Infertility in Star Trek

By Victor Grech

Key Words: STAR TREK; INFERTILITY; MEDICINE IN SCIENCE FICTION

Abstract

It is fair to say that *Star Trek* comprises a self-contained subgenre within science fiction (SF). Over nearly 50 years, through six distinct television series, and eleven feature length films, the "Star Trek universe" envisioned by Gene Roddenberry has become arguably the world's most elaborate and widely recognized depiction of life in future times (covering roughly the twenty-second through the twenty-ninth centuries). In this article, situations involving infertility occurring in episodes from different *Star Trek* series are examined and some general conclusions offered concerning the perception of this problem and the variety of responses proposed.

Introduction

Human infertility is common, and it is estimated that the number of couples in developed countries affected by infertility will double within a decade, from one in seven today to at least one in three in ten years' time.[1] There are many reasons for this increase and the most important causes are rising age at first attempt at pregnancy, an increase in the prevalence of sexually transmitted diseases, an elevation in the general level of obesity, and a decline in male sperm count and quality. All of these factors adversely affect fertility.[2]

In the public's view, SF has become a popular, fashionable and influential literary genre, playing a dominant role in current cultural perceptions and expectations, with mammoth commercial interests. *Star Trek* (ST) has been with us since 1965,[3] and although the original series lasted just three seasons (1967-1969), its effect has multiplied exponentially into an ever-expanding set of films, cartoon series, and spinoffs. Likewise, there appears to be an endless assortment of related toys and props, comics, novelizations, compendiums, biographies, autobiographies and fanzines.[4]

ST continually recreates and reaffirms Gene Roddenberry's view of a possible utopian human future, ennobling a "humanist mythos that fulfils many of the same functions that myth has served in more traditional cultures."[5] These views and possible future histories may potentially guide us away from clear errors in avenues that will eventually open to us, while enabling "[a]n understanding of the mythic facets of […] our own culture."[6]

Thus, *ST*, along with other narratives appertaining to the SF genre, permit the construction of "a cosmology that gives order and meaning to people's deepest confusions, conundrums, and ambivalences."[7] These imagined utopian futures must include the place for humanity in the larger cosmos, the boundaries of the self and the fate of the soul, the nature of human difference and its role in forming social relations and institutions, the hope and future of the collective human enterprise, and the role of narratives in weaving these diverse matters into a living tapestry of meaning.[8]

A surprising number of *ST* episodes and films have dealt with infertility. This essay will fo-

Victor Grech is consultant pediatrician (cardiology) and associate professor of paediatrics, Humanities and Medical Science Programme, University of Malta. He can be reached at victor.e.grech@gov.mt

cus on instances of infertility in *ST*, among all species, and will attempt to provide a comprehensive reading of such narratives.

[NOTE: In the text that follows, references to episodes of the six different *Star Trek* series are indicated in the following fashion:

- *The Original Series* (1966–1969) cited as STTOS
- *The Animated Series* (1973–1974) cited as STAS
- *The Next Generation* (1987–1994) cited as STNG
- *Deep Space Nine* (1993–1999) cited as STDSN
- *Voyager* (1995–2001) cited as STV
- *Enterprise* (2001–2005) cited as STE]

Episodes and Films

Fear of planetary overpopulation is a popular SF theme. In "The Mark of Gideon" (STTOS, season 3, episode 16, 1969), the *Enterprise* crew discovers a planet that has become grossly overpopulated due to longevity and control of disease, and Captain Kirk suggests to the planetary rulers that the United Federation of Planets would be willing to provide help, "new techniques to sterilize men and women […] devices to safely prevent conception. The Federation will provide anything you need." But this race believes that life is sacred, and that the love of life is the greatest gift. Their leader replies "We are incapable of destroying or interfering with the creation of that which we love so deeply. Life, in every form, from foetus to developed being. It is against our tradition, against our very nature. We simply could not do it."[9] Instead, the rulers introduce a deadly plague as a means of population control.

The State may also curtail population levels by deliberately withholding knowledge of sex. Even an alien State may also choose to do so, and in "The Apple" (STTOS, season 2, episode 5, 1967), humanoid but alien denizens serve their State, a machine god called Vaal, but have no knowledge of sex, and in return, never age or die.[10] Children are referred to as "replacements." As none are necessary, they are forbidden by Vaal. As one being explains: "Children. Love. What is love? […] Ah, yes. The holding, the touching. Vaal has forbidden this." Kirk and colleagues naturally terminate this situation, claiming that they have "put those people back on a normal course of social evolution."

A spaceship is an even more claustrophobic environment which does not permit any sort of "overpopulation." While recent *ST* episodes clearly do not discourage babies aboard starships, Captain Janeway faces a difficult situation in the Voyager series (1995), set in the twenty-fourth century. The starship Voyager finds itself stranded 70,000 light years away from Earth, with an estimated 75 year return trip back to Earth. Janeway expresses her concerns thus:

> I continue to wonder about the issue of procreation aboard the ship. Certainly, it's wrong to interfere with the private lives and decisions of the crew, yet I remain concerned about the environment we could provide for any child born here. ("Elogium," STV season 2, episode 4, 1995)[11]

Intriguingly, the Vulcan race in *ST* only have sex once every seven years, and males are particularly affected during this period, for they experience a "blood fever" *(pon farr)* due to a neurochemical hormonal imbalance, that appears similar to a combination of menstrual mood problems and premenstrual syndrome.[12] This may cause difficulties during long voyages in space, and in the *Voyager* episodes "Blood Fever" (STV, season 3, episode 16, 1997)[13] and "Body and Soul" (STV, season 7, episode 7, 2000),[14] the Starship *Voyager* crew's two Vulcans both eventually enter *pon farr* and face limited options: actual mating (which is naturally impossible on this voyage as no Vulcan females are available), intensive meditation, participating in a ritual combat, or dying

of unconsummated lust. In the former episode, meditation solves the problem while in the latter, a three-dimensional holographic simulation is used to defuse the situation.[15]

Contraception is part of everyday life in the *ST* universe and a somewhat implausible scenario occurs in the *Deep Space Nine* episode "The Dogs of War" (STDSN, season 7, episode 24, 1999) wherein one of the protagonists finds herself pregnant as her partner forgot to take his birth control injection, and yet both are meant to be taking their injections.[16]

Celibacy, that is, abstention from sex for religious or spiritual reasons, is a concept found in several religions, and has been a Christian ideal since early times. The situation is similar in Buddhism and Sufism and also for Hindus who follow the Vedic way to its final stages. Conversely, Islam is generally hostile to celibacy and Judaism does not generally advocate celibacy.[17] In "The Covenant" (STDSN, season 7, episode 9, 1998), the ruler of a religious cult enforces his members to pledge a covenant of abstinence,[18] which he himself is eventually found to have broken, inducing a pregnancy.

Similarly, in the *ST* universe, the Deltans are highly sexually evolved humanoids, sexually irresistible to humans. Hence, before serving in Starfleet, they are obligated to take an oath of celibacy ensuring that they would not take sexual advantage of any non-Deltan crew.[19]

The State, "the coldest of all cold monsters,"[20] may accidentally provoke or deliberately impose infertility, and an example of the latter has already been given. The power at the heart of the atom, released by the State in an excessive manner through warfare or accidentally, has frequently been presented in SF as a cause of infertility. For example, in the *ST Voyager* episode "Friendship One" (STV, season 7, episode 21, 2001), accidental misuse of antimatter causes devastating explosions that trigger a nuclear winter and radiation-damaged babies.[21]

Iatrogenic infertility is depicted in "Miri" from the original *ST* series (SOTOS, season 1, episode 8, 1966), where the inhabitants of an extrasolar planet created a "life prolongation complex" virus that inadvertently killed all the adults and slowed down surviving children's physical and sexual development. But even these children eventually still reach puberty at which time they contract the virus and die.[22]

Alien creatures may also have infertility inflicted upon them. This occurs in an episode from the animated *ST* series ("More Tribbles, More Troubles," STAS, season 1, episode 5, 1973).[23] "Tribbles" are small, cute and apparently harmless creatures that resemble furry pets. Though they normally eat voraciously and multiply prolifically, the tribbles encountered here have been genetically engineered and rendered infertile. However, they retain their gluttonous appetites, and now, instead of multiplying, they grow hugely fat.

Aliens have also fashioned sterile beings, such as the "Jem'Hadar" a manufactured, asexual race of warriors.[24] In the *ST Voyager* episode "Prototype" (STV, season 2, episode 13, 1996), a group of sentient warrior robots are discovered by the *Voyager* crew. These had turned on their organic builders and destroyed them when they attempted to shut the robots down as they were no longer needed for war. However, the builders had created a failsafe mechanism in order to prevent the robots from creating more such creatures. *Voyager*'s chief engineer is abducted, coerced to circumvent this limitation and successfully creates a new robot, but on animating it, realizes the error of this course of action, and destroys her creation.[25]

However, not all synthetic beings are infertile in the *ST* universe, as witnessed in an episode of *ST The Next Generation* (STNG, season 3, episode 16, 1990) entitled "The Offspring," which features the creation of a mechanical android named "Lal" (the word means "beloved" in the Hindi language) fashioned by the equally me-

chanical android Data.[26] Data is a "fully functional" male android, capable even of the sexual act,[27] but being mechanical, he is unable to father children in the biological sense. However, like Frankenstein, Data creates a new individual without the involvement of a member of the opposite sex in an attempt to perpetuate his race. Captain Picard is naturally apprehensive with regard to Starfleet's reaction to this unauthorized creation and this leads to a humorous exchange regarding android reproduction between Pickard and Data. Pickard asks "Data, I would like to have been consulted" to which Data appropriately and correctly replies "I have not observed anyone else on board consulting you about their procreation, Captain."

In an analogous storyline, from *Star Trek: The Motion Picture* (1979),[28] *Voyager 6,* one of a series of NASA deep space probes,[29] returns to Earth after having been modified beyond recognition by machine intelligences. *Voyager* has become sentient and its sole desire is to download the data that it has acquired during its travels to its creator. However, there is a snag in that it has forgotten that its creator is mankind, and decides to merge with a human female in order to become a being that is greater than the sum of the two parts—a man and a machine. It does this first by destroying a woman in order to reproduce her mechanically, and then uses this facsimile in order to merge with one of the male crew. The result is an offspring fathered by a man and birthed off a machine. While such physical man-machine reproduction is unlikely in real life, mankind does metaphorically give birth to machines that may surpass us in unknown and unknowable ways, as has already been mentioned.[30]

Infertility among biological aliens is a common theme in many stories set in the *Star Trek* universe. In "When the Bough Breaks" (STNG, season 1, episode 17, 1988), the starship *Enterprise* encounters a planet that is deliberately kept cloaked using a form of sophisticated stealth technology. While the *Enterprise* is in orbit, seven of the ship's children are kidnapped by the planet's alien inhabitants, an otherwise kindly humanoid race who claim they are sterile and that they wish to teach the human children their customs and use them to repopulate their species. The *Enterprise* doctor discovers that they are suffering from radiation poisoning caused by the overhead planetary cloak, leading to infertility. This story makes several doubtful assumptions: that humans can interbreed with aliens and that cumulative radiation effects on fertility can somehow, even in an alien species, be repealed.[31]

The Original Series ST crew also encounter infertility on an alien planet in the episode "Wink of an Eye" (STTOS, season 3, episode 11, 1968) where they find just five survivors who invade the Enterprise by stealth, and are invisible to the human crew because of a hyperaccelerated metabolism that permits them to move at velocities too fast for the human eye to register. Their aim is to overpower the crew members of the Enterprise and to hook them to a life-support system so they can be used as mating stock since their own males have been rendered sterile by radiation released during volcanic eruptions. Naturally, the *Enterprise* crew prevails and escapes the planet.[32]

The Enterprise NX-01 series crew also encounter the relics of a sterile race that had passed away on an ancient planet centuries before (STE, "Extinction," season 3, episode 3, 2003), leaving behind a genetically engineered virus that is capable of mutating other races—both bodies and minds—into their species in an attempt to perpetuate the race.[33] However, it is difficult to believe that a species capable of such advanced feats of genetic engineering would be incapable of treating themselves for infertility.

Only one individual of the "Caretaker" race is encountered by the *Voyager* crew. The Caretakers had inadvertently destroyed a planet's ecology and a Caretaker couple had been left to supervise the survival of the inhabitants of the planet, but when one of the couple leaves, and the remaining Care-

taker ages and approaches death, he unsuccessfully attempts to find a mate and reproduce in order to leave behind another Caretaker to supervise the planet (STV, "Caretaker," season 1, episode 1).[34]

In "Meridian" (STDSN, season 3, episode 8, 1994), a humanoid race based on the planet which shifts between this dimension and another is discovered by the *Deep Space 9* crew. When the planet shifts into the alternate dimension, the inhabitants exist as pure consciousness and are unable to procreate. Starfleet manages to establish a means of stabilizing the planet allowing it to remain locked in this, our native dimension, allowing the aliens to reproduce.[35]

Somewhat illogically, the *Voyager* episode "Ashes to Ashes" (season 6, episode 18, 2000) portrays an alien species that reproduce by reanimating the newly deceased of other species, and over a period of months, the dead DNA is remodelled into alien DNA.[36] This is unsound on many counts as the aliens could just as easily reanimate themselves when they die. In addition, neighbouring species would surely consider such practices grave robbing and would likely react by totally destroying their dead. Moreover, this alien reanimation practice would create a significant moral dilemma for this species in that a family wishing to have a child would only be able to acquire one by killing a child of another species, and then reanimating the corpse. While this may not be considered true infertility, scouring space for the purposes of scavenging corpses would at least seriously limit potential population.

This Faustian scenario is again repeated in "Up the Long Ladder" (STNG, season 2, episode 18, 1989), where a crashed spaceship crew of only five individuals decide to perpetuate the involuntary and otherwise non-viable colony through cloning, initially avoiding sexual reproduction through a combination of drugs and legislation, but later through no coercion whatsoever as sex becomes repugnantly primitive. However, repeated cloning is shown to result in physical degeneration of the clones.[37]

Conversely, in the *ST* universe, trans-species unions abound and result in fertile offspring. Indeed, a bewildering number of species seem to be able to interbreed, but undoubtedly, the most famous crossbreed not only in *ST*, but in all SF is Spock, the son of a Vulcan male and a human female (STTOS, "Journey to Babel," season 2, episode10, 1967).[38] All of these crosses are said to be possible in the *ST* universe, with or without the help of genetic technology, because of the shared genetic ancestry of most of the humanoid races of the galaxy who had been seeded by an ancient race known as the "Progenitors" (STTNG, "The Chase," season 6, episode 20, 1993).[39] However, even if such cross-breeding were possible, it seems highly likely that the resulting offspring would be sterile, as mules, the result of a cross between a horse and a donkey, are on Earth.

The ultimate in *ST* credibility challenging fecundity is the combination of a mobile holographic emitter with the DNA of a male human and cybernetic Borg nanoprobes to produce a twenty-ninth century Borg drone (STDSN, "Drone," season 5, episode 2, 1998).[40] Yet another fantastic situation is portrayed in the episode "Blink of an Eye" (STV, season 6, episode 12, 2000) when the holographic doctor claims to have somehow fathered a child.[41]

Finally, in the famous episode "The Inner Light" (STNG, season 5, episode 25, 1992), Captain Picard deliberately postpones having children for five years with his new wife when he inexplicably finds himself transferred from his starship to a planet wherein he had somehow already been leading an existence as a married man.[42] It is finally revealed that Picard's supposed "pre-existence" is in fact the result of his having been struck by a mind probe from a now-extinct alien race that wished to preserve the memory of its existence by enabling the first individual with whom it came into contact to experience (in less than half an hour of real time) every minute from

forty years of life lived as a member of its gentle, peace-loving, but ultimately doomed society.

An interesting medical solution to future infertility is the transfer of unwanted fetuses to the wombs of infertile women.[43] This trope is used twice in *ST*, once to transfer a baby to another (alien albeit humanoid) mother due to injury of the human biological mother (in STDSN, "Body Parts," season 4, episode 25),[44] and once to transport a full-term baby out of its mother (in STV, "Deadlock," season 2, episode 21),[45] in what is effectively a high-tech caesarean-section, that nonetheless, accedes to the "cognitive utility of SF […] based on the rigor of applying scientific laws; such worlds must be possible."[46]

Conversely, men are truly needed, albeit briefly, in the two episodes, "The Lorelei Signal" (STAS, season 1, episode 4, 1973)[47] and "Favorite Son" (STV, season 3, episode 20, 1997),[48] where beautiful females feed off the "life energies" of males, thus killing the men to retain their own immortality at the expense of infertility.

Discussion

Star Trek has been with us for almost 50 years, and constitutes a universally known and recognized metanarrative in its own right, spanning no fewer than 6 distinct television series, plus 11 feature films, representing a total viewing time of over 735 hours.

The series' creator, Gene Roddenberry (1921-1991), was a humanist, espousing the belief that humanity should not expect divine or supernatural intervention or help, but should instead rely on Cartesian and Baconian exhortations to use reason and the scientific method to search for and apply universal truths.

Roddenberry's humanism also championed the notions of voluntary cooperation, nonviolent conflict resolution, the right to self-defence, respect for the dignity of all life forms, and avoiding the imposition of one group's dogmas and doctrines while respecting the personal beliefs of every sentient species. However, it must be noted that such outlooks do not eschew the enjoyment of human emotions, spirituality and intuition.

Roddenberry referred to *ST* as "my social [...] racial philosophy, my overview on life and the human condition" and correctly believed that he could reach far more people by way of the mass media than a conventional philosopher or even a conventional SF writer.[49]

Infertility is one of the problems that may be encountered and must be overcome, not only by humans, but also by purported alien species. This issue is a cause for great concern to both genders, and this may explain why the condition is so frequently brought up in *ST* narratives, since it resonates with audiences of all ages and from all cultures. Although the psychological effects of infertility on individuals have been well studied, the effects of mass sterility remain unknown. Mass despair would be likely, potentially precipitating suicides.

The closest parallel available is the "infertility belt" of sub-Saharan Africa where up to one-third of all couples are unable to conceive. This is mainly due to infectious diseases that are acquired sexually, post-partum or post-abortion. Moreover, infertility can be tragic in highly pronatalist cultures, where parenthood is culturally mandatory and childlessness is socially unacceptable, and may lead to active stigmatization. For example, infertile women in the Ijo community of the Niger Delta are extremely stigmatized. Barren women cannot attain full womanhood and join appropriate age associations since they cannot be circumcized without having given birth. Uncircumcized women cannot be buried within the town and are instead buried in a designated forest.[50]

In these narratives from the *Star Trek* universe, we see how protagonists in different periods over roughly eight centuries of time face and deal with the challenge of infertility, relying on reason and science as much as possible and avoiding any hint of divine intervention. Furthermore,

ST episodes frequently take the form of morality plays, displaying a stylised Manichean conflict of good versus evil, with the good guys invariably encompassing Starfleet crews, who, in their explorations, occasionally encounter human evil or its alien equivalent. Indeed, very few *ST* episodes involve shadings or nuances of good and evil. A simple dichotomy appears to suffice for directors and fans.

Simplistic humanism and the demonstrable triumph of good over evil are implicit in the vast majority of *ST* episodes—so much so that, in the narratives outlined above, Starfleet crews almost always find a solution to end infertility, or when this is not possible, at least manage to escape ensnarement by nefarious aliens.

Future humanity is therefore depicted in Ulyssean fashion, "strong in will. To strive, to seek, to find, and not to yield," as the poet Tennyson put it—acceding to the humanist penchant to overcome all odds and triumph over evil and adversities of every kind, including infertility.

Bibliography

Television Episodes

"Ashes to Ashes," dir. by Terry Windell, *Star Trek Voyager,* March 2000.

"Blink of an Eye," dir. by Gabrielle Beaumont *Star Trek Voyager,* January 2000.

"Blood Fever," dir. by Andrew J. Robinson, *Star Trek Voyager,* February 1997.

"Body and Soul," dir. by Robert Duncan McNeill, *Star Trek: Voyager,* November 2000.

"Body Parts," dir. by Avery Brooks, *Star Trek Deep Space 9,* June 1996.

"Caretaker," dir. by Winrich Kolbe, *Star Trek Voyager,* January 1995.

"Deadlock," dir. by David Livingston, *Star Trek Voyager,* March 1996.

"Drone," dir. by Les Landau, *Star Trek Voyager,* October 1998.

"Elogium," dir. by Winrich Kolbe, *Star Trek Voyager,* September 1995.

"Extinction," dir. by LeVar Burton, *Star Trek Enterprise,* September 2003.

"Favorite Son," dir. by Marvin V. Rush, *Star Trek Voyager,* March 1997.

"Friendship One," dir. by Mike Vejar, *Star Trek: Voyager,* April 2001.

"Journey to Babel," dir. by Joseph Pevney, *Star Trek The Original Series,* November 1967.

"Meridian," dir. by Jonathan Frakes, *Star Trek Deep Space 9,* November 1994.

"Miri," dir. by Vincent McEveety, *Star Trek The Original Series,* October 1966.

"More Tribbles, More Troubles," dir. by Hal Sutherland, *Star Trek: The Animated Series,* October 1973.

"Penumbra," dir. by Steve Posey, *Star Trek Deep Space 9,* April 1999.

"Prototype," dir. by Jonathon Frakes, *Star Trek Voyager,* January 1996.

"The Apple," dir. by Joseph Pevney, *Star Trek The Original Series,* October 1967.

"The Cage," dir. by George Butler, *Star Trek The Original Series,* February 1965.

"The Chase," dir. by Jonathon Frakes, *Star Trek The Next Generation,* April 1993.

"The Covenant," dir by John Kretchmer, *Star Trek Deep Space 9,* November 1998.

"The Dogs of War," dir. by Avery Brooks, *Star Trek Deep Space 9,* May 1999.

"The Inner Light," dir. by Peter Lauritson, *Star Trek The Next Generation,* June 1992.

"The Lorelei Signal," dir. by Hal Sutherland, *Star Trek The Animated Series,* September 1973.

"The Mark of Gideon," dir. by Jud Taylor, *Star Trek The Original Series,* January 1969.

"The Naked Now," dir. by Paul Lynch, *Star Trek The Next Generation,* October 1987.

"The Offspring." dir. by Jonathan Frakes, *Star Trek The Next Generation,* March 1990.

"Up the Long Ladder," dir. by Winrich Kolbe, *Star Trek The Next Generation,* May 1989.

"When the Bough Breaks," dir. by Kim Manners, *Star Trek The Next Generation,* February 1988.

"Wink of an Eye," dir. by Jud Taylor, *Star Trek The Next Generation,* November 1968.

Publications

Alexander David, "The Roddenberry Interview." *The Humanist* 51:2 (1991): 5–30.

Brown, Peter, *The Body and Society, Men, Women and Sexual Renunciation in Early Christianity* (New York: Columbia University Press, 1988).

Grech, Victor, "The Irruption of Vulcan Pon Farr as Unleashment of Jung's Shadow," *New York Review of Science Fiction,* 25 (2012), 13-15.

Harrison, Taylor, and others, eds. *Enterprise Zones: Critical Positions on Star Trek,* (Boulder, Colorado: Westview Press, 1996).

Hollos, M., "Profiles of Infertility in Southern Nigeria: Women's Voices from AMAKIRI," *African Journal of Reproductive Health,* 7 (2003), 46-56.

Koman, Victor, *Solomon's Knife* (Danbury: Franklin Watts Inc., 1989).

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

Ledger, W. L., "Demographics of Infertility," Reproductive Biomedicine Online, 18 (2009), 11-14.

Luckhurst, Roger, "The Many Deaths of Science Fiction: A Polemic," *Science Fiction Studies,* 21 (1994), 35-50.

Lundeen, Jan, and Jon Wagner, *Deep Space and Sacred Time: Star Trek in the American Mythos,* (Westport: Praegher, 1998).

Nietzsche, F. W., *Thus Spoke Zarathustra* (1883-8; London: Penguin, 1969), p. 75.

Sagan, Carl, *Murmurs of Earth: The Voyager Interstellar Record* (New York: Random House, 1978).

Motion Pictures

Star Trek: The Motion Picture, dir. by Robert Wise (Paramount Pictures, 1979).

Notes

1. W. L. Ledger, "Demographics of Infertility," *Reproductive Biomedicine Online*, 18 (2009), 11-14.
2. Ibid.
3. "The Cage," dir. by George Butler, *Star Trek The Original Series*, February 1965.
4. See Taylor Harrison and others, eds. *Enterprise Zones: Critical Positions on Star Trek* (Boulder, Colorado: Westview Press, 1996).
5. Jan Lundeen and Jon Wagner, *Deep Space and Sacred Time: Star Trek in the American Mythos* (Westport: Praegher, 1998), p. 3.
6. Ibid.
7. Ibid. p 42.
8. Ibid.
9. "The Mark of Gideon," dir. by Jud Taylor, *Star Trek The Original Series*, January 1969.
10. "The Apple," dir. by Joseph Pevney, *Star Trek The Original Series*, October 1967.
11. "Elogium," dir. by Winrich Kolbe, *Star Trek Voyager*, September 1995.
12. Victor Grech, "The Irruption of Vulcan Pon Farr as Unleashment of Jung's Shadow," *New York Review of Science Fiction*, 25 (2012), 13-15.
13. "Blood Fever," dir. by Andrew J. Robinson, *Star Trek Voyager*, February 1997.
14. "Body and Soul," dir. by Robert Duncan McNeill, *Star Trek: Voyager*, November 2000.
15. Grech, "The Irruption."
16. "The Dogs of War," dir. by Avery Brooks, *Star Trek Deep Space 9*, May 1999.
17. Peter Brown, *The Body and Society, Men, Women and Sexual Renunciation in Early Christianity* (New York: Columbia University Press, 1988).
18. "The Covenant," dir by John Kretchmer, *Star Trek Deep Space 9*, November 1998.
19. *Star Trek: The Motion Picture*, dir. by Robert Wise (Paramount Pictures, 1979).
20. F. W. Nietzsche, *Thus Spoke Zarathustra* (1883-8; London: Penguin, 1969), p. 75.
21. "Friendship One," dir. by Mike Vejar, *Star Trek: Voyager*, April 2001.
22. "Miri," dir. by Vincent McEveety, *Star Trek The Original Series*, October 1966.
23. "More Tribbles, More Troubles," dir. by Hal Sutherland, *Star Trek: The Animated Series*, October 1973.
24. "Penumbra," dir. by Steve Posey, *Star Trek Deep Space 9*, April 1999.

25. "Prototype," dir. by Jonathon Frakes, *Star Trek Voyager*, January 1996.
26. "The Offspring," dir. by Jonathan Frakes, *Star Trek The Next Generation*, March 1990.
27. "The Naked Now," dir. by Paul Lynch, *Star Trek The Next Generation*, October 1987.
28. Wise, *Star Trek: The Motion Picture*.
29. The Voyager program consisted of only two unmanned probes, *Voyager* 1 and *Voyager* 2, both of which were funded by NASA and were launched in 1977 to study the gas giant outer planets of the solar system. *Voyager* 2 is about 14 billion km away from the sun and is the longest continuously operating NASA spacecraft. *Voyager* 1 is about 17 billion km away from the sun and is the most distant active spacecraft. Periodic contact has been maintained with both probes since the crafts' radioactive power supplies are still functioning. Carl Sagan, *Murmurs of Earth: The Voyager Interstellar Record* (New York: Random House, 1978).
30. Ray Kurzweil, *The Singularity Is Near: When Humans Transcend Biology* (New York: Viking, 2005).
31. "When the Bough Breaks," dir. by Kim Manners, *Star Trek The Next Generation*, February 1988.
32. "Wink of an Eye," dir. by Jud Taylor, *Star Trek The Next Generation*, November 1968.
33. "Extinction," dir. by LeVar Burton, *Star Trek Enterprise*, September 2003.
34. "Caretaker," dir. by Winrich Kolbe, *Star Trek Voyager*, January 1995.
35. "Meridian," dir. by Jonathan Frakes, *Star Trek Deep Space 9*, November 1994.
36. "Ashes to Ashes," dir. by Terry Windell, *Star Trek Voyager*, March 2000.
37. "Up the Long Ladder," dir. by Winrich Kolbe, *Star Trek The Next Generation*, May 1989.
38. "Journey to Babel," dir. by Joseph Pevney, *Star Trek The Original Series*, November 1967.
39. "The Chase," dir. by Jonathon Frakes, *Star Trek The Next Generation*, April 1993.
40. "Drone," dir. by Les Landau, *Star Trek Voyager*, October 1998.
41. "Blink of an Eye," dir. by Gabrielle Beaumont *Star Trek Voyager*, January 2000.
42. "The Inner Light," dir. by Peter Lauritson, *Star Trek The Next Generation*, June 1992.
43. Victor Koman, *Solomon's Knife* (Danbury: Franklin Watts Inc., 1989).
44. "Body Parts," dir. by Avery Brooks, *Star Trek Deep Space 9*, June 1996.
45. "Deadlock," dir. by David Livingston, *Star Trek Voyager*, March 1996.
46. Roger Luckhurst, "The Many Deaths of Science Fiction: A Polemic," *Science Fiction Studies*, 21 (1994), 35-50, p. 39
47. "The Lorelei Signal," dir. by Hal Sutherland, *Star Trek The Animated Series*, September 1973.
48. "Favorite Son," dir. by Marvin V. Rush, *Star Trek Voyager*, March 1997.
49. David Alexander, "The Roddenberry Interview." *The Humanist* 51:2 (1991): 5–30. p. 18.
50. M. Hollos, "Profiles of Infertility in Southern Nigeria: Women's Voices from AMAKIRI," *African Journal of Reproductive Health*, 7 (2003), 46-56.