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The Dystopian World of Blade Runner: An Ecofeminist

Perspective

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The real act of discovery consists not in finding new lands but in seeing with new eyes. - Marcel Proust

The science fiction film, Blade Runner, directed by Ridley Scott, first released in 1982 and loosely based on Philip K. Dick's novel, Do Androids Dream of Electric Sheep?,1 has continued to fascinate film viewers, theorists and critics for more than fifteen years. Writings include Judith B. Kerman's Retrofitting Blade Runner, a collection of academic essays;2 Paul M. Sammon's book on the making of the various versions of the film;3 and an extensive network of publications are available via the World-Wide Web.4 A student colleague has just seen the film for the eighteenth time.

The "Director's Cut", released in 1992, is a more satisfying version of the film than earlier releases, mainly because narration is excluded, more mythological ambiguity is introduced (with the inclusion of a scene of a unicorn running through a forest), and the finalé of an escape into nature is removed. In the context of Blade Runner's dystopia such an ending is incredible; for science fiction to succeed there needs to be plausibility within speculation.

Since the Director's Cut, Blade Runner seems to have had a phoenix-like resurgence. Just as the simulated humans, or replicants, become more than the sum of their parts as they develop "humanity", so the film has become more than the sum of its parts as interaction - among critics and fans as well as scriptwriters, actors and film crew - contributes to ways of seeing. Scott describes depth in film as like a seven hundred-layer cake.5 Ideas presented in these layers can expand and deepen in the viewer's mind. The viewer's eye becomes as important for the ongoing life of the film as the eyes on which the camera focuses in Blade Runner.6

The dense urban setting that Scott created plus the film's intertextuality and references to the past - the late 40s and 50s in particular - supplies an environment of signs, symbols and simulations that provide multiple meanings, only some of which may have been intended by Scott.

Blade Runner's vision of ecological catastrophe is set in the not too distant future; the year is 2019, the place Los Angeles, where Tyrell Corporation conducts the devilish technology of eugenics. Genes in Blade Runner have become corporate property, managed as capital, providing labour resources and market commodities. High above the spectre of this decaying city Tyrell leads operations from his Olympus. Below, gaseous outpourings flare and cloud the sky. Huge bill-board advertisements patchily illuminate the darkness - as do the eve-

lights of black, bat-like police hover vehicles. PURGE is the signal that flashes within a vehicle to Gaff, a detective who keeps an eye on Rick Deckard, member of a special police-squad. Corporate manpower has brought about a policed society, foul air and a corrupt world.

There are many cultural and ecological issues that the film raises with its "silent spring" of a post-nuclear, polluted, overpopulated world coming to its end; where replicants, according to the slogan of their "maker", Doctor Eldon Tyrell, are made "more human than human"; and where animals are mostly extinct or expensive simulated versions of highly valued originals.

The density of Ridley Scott's visual and textual layers in Blade Runner provides scope for me to explore themes common to science fiction as a genre and Blade Runner in particular:7 the so-called mastery of nature and the related themes of myopia or blindness; and technology going astray (like Maria the android in Metropolis, and Hal the computer in 2001, A Space Odyssey). I say so-called because the mastery of nature is an arrogant and deluded term denoting human hubris. Humans are animals, are nature. Mastery within nature is where ecological problems lie: in the domination and oppression of non-human nature by humans, and of humans by other humans who are unable or unwilling to recognise relationships and interconnectedness.

Barbara Kingsolver, in High Tide In Tucson, writes:

It's starting to look as if the most shameful tradition of Western civilisation is our need to deny we are animals. In just a few centuries of setting ourselves apart as landlords of the Garden of Eden, exempt from the natural order and entitled to hold dominion, we have managed to behave like so-called animals anyway, and on top of it to wreck most of what took three billion years to assemble. Air, water, earth, and fire - so much of our own element so vastly contaminated, we endanger our own future. Apparently we never owned the place after all. Like every other animal, we're locked into our niche: the mercury in the ocean, the pesticides on the soyabean fields, all come home to our breast-fed babies. In the silent spring we are learning it's easier to escape from a chain gang than a food chain. Possibly we will have the sense to begin a new century by renewing our membership in the Animal Kingdom.8

The concept of humans as landlords in the Garden of Eden and the denial of ourselves as animals is part of a system of patriarchal beliefs which is reinforced in the West by literal interpretations of "Genesis" and other biblical stories which contribute to the debasement of the non-human and the female in a male privileged world. Biblical stories are the most influential texts in the Western world. They form part of a belief system still unquestioned by many today.

The biblical story of the expulsion from the Garden of Eden contributes to the subtexts of Blade Runner's fallen world. There are covert allusions also to the mythic, mysterious past of fable, unicorn and goddess. Creatures that appear in the film such as the owl, the serpent, and the dove, were totems once associated with goddesses. They are reminders of loss. Lost is wild nature and the archetypal mother - Mother Earth, The Great Abyss, The Creatrix, all metaphors for a pagan sentient nature. In Blade Runner's patriarchal world no mothers exist. Photographs, treasured by replicants, are a link to the memory of mothers, but any memories that replicants have are implants. As replicants have no mother and no past photographs help them to understand a history in which they have no part. The sense of loss - of a golden age, and of mothers, goddesses, and wildness - integral to Blade Runner, forms part of an interconnected and evolutionary mythology which echoes the historic elimination of the female from positions of power from ancient tales to contemporary story telling.9

The owl, once the totem of the goddess of wisdom, Sophia - she who was there at the beginning - is an indication that Tyrell is a usurper of female power. A huge eye screened almost subliminally at the start of the film, gives the impression of Big Brother, or God the Father, observing the activities of the city. Yet Tyrell's thick-lensed glasses signify that he is myopic. From this myopia, the partly blind owl that accompanies him, and the dystopian context of the film, it is apparent that Tyrell's world vision and his creations are flawed, that there is a loss of wisdom. Blindness is ambiguous in mythology. For example Tiresias is the blind seer who in his inner darkness saw the destiny of Oedipus.10 Tyrell's 'blindness' has mythical and psychological associations with impotence; with the impotent Fisher King and an infertile and wasteland world.

The Fisher King suffered a lance cut to the groin, hence his impotency. His land remains a wasteland until he is healed. Tyrell could be viewed as an impotent male continuing what Irene Diamond describes as "the age-old male supremacist war against women's reproductive powers".11

A world in which the mother is absent is an unnatural world; at least it is from an ecofeminist perspective. Human and nonhuman animals birth from the mother. Diamond writes:

Babies, once primarily dealt with within the world of women, are now the subject of theological proclamations, medical surveillance, and international policy. The possibilities posed by the so-called reproductive technologies, which divide bodies into readily manipulable parts, have added new elements of commodification and sci-fi fantasy to the historic mysteries of human fertility. 12

Replicants can only be identified by "Voight Kampff" eye tests which register replicants' responses to memory and empathy testing questions. The replicant, Leon, loses control when asked about his mother by the Blade Runner, Holden.

My mother? Let me tell you about my mother: and Leon shoots his questioner. Rick Deckard is then recalled to do the job of Blade Runner that he no longer wants. He is "tired of killing", but he has no choice. If he is not a cop he becomes one of the "little people".

Leon is one of a group of replicants described as Nexus-6: short-term models with a life-span of four years, produced not for the dying Earth but for "Offworld" colonies. The Nexus-6 replicants, who have superior strength and ability and intelligence at least equal to humans, but no rights, mutiny and escape their Off-world slavery. They return to Earth in a bid to meet their "maker", Tyrell, in order to fight the early "retirement" planned for them. It is the job of Deckard, to "retire" (kill) the outlawed escapees who remain: Leon, Roy, Zhora and Pris.

Zhora and Pris are not frail, unintelligent creatures in need of the protection of men to survive. Their strength and desire to live is as strong as male strength, male desire. In the past, strength in females has been associated with monstrosity. When Zhora and Pris defend their lives they appear to be monstrous, castrating females - Pris in particular. She changes from baby doll and veiled doll-bride to an aggressive super-athlete when she grips Deckard's head in a life-threatening thigh lock.13 Zhora, the night club temptress, turns from an intimate Eve-like beguiler to a deadly assailant. There are (Freudian) psychological and mythological links here, which parody yet perpetuate views of women and nature as mysterious, inviting and threatening - the femmes fatales and monstrous females who are believed to bring death to men because of female sexuality and le petit mort of sexual intercourse, and the power of nature at life's end, le grand mort. What occurs in the film is the more literal and usual occurrence, women killed by men. Zhora, like Pris, dies in a gory spectacle of acrobatics and blood which emphasises a prolonged "dying" rather than the corporate "retirement" euphemistically described by Blade Runners and their superiors.

One other replicant, Rachael, has been released on Earth. She is the latest model; beautiful, 'virginal', with the implanted memory of Tyrell's niece and an extended life-span. Rachael is outstanding in science-fiction creations of womanly artifice. She is the perfect, 'finished' woman. Rachael, deceived and emotionally deserted by Tyrell, exhibits distress when she learns from Deckard that she is a not a human being but a replicant experiment. Rachael is produced without a mother and, presumably, never can be a mother, let alone the mother of a new nation - a new Eve with Deckard as Adam in the genesis of a new world.

The naming of Rachael may be an ironic reference to Rachel the biblical mother of a new nation, Israel. Robert Graves, in The White Goddess, tells the story of the dove-priestess Rachel who married Jacob. Jacob then becomes Ish-Rachel or Israel - Rachel's man. Rachael's protection - the saving of Deckard's life - and her submission to him, seduces Deckard into becoming Rachael's man. When

Rachael shoots Leon as he is about to kill Deckard she reverses the situation of men killing women and is then assured of Deckard's protection - "I owe you one", he says.

David Harvey writes: Rachael can re-enter the symbolic realm of a truly human society only by acknowledging the overwhelming power of the Oedipal figure, the father. That is the only route she can take in order to be able to respond to the question, "Tell me about your mother?" In submitting to Deckard (trusting him, deferring to him, and ultimately submitting to him physically), she learns the meaning of human love. In killing the replicant Leon as he is about to to kill Deckard, she provides the ultimate evidence of the capacity to act as Deckard's woman.14

As the unicorn is captured by a pure virgin, so is Deckard when he responds to the lure of Rachael, the replicant "virgin". The milk-white unicorn is a subject of medieval mythology, described by Robert Graves as:

... the Roe in the Thicket. It lodges under an apple tree, the tree of immortality-through-wisdom. It can be captured only by a pure virgin - Wisdom herself. The purity of the virgin stands for spiritual integrity.15

There is an alternative unicorn myth which suggests a more threatening side to Rachael; that the virgin, having caught the unicorn, leads him to the hunter.

Deckard's relationship with Rachael, and his observations of the distress Leon and Roy exhibit at the loss of the female replicants, contribute to a change in him. He begins to understand the value of life; what it means to be human; and what it means to be classified as non-human. When Rachael says to Deckard: Have you ever killed a human by mistake? and, Have you ever taken the Voight Kampff test?, questions that are directed towards Deckard are also planted in the viewer's mind - what essentially makes the difference between the human and the non-human? Deckard may also be a replicant. His subconscious vision of the unicorn in the forest links Deckard to a fabulous, rather than an historic, past. The many photographs on his piano constitute his history, as they do for the replicants. The origami unicorn left by Gaff in Deckard's path - as he is about to enter the elevator with Rachael - is a reminder of Deckard's vision of the unicorn and another indication that Deckard may be a replicant. The ever watchful Gaff seems to have knowledge of Deckard's unicorn vision just as Deckard has knowledge of Rachael's implanted memories. When Deckard relates stories to Rachael that she believes are memories related to her past he convinces her that she is indeed a replicant.

Rachael's future with Deckard is as uncertain as his own. She won't live you know - but then who does? is Gaff's rhetorical question which echoes in Deckard's head as he is about to escape with Rachael via the elevator. There

is no escape from death even for those manufactured to be "more human than human".

Added to the mystery and mythological ambiguity associated with Rachael is the shadow of the 40s, literally in her make-up, reminiscent of the mysterious femme fatale of film noir, associated with world weary detectives and black cities, such as Blade Runner's city, Los Angeles. It is ironic that Los Angeles is a dystopian world: a bad, black place. Clearly it is not the angelic or sacred utopia that its name conjures up: a place of past American dreams and a quest to reach the golden west of California. The angels have fallen, become satanic; there is a loss of innocence and dream. Images of the city and its occupants have a nightmarish, gothic, noir quality in which late twentieth century environmental fears are depicted as reality. There is constant rain. Flickering artificial lights and signs replace sunlight. People, homeless, hungry and stunted, warm themselves by street fires and forage amongst piles of rubbish. The artificial owl associated with Tyrell, and the artificial serpent that Zhora uses for her nightclub performance of temptation in the Garden of Eden, indicate species' rarity or extinction.

The film's broken down society is reminiscent of "A Fable for Tomorrow" in Rachel Carson's Silent Spring.16 No birds sing. There are no trees, grasses, or animals visible or audible, apart from rats and replicants. Carson describes the "grim spectre" of world ecological problems as if they all existed at the same time, in one community:

it might easily have a thousand counterparts in America or elsewhere in the world. I know of no community that has experienced all the misfortunes I describe. Yet every one of these disasters has actually happened somewhere, and many real communities have already suffered a substantial number of them. A grim spectre has crept upon us almost unnoticed, and this imagined tragedy may easily become a stark reality we all shall know.17

Just as much of Blade Runner is pastiche, similarly the dystopia of Carson's composite place is a blending of American or world-wide social and environmental problems in which distinctions of time and place are eroded.

Blade Runner's city, with its composite of time and place and its references, through architecture and fashions, to the 40s, conjures up memories of one of the blackest periods of human history: the 'Fall' of humanity, linked with the domination of people perceived as the non-human enemy and therefore as subjects for brutality and experimentation in the Nazi eugenics programme, the concentration camps, the gas chambers, and as targets for nuclear bombs.

Scientific experimentation, vivisection, and the control of individuals and nonhuman species by humans can be seen as a warring process against those who are different whom we have come to call the "Other"; a scientific and technological warring process, waged particularly since the Enlightenment's "Masculine Birth of Time", the time of Francis Bacon and the persecution of natural healers and witches. This warring process continues to occur when humans distance themselves from other humans by viewing them as the non-human enemy; and when humans separate themselves from the animism of the Earth and the feelings of the non-human of the world in a myopic quest for human progress.

Science fiction as a genre provides a distancing view that enables us to see and "to reveal ourselves to ourselves".18

Blade Runner takes us still further. Not only does the film reveal ourselves to ourselves but it also leads us to question the actions that have brought our world to this dystopia in which human dominance is affecting the well-being of other humans and other species.

Blade Runner's vision of the future is one that the first scriptwriter to work on the film, Hampton Fancher, describes as Los Angeles in the present:

... a simple walk through any downtown neighborhood should convince viewers that the trash-strewn, poverty-ridden, overpopulated streets of Blade Runner are already with us today.19

Ridley Scott's replicants could well be a reality by the year 2019. Each week journals and media report the 'advances' of science and technology. Computers, experts tell us, will reach "at least" equivalence of human intelligence by 2019. Genetic engineers, having cloned Dolly the sheep, are, by the same methods, well on the way to being able to clone humans. The Human Genome Project is in the process of blueprinting the DNA of humanity. Human genes are being introduced to pigs in order to increase the supply of organs for transplanting in humans. Chickens have been genetically designed without feathers, ready for the oven. Monsanto's soya bean production, used for between 60 - 80 per cent of processed foods, is both heavily sprayed with the chemical glyphosate and genetically engineered to resist glysophate so that it kills only unwanted plants.

The treatment of animals to scientifically increase production for humans becomes more and more grotesque. Cows, according to George Monbiot,20 are suffering treatment similar to that of intensive chicken and pig farming in the pursuit of ever higher milk production. The latest monstrous object, he says, is an animal that produces almost twice the average daily yield. Monsanto boosts cows' milk production with the use of the artificial bovine growth hormone BST (Bovine somatotropin). Animals are so tormented by their huge udders and leg spread that they need to be culled at about a fifth of their natural life span. The same report states that Monsanto fudged their results of clinical trials which showed that BST increased udder cell infection.

In Dick's novel, Do Androids Dream of Electric Sheep?, humans as well as

androids mourn the loss of animals to the world and dream of the electric sheep that are too expensive to buy. Dreams could become nightmares for us if the scientific experiments that "go astray", including the 227 lambs that did not shape up to the genetically replicated sheep, Dolly, were exposed for all to see. Danny Penman reports: "Genetics is a hit-and miss-affair and occasionally stories of grisly mistakes leak out of the laboratory".21

But what of the scientific drive that does not become intoxicated by ambition and the pursuit of fame; the science that brings beneficial applications of technology? Deckard, in his job to chase down replicants that have gone dangerously astray and become a threat to corporate hierarchy, says: they can either be a benefit or a hazard. If they're a benefit they're no concern of mine. The same can be said of science and technology. Both can be a benefit or a hazard if prudence and compassion are not used and, of course, wisdom.

Analogies between current scientific experiment and Mary Shelley's novel, Frankenstein, have been made by literary critics, including Theodore Roszak. Mary's "cautionary novel", subtitled The Modern Prometheus, was written when she was only nineteen years old and pregnant. Her pregnancy is relevant. Roszack writes of her protagonist, Frankenstein: "Victor's madness is designed to reveal a twisted sexual impulse". He, like Tyrell in Blade Runner, "means to appropriate the powers of procreation, the one most rooted in nurture, care and love". At the time Mary was completing the final chapters of her novel, her husband, Percy, was writing Prometheus Unbound.

Roszak writes:

Percy, an unrestrained scientific enthusiast, was in fact, Mary's model for Victor Frankenstein. In him she saw the same blazing gifted mind and the same lack of balance she attributed to young Frankenstein ... Percy's Prometheus was "good, joyous, beautiful and free". But Mary, more troubled than encouraged by her husband's infatuation with both rebellion and science, feared the demonic side of Promethian daring. Her reply was a moral hymn to prudence and compassion.22

The mythological Titan, Prometheus, challenged and enraged the gods by stealing fire to bestow on humans. Fire enabled humans to make, amongst other beneficial things, weapons to subdue animals. Prometheus's act of hubris is also Victor Frankenstein's and Tyrell's. Frankenstein desired to bestow on humans a gift for which they would thank him. Instead, his monstrous creation, desperately out of control, wreaks homicidal vengeance against his creator. So does Blade Runner's replicant, Roy Batty, against his creator, Tyrell.

Roy gains entry to Tyrell's inner sanctum with the help of Sebastian, Tyrell's genetic designer, when Sebastian communicates chess moves that "check-mate"

Tyrell and make him curious enough to allow a late night visit. Surprised to see Roy with Sebastian, Tyrell asks, what's the problem? Roy replies, it's death, death is the problem. I want more life, fucker. Roy is the "prodigal son" returned. He says: I have done questionable things. Tyrell: And some extraordinary things ... revel in them. Roy: Nothing that the god of biomechanics wouldn't let you in heaven for?

When Roy fails to extract the promise of extended life that he needs from Tyrell he kisses him on the mouth in a deadly embrace. Roy, like Frankenstein's monster and Oedipus of Thebes, kills his "father". In a reversed Oedipal blinding he smashes Tyrell's glasses and pushes his myopic eyes back into their sockets before crushing his skull. Myopia then, becomes a precurser to blindness and death. Roy, in his programmed tragedy (of inbuilt obsolescence), does not embrace his mother, as Oedipus incestuously and unknowingly did. There is no mother to embrace. Oedipus is the supreme tragic hero. It was his destiny that he would kill his father (Laius). He put out his own eyes after discovering that a man he had killed in anger was his father.

The emphasis on eyes in Tyrell's death scene is a reminder that one of science fiction's functions in mirroring contemporary attitudes and trends is to expose what we would prefer not to see in our own lives and societies, hence Blade Runner's theme of myopia, or blindness. The replicants' vision is quite different from the myopic views of Tyrell, the contact-lensed eyes of the detective Gaff; and the ever-watchful corporate eye. Roy says to Chew, maker of eyes for the Nexus-6 replicants, if only you could see what I've seen with your eyes. Not only is Roy able to see and know more than Tyrell (for example when he "checkmates" Tyrell), he also is able to feel more and to know the tragedy of his limited life-span.

Roy's quest is for extended life but the questions he and the other replicants need answered are archetypal questions sourced in creation stories and mythology. Who am I? What is my relationship with the world? What is my destiny? To know who we are we need to know and understand our metaphorical Earthmother, and our biological mother and father (this, according to Australian research, is denied to most of the children born by in-vitro fertilisation).23 We need to understand our relationship with non-human nature, our relationships within nature in a cycle that accepts death as a process of life.

The question of destiny, or mortality, is Roy's obsession, and a major mythological theme, one in which men - in the fatal flaw of hubris - seek to be God, or close to the gods. The gods hold the secret men eternally seek, the gift of everlasting life, symbolised in the totem of the serpent - also usurped from the goddesses - because of the serpent's ability to renew itself by shedding its skin.

Roy's metamorphosis to a savior figure occurs when he saves the man who hunts him, Deckard, from his literal fall. Deckard is visibly affected by Roy's final words and actions which reflect his compassion, his poetic vision, his "soul".

I've seen things you people wouldn't believe, attacked ships on fire on the coasts of Orion. All these moments will be lost in time, like tears in the rain. Time to die.

The hunter becomes the hunted; the monster becomes a savior, in a deepening ambiguity and questioning of what it means to be a sentient being. In this scene, and in others, Blade Runner demonstrates the replicants' superiority to humans. Their empathetic responses are compared with the inhuman callousness of those who act as God, at the top of the corporate hierarchy; humans who, like Tyrell, treat others as pawns in a chess game; who control the gene pools; who for financial gain irresponsibly incorporate obsolescence. In doing so the film calls to account scientists' lack of empathy when, like Tyrell, they fail to consider the responses of the objects of their experimentation, particularly for the suffering of their flawed creations, or creations gone astray.

Blade Runner implies that transnational corporations can be destroyers of healthy and diverse community life when they push profitable artificial processes and unneccesary goods through technology and science. The replicants as corporate models of obsolescence and redundancy represent a flawed system in which everything seems to be technologically replaceable; people and animals can be copied and disposed of; and when a place becomes polluted there is a deluded belief that there is always another world to take over - like the Off-worlds where the replicants are sent as slave labour in the process of corporate expansion and colonisation. According to an omnipotent advertiser whose voice comes from an air-ship, a new life awaits you in the Off-world colonies. The chance to begin again in a golden land of opportunity and adventure ... helping America in the New World.

Off-world is the newest American Dream. An Edenic world with all the old promises of Paradise - for the elite, the non-sceptical, and those who still can pass the medicals (unlike Sebastian, the genetic designer, who suffers from an accelerated aging sickness). This is perhaps the deepest irony: that life can be engineered yet sickness not healed. The juxtaposition of corporate promises of enjoyment with Blade Runner's wasteland streetscapes is a reminder of this irony; and of the reality that there can be no escape from a polluted world.

The corporate propaganda for Off-world promises a future better than the present but this is the empty promise of corporate hubris, an endeavour to convince other members of society that the total mastery of non-human nature is possible and that humanity can create new worlds better than the old.

Notes

1 Granada, Herts., U. K., 1972.

- 2 Retrofitting Blade-Runner, Bowling Green State University Press, Ohio, 1991.
- 3 Paul M. Sammon, Future Noir, The Making of Blade Runner, Orion, London, 1996.
- 4 Sammon recommends two comprehensive sites: http://www.rit.edu:80/ db-h69133/blade/brindex.html and rtfm.mit.edu:/pub/usenet/news.answers/movies/bladerunner-faq

ibid, p.417.

- 5 Sammon, op. cit. p.47.
- 6 Scott said of the replicants' sometimes glowing eyes: "that kickback you saw from the replicants' retinas was a bit of a design flaw. I was also trying to say that the eye is really the most important organ in the human body. It's like a two-way mirror; the eye doesn't only see a lot, the eye gives away a lot. A glowing human retina seemed one way of stating that".
- 7 see Annette Kuhn, "Introduction" & Ann Cranny-Francis, "Feminist Futures: A Generic Study", Alien Zone, Verso, London,1990, pp. xxi & 8.
- 8 Faber & Faber, London, 1995, p.10.
- 9 see Joseph Campbell The Power of Myth, Doubleday, New York, 1988 pp.165-9 & Robert Graves, The Greek Myths, Penguin, Middlesex, 1960, pp.13-15.
- 10 Joseph Campbell, The Hero With a Thousand Faces, Paladin Grafton, London, 1988, p.154.
- 11 "Babies, Heroic Experts, and a Poisoned Earth", Irene Diamond & Gloria Feman Orenstein, eds., Reweaving the World: The Emergence of Ecofeminism, Sierra Club Books, San Francisco, 1990, p.203.
- 12 Diamond, ibid, p.201
- 13 ref. Barabra Creed, "Gynesis, Postmodernism and the Science Fiction Horror Film" in Kuhn, pp. 214-218.
- 14 The Condition of PostModernity: An Enquiry into the Origins of Cultural Change, Blackwell, Cambridge MA, 1989, p.312.
- 15 The White Goddess: a historical grammar of poetic myth, Farrer, Straus & Giroux, New York, 1984, p. 255.
- 16 Carson, op. cit., p.21.
- 17 Carson, op. cit., p.22.
- 18 Steve Carper, "Subverting the Disaffected City", Kerman, Retrofitting Blade-

Runner op. cit., p.193.

- 19 Sammon. op. cit., p.6.
- 20 Guardian Weekly, July 20, 1997, p.24.
- 21 The New Internationalist, op. cit., p.17.
- 22 "The Soul of Science", Resurgence, September/October, 1997. No.184, p.9.
- 23 The Mercury, Hobart, Tasmania, Sept. 1. 1997. Co author Stephen Steigrad, Department of Reproductive Medicine at Sydney's Royal Hospital for Women, found that 276 families through four fertility units did not plan to tell their children that they were the product of artificial insemination with sperm from donors.

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