

Cyberspace and the Sacred Sky

Frances Clynes

Cosmologies: Proceedings of the Seventh Annual Sophia Centre Conference 2009,

Edited by Nicholas Campion, Published by Sophia Centre Press 2010, pp. 137-151.

In the twenty-first century, computing terminology, particularly network and Internet terminology is packed with celestial terms. Groups of network nodes are known as clusters.¹ The symbol for the Internet is a cloud, and Cloud Computing, a separate term from the cloud symbol, is the current buzzword.² Descriptions of the Dark Internet or Deep Internet appear similar to those of dark matter and deep space.³ For example, according to NASA ninety-six per cent of the universe is composed of the invisible dark energy and dark matter.⁴

Similarly, the Dark Internet, so called because it is invisible on the surface, is estimated to be at least 500 times greater than the surface accessible Internet.⁵ The tendency to give Internet technology names already associated with the sky, suggests that in some way the Internet appears, at least to some people, to share some common characteristics with the celestial realm. This in turn suggests that humanity's relationship with the sky and space is being repeated in its relationship with the Internet or cyberspace.

The Internet came into being in the United States of America. According to John Naughton in his history of the Internet, the spark that lit the fuse that brought about the Internet's birth, was the Soviet launch into space of Sputnik, the world's first

¹ George Aggelou, *Mobile ad-hoc networks* (New York: McGraw-Hill, 2005), p. 120.

² Anon, *PC Magazine Encyclopedia*,

http://www.pcmag.com/encyclopedia_term/0,2542,t=cloud&i=39847,00.asp (Accessed 7/7/2009)

and http://www.pcmag.com/encyclopedia_term/0,2542,t=cloud+computing&i=57964,00.asp

(Accessed 7/7/2009)

³ Michael K. Bergman, 'The Deep Web: Surfacing Hidden Value', *The Journal of Electronic Publishing*, vol. 7, no. 1, August, 2001, Issue title: *Taking License: Recognizing a Need to Change*, Available Online: <http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;view=text;rgn=main;idno=3336451.0007.104> [hereafter Bergman 'Deep Web'] (Accessed 7/7/2009)

⁴ Charlie Plain, 'A Dim Light Shines on Dark Matter', NASA website,

http://www.nasa.gov/missions/deepspace/chandra_dark_matter_halo.html, (Accessed 7/7/2009)

⁵ Bergman 'Deep Web'

artificial satellite, in October 1957. On that day Naughton claims there was a strong reaction in America, or to use his words, 'the US went apeshit'.⁶ He states that it was in an effort to end rivalries between different arms of the US military, that it was believed had resulted in the US falling behind in aerospace technology, that the Advanced Research Projects Agency (ARPA) was set up in 1958. Although their brief with regard to space would be handed over to NASA later that year, it was ARPA who pioneered the world's first computer network, initially called ARPANET. The original purpose of ARPANET was to allow ARPA-sponsored researchers in various locations, to collaborate on research projects.⁷ The first permanent ARPANET link was established between computers at University College Los Angeles (UCLA) and at the Stanford Research Institute in 1969. By December 1969 a four-node network, including two more computers at University College Santa Barbara and the University of Utah, was connected. By 1981 there were 213 nodes in different parts of the world. In 1983 the U.S. military portion of the ARPANET was broken off as a separate network. Further technical developments such as the development of Internet Protocols and a global addressing system, allowed the creation of an open architectural environment. Widespread use of computers and a drop in prices allowed it to flourish.⁸ The Internet today is a global network of computer networks. A crucial part of its design is that each network should be able to work on its own, developing its own applications without restraint and requiring no modification to participate in the Internet. The failure of one network should not affect other networks. In 1991 the World Wide Web was released to the public. This is a system that allows links hidden behind text to retrieve documents or pages using HyperText Markup Language (HTML). This made the system user-friendly and accessible to people unfamiliar with complex technology.⁹ Its spread was rapid and exponential. By 1990 there were 2500 host networks throughout the world (although mainly in

⁶ John Naughton, *A Brief History of the Future: The Origins of the Internet* (2nd edition) (London: Phoenix, 2000 [Weidenfeld & Nicolson, 1999]) [hereafter Naughton, History], p. 79.

⁷ Naughton, *History*, pp. 131-139.

⁸ Barry M. Leiner, Vinton G. Cerf, David D. Clark, Robert E. Kahn, Leonard Kleinrock, Daniel C. Lynch, Jon Postel, Larry G. Roberts, Stephen Wolff, 'A Brief History of the Internet', *The Internet Society*, <http://www.isoc.org/internet/history/brief.shtml> (accessed 4/7/2009)

⁹ Anon, 'From Arpanet to World Wide Web', *Internet History*, University of Leiden, <http://www.leidenuniv.nl/letteren/internethistory/index.php3-c=5.htm> (accessed 4/7/2009)

developed countries), connected to the Internet. By 2000 there were an estimated 361 million users of the Internet. In March 2009 the figure was estimated to be over 1,596 million.¹⁰

While the Internet was still known as ARPANET, a small network connecting researchers, the term cyberspace was coined by American author William Gibson. Gibson first used the term in 1982 in *Burning Chrome*, and developed it in his 1984 novel, *Neuromancer*. In this much-quoted passage from *Neuromancer*, Gibson defines cyberspace:

Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators...A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding...

In *Neuromancer* and the novels that followed, that gave birth to the genre that was to be known as cyberpunk, the protagonist who is almost always male, lives in a world dominated by technology and spends a lot of time in cyberspace. He frequently breaks laws, flouts authority and takes risks. His technical skills lead him into dangerous situations, but usually bring about his escape. Cyberspace is seen as both a place of adventure and excitement and a place where people can become rich.¹¹

The term cyberspace became widely used in connection with the Internet during the 1990s, particularly in academic circles. John Perry Barlow is credited with being the first to use the term in this way, in his

¹⁰ Anon, *World Internet Statistics*, <http://www.internetworldstats.com/stats.htm> (accessed 5/7/2009)

¹¹ For example Case in William Gibson's *Neuromancer* or Bobby Newmark in William Gibson's *Count Zero*.

1990 essay 'Crime and Puzzlement'.¹² In 2006 Karaflogka argued that although she sees them as entirely distinct from each other, the notion of cyberspace contributed to the growth of the Internet. Even though as she stated, the Internet of the twenty-first century is 'a far cry' from the cyberspace described by Gibson, the terms are often used interchangeably.¹³ Like Bell before her, Karaflogka differentiates between cyberspace and the physical hardware and software that allows the Internet to exist, or what Bell calls,

the network of computers, modems, communication links, nodes and pathways that connect users into something (or some things) like the Internet, the World Wide Web, the information superhighway and so on.¹⁴

However Bell believes there is another dimension to the Internet.¹⁵ He goes on to state

We have to move beyond the simple answer that physically we are seated in front of a monitor. . . We are simultaneously making ourselves over as data, as bits and bytes, as code, relocating ourselves in the space behind the screen, between screens, everywhere and nowhere.¹⁶

In Bell's other dimension, the person in front of the monitor is not just visiting a website, they are clearly entering another world. This world is what Karaflogka calls cyberspace, or as she puts it, 'where the act of connectivity and interactivity takes

¹² John Perry Barlow, 'Crime and Puzzlement', online on the John Perry Barlow Library, http://w2.eff.org/Misc/Publications/John_Perry_Barlow/HTML/crime_and_puzzlement_1.html, (Accessed 5/7/2009)

¹³ Anastasia Karaflogka, *E-religion: A Critical Appraisal of Religious Discourse on the World Wide Web* (Equinox: London, 2006) [hereafter Karaflogka, *E-religion*], p.3.

¹⁴ David Bell, 'Cybercultures Reader: A User's Guide', in *The Cybercultures Reader*, eds. David Bell and Barbara M. Kennedy (London: Routledge, 2000), pp. 1-12 [hereafter Bell, 'Reader'] p. 2.

¹⁵ Bell, 'Reader', p. 2.

¹⁶ Bell, 'Reader', p. 3.

place'.¹⁷ She describes it as a place, which although part of the network, is nevertheless completely different from it.¹⁸ To clearly differentiate between the two she uses the term 'Internet' to refer to the physical network and 'cyberspace' to refer to the place Bell calls 'everywhere and nowhere'. This distinction will also be used here.

Cyberspace has been compared to the Christian Heaven, the Gnostic Heaven, the Heavenly City, the New Jerusalem, the Garden of Eden and Utopia.¹⁹ It has been claimed that it fits the description of Mircea Eliade's sacred space, in that it meets the conditions necessary for a hierophany or eruption of the sacred, that results in the territory, in this case cyberspace, becoming detached from its surroundings and becoming qualitatively different.²⁰ A typical example is the following quote from Nicole Stenger:

'On the other side of our data gloves we become creatures of coloured light in motion, pulsing with golden particles... We will all become angels, and for eternity... Cyberspace will feel like Paradise, a space for collective restoration of the habit of perfection'.²¹

Stenger is French but has worked in the US since 1992.²² This fact is significant because, as noted by Karaflogka, most cyberspace theorists are American. As Karaflogka states, not only is the Internet an American invention, but cyberspace as a place, is an American concept.²³ One of many possible explanations for the American domination of cyberspace, is the importance of the concept of the Western frontier,

¹⁷ Karaflogka, *E-religion*, p. 24.

¹⁸ Karaflogka, *E-religion*, p. 25.

¹⁹ For example see Michael Benedikt's, 'Cyberspace: Some Proposals', in *Cyberspace: First Steps*, pp. 120-224 or Margaret Wertheim, *The Pearly Gates of Cyberspace* (London: W.W. Norton & Co. Ltd, 1999).

²⁰ Nicole Stenger, 'Mind is a Leaking Rainbow', in *Cyberspace: First Steps*, ed. Michael Benedikt (Massachusetts: MIT 1991), pp. 49-58 [hereafter Stenger, 'Mind']. P. 55.

²¹ Stenger, 'Mind', p. 52.

²² Thome, Diane, 'Reflections on Collaborative Process and Compositional Revolution', *Leonardo Musical Journal*, Vol 5 (1995), pp. 29-32, p. 29.

to the American sense of national identity. It is argued that there is a spiritual need for an open frontier in the American psyche and it was in recognition of this that the television programme *Star Trek* named space 'the final frontier'. As the old frontier to the West no longer existed, space offered a new frontier to be explored, and in the 1990s, cyberspace offered yet another.²⁴

In 1893 Frederick Jackson Turner wrote about a report in the 1890 census (in the United States), that since isolated settlements existed throughout the American West, the frontier line was no more. He believed that it marked the end of a great historic movement that had helped form the American view of the world,

Up to our own day (1893) American history has been in a large degree the history of the colonization of the Great West. The existence of an area of free land, its continuous recession, and the advance of American settlement westward, explain American development.²⁵

Turner predicted that the expansive character of American life would not cease and 'the American energy will continually demand a wider field for its exercise'.²⁶ In an article about the concept of the frontier and its profound impact on the American psyche, Dave Healy attempts to describe how this has occurred. He believes that, as predicted by Turner, the search for new wilderness continued to the 'final frontier' of space and on to the new frontier of cyberspace 'where some of the same tensions that characterized American settlement continue to be played out'.²⁷ He notes that like Huck Finn, the console cowboy of cyberspace is a young male who finds

²³ Karaflogka, *E-religion*, p. 19.

²⁴ Anon, <http://www.startrek.com/startrek/view/series/MOV/005/index.html> (Accessed 13/7/2009)

²⁵ Frederick Jackson Turner, 'The Significance of the Frontier in American History', *Proceedings of the State Historical Society of Wisconsin, December 14, 1893*, Published online in Frederick Jackson Turner, *The Frontier in American History*, <http://xroads.virginia.edu/~HYPER/TURNER/> [hereafter Turner, 'Frontier'] (Accessed 5/7/2009).

²⁶ Turner, 'Frontier'.

²⁷ Dave Healy, 'Cyberspace and Place: The Internet as Middle Landscape on the Electronic Frontier' in David Porter (ed.), *Internet Culture* (New York and London: Routledge, 1997), pp. 55-68 [hereafter Healy, 'Cyberspace'], p. 57.

salvation in escaping the civilising influence of authority figures. Using his keyboard he charts the unexplored and sometimes dangerous territory of cyberspace.²⁸

The land beyond the frontier is seen as a lawless place. Healy describes it as 'that hypothetical border-land between civilisation and the wilderness'.²⁹ In this he echoes Turner who called it 'the meeting point between savagery and civilization'.³⁰ Positing the existence of a spiritual need (in America) for an open frontier, and the idea of space travel as an expression of this need, Mary Midgley believes that a certain lawlessness is part of the attraction, 'Symbolically space stands for freedom. Negatively this means not being interfered with by others; positively, it means increased opportunities for action.'³¹ She goes on to say that space is heir to the literal, geographical frontier which Americans were for a time, accustomed to see as symbolising unlimited freedom, always available to them if they chose to use it.³² Healy also believes that the idea that space represents freedom has a special resonance for 'a nation that began with an errand into the wilderness'.³³ That same freedom, he states can be found in cyberspace, which has no inherent limitations and no social restraints on behaviour.³⁴

John Perry Barlow is a retired Wyoming cattle rancher, a former lyricist for the American rock band, the Grateful Dead, and co-founder of the Electronic Frontier Foundation, an organisation which promotes freedom of expression in digital media. Since May of 1998, he has been a Fellow at Harvard Law School's Berkman Centre for Internet and Society.³⁵ Barlow also compares cyberspace to the Wild West in terms of its lawlessness and freedom:

²⁸ Healy, 'Cyberspace', p. 57.

²⁹ Healy, 'Cyberspace', p. 55.

³⁰ Turner, 'Frontier'

³¹ Mary Midgley, *Science as Salvation: A Modern Myth and its Meaning* (London and New York: Routledge, 1992) [hereafter Midgley, *Science*], p. 193-194.

³² Midgley, *Science*, p. 193-194.

³³ Healy, 'Cyberspace', p. 65.

³⁴ Healy, 'Cyberspace', p. 56.

³⁵ Electronic Frontier Foundation website, <http://homes.eff.org/~barlow/> (Accessed 6/7/2009).

Cyberspace, in its present condition, has a lot in common with the 19th Century West. It is vast, unmapped, culturally and legally ambiguous, verbally terse, hard to get around in, and up for grabs. Large institutions already claim to own the place, but most of the actual natives are solitary and independent, sometimes to the point of sociopathy. It is, of course, a perfect breeding ground for both outlaws and new ideas about liberty.³⁶

If space is perceived as a frontier, then following Turner's thesis of the American identification with the frontier, exploring space becomes a form of national self-expression. This could explain the emotional and territorial reaction described by Naughton, when, in 1957, the Soviets preceded them into their final frontier. Similarly, as the new frontier, cyberspace also becomes a space to be explored, where the console cowboy is once more free from the restrictions of civilisation. Once again an attempt to invade the territory provoked a strongly emotional reaction. In 1995 the US Congress passed a law, the Communications Decency Act, attempting to regulate what could be transmitted over the Internet. In what became known as the Black World Wide Web Protest, over 20,000 websites turned their web pages black for forty-eight hours in protest, and Senators and Congressmen were inundated with angry letters and emails. There were strong legal challenges from the Electronic Frontier Foundation and the American Civil Liberties Union. It prompted Barlow to write 'A Declaration of the Independence of Cyberspace', addressed to 'Governments of the Industrial World', containing the lines,

We have no elected government, nor are we likely to have one, so I address you with no greater authority than that with which liberty itself always speaks. I declare the global social

³⁶ John Perry Barlow, 'Crime and Puzzlement', online on the John Perry Barlow library, http://w2.eff.org/Misc/Publications/John_Perry_Barlow/HTML/crime_and_puzzlement_1.html (accessed 5/7/2009)

space we are building to be naturally independent of the tyrannies you seek to impose on us.’³⁷

Eventually the act was declared unconstitutional by the Supreme Court in 1997.³⁸

Midgley believes there is a chronic confusion between the possibility of inner, spiritual freedom and the possession of an outside, physical territory which one could, if one felt like it, always invade. She believes that over-crowding in the world could be behind this.³⁹ Healy also considered the hypothesis that the source of this love of freedom and the desire to go to the land beyond the frontier, is an attempt to escape an over-crowded world. He believed this to be true of the migration to the American West and argued that the desire to physically go into outer space was another such attempt.⁴⁰ In the 1950s Carl Gustav Jung believed that the people of the time also sought to escape from an over-crowded world via space. Writing about the thousands of Unidentified Flying Object (UFO) sightings that occurred in the 1940s, he said that in the prison of an Earth that was growing too small and threatened by the hydrogen bomb, people looked for help from extra-terrestrial sources since it could not be found on Earth, ‘Hence there appears “Signs in the heavens”, superior beings in the kind of space ships devised by our technological fantasy’.⁴¹ In times of stress he believed that people looked to the heavens for salvation as they always had, ‘beyond the realm of earthly organisations and powers into the heavens, into interstellar space, where the rulers of human fate, the gods, once had their abode in the planets.’⁴²

The sacredness of the celestial realm has been a feature of cultures as far back as the third millennium BCE, in Mesopotamia, where, as described by Rochberg, astral

³⁷ John Perry Barlow, ‘A Declaration of the Independence of Cyberspace’, Electronic Frontier Foundation Website, <http://homes.eff.org/~barlow/Declaration-Final.html> (Accessed 6/7/2009)

³⁸ Naughton, *History*, p. 42.

³⁹ Midgley, *Science*, p. 194.

⁴⁰ Healy, ‘Cyberspace’, p. 56.

⁴¹ Carl Gustav Jung, 1964, *The Collected Works of C. G. Jung*, Vol. 10, *Civilisation in Transition*, Trans. R. F. C. Hull, London and Henley: Routledge and Kegan Paul Ltd [hereafter Jung, *Civilisation*], p. 616.

⁴² Jung, *Civilisation*, p. 610.

phenomena were seen as manifestations of certain gods.⁴³ This association of celestial bodies with the divine was incorporated into Greek culture where the Athenian philosopher Plato (428-348 BCE) was sympathetic to Mesopotamian beliefs, and supported the introduction of their pantheon to Greece.⁴⁴ He believed the planets were gods and their movements revealed divine Reason.⁴⁵ In the Myth of Er, Plato describes heaven as beyond concentric spheres, of which Earth is at the centre. Each sphere was associated with a celestial body. This idea found its way into Gnosticism and was part of the Medieval Christian worldview. In Gnosticism, heaven was beyond the eighth sphere, the sphere of the fixed stars, which was outside seven imperfect planetary spheres.⁴⁶

Ptolemy in the second century believed that the spheres grew progressively more pure as they ascended.⁴⁷ This system was adopted by Christianity and used by Dante in his *Divine Comedy*. In Dante's description of the Medieval view of the cosmos, heaven is in the Empyrean or tenth sphere. It is beyond time, space and matter. Each of the seven inner spheres relate to a planet and become progressively more perfect as Dante moves out from earth towards heaven.⁴⁸ At the eighth sphere of the fixed stars he sees visions of Christ, the Virgin Mary and the saints. He believes that the power of the constellations is drawn from God. At the ninth sphere, the Primum Mobile, the abode of the angels, Dante sees God as a point of light surrounded by nine rings of angels.⁴⁹ His description of the ninth sphere bears some resemblance to Stenger's description of cyberspace, where we become creatures of coloured light in

⁴³ Francesca Rochberg, *The Heavenly Writing: Divination, Horoscopy and Astronomy in Mesopotamian Culture*, (Cambridge: Cambridge University Press, 2004), p. 46.

⁴⁴ Plato, *Epinomiss*, in (eds.) John M. Cooper and D.S. Hutchinson, *Plato: Complete Works*, translated by Richard D. McKirahan Jr., (Indiana: Hackett Publishing Company, 1997), [hereafter Plato, 'Epinomis'], 987 A, p. 1628.

⁴⁵ Plato, *Timaeus*, in (eds.) John M. Cooper and D.S. Hutchinson, *Plato: Complete Works*, translated by Donald J. Zeyl, (Indiana: Hackett Publishing Company, 1997) [hereafter Plato, *Timaeus*], 40A-41A, 47B-C

⁴⁶ 'I, Poemandres, the Shepherd of Men', *The Corpus Hermeticum*, trans. G. R. S. Mead, 26. Online at <http://www.gnosis.org/library/hermes1.html> (Accessed 15/7/2009)

⁴⁷ Claudius Ptolemy, *Almagest*, trans. G. J. Toomer (London: Duckworth, 1984), 1.1, p. 36.

⁴⁸ Dante Alighieri, *The Divine Comedy, Paradiso*, trans. Henry Francis Cary (London: Wordsworth Editions Ltd., 2009) [hereafter Dante, *Paradiso*], Canto I-21.

⁴⁹ Dante, *Paradiso*, Canto 22-33.

motion, pulsing with golden particles, and angels for eternity.⁵⁰ For Dante, God is at the Empyrean or tenth sphere. Just as with Plato, Ptolemy and in Gnosticism, God is beyond the solar system, in outer space.

In the twentieth and twenty-first centuries, the human relationship with space underwent a dramatic change as humanity attempted to physically travel into outer space, or as Noble puts it into 'what used to be called heaven'.⁵¹ He believes that the enchantment of space flight is 'fundamentally tied to the other-worldly concept of heavenly ascent'.⁵² Midgley supports this view, pointing out that unmanned space probes have been far more useful than manned spacecraft, yet humans continue to travel into space.⁵³ To support Noble's argument that space is the new heaven, he gives the example of the space window in Washington Cathedral. In February 1974 a stained-glass 'space window' was officially installed at the Cathedral, containing a two-inch diameter lunar rock sample brought back on Apollo 11. The *NASA Headquarters Weekly Bulletin* announced the event, pointing out that the dean of the cathedral 'will preach on the spiritual significance and the religious implications of the first journey from the planet Earth'.⁵⁴ If the space window inside a Christian cathedral can be considered an altar, then it is an altar to space itself. In this example, space is being perceived not just as heaven, but as a god.

Space travel or Noble's 'heavenly ascent', is an attempt to not just to travel alive into the realm of the gods, but also to return. Logging into cyberspace has been seen in the same light. Speaking of cyberspace, Michael Benedikt wrote in 1991:

another life world, a parallel universe, offering the
intoxicating prospect of actually fulfilling – with a technology
very nearly achieved – a dream thousands of years old: the

⁵⁰ Stenger, 'Mind', p. 52.

⁵¹ David F. Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention*, 2nd edition (New York: Penguin Books, 1999 [1997]) [hereafter Noble, *Technology*], p. 115.

⁵² Noble, *Technology*, p. 115

⁵³ Midgley, *Science*, p. 185.

⁵⁴ 'Invitation to Dedication of Space Window at Washington Cathedral', *NASA Headquarters Weekly Bulletin*, July 15 1974, cited in Noble, *Technology*, p. 136.

dream of transcending the physical world, fully alive, at will, to dwell in some Beyond – and to be empowered or enlightened there, alone or with others, and to return.⁵⁵

Travelling body and soul to the divine realm is not a new concept. Christianity teaches that at the end of days, the faithful shall enter heaven with body and soul intact, 'the dead shall be raised incorruptible'.⁵⁶ What is different about the attempt to do so via technology, is that now it is possible as Benedikt points out, to travel there alive, and to return. But there is also a difference between the heaven reached through the use of a spacecraft and that reached through the use of a computer. While the journey to space involved leaving Earth, with cyberspace the person enters heaven without leaving their chair. What is being promised in the Scriptures is immortality, and if once that involved the sky, cyberspace makes it possible on Earth.

The achievement of true immortality implies the winning of a battle over this world of death and decay, which includes the physical body. Transhumanism or T+, is an international intellectual and cultural movement, supporting the use of science and technology to improve human mental and physical characteristics and capacities, and to eliminate disease and suffering. According to the Transhumanist website Humanity+, the core Transhumanist value is exploring the realm of the posthuman,

Transhumanists view human nature as a work-in-progress, a half-baked beginning that we can learn to remould in desirable ways. Current humanity need not be the endpoint of evolution. Transhumanists hope that by responsible use of science, technology, and other rational means we shall

⁵⁵ Michael Benedikt, 'Cyberspace: Some Proposals', in *Cyberspace: First Steps*, ed. Michael Benedikt (Massachusetts: MIT 1991), P. 131

⁵⁶ 1 Corinthians 15:52, <http://www.sacred-texts.com/bib/kjv/co1015.htm#052>, (Accessed 11/7/2009).

eventually manage to become posthuman, beings with vastly greater capacities than present human beings have.⁵⁷

As a way of prolonging human life indefinitely, they propose uploading the human mind to a computer, where the individual can live forever in cyberspace, or even in the real world by controlling a robotic version of themselves from their uploaded mind. Hans Moravec, a faculty member of the Robotics Institute at Carnegie Mellon University, describes how the individual moves into cyberspace: The brain is connected by cables to a computer. As the brain withers with age, the computer assumes its functions. In time the brain dies and the person goes on living in the computer. As long as enough back-up copies are made, death is unlikely.⁵⁸

The Extropy Institute was founded in 1990 by Tom Bell and Max More. Similar organisations followed in different parts of the world. Extropianism is the belief that science and technology will someday allow people to live indefinitely and that humans alive today have a good chance of seeing that day. The Extropy Institute describes itself as 'the original force behind the philosophy and global cultural movement of Transhumanism'.⁵⁹ In 2006 the board of directors of the Extropy Institute made a decision to close organisation, stating that its mission was essentially complete, in that they had developed a culture for activists, energised and devoted to bringing these ideas to the public, and created a website that would continue to provide a place for Transhumanists to meet for 'challenging and creative discussions about the future'.⁶⁰

The aims of Transhumanism and Moravec sound strangely like the promise of the book of Revelations, 'And God shall wipe away all tears from their eyes; and there shall be no more death, neither sorrow nor crying, neither shall there be any more

⁵⁷ Anon., 'Transhumanist Values: What is transhumanism?'

<http://humanityplus.org/learn/philosophy/transhumanist-values> [accessed 1/7/01]

⁵⁸ Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge, Mass: Harvard University Press, 1988), pp. 121-124.

⁵⁹ Anon, <http://www.extropy.org/> (Accessed 13/7/2009)

⁶⁰ Anon, <http://www.extropy.org/> (Accessed 13/7/2009)

pain: for the former things are passed away'.⁶¹ Davis writing about Moravec says, 'Here again is the real wonder: that information technology allows even the most hard-core materialists to ruminate once again on the ancient dream of slipping the incorporeal spark of the self through the jaws of death unscathed.'⁶² Just as with Stenger, cyberspace is being perceived as an earthly heaven where the digital faithful can live forever.

Other writers have taken the relationship between cyberspace and the divine a step further. Two further ideas have crept into cyberspace theory. The first of these is that cyberspace has become God, the second that it enables human beings to collectively become God. The idea of cyberspace as God has been posited by Ward who called it 'The ultimate secularisation of the divine'⁶³, and Zaleski who asked, 'Will the WWW evolve into God?'⁶⁴ Naughton points out that since the Internet was designed so that it could continue to pass messages even if large chunks of it were irretrievably damaged, it is no longer under the control of humanity. He concludes that since it is resilient enough to withstand a nuclear attack, it is unlikely that it could be switched off.⁶⁵ In this view of cyberspace, it has an existence of its own outside human control.

The concept of artificial intelligence surpassing human intelligence is the basis of much of the writing of Ray Kurzweil. He proposes the physical merging of people and machines in his 2005 book, *The Singularity is Near: When Humans Transcend Biology*.⁶⁶ The Singularity, is the point in the future, at which machine intelligence outstrips human brainpower. It is estimated (by Kurzweil) that this will happen by the year 2030.⁶⁷ The term 'Singularity' was first defined by Vernor Vinge and has

⁶¹ Revelations 21:4, <http://www.sacred-texts.com/bib/kjv/rev021.htm#004> (Accessed 11/7/2009)

⁶² Erik Davis, *TechGnosis: Myth, Magic and Mysticism in the Age of Information* (London: Serpents Tail, 2004 [1998]), p. 148.

⁶³ Graham Ward, *The Postmodern God*, (Oxford: Blackwell Publishers, 1997), xvi.

⁶⁴ Jeff Zaleski, *The Soul of Cyberspace: How New Technology is Changing Our Spiritual Lives* (New York: HarperCollins, 1997), p. 20.

⁶⁵ Naughton, *History*, p. 36.

⁶⁶ Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: Viking Press Inc, 2005) [hereafter Kurzweil, *Singularity*].

⁶⁷ <http://www.kurzweilai.net/meme/frame.html?main=memelist.html?m=1%23696>

been developed by Kurzweil, a computer engineer with an impressive track record in invention.⁶⁸ In this future era, Strong Artificial Intelligences (SAIs) and cybernetically augmented humans (cyborgs) will replace the current biological model. Once again it is proposed that the machine-enhanced human can live forever and always experience health and happiness.⁶⁹ In what sounds like an attempt to recreate Plato's ensouled cosmos, the SAIs and cyborgs will then overwhelm the universe and saturate its matter with intelligence. Kurzweil predicts that complete universal saturation can occur by the end of the twenty-second century.⁷⁰ In a debate in Massachusetts Institute of Technology (MIT) on 30 November 2006, Kurzweil and Yale professor of computer science, David Gelernter held a debate on the topic 'Will Machines Become Conscious?' The debate also asked if machines could develop spirituality. There was no winner of the debate, but Gelernter who argued against the motion, based his arguments on the belief that the human brain can not be reduced to a machine, a necessary criteria for the fulfilment of Kurzweil's visions.⁷¹

In attempting to achieve immortality and thus victory over life and death, humanity is not just emulating God or the gods; they are seeking to become God. This aspiration is put into words by Artificial Intelligence (AI) guru Earl Cox. Cox claims that because of technological achievements, humans have evolved beyond their original design and outdistanced their creator. While Descartes believed that the mind freed from the prison of the body is the intellectual equal of God, Cox believes that the uploaded minds stored in cyberspace will collectively become more powerful than current concepts of the divine.⁷² In his words, 'Such a combined system of minds, representing the ultimate triumph of science and technology, will transcend the timid concepts of deity and divinity, held by today's theologians.'⁷³ The

⁶⁸ Anon, <http://www.kurzweilai.net/> and <http://www.kurzweiltech.com/ktiflash.html> (Both accessed 13/7/2009)

⁶⁹ Kurzweil, *Singularity* pp. 24-30.

⁷⁰ Kurzweil, *Singularity* pp. 353-366.

⁷¹ Rodney Brooks, David Gelernter and Ray Kurzweil, 'Will Machines Become Conscious', <http://www.kurzweilai.net/meme/frame.html?main=memelist.html?m=4%23688> (Accessed 13/7/2009)

⁷² Rene Descartes, Letter to Silhon, May 1637.

⁷³ Earl Cox and Gregory Paul, *Beyond Humanity: CyberEvolution and Future Mind*, (Cambridge: Charles River Media, 1996), pp. 1-7.

idea that mankind could become god or god-like was considered (in a less extreme version) by Michael Heim in 1993, 'What better way to emulate God's knowledge, than to generate a virtual world constituted by bits of information? Over such a cyber world human beings could enjoy a god-like instant access'.⁷⁴ In this statement Heim is implying not that cyberspace is God, but that by giving people the power to enter this digital heaven and return at will, it empowers humans to become God.

William Gibson appears to have been aware of this potential development in the perception of cyberspace. In *Mona Lisa Overdrive*, the third and final novel in the series that began with *Neuromancer*, an artificial intelligence (a computer), when asked if the Matrix (cyberspace) is God, stated that it would be more accurate to say that the Matrix has a god since this god's omniscience and omnipotence are assumed to be limited to the Matrix. The being is not assumed to be immortal, as its existence is dependent on the life of the Matrix. 'Cyberspace exists, in so far as it can be said to exist, by virtue of human agency'.⁷⁵

So in the view of its creator, cyberspace like heaven, like the celestial realms, contains a divine presence. This divine presence differs from those of the past however, in that for the first time God or the gods are being perceived as confined, with their power limited. What limits and confines God is a construction that has been created by human beings. In this scenario what appears to have taken place is a type of Genesis in reverse, where man has created God, a suggestion that has led some to the view that humanity has achieved the traditionally god-associated characteristics of omnipotence and immortality.

⁷⁴ Michael Heim, 'The Erotic Ontology of Cyberspace' in Michael Benedikt (ed.) *Cyberspace: First Steps* (Cambridge, Mass: MIT Press, 1992 [1991]), pp. 59-80, p. 69.

⁷⁵ William Gibson, *Mona Lisa Overdrive* (1988), p. 107.

Bibliography

Aggelou, George, *Mobile ad-hoc networks* (New York: McGraw-Hill, 2005).

Anon, *PC Magazine Encyclopedia*,
http://www.pcmag.com/encyclopedia_term/0,2542,t=cloud&i=39847,00.asp
(Accessed 7/7/2009)

Anon,
http://www.pcmag.com/encyclopedia_term/0,2542,t=cloud+computing&i=57964,00.asp (Accessed 7/7/2009)

Anon, 'From Arpanet to World Wide Web', *Internet History*, University of Leiden,
<http://www.leidenuniv.nl/letteren/internethistory/index.php3-c=5.htm> (Accessed 4/7/2009)

Anon, *World Internet Statistics*, <http://www.internetworldstats.com/stats.htm>
(Accessed 5/7/2009)

Anon., 'Transhumanist Values: What is transhumanism?'
<http://humanityplus.org/learn/philosophy/transhumanist-values> (Accessed 1/7/01)

Anon, <http://www.extropy.org/> (Accessed 13/7/2009)

Barlow, John Perry, 'Crime and Puzzlement', online on the John Perry Barlow Library,
http://w2.eff.org/Misc/Publications/John_Perry_Barlow/HTML/crime_and_puzzlement_1.html, (Accessed 5/7/2009)

Barlow, John Perry, 'A Declaration of the Independence of Cyberspace', Electronic Frontier Foundation Website, <http://homes.eff.org/~barlow/Declaration-Final.html>
(Accessed 6/7/2009)

Bell, David, 'Cybercultures Reader: A User's Guide', in *The Cybercultures Reader*, in David Bell and Barbara M. Kennedy (eds.) (London: Routledge, 2000), pp. 1-12

Benedikt, Michael, 'Cyberspace: Some Proposals', in *Cyberspace: First Steps*, Michael Benedikt (ed.) (Massachusetts: MIT 1991), pp. 119-224.

Bergman, Michael K. 'The Deep Web: Surfacing Hidden Value', *The Journal of Electronic Publishing*, vol. 7, no. 1, August, 2001, Issue title: *Taking License: Recognizing a Need to Change*, Available Online: <http://quod.lib.umich.edu/cgi/t/text/text-idx?c=jep;view=text;rgn=main;idno=3336451.0007.104> (Accessed 7/7/2009)

Brooks, Rodney, David Gelernter and Ray Kurzweil, 'Will Machines Become Conscious', <http://www.kurzweilai.net/meme/frame.html?main=memelist.html?m=4%23688> (Accessed 13/7/2009)

1 Corinthians 15:52, <http://www.sacred-texts.com/bib/kjv/co1015.htm#052>, (Accessed 11/7/2009).

The Corpus Hermeticum, 'I, Poemandres, the Shepherd of Men', trans. G. R. S. Mead, <http://www.gnosis.org/library/hermes1.html> (Accessed 15/7/2009)

Cox, Earl and Gregory Paul, *Beyond Humanity: CyberEvolution and Future Mind*, (Cambridge: Charles River Media, 1996).

Davis, Erik, *TechGnosis: Myth, Magic and Mysticism in the Age of Information* (London: Serpents Tail, 2004 [1998]).

Gibson, William, *Neuromancer* (London: Voyager, 1995 [1984]).

Gibson, William, *Count Zero* (London: Voyager, 1995 [1986]).

Gibson, William, *Mona Lisa Overdrive* (London: Voyager, 1995 [1988]).

Healy, Dave, 'Cyberspace and Place: The Internet as Middle Landscape on the Electronic Frontier' in David Porter (ed.), *Internet Culture* (New York and London: Routledge, 1997), pp. 55-68

Heim, Michael, 'The Erotic Ontology of Cyberspace' in Michael Benedikt (ed.) *Cyberspace: First Steps* (Cambridge, Mass: MIT Press, 1992 [1991]), pp. 59-80, p. 69.

'Invitation to Dedication of Space Window at Washington Cathedral', *NASA Headquarters Weekly Bulletin*, July 15 1974, online at <http://articles.adsabs.harvard.edu//full/1977NASSP4019.....B/0000118.000.html>
(Accessed 12/7/2009)

Jung, Carl Gustav, *The Collected Works of C. G. Jung, Vol. 10, Civilisation in Transition*, Trans. R. F. C. Hull, (London and Henley: Routledge and Kegan Paul Ltd, 1964).

Karaflogka, Anastasia, *E-religion: A Critical Appraisal of Religious Discourse on the World Wide Web* (Equinox: London, 2006).

Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: Viking Press Inc, 2005).

Leiner, Barry M, Vinton G. Cerf, David D. Clarke, Robert E. Kahn, Leonard Kleinrock, Daniel C. Lynch, Jon Postel, Larry G. Roberts, Stephen Wolff, 'A Brief History of the Internet', The Internet Society Website, <http://www.isoc.org/internet/history/brief.shtml>
(Accessed 4/7/2009)

Midgley, Mary, *Science as Salvation: A Modern Myth and its Meaning* (London and New York: Routledge, 1992).

Moravec, Hans, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge, Mass: Harvard University Press, 1988).

Naughton, John, *A Brief History of the Future: The Origins of the Internet* (2nd edition) (London: Phoenix, 2000 [Weidenfeld & Nicolson, 1999]) [hereafter Naughton, History], p. 79.

Noble, David F., *The Religion of Technology: The Divinity of Man and the Spirit of Invention*, 2nd edition (New York: Penguin Books, 1999 [1997]).

Plain, Charlie, 'A Dim Light Shines on Dark Matter', NASA website, http://www.nasa.gov/missions/deepspace/chandra_dark_matter_halo.html, (Accessed 7/7/2009)

Plato, *Epinomiss*, in (eds.) John M. Cooper and D.S. Hutchinson, *Plato: Complete Works*, translated by Richard D. McKirahan Jr., (Indiana: Hackett Publishing Company, 1997).

Plato, *Timaeus*, in (eds.) John M. Cooper and D.S. Hutchinson, *Plato: Complete Works*, translated by Donald J. Zeyl, (Indiana: Hackett Publishing Company, 1997).

Plato, *Republic*, in (eds.) John M. Cooper and D.S. Hutchinson, (1997), *Plato: Complete Works*, translated by G. M. A. Grube and rev. C. D. C. Reeve, Indiana: Hackett Publishing Company.

Ptolemy, Claudius, *Almagest*, trans. G. J. Toomer (London: Duckworth, 1984).

Revelations 21:4, <http://www.sacred-texts.com/bib/kjv/rev021.htm#004> (Accessed 11/7/2009)

Rochberg, Francesca, *The Heavenly Writing: Divination, Horoscopy and Astronomy in Mesopotamian Culture*, (Cambridge: Cambridge University Press, 2004), p. 46.

Stenger, Nicole, 'Mind is a Leaking Rainbow', in *Cyberspace: First Steps*, ed. Michael Benedikt (Massachusetts: MIT 1991), pp. 49-58.

Turner, Frederick Jackson, 'The Significance of the Frontier in American History', *Proceedings of the State Historical Society of Wisconsin, December 14, 1893*, Published online in Frederick Jackson Turner, *The Frontier in American History*, <http://xroads.virginia.edu/~HYPER/TURNER/> (Accessed 5/7/2009).

Ward, Graham, *The Postmodern God*, (Oxford: Blackwell Publishers, 1997).

Wertheim, Margaret, *The Pearly Gates of Cyberspace* (London: W.W. Norton & Co. Ltd, 1999).

Zaleski, Jeff, *The Soul of Cyberspace: How New Technology is Changing Our Spiritual Lives* (New York: HarperCollins, 1997).