight upwards.
Fred Hoyle

Conversations In Deep Time

The Greg Bear Interview

You would be hard pressed to find another science fiction writer as talented as New York Times bestselling author Greg Bear. With each successive novel he releases, his mystique grows. As does his accolades.

He has won several Nebula and Hugo awards over the years and has been nominated multiple times for the World Fantasy, Arthur C. Clarke and John C. Campbell awards. In 2006 he was the recipient of both the Monty and Heinlein awards. From the release of his first novel, Psychlone (also released under the title Lost Souls) through such bestsellers as Eon, The Forge of Mars, Anvil of Stars, Darwin's Radio and the darkly wonderful Dead Lines, Greg has established himself as one of the best speculative fiction novelists in the world. He's even written a *Star Trek: Original Series* novel Corona and a *Star Wars* novel, Rogue Planet.

His short story collection The Wind From A Burning Woman may be one of the best speculative fiction short story collections ever gathered. Greg is also an award winning artist and founder of the Association of Science Fiction Artists.

Greg is a visionary and a futurist as well. His theoretical physics concepts, first utilized in his novels Anvil of Stars and Moving Mars, envisioned physics based upon the data exchange between particles capable of being altered at the bit level. He was the first science fiction writer to depict nanotechnology in fiction. He also was the first writer to present the concept of a quantum logic computer. And after 9/11, Greg was selected by the US Army and the CIA, as part of task force to provide consultation on security issues. He was a member of a group of economists, scientists, novelists, futurists, etc, who performed a threat analysis on various ways that terrorists might attempt to attack the US again. He has also been a consultant for Microsoft Corporation and Sandia National Laboratories and was appointed to the Citizen's Advisory Council on National Space Policy to work in conjunction with NASA.

Not too shabby for a son of the Vietnam generation who sold his first short story at age fifteen to Robert Lowndes's Famous Science Fiction magazine.

ML: So tell me about your forthcoming bioterror, near future thriller, Quantico? What was the primary inspiration for the story? Actually Quantico is more of a science fiction suspense novel. I think you've just invented a new sub-genre.

GB: Quantico is a high tech thriller. John Campbell used to publish very similar stories in Analog back in the fifties and sixties--I'm thinking specifically of Mack Reynolds, Joe Poyer, Rick Raphael. Since that time, the success of Tom Clancy and others has spun this off into a genre of its own--but we shouldn't forget the roots.

ML: One of my favorite Greg Bear novels is Dead Lines. What was your inspiration for the story?

GB: I love ghost stories--always have. One of my favorite movies is the original *The Haunting*, and I've been reading Stephen King, Clive Barker, Dean Koontz, and many other writers for decades now. Dead Lines pays homage to some of my favorite stories and writers--M.R. James, H.P Lovecraft, Richard Matheson, Shirley Jackson. Both Matheson and James Blish incorporated science fictional elements into their speculations about the afterlife--as I did in my novel, Psychlone. For Psychlone, I borrowed a suggestion from Blish's Black Easter--and later saw my scenario--particle beam weapons used against ghosts--wonderfully incorporated into *Ghost Busters*! Another favorite.

ML: Can a science fiction novel really have influence on modern culture any more?

GB: All the time. Beyond Michael Crichton--certainly one of the most popular and influential writers of our time--we find more mainstream writers constantly dipping into science and the future for their themes. Science fiction writers since H.G. Wells have been read by politicians and world leaders, and invited to participate in discussions on the present and the future. That dialog is still going on--I've been invited to numerous government-sponsored seminars and analysis sessions, along with quite a few of my colleagues.

ML: People may not know this but in addition to being one of the best science fiction novelists alive, you are also an accomplished illustrator. What moved you to form the Association of Science Fiction Artists?

GB: I was involved in the founding of ASFA back in the seventies, working with real pros like Rick Sternbach. They were better at illustration than I was--and writing eventually took over. But I still love to talk with artists and occasionally dabble in a sketch or two.

ML: The Ultimate Encyclopedia of Science Fiction called you the "best working writer of hard science fiction" on Earth. Which I must say I agree with them. Do you feel comfortable with such praise?

GB: Only as long as my books continue to sell! And as long as I can keep trying new things.

ML: I personally think that your first short story collection, The Wind from a Burning Woman, released by Arkham House in 1983, may well be the best collection of science fiction short stories ever gathered. This collection should be required reading for every would-be speculative fiction writer. You served as a visiting Nat C. Robertson Distinguished Professor in Science & Society at Emory University in Atlanta and taught writing seminars there. Do you enjoy teaching the art of writing?

GB: I always like working with students and fellow writers. The Emory visit was delightful--professors and students were both very high caliber, very creative and dedicated. And Emory is also a medical school--which meant I got to talk biology with real experts, always a treat. (And while I always enjoy praise for my books, I think everyone should go back and read John Varley's Persistence of Vision and James Tiptree's Ten Thousand Light Years From Home. Now THOSE were important and influential anthologies!)

ML: As a teacher of speculative writing, what is your opinion of the Clarion writers workshops? Do you feel they have benefit?

GB: I've taught at Clarion West several times. The Clarion workshops are excellent places to find out whether you want to launch a career as a writer. The list of professionals who have taken off from these workshops and made fruitful careers is impressive.

ML: Has any of your novels been optioned for film rights? I think Dead Lines would make a great movie. I thought I heard that The Forge of God had been opted by Warner Brothers and along with the Sci Fi Channel?

GB: There have been a number of options over the years, and Warner Bros., as of this writing, still has The Forge of God and Anvil of Stars under development. Darwin's Radio is going the network rounds as a possible television miniseries. And there could be even better news soon on another novel.

ML: What are your thoughts on the UFO/abduction phenomenon? Though UFOs and all fascinate me, I have never seen anything that could be remotely called a UFO, but mind is still open.

GB: We can't deny the possibility, but I've seen little compelling evidence. The problem with such sightings--along with seeing ghosts--is that these are often intensely subjective experiences, tough to convey to others. The objective proof is certainly lacking, and I've never been fond of vast conspiracies.

ML: Have you ever censored yourself or began to write something, but then pulled away and said to yourself, "no, can't write that"?

GB: Probably, but my internal guidelines are pretty strict to begin with. I don't want to write immoral fiction--fiction that dishonestly distorts or exploits common experience or human nature. Now, as for honest distortion--*honest* exploitation--!

ML: Have you ever thought about going somewhere else with your writing besides science fiction, such as a western, historical or mystery novel? I know from reading your bio that science fiction is in your blood since you were a young boy, I was just curious if you were ever tempted to do something else.

GB: Of course! One of my favorite novels is Larry McMurtry's Lonesome Dove, and I have a lot of research material stacked up for a historical or western novel, should I ever decide to write one. So far, however, the fields of SF and fantasy are still pretty rich.

ML: I read your article entitled "All the Robots and Isaac Asimov" which is a fascinating essay on the development of robots as mechanisms of fear in popular culture. What do you think about the ASIMO robot developed in Japan to assist the elderly or the very human looking Repliee Q1Expo android?

GB: ASIMO is great fun. The Japanese are doing wonderful work on humanoid or personable robots. The Good Doctor would have been proud--but so far, none of our robots exhibit the capacity to be more than just charming--to actually think, and challenge their masters.

ML: So, what exactly is your insight on the Fermi paradox?

GB: Long ago, debating the topic with David Brin, I came up with the ecological, predator-prey solution--we don't hear anything out there because smart civilizations believe in keeping quiet, just in case there are predators out hunting. I used this as the basis for the scenario that became The Forge of God novel.

This solution is not very popular with SETI types--I'm not sure why. Perhaps we're still hoping for angels to come down and enlighten us. But I'm pretty sure the rest of the universe functions in much the same way we do here on Earth--and if I had been a Native American, and could have hidden North America, I would certainly have done so.

ML: Do you think that nanotechnology and nanites could hold the answer to increasing the longevity of the human species such as the work at the SENS Institute?

GB: As soon as we develop them, I'll let you know! After more than twenty years of nanotechnology in the public eye and in scientific research, the core ideas remain speculative--but we see a lot of nanoparticle "nanotech" solutions in paints, cosmetics, materials science, but no real nanotechnology as K. Eric Drexler envisioned it. These little particles just aren't very smart--certainly not as adaptive as proteins.

ML: Did you enjoy writing those *Star Trek* and *Star Wars* novels? Are there any more TV or movie tie-in books in your future?

GB: I enjoyed both projects, but I don't think I'll be going back to do more. I prefer to create my own universes.

ML: What role did you serve on the Citizen's Advisory Council on National Space Policy? Did you determine policy for human civilian space flight?

GB: I was proud to work with Jerry Pournelle and Larry Niven and all of their invited experts and fellow writers. The writers helped articulate, clarify, and record the ideas of the experts. CACNSP did some remarkable work over sixteen years, both in space defense proposals and civilian/commercial spaceflight advisories. One of our final tasks was to help NASA smooth the way for private spaceflight, and I think some of those ideas are in place now that a number of entrepreneurs are planning, building, and launching private suborbital spacecraft.

ML: What influence has the works of Nikos Kazantzakis and Olaf Stapledon had on your writing? Who's your favorite science fiction novelist to read? And you're not allowed to say Poul Anderson ☺ - though we both agree his novels are wonderful reads! For those of you out there that don't know, Greg is married to Poul's daughter, Astrid.

GB: Olaf Stapledon absolutely blew me away. I came to Stapledon through reading Sir Arthur Clarke's novels and seeing *2001: A Space Odyssey* back in

the 1960s. Within a few years, I was in touch with Stapledon experts and enthusiasts like David McClintock and Harvey Satty and Curtis C. Smith, collecting his rarest books and novels--even procuring an autographed copy of A Man Divided from Forrest J. Ackerman. Nikos Kazantzakis came to my attention through the recommendation of Ray Bradbury, and I'm still enjoying his novels and nonfiction--travels and such. I find a number of parallels between these two, with their approaches to the relationship between God, man, and nature: Stapledon, disciplined and incomparably brilliant and a little chilly, Kazantzakis filled with Mediterranean life and splendor, contradictory passions, explosive language. Kazantzakis in some respects is Ray Bradbury's older Greek brother--or perhaps uncle!

ML: With all the imaginative bits of technology and whatnot that you've essentially invented in your novels, do you own any patents like Arthur C. Clarke? Have there been any of your ideas that you've been interested in pursuing as inventions?

GB: No patents. Compared to defending patents and inventions, writing is easy!

ML: From your educated opinion, what science fiction novel has had the greatest impact on society?

GB: I'd say Frankenstein, closely followed by 1984, Brave New World, and today, quite possibly Fahrenheit 451. But books that influence us all should not eclipse books which transform certain classes, endeavors, or philosophies--it's almost impossible to judge the depth of influence of writers like Asimov and Clarke, Heinlein and Anderson. None of the first three books I mention above were that influential on me, for example--as brilliant as they are--whereas much more obscure writers and works knocked my socks off. It's all about age, preparation, anticipation. The oddest little books can turn us topsy-turvy.

ML: In Darwin's Children you explored the rather avant-garde, unorthodox theories of early date colonization of the Americas. Are you fascinated by unorthodox archaeology?

GB: The idea that humans could have arrived on this continent earlier than ten thousand years ago is rapidly becoming accepted doctrine. No way would I have made my homo erectus pioneers of twenty thousand years ago be less than a meter tall, however--that would have been silly! And yet the Homo floresiensis specimens from Indonesia are likely Homo erectus, twenty thousand or fewer years old, and just three feet in height when mature.

ML: What projects are you currently working on and what will we see next from Greg Bear?

GB: Quantico is being published in hardcover in the United States on April 8 by Vanguard/Perseus with a major push--and a larger first printing (by nearly double!) than any of my previous books. At the moment, I'm working my way slowly toward the conclusion of what may be the longest novel I've written in years, City at the End of Time. It pays homage to many of my favorite writers, including Stapledon and Clarke. It's set one hundred trillion years in the future--and in contemporary Seattle.

It was indeed a pleasure to talk with Greg Bear. Speaking with him was like talking to some sort of ancient Greek Oracle, full of wisdom and knowledge, but bent on a future tense. Very enlightening! To learn more about Greg please go to his official website: http://www.gregbear.com/.

I've had the pleasure of reading Greg's latest novel Quantico, when I picked up a copy at Gatwick Airport in England last year. It was a fabulous read and it maybe his best novel he's written to date.

Michael Lohr is a professional journalist, outdoorsman, treasure hunter and adventurer. His writing has appeared in such diverse magazines as, Outside Magazine, Southern Living, Cowboys & Indians, Sailing World, Caribbean Travel & Life, Canoe & Kayaking, Outdoor Life, and Adventure Sports, to name a few. He contributes regularly to Bluegrass Unlimited magazine and Persimmon Hill, the Journal of the National Cowboy & Western Heritage Museum, and also had a few dabblings published in Rolling Stone and Esquire.

His webpage can be found at: http://www.internet.is/artist/writer/michael_lohr.htm

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"Heavy Metal Thunder" **Gail Jamieson, Iain Sinclair, Gavin Kreuiter, Shaun v.d.Berg**

The two space cycles faced each other, one Klingoned by Work, the other, Dominioned by Odo. Each was aware of the seriousness of the situation, with the pride of the entire Klingon and Dominion races at stake. And all because of that Hotel California Incident. If only Quark hadn't fed them that Romulan Ale, then security would not have been breached.

The cycles converged in a Galactic Game of Chicken that neither would concede, resulting in a crash of Heavy Metal Thunder. The Klingon seconds disentangled a growling Worf, while the Dominion seconds mopped Odo up.

Honour satisfied.

Letter of Comment

SFF&HSA

"What's in a name? That which we call a rose
By any other name would smell as sweet."
Romeo and Juliet (II, ii, 1-2)

The SFSA committee have mooted the possibility of changing the name of the club to recognize the large interest in fantasy within the club. While the implications of a name change are not trivial (legal/constitutional grounds, website, etc), that is not the reason for writing this LOC. The reason is purely to suggest something to think about, a topic for debate. Like many science fiction stories, the goal is the journey itself, rather than the destination. At the end of the day, I am not promoting any hidden agendas with the intention of levelling the playing field… oops! Sorry, wrong forum!

There are enough arguments merely about the terms used to describe *Science Fiction*; arguments in the sense of flame wars that resurge periodically with no possible conclusion. Hardcore Science Fiction fans object to the term *sci-fi*, which outsiders (aka *aliens*) use, generally in a derogatory fashion, to describe this genre. Sci-fi actually has an honourable etymology; it was first used (privately, 1948) by Heinlein, and (publicly, 1954) by Forrest J Ackerman. But I share the dread of the term because, to me, it conjures up images of B-grade movies (aliens with tin-foil antennae) and pulp fiction (monstrous blobs with all sorts of yucky bits, attempting to ravish buxom earth maidens). And, hey, my taste is far more sophisticated that that.

Even if we agree to use the term sf to describe the genre, there are a number of subgenres that clamour for independence. Does Fantasy form an integral component of sf, or should it be classified separately? Fantasy is generally understood to incorporate magic and/or mythological creatures like dragons, trolls and elves, while sf usually has a sound technological base. Some fiction (LOTR, Harry Potter) falls firmly into the Fantasy camp, how does one classify stories of Pern? Here there be dragons… but these were created by scientists using genetics. No hint of magic anywhere. There are many other books that cross boundaries and blur distinctions.

And what about Horror? This (sub)genre is arguably the most popular category of movies. Its primary intention is to frighten, although, like sf, it often issues a warning against unrestrained research. While *The Texas Chainsaw Massacre* is a "pure" horror movie, *Frankenstein*'s monster was created using science

(fiction), and *Underworld* blends Fantasy, Horror and sf. But I shudder at the horrific thought of belonging to *The Science Fiction, Fantasy and Horror Club of South Africa*.

The initials *sf* are also sometimes used as an abbreviation for *Speculative Fiction*. Curiously, Heinlein is also believed to have invented this term in 1948 (although an earlier usage can be traced to *Lippincott's Monthly Magazine* in 1889). He, however, used it in a way that explicitly excluded Fantasy. Speculative Fiction is now generally used to include sf, fantasy, horror, alternate histories, and anything else that explores the possibilities of "What if?"

By the way, even though Gene Roddenberry used the term *trekkie*, most Star Trek fans prefer *trekker*. Even Leonard Nimoy approved of the latter term. Roddenberry is claimed to have replied to fans at a convention, "No, it's *trekkies*. I should know, I invented the thing".

So who cares whether SFSA stands for *Science Fiction South Africa*, or *Speculative Fiction South Africa*, or *Sci-fi and Fantasy South Africa*, or *So Far, Still Alive*? By any other name it would be as much fun to belong to.

I may not know anything about sf classification… but I know what I like.

Gavin Kreuiter

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"Heavy Metal Thunder" **Ramon Thomas, Nial Mollison, Owen Swart, Alice Davies**

A fleet of Andorean light cruisers decloak nearby Earth orbit. Just then the Enterprise glides elegantly out of dock with a fresh coat of paint. Worf, scanning with new sensory array picks up explosions coming from Spacedock. High res scan reveals a full blown attack underway. Piccard hails the lead ship. Commander Kron grunts non-responsively. Following procedure fails. Piccard mentions *that* Starfleet report about fist fight in Council Chamber involving Andorean Ambassador and RWAH. Piccard dives through door of his ready room to chat with Andorean Ambassador. Leaving Riker on the bridge to co-ordinate the counter attack…… (to be continued)
(RWAH = Right Wing Alien Haters)

3rd Place Nova 2006 – General Section

EMPEROR OF HAG'S by Toby Bennett

The walls are green not emerald, beneath the stone is grey
The palaces of another world where gulls and dust display
Their finery against the light that streams in through the broken beams,
Tumbles from above and all beneath it gleams

Down by green dock stones an Emperor greets the sun, rich now with the slime of low estate. Two eyes that have seen more than any two eyes should see, stare without interest at the scattered light on the tip of each incoming wave. A beggar's robe staves off the discomfort of morning. His hand, once too fine to be seen outside a glove, runs across the slickness of the city's cobblestones. His city's stones. They are all that is left, except for the heaped piles of old bones and clothes, now home to a century of gulls and bad dreams. The Emperor of Emmirion slaps his lips in time with the creaking of the docks. It has been days, maybe weeks, since he ate, he is hungry and he is also not alone. The gulls have long forgotten fish; generations have dined on the leavings of the Lord of Emmirion. The constant riot of these jaundiced carrion birds is what gave the city its more modern name, City of Hags. Even now the thin wretches were screaming high screams of disappointment to the impending sky. But neither Emperor nor his shrieking court holds any hope in the incoming waves, more than a century of fear has marked the city's name. No trader might be tempted by the broken towers and make his way, a willing meal into the emperor's grasp. At the last only the most loyal and most foolish had awaited the Emperor's pleasure, the rest had taken with them what remained of the wealth that might have tempted the unwary. So the Emperor waits and thinks, dreaming of his ageless years of plenty.

Not all treasures had been lost though, one a red stone the size of a small egg hangs from the Emperor's still ample neck. And this is what brings the stranger to the city. For three days he has moved through its narrowest allies and crept through the worst of the city's debris. Only moving through the darkest phases of the moon, lest the gulls call the master of the city or worse elect to feast on him themselves. The thief has no illusions that the saber at his hip would be sufficient to deal with

either adversary. So, with patience learned from a lifetime of slowly realized ambitions, he edges towards the bulk at the shore. All the time the wonder at the carnage around him grows. Skeletons lie in mixed piles. Men women and children had all given themselves to the appetite of their undying emperor. One by one he had consumed them. Just the best bits at first. Then, or so the histories said, with an appetite that left piles of decay so large that only the birds could be expected to clear them and by then there were precious few left to be asked to undertake the task. Some had stayed, even then, held by faith in the will of old gods and the duty to their killer. A killer who had not aged in two generations, a secret of interest to any thief but to this one more than many others. Not old yet, not quite but gray hairs are beginning to show and his hands twinge when they replicate the speed of youth. Besides Akna is more than a common thief. The gem, hidden under the Emperor's ragged robe, draws him with more than the lure of simple years. The gift of a daemon, there are histories older than that of Hags that speak of it, the Eye of Dawn. A long life is the least of its gift, by night one who knows its secrets might use it to see the dreams of man since first he crawled from the jungles of Seg. The prize is irresistible to one such as Akna though he has stolen much since he left the Temples of the Moon in distant Nikshar, his greatest thefts are dreams. How many more might he yet see with time off his back and with a key to the most deeply locked visions and fantasies? Even the Emperor of Hags held little fear against such a hope.

The Emperor would be strong though, even now, strong with the blood and souls of thousands. Hence the need for stealth. A pity since the Emperor's treasures stretched to more than the stone as far as Akna was concerned. Nearly two centuries of decadence must have spun many rich dreams, dreams worth much to a connoisseur. He cannot speak the rituals so close, though, nor can he risk the noise of unbinding his hair to snag a few choice dreams in the crystals and bells that are threaded through it. The Emperor's second treasure must wait. Perhaps when the eye is his. Akna checks the bulbous silhouette in the distance. The Emperor has not moved in hours, nor has Akna for that matter and a thousand slow aches are spurring his impatience. Not now, though, there's a whole day to go before he can move again. Soon the sun will be high, its heat drawing a wet stench from the musty shadows below the buildings and bones. Akna swallows down his impatience with a shallow breath and sets his hope on the evening, "Tonight!" he whispers to himself, "Tonight, even the Emperor must sleep."

It was a mistake to speak, even with the shrill disappointment of the hags still ringing in the air. Sudden movement splits the grin of the skull in front of Akna's face. A rat glares out through the narrow opening, sizing up the interloper with cold eyes. Rats were generally less numerous near the hags nests, but since Akna like the rats, was

avoiding the hags above it was inevitable that he should encounter them. After all it was probably the rat and his brethren who had cleared the narrow tunnel under the pile in which he had chosen to hide. A reasonable risk since, like him, the rats rarely moved without the cover of darkness and spent the day in rest. Akna has no doubt that the rats share a love of human flesh with the birds. They had shared the piles of bodies until necessity had driven the gulls to seek the flesh of their smaller partners. His muscles freeze, as he forces calm like ice water through his limbs. More rats join the first, their numbers giving them a new courage. The largest of them shoulders its way to the front of the pack. Yellow teeth bared, it advances. The old discipline of Nikshar holds him still as the creature takes a first tentative bite at his gloved finger. Slowly his other hand reaches back. Another bite does not increase his speed, too fast and he might disturb the pile. Here in the dimness he has more chance than he could ever have in the sun, with the attention of the hags or the Emperor. Here beyond the influence of the sun he could work his magic.

A slow finger snags loose a lock of hair as the first blood flows, he winces not from the pain but from the sound of the single silver bell as it falls with the hair to the grimy cobbles. The smell of blood is too much for the rats, oblivious of the danger caused by the noise of their passage they surge forward only to stop as a soft glow fills the space in front of their victim. With the sounding of the bell the dream is free, she appears before her master. A nymph, half snake half woman, writhing in a dance. She undulates, twisting her glowing body into mesmerizing shapes that hold the rats transfixed all but the one still intent on Akna's finger. With a single slow movement his other hand comes round and snaps his torturer's neck. In front of him, the dream dances, always avoiding the single shaft of sunlight, beyond which the Emperor sits unmoving. Akna raises his hand and blocks the light, even if he cannot watch the Emperor, the sunlight is too dangerous to the dream's fragile existence. Beneath the pile in the gloom the light brightens and Akna allows himself to close his eyes.

The Emperor is hot now, the sun stabs at him from the cold tips of the waves. Afternoon will soon straighten shadows and turn the soothing wetness of the stones to a thick paste. Old smells as strong as he remembers jasmine, begin to roll from the warming streets. Without words, he laments the loss of his shining court. There is no incense or cunning fragrance here. No shade, no remorse. He gnaws idly at the ring that strangles his swollen middle finger. He stops when the sickly thickness of his own blood begins to nauseate him. He remembers the first. She'd been young. Her blood had been sweet, somehow his own had never satisfied him. He'd tried to make it though, drunk every animal's blood his courtiers could find. All sour. Above him the sun has begun it climb and he knows he will have to leave soon, he'd dared the sun before but it only scared him. The

dream stone was weak in the sunlight and all those stolen years tore at him if he was out when the sun was at its peak. Years, some part of him felt old, felt more dream than man, more nightmare than real. For a hundred years he had been a god and a hundred more had seen him a monster, his conscience grown so bored and experience as unwanted as memory. With startling quickness the great bulk scurries to the shadows of the nearest pile. His eyes close only against the sunlight, a stranger to sleep for more than fifty years; he sits and tries to remember dreams.

There might be one left, one last dream of an old fountain, now green and stopped with filth. It's white again now, behind closed eyes, as it was the first days of his life. His mother's fingers stir the water, shooting light over the garden's overhanging leaves; a scene so peaceful, he could almost believe that he slept. Birds laugh, now tiny and unthreatening, teasing the bell-like flowers with their hungry song. They suck nectar, just nectar, but the red of the flowers is too close to flesh. The Emperor knows that somewhere in the recesses of that warm red cup, the bird is seeking the last vestiges of a lost eye. Beaks bob into the fleshy hole singing sweet songs, some, frustrated, start to tear at the flower itself, and spilling blood onto the marble tiles around the fountain. The leaping water bears a painful light. The child is crying in his mother's skeletal arms. Thick slime oozes down from the screaming mouths of the cherubs encircling the fountain. The Emperor is mixing his cries with those of the hags, cradled by bones and too afraid of the midday sun to open his eyes.

A little way back in the alley Akna is listening to the mingled sobs and cries. Desperately, he puts them from his mind and for a moment, the dream-lit darkness beneath the bones reminds him of the stark temples, which jut like pale claws out of the gloom of Nikshar's eternal night. Here that grim place gives him hope, for all its endless phantasms and delights the city of eternal night, where Akna first learnt his art, held more subtle dangers than the slaughterhouse he now find himself in. For a moment Akna thought the Emperor might have found the sleep he'd hoped for. Patience. Everything must close its eyes at some time.

Suddenly, the Emperor opens his eyes, risking the fierce light of noon. Above him the hags circle at the peak of their hunger. Shadow after shadow dives down on the bones breaking them on stones to seek marrow or digging through the pile for a cowering rat. Some crowd around the bodies of smaller birds foolish enough to get close to their larger cousins. The Emperor squints his eyes and stares about him through the glare, he snorts in another breath savoring the scent. A scent to rouse him, even at midday, sweet and rare. The smell of human blood. Strength enough to dare the light floods through him, half-blind he stands. He spins himself about once, to catch the direction of the smell. Then he lunges towards the pile of bones to his right.

Aknas only warning is the dimming of the light. Then the bones above begin to shudder as a huge hand punches through them. Old reflexes take over and he is rolling to the side even as the hand snakes down. Hard bones hit his shoulder then explode away unsettling the pile. His body tumbles through the debris and stops against the pile on the other side of the alley. His eyes quickly adjusting to the brightness of the day can see the ragged bulk in front of him bring its hand to its mouth. The Emperor giggles to taste even a small drop of the stranger's blood.
"I'd almost forgotten" he whispers, without turning around.
Behind him there is the soft scraping of steel.
"You tasted foolish." The Emperor slurs, almost drunk at the mere thought of this long awaited feast, "Then, who but a fool would join me here?"
There is no reply but the sound of the saber parting the air.
At the last moment the Emperor's hand snakes out. In a blur he turns, catching the sword and holding it steady. At the same moment Akna flicks a throwing knife from his hip. The Emperor only grunts contemptuously as the barb thuds home. Akna stands, paralyzed for a second, extended for the thrust and unable to retrieve his sword, no matter how vigorously he tries. All he gains is a few drops of blood from the Emperor's hand and the dull grating of his rings on the sword blade. Then, impossibly, the Emperor begins to pull on the sword dragging Akna into range of his other arm. Left with no choice, the thief releases the sword and falls backward onto the grisly pile behind him. The Emperor's hand misses by inches and he scowls down in disappointment.

In the daylight without his weapons Akna has no attacks left but the most basic open to his kind. Uncaring of the risk, he closes his eyes and reaches towards the Emperor's mind with his own. In a single thrust he punches through the Emperor's conscious thought. Desperately, he searches for the dreams and phantoms that lie beneath, hoping for some nightmare that he might bring to the front of his attacker's mind. He finds only emptiness. At last he realizes the stone's terrible price and the Emperor's true torture. The stone had a hunger that would consume a common man, it demands dreams. One by one it had drawn off the Emperor's dreams, until the void tore him apart. There was the true irony; he did not crave the blood and flesh he took with such abandon. His never-ending hunger lay beyond that. A hunger for something so close to the warmth of blood and sinew that it could be tasted for just a second by one desperate enough. Despite his continued existence the Emperor was not truly alive. Only his jealous hunger coloured his days and as with all who know not what they truly seek, it is unceasing. Already Angor can feel the stone tearing at his mind, seeking fresh dreams. Only its weakness during the day saves him from being totally absorbed.

Akna snaps his eyes open only to find himself looking into his opponent's own desperate visage.

“Wait…” he manages to gasp, before two huge arms begin to encircle him. He flails about, grasping a skull in either hand and bringing them together sharply on either side of the Emperor’s head. Teeth grind against his collarbone as he jerks his neck away. At the same time he bunches his legs against the Emperor’s chest. With a heave of his whole body he forces himself back. He is not strong enough to defeat the Emperor’s grip but his coat is another thing entirely. With a second heave and the sound of tearing cloth he is once again tumbling to the street below. He is rolling even as he lands, narrowly avoiding the Emperor’s lunge. His hand finds the hilt of his fallen sword, heedless of its point he uses it as a crutch to drag his weakened body to its feet. Drunkenly, he begins to run, ignoring the exultant cries of the hags. He tumbles out into the open spaces of the dockside, out into the full sunlight. Behind him the Emperor growls, hesitant to dare the brightness. Without the sustenance of souls in so long and with the gem’s strength at its lowest ebb, he can feel the weight of his bulk. The stranger is fast, making the Emperor wonder if he can catch him with the sun at its height, but the taste of blood on his lips drags him out, the promise of a single moment of satisfaction is enough.

Two figures barrel out into the light and they do not go unnoticed, their watcher is born on thin wings and all that last strength is thrown into the hag’s dive down upon the first runner. A flash of silver and a shrill cry sends Akna’s sword swinging out in a wild arc that sets him off balance and spills him over the edge of the dock into the stinging water. The hag suddenly bereft of a wing hits the ground in a trail of gore. For a second there is silence. Other hunters look up curious, about the sound. Then, two sounds mingle as one. One is the sound of crying.

In the centre of the cobbled dock the Emperor meets the sun. Two eyes, that have seen more years than any two eyes should see, are blurred by tears. Whether drawn forth by the light or the tattered remnants of his soul, the Emperor cannot tell. Unable to see, he has only the sent of blood to drive him and with that lost when Akna hit the water, he is without any direction. Here in the noon sun, there is a clarity he has not had for more than fifty years. Blinded and almost free of the stone’s fell hunger, he sits, lost in a waking dream. His mother’s hands stir the fountain, playing light over birds; subtle flowers gasp perfume over the dancing water. One hidden dream left, peace in a garden, one moment of security set in unrestrained beauty. One last dream.

The second sound is the sound of wings. Across the city the hags move as one, the oldest remembers the sound of crying, the others simply follow. A cloud rises above Emmirion as if to sooth its emperor’s eyes but they are still sealed by unlooked for tears. The sound of flapping is a roar, a swirling torrent eerily silent as each bird measures its fellow’s response to the huge prize beneath. A giant, hung with flesh not scraps or bones but a feast to be taken, to be fought for. When the cloud splits it is

with a single shriek, one thunder strike before the lightning.

He'd touched the water too, felt the cool slickness and marveled at the light struck into golden ripples on the marble by the water above. The birds were still singing sweet songs as they ate. Tearing at the flowers, seeking for the nectar within. The water was stained with petals, stained red with petals. His mother holds him tight, almost hurting him. Almost but then he has known a greater pain. He laughs to see the birds at play in the sun, laughs at the petals on the water. He can feel the wind that stirred them on his face. The Emperor laughs as he has not done in a hundred years. Laughs until his throat is full of red petals and he can laugh no more and then, at last, he sleeps.

The moon rises as it must, making silver of old bones and dripping secrets onto dark waves. The thief is moving out from under the jetty, slowly hauling himself onto slick cobbles. Before him, almost as white and well picked as his fellows, the Emperor of Emmirion sits still grinning. The thief is digging in the scattered pile of bones, he smiles at finding his prize and then stops for a moment to re-tie a topaz in his hair. In the end he'd gained more than the red stone he cups in his hand. A single dream had escaped the stone's notice, but not the thief's. In the end he had spoken the ritual and wrapped up the charm. He'd caught a simple garden in a tiny topaz and at the last the Emperor had known what it was to be eaten.

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Heavy Metal Thunder **Mandy-Maria Phahlane, Gordon Reid, Andreas Lemmerer, Eileen Jamieson**

Bang! Crunch! The sound of metal on metal. 'What was that?!' Worf scowled, dropping his drum sticks. 'That was me attempting to play "Heavy Metal Thunder" in Klingon. Its supposed to be an opera. Data howled with laughter. He picked up his violin and proceeded to show how the 'Battle of the Bands' was going to be won by an AI. Worf grumbled, 'I wish Data had not gotten that emotion chip!' He pulled out his Batt-leh. 'I shall destroy your violin. Honour is my creed' Once the wood had settled the sound of Worf's Heavy Metal Thunder remained.

How Star Trek has changed our lives.

By Owen Swart

On the 28th of September 1966, television audiences first heard a theme tune that would grow familiar. Without particular aplomb, the Starship Enterprise made her debut and ushered in what would turn out to be one of the most successful entertainment franchises in history. Star Trek was born.

Breaking the mould.

But even before then, Star Trek was remarkable. Before the very first episode made it to the small screen, it had already broken the mould and set records.

In the early 1960's, Gene Roddenberry, a war veteran and veteran television producer pitched an idea to the executives of Desilu studios to combine two of the most favoured genres in popular entertainment of the day: science fiction and westerns.

He proposed a concept that he nicknamed "Wagon train to the stars", a name that would soon change to incorporate the first use of Afrikaans in American television: Star Trek.

Roddenberry was granted permission and finance to produce a pilot episode. So he did. The episode's title was "The Cage". Although The Cage bore some resemblance to the classic Star Trek we're familiar with, there were many differences… probably the most obvious of which is a different cast.

The network executives didn't much like The Cage. Among their complaints were that the story was "too cerebral", and that it wouldn't appeal to the average television viewer of the day. Also, the diversity of the cast was a concern: The fact that the bridge crew contained no less than two women, one of whom was the second in command, was dubbed far too controversial for television. The executives were also concerned at the presence of an alien on the bridge (the inimitable Mr Spock), so Roddenberry was instructed to "Lose the Martian or the broad."

Roddenberry was given an unprecedented opportunity to go back to the drawing board and produce a second pilot episode. Although the basic concept remained the same, the cast was almost entirely replaced, and the show was given a somewhat more "action-oriented" tone.

Despite the concerns of the network executives, Roddenberry was so committed to promoting racial diversity as one of the recurring themes of the show that he stuck to his guns, keeping the "Martian", as well as populating the bridge with two new women (one of whom was black!) and a certain helmsman of Japanese descent. In the second season, Roddenberry included a Russian officer… in the middle of the Cold War!

Roddenberry even managed to smuggle hotly disputed female supporting lead back onto the show in later episodes. Majel Barret who played Number One in The Cage was re-introduced in the role of Nurse Chapel. Barret remains the only actor to have played a role in every single Star Trek series to date. No doubt the fact that she became Mrs Majel Roddenberry had something to do with that.

Nichele Nichols, who portrayed the African Lieutenant Uhura, was talked out of quitting the show by Martin Luther King himself. He argued that her role on Star Trek was critically important to the cause of black equality, as Uhura was a black woman working alongside whites in a position of importance. Indeed Whoopi Goldberg claims to have been inspired by Nichols in choosing to become an actress. (You may recall that Goldberg played a recurring role in Star Trek: The Next Generation as the El-Aurian bartender, Guinan).

Star Trek's examination of issues surrounding racial diversity would not have made it past the censors of those days if they were explicitly expressed. Rather, they were implied… Star Trek followed the example of Gulliver's Travels as being an extended metaphor though which Roddenberry and his writing team were able to expose and explore race and other controversial issues of the day without offending anyone.

In fact, one of the more notable milestones that Star Trek achieved in those days also relates to the issue of race.

1960's America was a hotbed of political controversy. Women's liberation was still something of a hot topic, and racial integration was fairly new. The delicate sensibilities of your average suburban American family were not acclimatized to the idea of inter-racial relationships yet… it was still something of a taboo.

This is why it's so remarkable that Star Trek was the first television series to feature an on-screen inter-racial kiss. This image may seem unremarkable to us now, but in those days it was quite a shock to the system. And Star Trek is where it all began.

The writers of Star Trek, most notably D.C. Fontana, turned out to be rather prophetic in their use of scientific terminology. Although there are many examples, one of the more striking ones is the "Black Star" incident.

In the episode "Tomorrow is Yesterday", the USS Enterprise encountered an extremely massive object called a "Black Star". This object had such a large gravitational field that they were able to use it to fling them centuries back in time in the first appearance of the "Time Warp Maneuver". Those of us with a little knowledge of astronomy immediately identify the object in question as a "Black Hole", and think to ourselves how silly Ms. Fontana was in using the incorrect terminology.

That is, until we dig a little deeper. Tomorrow is Yesterday was first screened on the 26th of January 1967. However John Wheeler, a theoretical physicist, who coined the term "Black Hole", did so in a lecture given in December 1967… eleven months later.

Now, we don't know if Wheeler drew inspiration from Star Trek when he named the object, but apparently it's unlikely. I can't say either way: I never knew the man. Either way, it's certainly very interesting how close it was. Theoretical

physicist Lawrence Krauss in his book, The Physics of Star Trek, goes into considerable detail about the various uncanny predictions made by Star Trek in the realm of science… whether by accident or inspiration.

Despite these remarkable achievements (or perhaps because of them) Star Trek's ratings were not sufficient at the time to satisfy the all-powerful network execs. Mid-way through the second season, it was announced that Star Trek would be cancelled.

The intrepid and devoted fan base sprang into action. They put together a massive letter-writing campaign. So overwhelmed was the network by the flood of letters that they decided to renew Star Trek for a third season. Another precedent was set: Star Trek became the first science fiction television series to be saved by its fans.

Unfortunately by that time many of the creative staff had already signed up for other projects, so the reigns of Trek had to be handed over to a largely new team. Many Trekkies feel that this resulted in a loss of quality, since Trek's third season was clearly not at the same standard as the previous two seasons. This was the season that brought us episodes like "The Empath" and "Spock's Brain".

And so it was that Trek was cancelled again. The fans wrote in again, but were not successful this time. Star Trek came to an end… or so they thought.

After the original run completed, Star Trek went into syndication. It was sold across the television networks and was screened in rerun after rerun. The added exposure attracted a whole new audience, and Trek's popularity snowballed. By the mid seventies it became clear that Star Trek would need to make a comeback. But that's another story.

At around the same time, NASA (The American National Aeronautics and Space Administration) were preparing to launch their revolutionary new space vehicle, the Space Shuttle.

The prototype shuttle, originally named Constitution, was renamed as a result of another letter-writing campaign instigated by the apparently vociferous Star Trek fans. Her new name was 'Enterprise' in honour of the beloved fictional Starship. When the Enterprise was towed off the "assembly line", the Star Trek theme music was played and a delegation of cast and crew from the series were present to greet her.

Although the Enterprise OV-101 was only a test model used for landing simulations and was never fitted with engines, she flew a number of missions and now rests at the Smithsonian Institute in Washington DC.

Later installments of Star Trek paid homage to this concession by including images of the 0V-101 in the show. In Star Trek: The Motion Picture, a set of images on the recreation deck featured a photograph of the Shuttle Enterprise. Later, in Star Trek: Enterprise, Captain Archer's ready room also featured a display of drawings of earlier vessels named Enterprise… among which was included a drawing of the 0V-101. Enterprise's title sequence shows a quick clip of the 0V-101 being towed out of a hangar, with her name proudly displayed on her hull.

And so it was that Star Trek began to shape the world around us. Not only by pressure exerted by zealous fans, but by children who had been inspired to enter careers in the sciences by watching the original Star Trek on television.

Now, in the early 21st century, those children have grown up, and are responsible for the ideas that drive our civilization.

Section 2: The Trek life.

Take a moment to consider the most important innovations of the last three decades or so. Which one stands out as being the most significant? Although there are certainly many to choose from, I would argue that it is the Personal Computer.

Even from the beginning, Star Trek was awash with advanced computer technology, most notably the seemingly omnipresent ship's computer that saw to the needs of her crew. However, there were other computers on board as well. One that was featured often was a machine that can only be described as a personal computer that belonged to Mr. Spock.

Although it's unclear whether this device was a direct inspiration for the desk-top computer we know, I don't think it's too far of a stretch to suggest that it may be. And this puts Star Trek on a very short list of science fiction that successfully predicted its invention.

Taking it a step further though, one fairly pervasive technology that was directly inspired by Star Trek is the PDA, or Personal Digital Assistant. In the early nineties a team of electronic and computer engineers working for 3com were inspired by a device they saw in Star Trek: The Next Generation - The PADD (Personal Access and Display Device). It's essentially a fully portable, autonomous computer terminal with a flat design and touch-screen interface. Note how it bears a striking resemblance to the original PalmPilot. Although these first generation PDAs were not especially popular, their descendents are becoming increasingly pervasive. It's now difficult to enter a computer shop without bumping into a display of various such devices with an extraordinary range of capabilities.

Of course these days PDA's are becoming increasingly combined with cellular phones, which brings us to the next technology: The Personal Communicator. Although it barely requires mentioning, the 23rd century personal communicator was the direct inspiration for the clamshell cellular phone. There are some apocryphal reports that cellular technology as a whole was inspired by Star Trek… which may or may not be true.

It doesn't stop there, either. The later version of this device, the Commbadge has also begun to take hold. Hospitals in Canada have begun to deploy Vocera wireless communication badges as an alternative to beepers or mobile phones. Just as their fictional progenitors, these are activated with a touch and a vocal command, instantly and wirelessly connecting to any other device in the network.

Another significant set of technologies that have been, at least in part, inspired by Star Trek is medical technology.

One of the most startling things about the sickbay aboard the USS Enterprise is that, upon first glance, it appears almost empty. The main examination table is just a counter mounted against a wall with some sort of screen above it. The ward beds are similarly stark. There's not a needle or tongue-depressor in sight, let alone scalpels or a bone-saws. Indeed, as we see Doctor McCoy and his successors going about their healing business, it appears that they have mastered non-invasive medicine.

No more need for blood-tests or physical examinations… Bones is able to perform a thorough scan by waving a little silver sensor in your general direction, and perform a diagnosis based on that. In most cases, disease is cured by pressing a small syringe-like device to the patient's neck, a hissing sound is made and off they go. Broken bones, severe lacerations, burns, you name it are entirely healed by little glowing devices that only need to be near the patient to work.

Although some of those remain beyond our reach for the time being, other science fiction ideas have become science fact.

The simplest example is the hypo spray: a non-invasive alternative to the needle-syringe. Instead of physically piercing the skin with a metal probe, the hypo spray uses a high-pressure nozzle which uses the skin's own pores as a conduit into the blood-stream. It's less painful for the patient, and makes more sense since there is no need to discard a needle afterwards.

A more comprehensive suite of technologies has arisen around the non-invasive diagnosis ideas. In later Star Trek incarnations, the diagnostic tools were concentrated into the examination table itself, which became known as a Biobed. This piece of equipment contains an extensive array of highly detailed sensors which combine to create a detailed picture of the inner workings of the human body.

Anyone who has had a broken arm is familiar with the X-Ray machine: a device capable of detecting dense material within the body. But recent advancements have produced a plethora of other devices capable of searching within the body for a variety of things. Most notable of these the MRI (Magnetic Resonance Imaging) scanner. A device that generates intense magnetic fields and measures the distortions in those fields as they pass through the body in order to create a highly detailed picture of our insides. Although this device is somewhat larger than a Biobed, you can certainly see the similarity. MRI is only one of many such technologies. It's no real stretch of the imagination to suggest that over time these technologies will be miniaturized to the point where they can be combined into a single device, such as a biobed, or even made portable, as in a Medical Tricorder.

Another field in which Star Trek has led the way was in medical prostheses. Although prostheses are in themselves nothing new (wooden legs, hooks and glass eyes have been around for ages), Star Trek began to popularize the idea of functional prostheses: devices designed to fully replace a lost or damaged body part.

A notable example of this is visual prostheses, designed to replace a lost sense of sight. The first of these we saw was Dr Miranda Jones' Sensor Web, and later

Lt. Geordi La Forge's VISOR… both of which are designed to translate electromagnetic stimuli from the environment into neural signals that can be interpreted by the brain. Interestingly enough, modern scientists have created exactly that. A so-called "Bionic Eye" capable of restoring partial sight to the blind. Although not as sensitive as Geordi's visor, the Bionic Eye does represent a significant step forward, and will doubtlessly be improved until it is able to match, if not better, the visual acuity of a natural human eye.

Star Trek's prosthetic technology goes even further. Fleet Captain Christopher Pike was injured and disfigured beyond repair in an accident. Starfleet Medical provided him with a motorized wheel-chair which gave him mobility, as well as a neural link connected to a blinking light, which gave him limited ability to communicate.

21st century technology is apparently superior to 23rd in this area. Stephen Hawking, revolutionary theoretical physicist, Lucasian Professor of Mathematics at Cambridge University and arguably the greatest mind of our time suffers from a genetic disorder called amyotrophic lateral sclerosis (also known as Lou Gherig's Disease) which has robbed him of almost all motor control. Thanks to the wonders of modern technology (and probably in part to Star Trek) Hawking is equipped with a wheelchair superior to Pike's which allows him to live an almost normal life.

Since Hawking's illness prevents him from speaking, his wheelchair is equipped with a computerized voice synthesizer which he controls with subtle movements of his hand. This device allows Hawking to write books, give lectures and even participate in personal conversations. Hawking himself said that his life has been affected very little by this otherwise debilitating disease. If it weren't for those devices of his, we would not be able to benefit from his brilliance and the world would be less wonderful for it.

Recently, Professor Hawking was given the opportunity to experience zero gravity on board a "Vomit Comet" – a sub-orbital aircraft used for testing the effects on zero gravity on various test subjects.

Hawking's brief experience of space tourism reminds us of another Star Trek influence on the blossoming space industry.

Richard Branson, fun-loving multi-billionaire, founded a company called Virgin Galactic. The purpose of which is to provide commercial space-flight experiences to the general public, at a relatively affordable price. Based on the design of SpaceShipOne, the first privately owned and operated manned space vehicle, Virgin Galactic aims to build a flotilla of these passenger space-ships designed to take a few passengers up to the edge of space, and allow them to feel the effects of zero gravity on the way down.

Star Trek fan Branson has chosen names for his space-buses: VSS Enterprise and VSS Voyager, named after the fictional starships of those names featured in Star Trek.

Following time's arrow.

It is my belief that Star Trek has not finished with us yet. We're not yet done with the influence that Trek will have over our lives. The reason I say this stems directly back to the inspirational effects of Star Trek.

Although some scientists and engineers have been able to convert the ideas portrayed in Star Trek into tangible, ubiquitous technology within a life-time, some of Trek's ideas are not so easy to manifest.
I'm talking of course about the broad strokes, the big pictures, the life-changing, singularity-inducing ideas that will forever leave its mark on the face of the galaxy, not just on human history.
Theoretical physicists have also been inspired by Star Trek. These are the people who come up with, and prove, outlandish ideas with no tangible, immediate technological effect. Things like Relativity and Quantum Mechanics.
One theoretical physicist of some note, a Professor Stephen Hawking, is the only person ever to have played himself in an episode of Star Trek. He appeared in the episode of Star Trek: The Next Generation as a holographic representation of himself, and participated in a poker game between Isaac Newton, Albert Einstein and Lieutenant Commander Data.
Prior to his guest appearance on the show, Hawking, along with a group of other scientists of various disciplines, was given a tour of the set of the Enterprise D. The story goes that upon being taken through the set of main engineering, Hawking rode over to the warp core and in his computerized voice said "I'm working on that."
For indeed he is. Hawking, and a host of other scientists who have been, at least in part, inspired by Star Trek are working now to create the basic theory and mathematics describing the physical, spatial and quantum effects that must be harnessed in order to create these monumental technologies.
Which technologies are we talking about? Well, let's look at them one at a time. One that preoccupies the mind of many scientists working for organizations like NASA, SETI and even Virgin Galactic is Inter-stellar travel.
As difficult and expensive as it is getting people 100 kilometers into the sky, how much more difficult can it be getting people millions and millions of kilometers to the nearest star? Let alone the rest of the galaxy.
The bottom line is that interstellar travel may simply not be possible. It may be something that, despite our best efforts, is beyond our reach. With that being said, there's no reason why we shouldn't try and do it anyway. Star Trek has given us some interesting ideas on how we might do it.
The first, and probably easiest, way of doing it is the sleeper ship. Like the SS Botany Bay or the Klingon vessel T'Ong. The idea behind this is that the crew is put into a state of suspended animation, thus preventing them from ageing to any substantial degree during the ship's journey. The ship then chugs along at sub-light speeds, taking years, centuries or even millennia to arrive at its destination.
There are some clear disadvantages to this:

- It's a one-way trip. Since the crew will be en route for many years, by the time they reach their destination, it's quite possible that their friends, family and even mission control personnel will be long dead. Even if they do turn

the ship around and head home, the Earth they return to will be a very different Earth to the one they left behind.

- The ship is unmanned. If the crew is asleep for most of the journey, it means that the entire course must be planned beforehand. Any unexpected occurrences along the way (such as supernovae, rogue comets, alien visitations or temporal anomalies) will have to be handled entirely by the navigational computer. This could be mitigated by having a rotating crew, where some of the crew is awake while the rest are asleep, and leapfrog sleep-wake cycles through the journey. However this would limit the maximum distance of the trip so as to account for the life expectancy of the crew.
- There's no backup. Once the ship has traveled a substantial distance, there is no support in the event of an accident. If anything goes wrong, they are entirely on their own.

So although Sleeper Ships are probably quite practical using technology we have today, they are generally not considered a viable option.
Another potentially viable option is the multi-generational expedition, as employed by the Varro. This solution is similar to the Sleeper Ship, in that the ship itself needn't travel faster than light. The difference is that the crew is not placed in suspended animation. Rather, the crew is placed on board to maintain the ship and to procreate in order to foster new generations. The original crew will most likely never see the destination, but rather it will be their descendants who will complete the mission.
Although this too sounds like a pretty good idea on paper, there are some problems with this as well:

- No backup. As with the sleeper ship, a generational ship would be entirely on its own in the event of an emergency.
- One-way trip. Since the original crew are unlikely to survive to see the mission complete, this would be a one-way trip for them.
- No choice. Probably the biggest concern with this option is one of human rights. Although the original crew would have the option to choose to participate, their children would be born into the mission, and would not be given the luxury of choosing whether or not to participate. It's conceivable that a large percentage of post-launch generations would choose not to assist with the mission, which would place the mission as a whole in jeopardy. What if the original crew's children stage a mutiny and decide to turn the ship around?

So despite the physical viability of this solution, this is also regarded as a pretty undesirable option.
The main thing that these two solutions have in common is that they involve traveling slower than light… which means they take a really long time to get anywhere interesting. To make interstellar travel both practical and desirable, it's necessary to travel faster than light… which means we have to fiddle with the laws of physics.

To sympathize with the Enterprise's chief engineer, Montgomery Scott, "we cannae change the laws of physics!" So if we want to travel faster than light, we'll need to get creative.

And in Star Trek, that's exactly what we do. What Professor Hawking was referring to when he quipped about the warp core, was the ability to circumvent the ultimate speed limit (light-speed) and traverse tremendous distances without that constraint, and without relativistic effects.

So how do we break a speed-limit that can't be broken? How do we accomplish the impossible? We do what James T. Kirk did when he faced the no-win Kobayashi Maru scenario at Starfleet Academy: we change the rules of the game.

The process works like this:

- Step 1: create a coherent gravitational field around your ship
- Step 2: Extend the gravitational field ahead of the ship, and use it to bend space. If you push enough energy through this field, space will be bent to such a great degree, it can substantially decrease the actual distance between your ship and your destination.
- Step 3: Your ship moves slowly through the compressed space.
- Step 4: drop the gravitational field and space snaps back to its normal shape.

In effect, what you have accomplished is traveled at a speed far less than light, but achieved a resultant velocity many times greater than the speed of light.

The problem this creates is that bending space and time takes a LOT of energy. I won't get bogged down in figures but to give you an idea: in order to create a stable warp field for any substantial amount of time would require more energy than our sun puts out during its entire lifetime. Ouch. That's a lot of watts.

If we want to produce that amount of energy we'll have to do better than burning fossil fuels, or even nuclear fission. Which is why, in Star Trek, they use the most efficient means of generating power ever devised: matter/antimatter annihilation. While matter is made up of atoms, which are, in turn, made up of positively charged protons and negatively charged electrons, anti-matter is made up of atoms that consist of negatively charged anti-protons and positively charged positrons. When antimatter atoms and matter atoms come into contact with each other, the annihilate each other, breaking each other down to their constituent quarks… resulting in a massive release of electromagnetic radiation. The both atoms are completely converted into energy, making it and extremely efficient power source.

As efficient as a MARC reactor is, however, it still doesn't solve the energy problem. There is a substantial shortfall between the energy required by the warp engine and the power generated by the warp core. In Star Trek they pretend that that problem has been solved, but in real-life science it hasn't… and that's one of the many questions that occupies Professor Hawking's mind.

But what if we could find a different way of doing it? What if we could find space that was already warped and just travel along it? More specifically, what if we could find shortcuts to distant places that would allow us to avoid lengthy journeys?

To do this, we need to look to a theoretical special phenomenon that was used rather extensively in Star Trek: Wormholes.

Bearing in mind that space-time is not a constant flat shape, it seems reasonable that sections of space that are far away from each other in 3D space, might actually be quite close together in 4D space-time. All we need to do is find the quickest way to get there. If some of those places are close enough together, there may be some local conditions in both places that could cause a wormhole to open.
A wormhole is a tunnel through the extra-universal realm that connects two points in space-time. In theory a ship could fly into one end of the wormhole, through the tunnel and out the other side light-years away, possibly in seconds. It sounds like a brilliant idea, but there are some pretty serious stumbling blocks to this one:

- Wormholes are entirely theoretical. Although there is theory and math to describe them, we have yet to detect a wormhole. They may possibly exist, but at this point we don't know if they actually do. Since we are unable to detect the 4D "shape" of space-time, we currently have no way of knowing if any two points are closer together than they appear.
- The extra-universal realm is pure speculation. We have no idea if such a realm could exist. Since it's beyond the reach of our laws of physics, we have no way to describe how conditions in such a realm might be. We don't even know if matter from our universe could exist in such a realm, and therefore if we could survive passage through it.
- Wormholes are unpredictable. Our current perspective on how wormholes might be indicates that they appear at random, would only exist for a fraction of a second, and would then disappear again forever. Since wormholes operate in 4D space-time, there's no guarantee that the time you leave would be anywhere close to the time you left. You may arrive millennia before or after you left… perhaps even before the big bang, or after the heat-death of the universe. Plus, there is no way to predict your destination point.

With our current level of understanding of these objects, it's simply not a viable option. But our understanding is growing. Professor Hawking and his colleagues are working on it, and there may yet come a time when we can use wormholes as reliably as the Borg use their Transwarp Network.
Another exciting idea popularized by Star Trek is that of teleportation. Star Trek's transporter is one of its most famous innovations, having prompted many a Trekkie to plead with the imaginary Scotty to beam him up.
Although Star Trek predicted a particular way of accomplishing this feat, there seem to be various solutions to this problem as well.
The Star Trek solution is comparable to a "brute force" approach:

- Scan
- Dematerialize
- Transmit

- Rematerialise

Although this seems to be a fairly commonsense approach, there are some issues with it:

- The Heisenberg Indeterminacy Principle. One of the fundamental principles in quantum physics states that it is impossible to know both the location and spin of any given particle. Star Trek solves this problem by adding a fictional device called The Heisenberg Compensator, but makes no attempt to explain how such a device might work. This isn't to say that this problem is insurmountable, just that with our current understanding, there's no way around it.
- Complexity. In order to build a machine of this nature, it requires extremely detailed understanding of a wide variety of completely different scientific disciplines, including, but not limited to: computer science; molecular biology, neurology, quantum mechanics, chemistry, particle physics, metallurgy, astronomy, general physics, meteorology… this list goes on. Creating a machine governed by principles of all these various fields would require a research team of hundreds. The sheer size of the team required leaves open such a huge margin for human error that it seems virtually impossible to accomplish.
- The survival issue. As I discussed in my lecture two years ago, there are metaphysical questions surrounding this technology. Primarily, the question is whether or not a passenger can expect to survive the process… in other words, is the person who steps off the transporter pad the same person who stepped on? I won't go into much detail about this now, but suffice to say this question would need to be dealt with before anyone would be prepared to use such a device.

Another approach is one that is actually being explored by a number of contemporary researchers. This approach uses a weird quantum effect called entanglement.

It's a process whereby particles can be "entangled", in other words the properties of one particle are copied onto another, thereby making them identical. In the process, the two particles become linked, and any action taken one of the particles causes an instant effect in the other, regardless of how far apart they are. So far this process has been used to "teleport" very small things like electrons and photons, but the theory has been documented that could allow for the same techniques to be applied to larger objects.

The concerns here are real as well:

- Survival. As with any means of teleportation, it's not really clear whether it's reasonable to assume that you will survive the process.
- Mechanics. Although the theory exists to govern the teleportation of relatively large, complex structures, there isn't yet any idea what the machines would look like that might be able to perform such a thing. It's not even clear if it's within the realm of possibility to build such

machines… the technology is still too new. The way around this one is to wait and see.

Another direction technology might move in that Star Trek has dealt with, is the idea of human enhancement. This is a concept that goes beyond current medical technology which is designed to keep us healthy and operating at peak, but rather to extend that peak performance rate by modifying the body.
Nowadays athletes are tempted by steroids and other performance-enhancing drugs that temporarily alter their body's bio-chemistry allowing them to push harder and faster than normal. Star Trek predicts that new technology will open up a whole new realm of possibility for permanent modifications.
These potential modifications are divided into two broad categories: biological and technological.
Biological modifications will become increasingly possible the more we learn about the human genome. Already, geneticists and molecular biologists are learning which genes are responsible for many of our physiological traits. With some experimentation, they can learn to tweak those genes to eliminate performance affecting flaws and possibly even increase the potential of the human body.
The Augments, a group of genetically engineered human "supermen" ran amok in the Star Trek universe, since their superior physical abilities also created superior ambition. With more careful modifications, this sort of error can be avoided. The question is whether we should… but that's another story.
Technological enhancements are embodied in Star Trek by a race called The Borg. These beings have gone beyond using technological devices to replace damaged body parts, and taken the next step by replacing perfectly good organs with prosthetic implants that perform better.
Again, the question should be asked whether or not this is a good thing to do, but we are not far off from having the option to do so. Some new prosthetic feet are so efficient, that they are able to out-perform human feet in athletic competition.
Another advancement with possible medical applications is that of nanotechnology – the ability to build machines out of individual atoms and molecules. Although engineers are dabbling with this technology even now, Star Trek predicts that someday we will be able to build nano-robots, capable of complex programming. They could be used for medical purposes, such as Dr Crusher's Nanites, or for more insidious purposes such as the Nanoprobes employed by the Borg.
This leads us to the next big issue, that of artificial intelligence. It's not impossible or even unlikely, that we will see, in our lifetimes, the development of computers who will rival, if not surpass, the human brain in processing power.
One technological advancement I am particularly looking forward to is that of immersive systems – virtual reality simulations capable of fooling all the senses. Star Trek has presented us with two versions of this technology as well:
The Holodeck is a chamber which essentially puts you inside the simulation. It generates real-looking holograms in real-time, as well as replicating solid matter in order to make the simulation more convincing.

An alternative to this approach is one that puts the simulation inside you. The Kohl of the Delta Quadrant devised a neuro-synaptic simulator that interfaces directly with a humanoid brain, generating a real-time simulation in the mind itself. For them, this device was used as a stasis chamber, keeping the occupants' minds active during stasis instead of keeping them asleep. This works on the same principle as the Matrix.

The most difficult problem associated with this technology is its inherently addictive nature. People with the wrong personality types could easily become enslaved to a simulated world, and lose track of the real world… as happened to Lieutenant Barclay when he suffered from Holodiction.

Probably the most remarkable, and arguably most controversial future technology is time travel. Moving forwards in time is easy… we move forwards in time constantly, just by existing. If we want to move through time at a more rapid rate, we just need to travel closer to the speed of light. Moving Backwards in time is the trick part.

Professor Hawking notes that the Theory of General Relativity doesn't specifically preclude the ability to travel backwards in time, but nothing in our current understanding of space-time suggest any reliable mechanism through which it might be accomplished (with the possible exception of some weird quantum effects in which effect appears to precede cause). Star Trek has suggested a couple of mechanisms though which it might be accomplished… let's take a quick look at those.

The first time-travel mechanism Star Trek presented was Kirk's famous "Time-warp maneuver". In essence, it involves flying straight towards a very strong gravitational field at maximum warp, and using a kind of slingshot effect to propel the ship out of normal space-time allowing it to traverse great periods of time in a matter of seconds.

The second mechanism is by generating some sort of Temporal Portal, Vortex or Conduit… basically three different names for the same thing: a wormhole. The USS Voyager encountered a stable wormhole in the Delta Quadrant which led across the galaxy to the Beta Quadrant, but twenty years back in time.

As I mentioned in the discussion around wormholes, it's entirely likely that they could span great distances in time as well as in space. Assuming it was possible to create an artificial wormhole and keep it stable long enough to travel through safely, it seems feasible to be able to open one to the same place in space, but a different place in time. It seems to me that Kirk's Time-Warp maneuver is probably a pretty complicated way of accomplishing the same basic effect: allowing the ship to travel through the extra-universal realm and back in again at different time coordinates.

The possibility of time travel raises some pretty big questions. The first one that springs to mind is: if someone does invent time travel someday, why don't we see time-travelers visiting us today? It's not impossible that in this hypothetical future society that is capable of moving through time at will, there exists some equivalent of the Temporal Prime Directive that prohibits "Chrononauts" from revealing themselves to those they meet on their travels.

It also raises the question of paradoxes and causality loops: Is it possible to travel back in time and kill your own father before you were conceived? If you were never conceived, then you couldn't have traveled back in time and killed your father… a Star Trek example exists in the time-travel themed film Star Trek IV: The Voyage Home. In this film, Scotty and Bones visit a plexiglass factory, and in exchange for a generous amount of their product, they provide the manager with the formula to create transparent aluminium.
Assuming the manager's computer wasn't erased along with the formula at some point after they left the factory, and he went on to patent the design… nobody actually invented transparent aluminium. This isn't so much of a problem if you subscribe to the "many worlds' interpretation of time-travel.
In this model, all possible universes exist, in an almost infinite tree of causality. At every quantum turn (a point where a particle must go either in one direction, or in another… two universes are created: one in which each possibility is true. According this model, it's entirely plausible to travel back in time, interfere as much as you like, then travel back to your own time in a separate universe.
Star Trek has shown a preference for this interpretation, but there is another possible option: that while it is possible to travel back in time and interact with people there, you cannot alter the past, only participate in it.
In this scenario, it would be impossible to kill your own father, since you have already been born. Even if you traveled back in time with the intent to kill your father, something would happen that would prevent you from succeeding… and you know that this would be true because you were born in the first place. Star Trek hasn't shown this version very well. Rather it has probably best been demonstrated in the film Twelve Monkeys.
Technology isn't the only thing that Star Trek has predicted. Many people suggest that the reason Star Trek was as popular as it has been is the world it depicted: a utopian society in which all poverty, disease, crime and misery have been eliminated. There is still conflict in the Star Trek universe, but that conflict is more a clash between varied ethical values than it is petty squabbling over resources.
The United Federation of Planets closely resembles the communist utopia envisioned by Carl Marx. While that may or may not have been a conscious choice by Gene Roddenberry in the midst of the Cold War, what I think is more important than the choice of social system employed is the idea that someday human society may well reach a stage in which the greatest problems we face today are nothing but an unpleasant memory.
It's this vision that motivates me and my fellow members of STARFLEET international to promote Star Trek as an inspirational work. It's our mission to do whatever we can to bring society closer to that ideal.

When that first episode, The Man Trap, was screened, it hadn't occurred to anyone that this show was something special. Something different, and altogether new. Something that would inspire generations of fans to achieve greatness. Something that would change the world.

For that was precisely what it has become. Star Trek may be an entertainment franchise, but it is also so much more: It is a vision of our future, our potential and our hopes for what we may yet become. Is it any wonder that this monumental body of work has taken residence in our hearts, minds and indeed the lives we lead daily?

June 16th 2007 - Star Trek MiniCon

On a cold day in June some 27 members of SFSA and the Starfleet Academy got together to hold the annual Star Trek MiniCon. The episode theme was greatest battles, although Q's battle for Captain Janeway's heart did not really qualify. The episodes from the other three series were rather more appreciated. We tried out the club's newest acquisition, a data projector and wondered why we had taken so long to obtain one.

Owen Swart (left) gave us the very entertaining and thought-provoking talk printed above. Warwick Brown regaled us with a whirlwind rush through the colonies of Star Trek and Babylon 5. We were somewhat surprised to see the similarities between some of these and earlier colonies on Earth itself.

Four groups wrote 99-word wormholes entitled "Heavy Metal Thunder", which you will find printed around this issue.

All in all we had a very entertaining day together. Thanks go to Ahmed Wadee for organizing the venue.

3rd Place Nova 2006 SA Section

Change of Mind

Gavin Kreuiter

'So, Prof, are you going to swap your brain with a goldfish today?'

'Honestly, Alex, for an intelligent postgrad, you can be incredibly facetious. You know the difference between the brain and the mind. The brain is physical matter, while the mind is a form of energy.'

'Ah, but matter **is** energy, according to Einstein.'

'No it's not, although it may be transformed into energy, resulting in a large explosion, not unlike the one I am about to have, unless you give me a hand with this equipment.' Professor Brian Factor, head of the Physics Department in the Faculty of Science at the University of Cape Town, carried the goldfish bowl to the table that was positioned opposite a large device that looked a bit like a mainframe computer. His protégé, Alex Bowden, switched on the device, and started adjusting some dials.

The bowl contained a single Black Moor goldfish. It was predominantly velvety black, with some traces of orange and a few white spots. Large protruding eyes on the sides of its head seemed almost vacant as it swam listlessly around the bowl, reinforcing the popular conception that they were rather dim creatures.

The device would have delighted the director of a B-grade movie, because its front panel was full of flashing lights and large dials to satisfy the optical sense; and it constantly emitted some interesting beeping noises for the benefit of the auditory one. It looked like a cross between medical and military electronic equipment, and would have blended equally comfortably in a surgical drama, or on board the Enterprise. It was pretty much box-shaped, except for two telescopic protuberances that resembled camera lenses.

The professor continued, 'Using the Encephaloradiation Exchanger, I'm going to transfer my consciousness into the brain of a goldfish. Swap mine with it's, to be precise. I haven't managed to extract or store consciousness yet, just exchange it.'

'Ja, okay, but you couldn't you think of a better acronym than ERE?' asked Alex.

Professor Factor sighed loudly and said, 'You know that physicists are not renowned for their marketing skills. Someone will probably change the name later. But I think it is rather descriptive.'

'You still haven't told me how a fish brain can hold all your incredible intellect.'

The professor sighed again. 'Really, Alex. Flattery might help improve your year mark, but it's not necessary at the moment. I need your seriousness and concentration today, not your Ikey wit.'

'Sorry, guv. I'm, a bit nervous, you know?'

Brian looked at Alex a bit more closely, and noticed that he was, indeed, paler than usual. His tanned, athletic body belied the rather sickly expression on his face. 'It's all right, Alex,' he said quietly. 'I am sure that I will be perfectly safe. But, just in case, I have taken measures to ensure that my research won't be lost. That DVD contains all of my notes and thoughts. Encrypted, of course, and digitally signed, you'll be pleased to know. If I **do**, um, have an accident… I want to ensure that I still get the credit. Posthumously, of course, ' he grinned. 'But who knows? Maybe I'll - or my eternal consciousness will - be able to able to observe the repercussions of my blinding insight and effervescent intellect after my body… Damn, now even I'm overdoing it.'

'Ja, well, that's okay, Prof.. Hey, what's the password?'

Brian grinned. 'The decryption key is "Change of mind is a new beginning". All lower case, no spaces or special punctuation. And to answer your question, the consciousness is pure, mass less energy. So there is no possibility of overflowing the physical dimensions of a brain.'

'But why a goldfish?' asked Alex. 'Surely an orang-utan would be a better match?'

'As you know, I've experimented with a variety of creatures so far. The exchange and reversal seem to have no lasting

negative effects, provided the reversal is done soon enough. It doesn't seem to matter what two animals I use. They might be a bit disorientated for a while after the experiment, which is understandable – but that's all. I haven't seen anything to indicate permanent damage of any sort, no matter how incompatible the creatures might be. So the concept of a "match" seems irrelevant.

'As to why a goldfish…' He shrugged. '*Carassius auratus* provides an interesting perspective. At least, the popular press seems to think that the goldfish is the only animal that can see the entire range of visible light as well as infrared and ultraviolet. I haven't been able to find any papers on this in scientific journals, although I haven't really looked very hard. I thought an empirical approach would be best.' He grinned. 'Now let's get going.'

Alex strapped the professor on to a couch, so that his goldfish-controlled body would not be in any form of danger. He then aimed one of the projecting lenses at the professor's head, and the other at the goldfish bowl.

'How long did you set the timer for?' he asked.

'One minute,' the professor replied. 'As I said, the only problem is delaying the reversal for too long. There seems to be an upper limit of about 40 minutes before the mind shows signs of damage. Interesting number, that. Appears in religion a few times. Forty days and forty nights was the duration of the Flood, and the time Jesus spent in the wilderness. The Israelites wandered for forty years. Muslims mourn the dead for forty days. And minus forty degrees is where the Celsius and Fahrenheit scales intersect.'

'Hmm, and add two for the participants, and you get the answer to Life, the Universe, and Everything.'

'I have no idea what you're talking about, as usual, Alex. You sometimes really go off on a tangent. To get back to the question of duration, I've given myself plenty of leeway.

This first trial is more "proof of concept" than any hope of reaching eternal truths. So fire away.'

Alex pressed a large red button labelled *Start*, and wondered, 'Where do you want to go today?'

For forty seconds, Brian experienced a bewilderment of sensory data that refused to coalesce into a comprehensible image. It was completely different from the coke trips he and Alex occasionally indulged in. That was either the clichéd kaleidoscope of colours, or nightmarish or idyllic dreams that appeared to be real. But this, this was an overload of sensory input that he couldn't make sense of. At least his rationality was unaffected – he could appreciate the irony of being unable to make sense of sensory data. And his emotions were intact: he was aware of the frustration that was building up. He didn't feel panicked, so he wasn't drowning in the sea of raw data.

And then, quite suddenly, his vision came into focus. He still couldn't hear or feel anything, but he saw (in his mind's eye?) two distinct scenes, like watching split-screen television. And yet neither scene seemed right; they were distorted like… a fishbowl? Of course, the fishbowl! He felt a surge of elation, better than any drug-induced euphoria he'd experienced before. And felt like laughing out loud – only he didn't have the equipment to do so. He gave a mental giggle instead. This is **not** what a fisheye lens looks like!

Sanity prevailed. He concentrated on his perceptions with a more typical scientific detachment. Even taking the distortion due to the glass into account, the scene seemed unreal. And then he realised: he was picking up infrared signals over and above the visible spectrum. His mind was not quite sure how to present the data, and seemed to settle an overlay, like superimposing a thermal display over a 'normal' one.

And ultraviolet? He could see a greenish glow embedded in many objects, like a B-grade portrayal of radioactivity. Why green? he wondered. And then it dawned on him: his mind was trying to express

unfamiliar signals in familiar terms; exposing objects to ultraviolet radiation made them appear luminescent, so his mind subconsciously interpreted the phenomenon the way radioactivity was often portrayed in movies.

And then, a gut-wrenching moment as his mind tried to come to grips with the sensory data emitted from his own familiar – and yet somehow almost alien - body. The minute had expired.

A month later, Alex was once again in the physics laboratory with Professor Factor. 'Sorry, Prof. I've got to be the Union meeting tonight. The student union is organising protests about that ridiculous claim of sabotage. I mean, we all know that it was just an electioneering ploy. Koeberg has been mismanaged, and our lives are at stake here. I for one want to see that things change. We can't have Eskom fooling around like this; nuclear energy is great, but only if it's managed properly. A bolt! Can you believe it? "For the want of a nail, the kingdom was lost". Well, for the want of a bolt, millions were lost. And it could have been lives, not just rands.'

'I'm sorry to hear that, Alex,' said Brian. 'I know it's important to you, but this is important to me. I'm getting much closer now.

'You see, an EEG measures electrical activity of the brain as the neurons fire,' he explained. 'This is just the physical manifestation of the mind. We haven't been able to detect the mind itself. I believe it is a form of energy that *cannot* be transformed into other known forms of energy. And if this is the case, it validates the concept of the soul or spirit found in so many religions. Conservation of energy dictates that mind energy cannot be destroyed, which would confirm the existence of the eternal spirit, or soul. Of course, it could probably be transformed into similar forms of energy, like a universal pool of consciousness. Sort of like the Hindu concept of Brahman, or the universal cosmic spirit found in other religions.

‘But, like string theory, this is unfalsifiable speculation and not what I call physics. For something to exist to a physicist, it must measurable. I can’t measure it yet. But, using the ERE, I *can* exchange two instances of it. By swapping my mind with other creatures, I expect to gather more and more data. For the moment, I want to experience as much as I can using the brain of a goldfish.’

‘I know all that, Brian, but you’ve gone into that fish brain a dozen times already. Can’t you wait till tomorrow?’

Professor Factor looked at Alex with mild surprise. His student (with additional benefits) never used Brian’s first name unless he was really worried or serious, both rare emotions for the enthusiastic youngster. But time was important. ‘Tell you what, you cycle off to your meeting, and I’ll get some more documentation done. If it’s not too late, pop over after the meeting, and we’ll give it another go. Otherwise, we can do the next run tomorrow.’

‘Okay, Prof. Even the Brainy Factor needs a break once in a while. I might see you later.’

Brian smiled indulgently at the old joke. ‘Bye, now.’

After Alex left, Brian immediately prepared the equipment for another transfer. He didn’t want to worry Alex, but it really was too important to stop now. He just wouldn’t tell him about it.

He’d made enough progress over the past few weeks to know what to expect, and to be able to strap himself in, leaving one hand free. It wasn’t ideal, but they now knew that his body was fairly comatose while under piscine control (or lack of control). Of course, he had no idea what the goldfish mind made of all the sensory data that the nerves supplied to his own brain, but it didn’t seem capable of converting mental activity to physical action. Mind you, that was an idea; he didn’t know why he hadn’t thought of it before. An EEG recording of a fish mind occupying a human brain… that

ought to make interesting reading for a neurologist.

He'd set it up tomorrow. Right now, he wanted to explore the boundary limits he'd identified. He wouldn't go beyond 40 minutes – that would be irresponsible – but a 39-minute trip ought to suggest whether the mind started tiring towards the end, or whether autism was induced in a sudden chaotic event. He'd never noticed problems with any of his subjects provided the exchange lasted less than 40 minutes, so it should be safe. Curiously, the duration seemed to be independent of the type of mind; rats, dogs and chimps had all sometimes demonstrated almost autistic behaviour at various intervals after 40 minutes. There was no discernable pattern regarding the type of mind or the time limit. And it wasn't a common occurrence, anyway. While he was certainly no bunny-hugger, he couldn't reasonably destroy large numbers of animal minds just to see if he could spot a pattern. That's why it was so important to analyse the effect on his own mind.

'Here goes,' he thought as he pressed the *Start* button.

The disorientating sensation persisted, no matter how many times he did this. But, as he gained experience, it was taking less and less time to assume control. A mere five seconds had passed before he was able clearly to see the timer on the machine. And the ultraviolet and infrared sense data were now old friends.

One of the refinements he had made after the first experiment was to put the goldfish into a regular fish tank, so that his vision wasn't distorted by spherical glass. Of course, the water and the glass still had a magnifying effect, but that was boon actually. He concentrated on the objects he had previously placed on the table: two pot plants (not cannabis: an African Violet and a King Protea), a rat cage (complete with two white rats), a cat (Prussian Blue, also in a cage), and computer screen (displaying a boring screensaver). The variety of animal, plant and electronic life provided interesting

sources of comparisons, when viewed using his extraordinary senses.

He was quite amazed at the predominance of infrared data; even ultraviolet was more common than the so-called visible spectrum. He wondered why humans had lost the ability – or had never developed it – to perceive infrared. It was surely a useful advantage for a predator. And he also wondered why goldfish had not only evolved these abilities, but also retained them.

As always, time flies when you're having fun. A glance at the timer showed that 37 minutes had already passed; just two more to go before…

The lights went out. And everything else. 'Oh, my God, no! Not another Eskom power failure! Not now. Just two more minutes before the reversal would commence. Would have commenced.'

He had plenty of time to regret never installing a battery backup. Just one of those little things that had never crossed his mind.

He'd been told that the worst part of having Alzheimer's is *knowing* that your memory is fading. And the worst part of this Kafkaesque nightmare was knowing that his mind would never return to his body. And *not* knowing whether he, too, would develop autism, or whether he would remain conscious in terrifying awareness until the goldfish finally died. He realised he had never researched the average lifespan of *Carassius auratus*. Another one of those little omissions…

The Vice Chancellor followed the two detectives into the laboratory. Brian's body, discovered an hour earlier by a cleaner, was still strapped into the couch. After an initial examination to ensure he was alive, and a failed attempt to communicate with him, he'd been left as he was found, and the police were called.

One telescopic lens was still pointed at his head, the other to a fish tank, occupied by a goldfish that seemed more active than was normal. Brian was breathing comfortably.

He didn’t seem to be injured in any way, but he didn’t

respond to anything. His eyes were dull and vacant.

‘So, Officer, what do you think happened here? Does it look like foul play, or did Professor Factor have a stroke or something?’

‘Well, Sir, we’ll have to wait for the medical report to know for sure. We can’t do an autopsy on a body that’s still alive. To me, it looks like he’s just gone into a coma. You say he was doing some secret research? Did you know his assistant was killed the same night? A kid called Alex Bowden. The robots were out because of the blackout. A car didn’t stop at an intersection and killed the kid on his bike. I don’t like coincidences. I’ll tell you as soon as we know something, but it all looks fishy to me.’

Spiderman 3: Movie Review

Carla Martins

First off I must state that I enjoyed the previous two installments of the Spiderman franchise and it is my personal opinion that the third installment fell very short, was a step backwards and therefore was very disappointing for me.

Let's look at what was good in the movie:-

- The special effects were exceptional especially how the Sandman came to be, Venom, the battle between the New Green Goblin and Peter Parker and the final cataclysmic battle.
- Bruce Campbell's cameo in the French restaurant and of course J K Simmons' portrayal of the Daily Bugle editor Jonah Jamieson.

What I did not like:-

- Too many villains for Spiderman to battle instead of keeping things simple and concentrating on one villain and his story of his battle against Spiderman. I especially felt the character of Harry Osborne was not fully realized and short changed.
- I really became irritated with Mary Jane Watson and the romance between Mary Jane and Peter. Besides the villains that were too numerous, I felt that there were too many characters that were thrown into the mix and not fully realized especially Eddie Brock, Gwen Stacy and her father.

I felt this installment lacked the warmth of the previous two, there were good set pieces but in the end I came away very unfulfilled and cold. As a whole the movie seemed soulless to me - it seemed to me that it was just made to make money

The Sun, with all the planets revolving around it, and depending on it, can still ripen a bunch of grapes as though it had nothing else in the Universe to do.
Galileo Galilei

Astronomers Peer Inside a Quasar

For the first time, using a novel technique, astronomers have looked inside a quasar and have measured the so-called accretion disk around the black hole. The study lends further confirmation to what scientists have long suspected — that the supermassive black holes of quasars are surrounded by super-heated disks of material that is spiraling into them.

The results of the project, which involved scientists from Penn State University and Ohio State University, and observations with NASA's Chandra X-ray Observatory are begin reported today (5 October 2006) at the meeting of the American Astronomical Society (AAS) High Energy Astrophysics Division in San Francisco.

The research team, led by Christopher Kochanek at Ohio State, includes Xinyu Dai and Nicholas Morgan at Ohio State and George Chartas and Gordon Garmire at Penn State. The team studied the interior structures of the two quasars, whose light became visible only when a galaxy happened to line up right between them and the Earth, magnifying their light like a lens. The astronomers likened this effect, known as "gravitational lensing" or "microlensing," to being able to look at the quasars under a microscope.

"There are many models that try to describe what's happening inside a quasar and, before, none of them could be ruled out. Now some of them can," said Xinyu Dai, a postdoctoral researcher at Ohio State. "We can begin to make more precise models of quasars, and gain a more complete view of black holes."

Garmire, of Penn State, is the principal investigator of the X-ray camera on NASA's Chandra observatory, the Advanced CCD Imaging Spectrometer (ACIS), which the astronomers used to observe the gravitational lensing of the two quasars. This X-ray camera was conceived and developed for NASA by Penn State and the Massachusetts Institute of Technology under the leadership of Garmire, who is the Evan Pugh Professor of Astronomy and Astrophysics at Penn State. Virtually every important Chandra discovery has been based on observations with the ACIS camera.

Seen from Earth, quasars, or quasi-stellar objects, look like stars. They are extremely bright, which is why we can see them even though they are among the most distant objects in the universe. Astronomers puzzled over quasars for decades before deciding that they most likely contain super-massive black holes that formed billions of years ago. The material that is falling into a black hole glows brightly and, in the case of quasars, it shines across a broad range of energies, including visible light, radio waves, and X-rays.

"X-rays from the accretion disks of black holes probe emission regions closer to the black hole than those in the optical band," explains Chartas, a senior research associate at Penn State, who analyzed the X-ray data obtained from monitoring several of the objects in this microlensing study. "By comparing the X-ray lightcurves of a microlensing event to those in several optical bands, we inferred the relative sizes of the emission regions. This comparison allowed us to constrain the structure of a black hole's accretion disk at different wavelengths."

Quasars are so far away that, even in the most advanced telescopes, they normally look like a tiny pinpoint of light. But Einstein predicted that massive objects in space can sometimes act like lenses, bending and magnifying light from objects that are behind them, as seen by an observer. The effect is called gravitational lensing, and it enables astronomers to study some objects in otherwise unattainable detail. "Luckily for us, sometimes stars and galaxies act as very high-resolution telescopes," Kochanek said. "Now we're not just looking at a quasar, we're probing the very inside of a quasar and getting down to where the black hole is."

The scientists were able to measure the size of the so-called accretion disk around the black hole inside each quasar. In each, the disk surrounded a smaller area that was emitting X-rays, as if the disk material was being heated up as it fell into the black hole in the center. That's what they expected to see, given current notions about quasars. But the inside view will help them begin to refine those notions, Dai said.

Key to the project was NASA's Chandra X-Ray Observatory, which allowed the astronomers to precisely measure the brightness of the X-ray-emitting region of each quasar. They coupled those measurements to ones from optical telescopes that belong to the Small and Moderate Aperture Research Telescope System Consortium and the Optical Gravitational Lensing Experiment. The astronomers studied the variability of both the X-rays and visible light coming from the quasars and compared those measurements to calculate the size of the accretion disk in each. They used a computer program that Kochanek created especially for such calculations, and ran it on a 48-processor computer cluster. Calculations for each quasar took about a week to complete.

The two quasars they studied are named RXJ1131-1231 and Q2237+0305, and there's nothing special about them, Kochanek said, except that they were both gravitationally lensed. He and his group are currently studying 20 such lensed quasars, and they'd like to eventually gather X-ray data on all of them.

Original Source: PSU News Release (from Universetoday.com)

Science Fiction in Southern Africa
Gail Jamieson

In the late 1960's Tex and Rita Cooper were in touch with Dorothy Jones of N3F(National Fantasy and Fiction Foundation) in California. There was a notion of joining up with them, but a better idea seemed to be to start up a South African Club. Letters were sent to the newspapers and enough interest was shown to make a decision to go ahead.

At last on a cold Friday winter's night June the 9th, 1969 about 9 fans met and "The Science Fiction Club of South Africa" was formed. Another 25 people soon joined. Meetings were held once a month and the first volume of Probe, the clubzine, was printed, using ancient technology - a roneo machine and stencils. A smaller newsletter called Robe was occasionally published. The idea was that even smaller ones would be Obe, Be and maybe even E, but I haven't been able to find these in our archives.

The club grew from small beginnings and held regular meetings and then in August 1978 we held our first Convention. It was a two day affair with speakers, debates, and movies (on 16mm film) with the highlight being the Cheese and Wine supper. We had a number of eminent medical professors discussing "Medicine in the Future" and we had over 200 attendees. There were articles in the local newspapers and we felt that we were fulfilling our mission of bringing SF to the people of SA. We also contracted our name to "Science Fiction South Africa" Some time in the early years of the club, our first published SF author Claude Nunes joined the club. He did not attend many meetings, being deaf and preferring to communicate in writing. His novels were all Ace Doubles and the first one, "Inherit The Earth" was published in 1966. His second novel "Recoil" was co-authored by his wife Rhoda and appeared in 1971. His last novel was "The Sky Trapeze" hit the stands in 1980. His short stories have made the top 10 in our annual competition as late as 2001.

Our annual short story competition has been running for about 28 years and the winning and other highly placed stories are regularly published in Probe, which is a quarterly magazine that comes out at least three times a year. The first editor was Tex Cooper, Gail Brunette (later Jamieson) took over at issue 39. Tony Davis (now back in Toronto), Neil van Niekerk, Derek Hohls, Deirdre Byrne, Cedric Abrahams, Liz Simmonds and Back to Gail (now Jamieson) have taken over through the years and we are about to print issue number 129. The magazine runs to 64 A5 pages and we feel proud of it and that it compares favourably to other magazines which come out of countries that have far larger SF reading populations.

We have also published two collections of the competition winning stories.

These are "The Best of SFSA Volumes I and II" At them moment volume III is being prepared and we hope to print it in the next six months.

Another regular finalist and winner of the 2004 competition, Nick Wood has published a Young Adult fantasy novel, called "The Stone Chameleon" His competition winning story "God in the Box" was published in "Interzone 187"

Probably the most currently successful SF author to come out of SA is Dave Freer, a previous winner of our short story competition. He has had nine novels published by Baen Books since 1999. His first solo novel is "The Forlorn" He has collaborated with Eric Flint on "Rats, Bats and Vats" (2000), as well as "Pyramid Scheme" (2001) and then with Flint and Mercedes Lackey to write the "Heirs of Alexander" novels, "The Shadow of the Lion" and "This Rough Magic" as well as "The Witches of Karres".

A rather better known author we should not forget is Doris Lessing. She grew up and lived for a long time in Southern Rhodesia, now Zimbabwe. Her novel "Shikasta" (1979) was the first of her "Canopus in Argo" series. This is truly literature as well as being science fiction.

A much more recent author is Richard Kunzmann, whose novel "Bloody Harvest" shows real insight into urban African culture was published very recently. Someone else who needs to be mentioned is Arthur Goldstuck. He is a previous competition winner whose company World Wide Worx now sponsors the South African section of the annual competition. Arthur also judges this section and we have had some really good local stories which we have published in Probe. This fiction is truly science fiction out of South Africa.

I can't think of short story competitions without mentioning Yvonne Walus. She is the most successful entrant we have ever had. She has been the winner many times and in a single years general section she claimed the first three places. She, unfortunately for SA now lives in New Zealand. I am sure we will see her science fiction published in the not too distant future.

We have over the last few years entered the electronic age and gained a number of international members. We also trade Probe with other clubs and fans throughout the world. We maintain our own website at www.sfsa.org.za.

Since 1998 SFSA has also been represented at WorldCon. At least a couple of members have been at each one, since then, with the largest number having been to Bucconeer and Torcon 3. We hold a "South African" party and like to show off our bright new flag and talk to as many people as possible. There will be six members of SFSA at Nippon 2007 in Yokohama.

We feel that although we are very small we are keeping the spotlight on science fiction in South Africa.

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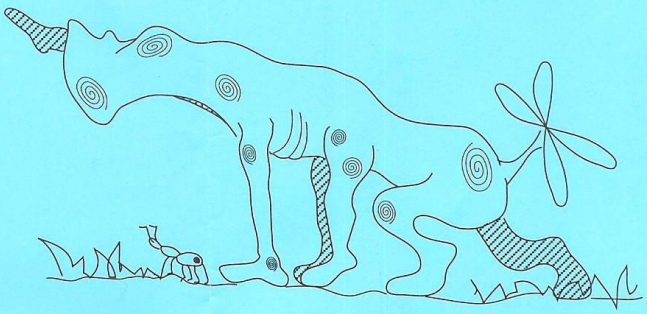

April 15, 2007

Dear *SFSAers*,

Well, in looking at your cover art for issues 131 and 132, no one can accuse you of using light-hearted artwork!

The *Hugo* nominations are out- my congratulations to one and all. With the first, ever, Japanese Worldcon, it will be an interesting convention for the history books. I sincerely hope there will be many reports to comment on the intersection of East and Western fen--should be enjoyable reads. Will there be a contingent heading there from *SA*?

Dale is right in mentioning that you are almost unique in pubbing fiction by fans. This used to be far more common than it is today. I don't know if anyone has ever done the statistics showing how many fans --writing fiction, made the transition to professional writing. I have a feeling that "quite a few" (whatever number that is) faneds and fanwriters, over the years, did indeed make a jump into the professional arena- but more often as editors and journalists...but I could be wrong. At any rate, you are a part of a longstanding fanish traditon, but one that is slowly waning.

I read, every now and then, about the alcohol-free nature of cons. I have not been to a con in quite a few years, but, not liking the taste of alcohol to begin with, it has never been an issue for me

Thank you for running the photos of the SFSA committee--nice to see faces for the names.

The *Tswaing* crater expedition sounds as if all enjoyed the trek--again, thank you, again, for the photos!

Thanks for the issues- I look forward to hearing about how/if your members will be heading to the Japanese Worldcon----it just is not in my budget.

Sheryl

Egoboo...the currency of fandom...
be a Bhig Spender!!

The Choice

Kate Henry

The wind slashed angrily at the man's dark "cloak, curling around his horse's legs as it ploughed through the mud and grime of the village road, the steady beat of rain on the loose slates of the houses acting as a symphony for his passage. No curious villagers poked their heads out of doors or peeked through broken shutters. The three moons, though hidden behind clouds, forewarned them to remain inside. He came to a stop outside one of the small, broken huts, the shutters on its windows hanging at a crooked angle, revealing the dim flicker of candlelight within. Dropping heavily to the ground, his leather boots sinking into the mud, he draped his reins over the saddle.

The man waved his hand at the door, which ripped off its hinges and crashed forward as if kicked. Inside, a small shriek greeted his entrance. He turned cold, grey eyes on the woman, her old grey dress hanging limply on her near skeletal figure. In her claw-like hand, she clutched a rusted dagger that trembled in her grip. Unconcerned, the man pushed back the hood of his cloak and whatever thoughts of defiance she had initially entertained, fled at the sight of the tattoo on his left cheek, a quarter moon stained red. The knife clattered to the ground, followed shortly by the woman who knelt on the floor, her eyes downcast. Yet even this act of deference might not spare her life this night, for the man before her was a Hound, one of the warrior-wizards, the protectors of the Priestesses of Shevan. To even glance at them sideways was to risk becoming the next sacrifice on a temple altar if you were allowed to live that long.

The Hound's eyes roamed the ramshackle home, which threatened to cave in every time the wind picked up its tempo. He had been in many such hovels in his lifetime, so was used to the abject poverty. His head swiveled round when a sound reached his ears.

Walking forward, he shoved the woman aside with his boot. Not daring to cry out in outrage, she crouched on the floor in terror as he stared down at his quarry.

Lying bundled within a small cot was a baby girl, oblivious to the events occurring around her. Gently, he scooped the babe onto his arm, an action at odds with his bulk and menacing look. The babe stirred, but still did not wake as he turned and left the house, ignoring the sobbing woman he left behind.

Mounting carefully, he pulled his cloak closer to shield the babe from the elements; he picked up his reins to continue his journey, when a cry of such anguish reached his ears. He should have ignored it. As a Hound he had often been the cause of such screams. Yet instead he looked over

his shoulder at the entrance of the dilapidated house.

The woman, standing in the doorway, took hope from this hesitation and ran out into the rain, her flimsy frock sticking to her body in seconds, her dull brown hair pressed against her narrow face.

'Please, my Lord,' she begged, 'do not take my daughter.'

'The Goddess must be satisfied,' the Hound said, though he had no reason to offer any explanation. The Hounds of Shevan answered only to Her Priestesses. He turned the horse around and started on his way back down the muddy road.

'I - I have a son!'

The Hound stopped short and gave her a hard look over his shoulder, which chilled her more thoroughly than the rain or wind. Turning his horse about he rode up to her, glowering at her from below grey tinted hair that stuck to his scalp.

'A son?' he growled, his voice full of knives.

'Yes, my Lord.' She bowed low, trembling even more vehemently now. Already thoughts of death whirled in her head. She had dared too much to survive this night.

'You would offer his life for hers?'

'My son has no life here, my Lord,' warm tears ran down her cheeks, 'my daughter however,' she motioned to the babe squirming in his grasp, 'she has.'

'You know he will be sent to the mines. '

She nodded. All male offspring taken by the Hounds were sent to the mines, while the girls would be placed in the care of the Priestesses of Shevan, the ruling power in their land, where they would learn to channel the power of the Goddess. But it did not matter, in a world where gender determined your fate, a girl child was always favoured; and an added incentive to a future mate who would usually not look twice at a poor widow.

The Hound glanced down at the squirming bundle. Making a noise in the back of his throat, he nodded. 'Go get your son, woman, and pray I do not choose to take them both.'

Swallowing hard, she hurried back inside, crossing to the small bed that was pressed against the wall, under which her son cowered. With a vicious snarl she dragged him out kicking and screaming - just like his fool father who'd been called to the Dark Priestesses mines a few years ago. There he had mined the precious crystals for the Goddess of the Moons, who had ended the Pagan Sun God's life and placed woman above the lowly ranks of barbaric, heretic men.

The rain had begun to abate as she dragged the boy outside, the light of the three moons partially slicing through the dark layer of clouds that obscured the night sky. She threw the whimpering whelp in the mud before the Hound, man and horse eyeing the boy implacably.

'Here he is, my Lord,' she said hopefully.

The Hound studied the child. Hardly nine winters of age, he was big for his age and would be a handsome lad, if he survived

long enough. In the Goddess's world, few lived to see their twilight years. He glanced back down at the girl, whose bright blue eyes looked up at him through dark curls.

'Do you not love him?' the Hound asked the woman who frowned at the question, seemingly unable to answer.

'I said do you love him!' the man repeated harshly.

The woman blinked in fear, reminded of whom she was with; a Hound, a warrior of the temple of Shevan, and the one of a select few men who held power near equal to a woman.

'I...I do, my Lord, but.. .but she is my daughter,' she answered as if that should be enough. After all, what person in their right mind would choose a boy over a girl?

He growled. 'Then you shall have her, but he,' he pointed to the confused boy, 'he shall be no mine rat. I will apprentice him myself. '

The woman paled, realising she'd made the worst mistake in her miserable, wretched life. The Hounds bore powers rivaled only by the Priestesses, and to prove their loyalty to the temple when they came of age, to prove their worth to accept the mantle of a Hound, they had to track down and eliminate their closest family members. Her daughter's life, as well as her own, would be short, for there was no escaping the clutches of these dark wizards.

'It is done.' He nearly threw the girl-child to her as he reached down and scooped the child from the ground, placing him in the saddle before him.

As the woman's mewling filled the streets, he turned and headed back out into the darkness. From behind closed doors fearful men and women peered out, awaiting the departure of this demon, this collector of children. They all were thankful he had bypassed their homes, even as they were resigned to the fact that the next time the three moons rose together, it might be their turn to offer up a child to the Temple.

The Hound spurred his horse forward, leaving the pitiful denizens of the village behind. The darkness rushed to embrace the child who sat rigidly still in front of him. The boy knew not where they were headed, only that his mother had given him up, had let this man take him from his home, this man who held him so tightly, tighter than he had ever remembered his mother holding him.

The rain softened as they skirted off the road, riding through low brush and dark boulders that looked as if men were crouching in ambush for them. Finally they came to an entrance to a cave where the Hound pulled to a stop.

Glancing about, his eyes narrowed. 'Well, aren't you going to greet me?'

The boy flinched as a hollow laugh responded and two men, dressed in makeshift armor, stepped out behind two of the larger boulders.

'And here we were thinking you'd got slack in your old age, Runikan.'

'Be glad I haven't,' the man grunted. 'Take the boy.'

One of the men stepped forward, lifting the boy from the saddle, placing him gently on

the ground. The boy stared in wonderment at the cave while the Hound dismounted, handing his reins to the other man.

'They're waiting for you,' the other man said gruffly.

Runikan grunted, putting his hand on the boy's back and pushing him forward. He stepped into the cave, moving assuredly despite the absence of light. The boy pressed closer to him, scared of the noises in the dark. The Hound stopped and put his hand out, a gold light rippling at his fingertips, spreading out until a wall of rippling light stood before them. Gripping the boy's shoulder, he walked through the light, the cold suddenly giving way to a deep, thawing warmth.

'Damn it; give us a heart attack next time why don't you?' A grey haired man in a brown robe growled. His rheumy eyes peered at the boy who pressed against the Hound, fearful of these new people. 'So you got him, eh? Well maybe there's hope for you yet.'

Runikan ignored them as he pulled the boy forward and pushed him gently to the fire. The boy stood there, eyes wide, shaking with the cold and fear.'Look at him,' one of the younger men scolded, 'lads frightened half to death.' He got up and wrapped an old blanket around the boy's shoulders then led him closer to the fire. 'Here,' he tore a piece of meat from the roast, skewering it on a knife, 'eat this.'

The boy couldn't remember the last time he'd eaten meat and gingerly nibbled at a piece. Hunger overcame him and he ravaged the meat.

'Whoa there,' the man smiled, 'slower before you give yourself stomach aches.' Meekly, the boy did as he asked, looking fearfully at the men who studied him.

'Well, at least that's one more the Temple ain't getting.' A wiry man wiped his nose with the back of his hand.

The boy frowned, but wasn't the man who brought him here a Hound? Seeing his confusion, the man who'd offered him the food, said, 'Its all right, boy, you don't have to be afraid.'

'Shakner is right,' the older man said kindly, 'you have been granted a fate few in this miserable land can boast of. You have been granted the gift of choice. '

'I-I don't understand,' the boy said then instantly clamped a hand to his mouth, fearing what they would do to him for his audacity.

'We don't fear opinions here, lad,' Shakner said.

'What he means, Tanan,' the Hound said gruffly, 'is that you are allowed to ask questions. As for not understanding, that is not a crime. Neither did I once, until a very special lady taught me that I was more than just a man, that I was a person equal to any woman. '

The boy didn't understand why a woman would want a man to think he could be her equal. No man in the village would dare think something like that. 'A-A woman told you that? '

Runikan nodded. “Yes, she taught us all that.” He waved at his companions who nodded one by one. ‘You will soon find, Tanan, that we are more than our gender.”

Runikan nodded. 'Yes, she taught us all that.' He waved at his companions who nodded one by one. 'You will soon find, Tanan, that we are more than our gender.'

'How-how did you know my name?'

The Hound raised a hand to his cheek, wiping away part of his tattoo. 'Because not all wizards need be Hounds. '

More and more confused, the boy asked, 'But-but then will I not go to the Temple?'

'No,' Runikan's voice hardened, 'and soon Shevan Temple will hold less power in these lands. The Sun God awakens.'

Tanan gasped. This was heresy of the worst kind.

The old man chuckled, 'Soon boy, you will learn that much of what you think is truth is not.'

'Hush, Orin,' a female voice said, 'you're only confusing him further.'

The boy gaped when he saw a woman, dressed in a pale blue dress of rich material appear from the back of the cave. The boy stumbled back, Shakner catching him, holding him in place.

'You have no need to fear, Tanan.' Shakner smiled. 'This is Avia, the woman we told you of. She is the Sun God's Priestess.'

Tanan gaped. 'But only men worshiped the Pagan God. That is why we are punished.'

Avia smiled sadly. 'A lie, Tanan; once the Sun God and the Moon Goddess guided the world together then the Shadow came. The Sun God killed him, but the battle ended his life as well. Shevan, unable to hold the balance without her other half, has grown mad, and her madness has infected the world. '

Avia smiled, touching her heart, 'but now Galivan's rebirth is at hand. Soon the duality will return.

Man and woman will stand as equals, as it was in the beginning, so it shall be again. '

'But-but the Temple won't like that.'

'Quick one, this lad,' Orin chuckled, 'no they won't, son, which is why our fair lady here, and her fellow miscreants, have been labeled heretics and rebels.'

'A title you too can adopt,' the Hound-that-wasn't-a-Hound said.

Tanan's eyes filled with tears. 'But-but I don't want to be a heretic.'

'It is just a word, Tanan,' Shakner said, 'we fight for equality for all, so that little boys like you need not become slaves or worse, Hounds. We want to make the land free again for all and we want you to join us.'

'And-and in don't, will-will you kill me?' his voice squeaked.

'That is not our way. If you decide not to join us, then this night, our false Hound will take you back to your village where the true Hounds will soon come to get you.'

'Why me?'

'Because, Tanan, you have the gift of magic in you,' Runikan said.

'M-Magic?'

'Only a handful of men carry the last

blessing of the Sun God. The Temple subverts our power to the will of the Moon Goddess to increase their control. Even if the Hounds do not come tonight, or the night after, in time the magic will show itself, and all will know Galivan touches you. The life you know will never be the same.'

'So-so I either stay here or become a Hound?'

'Not an easy choice,' Shakner said, 'but one only you can make.'

Tanan stared around the room, looked at all the expectant faces, then finally at the Hound who had taken him from his village. Tanan rose to his feet. Taking a deep breath, he met their enquiring looks. ‘I think I know what I have to do...'

Tanan whirled, slamming his fist into the false Hound's stomach, sending the wide eyed man flying backwards into the cave wall. Runikan hit it with a sickening crunch, slumping to the ground, unmoving. Stunned, the other men scrambled to their feet, reaching for weapons. Tanan ignored them, his gaze boring into the woman who remained seated.

'What the hell is going on here?' Shakner demanded, fear making his voice tremble. He had just seen a child take out a warrior-wizard of the highest caliber in a single move.

'Shevan has graced us with her presence,' Avia said softly, rising to her feet.

Tanan started to laugh, his face twisting and elongating, his body twisting and pulling, as golden strands of light twirled across his body, his peasant's garb rewoven into a flowing black robe as a woman of ethereal grace and beauty stood before them, her eyes pool's of darkness, her raven hair framing her pale face.

The men cursed and stumbled backwards, some falling to their knees, eyes wide, as they muttered prayers they had not spoken in years, prayers to the Dark Goddess of the Night who now stood before them.

Avia alone seemed unsurprised. She cocked her head. 'Lowering you to hide in the guise of a boy-child, Shevan? I had not thought we were such a threat?'

'Threat,' the Goddess grinned, her voice echoing through the room, sending shivers down the spines of all present, 'no, just a nuisance which I no longer wish to suffer.'

'Yet instead of sending your loyal servants to do away with this *nuisance* you visit us yourself?' Avia gave her a mock bow. 'We are honored, Holy One.'

'You risk the wrath of a goddess, woman,' Shevan said menacingly, her smile fading. 'And you the wrath of a god,' A via shot back.

Shevan replied by sending a wave of searing heat through the cave, sending men flying through the air, fire eating through their bodies, the smell of burnt flesh searing the air. Avia alone stood unaffected, a rippling bubble of icy blue light surrounding and protecting her.

Shevan scowled, the fire simpering out, leaving blackened corpses in her wake. 'You dare to gather upon yourself the gifts of

the Banned? A woman's power comes from the Moon, not the Sun.'

'For once, Holy One, we are in agreement,' Avia glanced to her left.

Shevan turned her head, eyes widening as a fist slammed into her face, the Goddess stumbling back, but did not fall. She stared at the false Hound who had risen to his feet. Though her godly senses had told her he had died upon impact, here he stood, whole, unbroken, a pulsating blue luminescence emanating from his body, his eyes sparks of radiant golden light.

Shevan took a step back, surprised, 'It cannot be. You slumber still.'

'I did,' Galivan, God of the Sun, Brother of the Moon, said, his voice echoing with the roar of a thousand flames, 'until you took it upon yourself to touch my servant.

Shevan understood with the painful clarity of the immortals. 'He was your vessel. But the boy...'

'False prophecies have come in useful to both of us,' Galivan said, stepping closer, raising a hand bathed in fiery luminescence. 'You kept the world to yourself, dear sister; now, it is time for me to share, time for me to rule

Shevan laughed hollowly. 'What of your servant's noble quest to return the balance to the world?'

'That was before a millennium trapped you in your shadow,' Galivan's eyes sparked furiously, hinting at the madness that had engulfed his sister, and threatened his own sanity. He lashed out, grabbing her by the throat, lifting her off her feet. 'Can you really be surprised, sister? We are one after all?'

Shevan's eyes sparked, the room shaking violently as the siblings clashed in a battle of wills.

Nearby, Avia whispered uncertainly as the earth cracked under their ferocity. 'Father?'

'Be still, my Priestess,' Galivan said, not bothering to look over his shoulder, 'you have the gratitude of a god. Soon you shall inherit a world.'

'I was not speaking to you,' Avia replied, less than respectfully.

Galivan frowned, turning round. Even Shevan stopped writhing in his grasp, her eyes wide. The pulsating blue light that had swathed Avia had not dimmed, but instead grew brighter, so bright it hurt even a god's eyes.

'What is this?' Galivan roared.

A wave of light as fierce as a cosmic storm burst from the priestess' body; the gods crumpled to their knees in agony. When they looked up, an old man was standing behind Avia, his long grey hair woven into runic patterns, his eyes dark voids imbued with the light of the universe.

'You disappoint me, children,' Kelsian, Lord of Light and Shadow, Father of Creation, said, stepping passed Avia who slumped, as if her strings had been cut. 'Have you so quickly forgotten my words?'

A disembodied voice filtered through the cave, making the gods clamp their ears against the pain, blood pouring from their eyes.

'You have forgotten your purpose,' Kelsian said, 'You have placed your charge in peril, and this I cannot accept.'

'Father,' Galivan cried, 'the Shadow...'

'Came and went. I whispered you into creation to be stronger than the madness, yet you succumbed. You were brought together, and instead of balancing the imbalance, you embrace it.' Kelsian's voice dropped to a menacing whisper that seemed to echo through the worlds.

'You have failed me, children.'

'Father, please...' Shevan begged.

'Hush,' Kelsian stepped forward, placing his hands on their heads, their eyes looking up at him imploringly, 'it is time to go home.'

Kelsian's fingers slipped into their heads as if they were made of water, radiant light pouring from them, the gods writhing under his grasp as he drew the energy from them. Galivan and Shevan shrieked, their unearthly howls rocking the very earth, which cracked and shattered beneath them. The walls of the cave smoldered around them as the stars screamed in empathy.

The gods melted under his touch, dissolving into pure light, which Kelsian gathered into his hands. Separate colours merged into a flawless radiance that spun and wove within his grasp. The world shuddered at the death of the gods, light speared the darkness, rain drove into the ground like hail, earthquakes and lightning that scorched the earth, suffering and screams of men and women, all linked to their gods, all linked to their loss.

Kelsian could feel the world convulsing, sinking into its death throes.

'Not yet, my child,' Kelsian whispered, sending his soothing thoughts out to the core of the world, which trembled under his touch, breathing a momentary relief. It was only, however, staying off the inevitable. A world could not live without its guardians, mad or no.

Kelsian walked over to where Avia stood; a breath away from death. The power it had taken to call him forth into a world not of his making had drained her. Taking the light, he placed his hand against her belly, forcing the light into her. A via gasped, arms spread wide, light pouring from her eyes, her ears and her mouth.

Avia sagged, eyes wide in surprise. Her hands reached for her stomach, resting atop his hand. She felt something move within her, a life not her own. She looked up at him, confused.

Kelvian smiled, '*And so I shall send you unto the world, to be the darkness and the light, the end and the beginning, the everything and the nothing, to balance the chaos of existence.'*

Books Received

Penguin Books

1. “Hinterland” by James Clemens. Book 2 of the “Godslayer” Trilogy.
2. “The Thousandfold Thought” by R. Scott Bakker. Book 3 of “The Prince of Nothing”
3. “The Right hand of God” by Russell Kirkpatrick. Book 3 of “Fire of Heaven”
4. “Lizard Born” and “The Lair of Bones” by David Fairland. Books 3 and 4 of “The Rune Lords”

Books from David Herrington

1.”James Tiptree Jnr. The Double Life of Alice B. Sheldon” by Julie Phillips.
2. “ Heinlein’s Children” by Joseph T. Major
3. Worldcon Goh speeches
4. Art Book
5. Samuel Delany

Magazines Received

1. Ethel the Aardvark 127, #01000000 ver 1.0 rel A, 129. The Melbourne Science Fiction Club Inc
2. Warp 65, Autumn 2006, 66, Winter 2007, 67 Spring 2007 Montreal Science Fiction and Fantasy Association
3. Opuntia 63, Jan 07. 63.1A, Feb 07. 63.1B, March 2007. 63.1 C, April 2007. 63.1D, May 2007.
4. Vannamonde. No 668687, Feb 28 2006 - July 12 2006 John Hertz 236 S. Coronado St, No 409, Los Angeles, CA

The Sun, with all the planets revolving around it, and depending on it, can still ripen a bunch of grapes as though it had nothing else in the Universe to do.
Galileo Galilei