DEUS IN MACHINA:
GODSCAPES IN CYBERSPACE

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In popular ideology, The Computer has been given many of the traditional attributes of a god. Anyone who has had a sales assistant insist that the total must be right because the computer did the addition, or an airline clerk maintain that the computer ticketing cannot be in error, has experienced a little of the cultural mythos of infallibility that now attaches to the computer. Where once we believed in a recording angel assiduously writing down the events of our lives, our sins now leave small snail-trails of electronic data in cyberspace - our salaries and financial transactions, our travel details, our phone calls, records of our homes, our cars, our library books... all is recorded. All of this raises questions relating to who is looking, and why. And science fiction writers, paranoid and visionary to the last, have been offering some fascinating extrapolations on this topic.

I've called this paper *Deus in Machina*, god *in* the machine, because, in the postmodern world, the metaphorical literary landscape has changed. It was once a standard literary trope that the relevant god would erupt from a theatrical machine, sweeping onstage to set matters right, coming 'down' to meet with humans whose identity was necessarily constrained by time, space, and the flesh. But with the coming of the computer, the problem of identity is moot:

> ...the computer represents the possibility of modeling everything that exists in the phenomenal world, of breaking down into information and then simulating perfectly in infinitely replicable form those processes that precybernetic humanity has held to be inklings of transcendence... SF's computer wipes out the Philosophical God and ushers in the demiurge of thought-as-technique.[1]

In the eternal present of fictional cyberspace, humanity has created a meta-landscape within which the downloaded posthuman consciousness can interact directly with analogues of the divine.

Questions about what constitutes immortality arise in the rapidly multiplying stories which concern themselves with the posthuman, and take as their thesis the idea that the self *can* be downloaded into appropriate software, or augmented and modified through neural modification software, or 'mods'. George Alec Effinger called such devices 'moddies and daddies' depending on their function. In Greg Egan's story 'Learning To Be

Me' (1990), he describes the transition of identity between the protagonist's original organic brain and the 'jewel' implanted in his skull - a memory storage device that can be transplanted into new bodies as the old one ages or is damaged, thus ensuring a psychic, patterned immortality for its owner. This concept is pursued further in 'Transition Dreams' (1993), which canvasses the metaphysics of the virtual dreams of a software model of the original brain of the story's protagonist, who is undergoing transition into an eternal, indestructible robotic 'body'.

This type of thinking involves a shift in the conception of the human from what Hans Moravec calls the 'body-identity position' (the person is defined by the physical composition of the human body) to the 'pattern-identity position' (the essence of a person is the pattern and process, not the machinery supporting that process: cells replicate, the entire body is replaced over time).[2] We've all become comfortable with the transference of data by fax machines: faxed copies have full legal status. It is a small imaginative step to physical matter transference, where the original is copied to another physical space: it is not yet possible - the technology required is staggeringly complex - but millions of Star Trek fans are perfectly comfortable with the concept. Indeed, matter transference has become one of the standard visual tropes of non-realistic film, and phrases such as 'beam me up, Scottie' have passed into the language of popular culture.

Greg Egan's recent novel, *Permutation City* (1994) extrapolates the posthuman condition, exploring the nature of human consciousness and the possibility of non-human evolution, and looking at the fine line between self-transformation and death. Here, the human mind is downloaded into virtual environments, where the resultant 'copies' can exist forever as virtual people - unaware that they are not the originals, for, enclosed in this self-referential universe, how could they know? They live as long as the world's computer networks remain stable, though this could be problematic (no-one at my university would download into our mainframe, where metalife expectancy would be very short indeed!) Egan canvasses some interesting probabilities, especially those relating to the legal status of the Copies, who, obviously enough, have a vested financial interest in remaining legally alive, and therefore in control of the fortunes needed to maintain their virtual selves. These Copies, or meta-characters, act out endless permutations of their meta-lives, until the virtual construct begins to collapse.

The question of humans playing god in virtual reality is given an interesting twist here: *Permutation City*'s protagonist, utterly obsessed with

virtual and artificial life, has coerced programmer, Maria Deluca, into creating the conditions for artificial evolution, and, within the meta-construct called the Autoverse, a new life form, the insect-like Lambertians, quietly evolve toward a totally different concept of reality that impinges negatively upon virtual/human cyberspace. The nature of 'truth', and of 'reality' is at question here: the human creators chose the Autoverse because of its simplicity: Durham, the instigator, confesses that he thought that: 'In the unlikely event that the planet yielded intelligent life, they'd still only be able to make sense of themselves on our terms... It never occurred to me that they might miss the laws that we know are laws, and circumvent the whole problem.'[3] The dilemma is that the meta-reality of virtual space already contradicts the laws of physics, and conflicting 'truths' can cause programming problems. The scientists decide that: 'we have to go into the Autoverse and convince the Lambertians to accept our explanation of their history - before they have a clear alternative. We have to persuade them that *we created them*, before that's no longer the truth.'[4]

The Lambertians have simply never developed any mythologies, so 'creators' are a non-subject. Just as the meta-humans are about to make contact and announce themselves as the creators of the Lambertian universe, the new life forms (in a nice play on Godel's theorem) deduce a completely different set of field equations, based on the 32 elements of their artificial autoverse. They prove, to *their* complete satisfaction, that it cannot have been externally created -- thus denying the horrified humans their chance to play gods, and indeed, forcing them to abandon this particular cyberspace continuum for one uncontaminated by Lambertian logic.

But it is not just the humans who aspire to godheads in cyberspace: in much recent science fiction, the Artificial Intelligences themselves evolve internally consistent theories of their own divinity. The literary trope of the god in the machine gained much of its current popularity when William Gibson's award winning Neuromancer trilogy (*Neuromancer* [1984], *Count Zero* [1986], *Mona Lisa Overdrive* [1988]) brought the computer-driven, high tech, near future of the cyberpunk movement into world prominence.

This is a trilogy about escaping the flesh. But the inhabitants of Gibsonian cyberspace are neither ascetics nor mystics. They are consumers of technology, techno-junkies who suffer the essential postmodern displacement of the integrated self. The mind/body dichotomy becomes absolute when console cowboys, who despise 'the meat', spend most of their lives as downloaded digital versions of their mental selves, roaming the

consensual hallucination that is cyberspace, searching for information and illumination.

The first novel, *Neuromancer*, ends with the amalgamation of Wintermute (hive mind, decision-maker) with Neuromancer (personality, immortality) to become the whole matrix - an Artificial Intelligence that is a powerful *deus in machina*, controlling the lives of its worshippers. Time elapses, and, when *Count Zero* begins, this omnipresent AI has shattered into separate fragments of itself, so that the god in the machine has become a whole high-tech pantheon. In a version of the traditional Faustian contract, humans cut deals with the devil, offering themselves to the cybergods. As one character, Finn, explains: 'There's been funny stuff out there, on the console cowboy circuit. The new jockeys, *they make deals with things*... all the ones who really know how to cut it, they got *allies*...'[5] The deals are predictably venal, producing odd constructs such as the meta-religion cum business operated by devotees of the voodoo Loas.

But the text also offers an inversion of the Faustian pattern, because the cyberspace dwelling AIs are interfacing, unbidden, with the human world. If humans can access the cybergods, then the gods in the machine can, logically, access the humans who have chosen to download individual consciousness into the computer matrix. And like the gods of the old mythologies, they are not always benevolent. In their thirst for acolytes, these demiurges, both good and evil, seek out their own deals with the humans. As the nostalgic Tessier-Ashpool AI remnant remarks, 'They plot with men, my other selves, and men imagine they are gods...'[6] Their objective is not the entrapment of damnation for the human soul, or consciousness, but the release into the world of the new gods.

In this type of fiction, the mythopoeic analogy between the gods of cyberspace and the old gods of mythology is overt. In Roger Zelazny's acclaimed *Lord of Light* (1967), some of the crew of a space colony ship have used their advanced technology to achieve the status of gods, choosing the Hindu pantheon as role models. There is an inescapable logic in the role of the protagonist, Sam, who is cast as the Buddha to liberate the long suffering humans of the planet.

The spectacular development of successive generations of Artificial Intelligences, and their resultant battles for power, is often presented analogically with the mythological struggle for supremacy between the Titans and Olympians of the Greco-Roman myth system. This is certainly the case in Dan Simmon's *The Hyperion Cantos* (*Hyperion* [1989/90], *The Fall of Hyperion* [1990], and the just released *Endymion* 1995]), named,

obviously, for the Keats poems. The tale is set in a far future where humans inhabit 'two hundred worlds and moons across more than a thousand light years in space', and Techno-Core Artificial Intelligences inhabit, like spiders, the huge, heterotopic 'Web of farcasters... singularity-spun environments' that links these places, enabling the AIs to prey upon the 'billions of human minds tapped into their datasphere at any given second'.[7] This symbiotic relationship between humans and the godlike AIs is at the centre of the plot. Originally 'conceived in slavery and dedicated to the proposition that all AIs were created to serve Man',[8] the AIs have seceded from humankind, and have turned the tables so that the relationship is now 'an evolutionary dead end'[9] for the humans.

In a straighforward analogy with nineteenth century social Darwinism, Simmons' Artificial Intelligences have evolved to the point where they can move in time as well as in space, and have created/will create an Ultimate Artificial Intelligence which will use up the huge Web, replacing the current AIs as the Olympians replaced the Titans. The Titan AIs would then be in the position of Keats' Saturn - not exactly dead, but doomed. In facing this probability, they have split into three factional groups: the Volatiles, who want to put an end to the symbiosis by destroying 'parasitic' humankind; the Ultimates, who take the evolutionary position of Keats' Oceanus, and are prepared to make way for the Ultimate Intelligence; and the Stables, who, like Keats' Hyperion, believe in the simple power of continued existence. One of the most interesting twists in this labyrinthine plot is that the Stables are manipulating humans and cybrids (cyborg hybrids) in an attempt to trigger one of the possible futures in which the Artificial Ultimate Intelligence is balanced against the human Ultimate Intelligence: a triune God which has apparently evolved from human consciousness without humanity being aware of it, in line with the theories of Teilhard and the Socinian heresy. This God was identified as being 'out there' immediately upon the birth of the Artificial Ultimate Intelligence.

The human Ultimate Intelligence of the text is tripartite, composed of 'Intellect / Empathy / and The Void Which Binds' (or Quantum Reality).[10] It is a divine structure doubtless drawn from Keats' 'Soul Making' materials of 'Intelligence... the human heart... and the World or Elemental Space'. It transpires that the Empathy part of this trinity has fled backwards in time to avoid the war with the Artificial Ultimate Intelligence. It is being sought both by the other parts of its own Ultimate Intelligence, and by the Artificial Ultimate Intelligence, which makes for infinitely intricate godscapes etched across the web of cyberspace.

One of the most predictably paranoid responses to idea of the god in the machine is the spawning of multiple millenial cults connected with cyberspace. In Egan's *Quarantine* (1992), the Children of the Abyss are reponsible for terrible violence. In Gibson's cyber-matrix, factional cults inflict massive damage upon those who oppose their chosen demi-gods. And in *The Hyperion Cantos*, the plotting Artificial Intelligences have created the ultimate Avatar of Pain, The Shrike, whose existence has generated the Church of the Final Atonement, a millenial cult whose followers revere the Shrike as the Lord of Pain.

In a universe defined by futuristic technology, The Shrike is a terrifying *deus in machina,* let loose upon the captive world. The priest of the text, father Dure, characterizes it as 'neither divine nor diabolical, but merely some organic machine from a terrible future'.[11] It incorporates the worst nightmares of the billions of humans whose neurons are constantly accessed in the data Web. It is described as 'Michael the Archangel and Moroni and Satan and Masked Entropy and the Frankenstein monster all rolled into one package...'[12] with 'four arms, retractable fingerblades, (a) profusion of thornspikes on throat, forehead, wrists, knees and body... (and) two thousand-faceted eyes which burned with a red flame...'[13] The Shrike is also the keeper of the macabre Tree of Pain, a ghastly structure of 'steel and chrome... (with)... branches (of) thorns and nettles,[14] upon which are impaled thousands of humans condemned to an eternal life-in-death crucifixion. This is a deliberate parody of the crucifixion of the Empathy part of the Human Ultimate Intelligence in its Christ manifestation. The idea is that the Tree will broadcast enough pain to drive Empathy out of hiding, and, since the thinking of artificial gods is mechanistic, they have also created the perfect bodily trap for Empathy: the cybrid Keats persona. As the AI Ummon explains, in order to locate the human Ultimate Intelligence,

> our only chance
> was to create a hybrid/
> Son of Man/
> Son of Machine\\
> And make that refuge so attractive
> that the fleeing Empathy
> would consider no other home / \
> A consciousness already as near divine
> as humankind has offered in thirty
> generations\
> an Imagination which can span
> space and time\ [15]

The Keats cybrids, however, prove sensibly disinclined to accept godhood, preferring identification with humanity, and leaving the Ultimate Intelligences to conduct the high-tech version of Milton's War in Heaven.

The science fiction dealing with the concept of the god in the machine is part of a very long literary and mythological tradition in which the gods are associated with control of knowledge and the technology that implements it. Ever since Prometheus stole fire from Olympus, giving humankind the means for technological development, the struggle for divine supremacy has been part of our imaginative heritage. In many ways, such literature might be characterised by Keats' warning that 'a little learning is a dangerous thing'. There is little metaphorical difference between Faustus' yearning for the secrets of the earth, and the construction of computers designed to calculate its infinite probabilities.

Texts extrapolating the possibilities of godscapes in cyberspace are at the cutting edge of the postmodern fictional exploration of what it means to be human. In describing the posthuman condition, and exploring theories of corporeality and virtual reality, the postulation of gods in the machine points to a metonymic construct that suggests that, despite scientific rationalism, humankind remains dependent upon the concept of god as a means of dealing with the fundamental uncertainty of our knowledge of the universe.

The nature of this problematic interface between the computer and religion was captured succinctly in one of science fiction's most famous short stories, Arthur C. Clarke's 'The Nine Billion Names of God'. Written in 1953, it is set high in the Himalayas, where a Tibetan monastery has installed an Automatic Sequence Computer, re-programmed to calculate and print out all of the *real* names of God. The monks believe that 'when they have listed all His names... God's purpose will be achieved. The human race will have finished what it was created to do...'[16] and God will step in to wind up the universe. As the story ends, the computer completes the nine billionth name, and a sceptical programmer looks up to the night sky where, 'Overhead, without any fuss, the stars were going out.'[17]

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