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SFRA Review

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In this issue

Endings and Beginnings

Doug Davis and Jason Embry

THE NASTY, brutish yet not-so-short national elections are now over in the United States, which means that SFRA's far more genteel and international bi-annual Executive Committee elections are over as well. In his final President's Column, outgoing President Ritch Calvin offers his thoughts on what turned out to be the most international election results our organization has ever seen. Ritch also gives us an update on the *Review*'s on-going transition to electronic publication format—a process that we suspect will continue long into the new Executive Committee's tenure.

This is the final issue of the year 2012, and it is also the final issue for which Jason Embry will serve as co-editor of the *Review*. The rest of the editorial staff of the *Review* want to thank Jason for the hard work he put into editing the *Review* these past two years. Jason has helped the *Review* grow both in terms of the diversity of content we offer and the diversity of platforms the publication can read it on. Historically, the *Review* has clocked in at around 30 pages. Under his editorship, we have published several 'extended' issues over 60 pages in length. Jason has been instrumental in effecting our transition to a hybrid digital/print-on-demand publication as well, working closely with our managing editor Lars Schmeink to create a beautiful three-volume print edition of our 2011 issues, to link our reviews to our new Amazon store, and to deliver content in other electronic reader formats. Our non-fiction area editor Michael Klein will take over Jason's duties starting with our next issue. Doug Davis will remain co-editor of the *Review* through 2013.

This issue—one of the shorter ones we have published in some time—features an assortment of comprehensive book reviews authored by leading scholars and artists in the field, including a fiction review penned by the SFRA's President Elect, Paweł Frelik. It also contains two "Feature 101" articles and the second entry in Jason Ellis's "Employment Stories" column. In his column, Jason offers several hyperlinks of interest for SF scholars who are on the job market. Our first "Feature 101" article is authored by one of our regular contributors, Chris Pak. Chris frequently reports on the news from our affiliated organizations in the *Review*, as he does in this issue. In "Terraforming 101," Chris presents a comprehensive historical survey, drawn from his doctoral work, of representations of terraforming in SF. Victor Grech and his colleagues from Malta also return to the pages of the *Review* with their Feature 101 article, "Sex in the Machine." In past issues, Grech—a medical doctor by profession—and his co-authors have surveyed such biological themes as medicine, immortality, infertility, and human-alien interbreeding in SF. In the present issue, they bring their medical expertise to bear on SF's representation of simulated and virtual sex. Pak and Grech have each compiled extensive bibliographies, making their essays invaluable resources for interested readers. If you are interested in writing a Feature 101 for the *Review*, please contact Doug Davis (ddavis@gordonstate.edu).

The Results are In!

Ritch Calvin

AFTER YEARS of fundraising, campaigning and sloganeering, the election results are in. Oh, and the US held some elections, too. The new Executive Committee for the SFRA is now set for the next two years. I would like to begin, however, by thanking everyone who agreed to run for office. We appreciate your willingness to serve the organization and sincerely hope that you will continue to work for the organization. For the next two years, your Executive Committee will be comprised of Pawel Frelik (President), Amy J. Ransom (Vice President), Susan A. George (Treasurer), Jenni Halpin (Secretary), and Ritch Calvin (Past President). Over the past few years, the EC has worked to make the SFRA a more truly international and diverse organization. We have tried to draw in more international members, include more international texts and media for review, include international members on award committees, and hold regular international conferences. For the first time (I believe) we have a President located outside the US, and for the first time (I believe) we have an EC that is predominantly female (no binders necessary).

I would also like to say that it has been a privilege and a pleasure to work these past two years with Jason Ellis, Susan George, Patrick Sharp, and Lisa Yaszek. They are each and every one the very best of colleagues and friends, and they have been—and will continue to be—assets to the organization.

By this time, everyone who was a member of the SFRA for the 2011 calendar year should have the triple issue in hand. The team did a great job putting it together, and the final product looks good. The transition to our electronic/POD model is not yet complete, but it is well under way. If you follow publishing news, even inside the SF&F world, you know that epublishing is the next wave. *Newsweek* has announced that it will be electronic-only from now on. *The New York Review of Science Fiction* has also just completed its transition to digital form. For the moment, we are committed to making the transition to epublishing, but we will continue—at least in the near term—to offer a print-on-demand option. Setting up the POD system has been both more complicated and more expensive than anticipated, but we continue to work on ironing out the kinks in the process.

You should also have noticed in the last issue (#301) that the links to the Amazon storefront are functioning. This took a lot of work on the part of Jason Embry and Lars Schmeink to get the SFRA Amazon store operational and stocked. For the moment, only the items under review are linked to the store. In the future, however, we hope to link every text/DVD/game mentioned in a review to the store. And remember, if you are intrigued by the item or convinced that you must own the item, please follow the link from the *Review*, and a portion of the sales returns to the SFRA.

At the moment, we have the next few annual conferences already scheduled. We will meet in Riverside, CA (2013), Madison, WI (2014), and Rio de Janeiro, BR (2015). The new EC will begin reviewing proposals for the next two years' conferences. If you think that you would be willing and able to host an annual conference, please submit a proposal to the EC. Please include mention of who would be involved in organizing the conference, where it would be hosted, whether or not you will have institutional support, and what other attractions might draw/entertain attendees. Please be sure to indicate in which year you would like to host the conference.

As hard as it is to believe, the SFRA/Eaton conference in Riverside is almost upon us. The line-up is shaping up. The conference should be, as usual, stimulating and exciting. The weather will be warm. The accommodations will be great. I trust that you have April 11-14, 2013 marked in your calendars. Book early—the hotel will fill up, to be sure! I hope to see you all there!

Leaving on a Jet Plane

Jason W. Ellis

I AM ONLY a few hours away from takeoff. I will touch down in Dusseldorf tomorrow morning and then make my way to the Technische Universität Dortmund by train for the First International Philip K. Dick Conference. There will be a number of friends and colleagues who I am eager to reconnect with—Norman Spinrad, Mark Bould, Roger Luckhurst, and Sandor Klapcsik—and many others who I look forward to meeting for the first time. Of course, I will drum up support for the SFRA and encourage all attendees to enroll as lifelong members. While this will likely be the last official duty that I have as the exiting SFRA Vice President, I will certainly be around and continue to help in any way that I can. During my tenure as Vice President (and Publicity Director before that), I contributed to the framework for the organization's transition to digital membership management, supported the pragmatic transition of the *SFRA Review* to primarily online distribution, and developed the organization's presence online (thanks to Stacie Hanes for creating our Facebook way back when) and within our community in general (thanks to *Locus*, the many SF zines and prozines, and too-numerous-to-name bloggers for covering the good work of SFRA members). I am very proud of these accomplishments, and I am very thankful to have had the opportunity to work with the past two ECs, the *SFRA Review* Editors Doug Davis and Jason Embry, the SFRA Review Managing Editor Lars Schmeink, and the SFRA's web director Matthew Holtmeier. I am also glad to have had this chance to give back to such a welcoming and supportive organization. I wish the upcoming EC—Pawel, Amy, Susan, and Jenni—the very best of luck. While my approaching flight only carries me to tomorrow, the SFRA's new EC carries us all into the future!

Composting Culture: Literature, Nature, Popular Culture, Science University of Worcester, 5-7 September 2012

Chris Pak

HELD AT this historic city of Worcester by the Severn River and the Malvern Hills, The Association for the Study of Literature and the Environment-UK and Ireland (ASLE-UKI) hosted their seventh bi-annual conference at the University of Worcester. As the current liaison between the SFRA and ASLE-UKI, I organized an SFRA panel designed to demonstrate and promote the potential for the ecocritical study of sf. The theme of this conference orbited notions of "composting" and recycling on the one hand and the related theme of "junk" on the other.

In his opening keynote, Jed Rasula, Helen S. Lanier Distinguished Professor at the University of Georgia, discussed the intertextuality of American poetry as a form of "composting" and related this to Dadaism in his talk "Bringing in the Trash: The Cultural Ecology of Dada," exploring ground covered in his work *This Compost: Ecological Imperatives in American Poetry* (2002). Professor Molly Scott Cato of Roehampton University, an economist and member of the UK's Green Party, extolled the benefits of craft work in her talk "Adam Smith vs. Adam Bede: Work, Craft and Environment in a Green Economy." But from the perspective of sf, it was agronomist and sociologist Professor Thierry Bardini's (Université de Montréal) talk on "Decompicultures: Decomposition of Culture and Cultures of Decomposition" that demonstrated the close fit between researchers of both ASLE-UKI and SFRA. In his talk, which re-contextualized elements of his book *Junkware* (2011), Bardini referenced Heinlein and drew on Baron Munchausen and Paul Bunyan to illustrate the folk origins of bootstrapping before arguing for the primacy of junk over trash in our contemporary culture – an insight partly developed in dialogue with his reading of William S. Burroughs and Philip K. Dick. He then moved on to discuss the work of Jae Rhim Lee, a Korean-American artist whose *Infinity Burial Project* for developing ecologically sound internment of human bodies led him to consider the human body as the ultimate junk. To my surprise and delight, Bardini ended his talk by discussing the motif of terraforming in Kim Stanley Robinson's *Mars* trilogy, relating elements of his foregoing discussion to this trope.

Discussion of sf was not limited to Bardini's keynote talk. Adeline Johns-Putra, the current chair of ASLE-UKI, and Louise Squire (both at the University of Surrey) considered works of sf in the "Human-Posthuman" panel. Johns-Putra's talk on "A Posthuman Empathy or the Same Old Ecofeminism: Margaret Atwood Recycles the Ethics of Care" explored what she identified as an attenuation of the ecofeminist vision developed in Atwood's *Oryx and Crake* (2003) in its companion text *The Year of the Flood* (2009). Squire's discussion of queered time and death in Jeanette Winterson's *The Stone Gods* (2007), in her talk "What Intervention? Posthumanism in Winterson's Repeating Worlds," explored the emergence of posthumanism from the bounds of a dystopian transhumanism. Donna Haraway's "Cyborg Manifesto" was an oft mentioned text in this panel and throughout the duration of the conference, and many scholars were surprised to learn that Haraway was awarded the Pilgrim Award at the SFRA 2011 conference in Poland.

I chaired the "Border Crossings" panel with papers from Dexia Zhang of the Harbin Institute of Technology, who presented her paper "From 'La Veneziana,' to *King, Queen, Knave*: The Metaleptic Approaches to Vladimir Nabokov's Fictions" via Skype, Christina Alt's (University of Sydney) "Science? Fiction?: The Porous Boundaries Between HG Wells' Utopian Fiction and Popular Science Writing," and Edna Gorney's (Haifa University) paper on the political symbolism of trees in "'Roots of (In)justice': Tree "Terrorism" in the Israeli-Palestinian Conflict.'" Zhang's examined the use of narrative levels in Nabokov's work while Gorney's paper offered a fascinating survey of the political use of the symbol of the tree in the context of the Israel-Palestine conflict and its relationship to landscape and memory, which alluded to Simon Schama's book of the same name (1995). Alt's paper explored the feedback between Wells' *Men Like Gods* (1923) and the dialogue about ecology that appeared in the pages of the journal *Nature* and the work of popular science writers Julian Huxley and G.P. Wells in *Science of Life* (1929-1930).

Although I was not able to see the talk, storyteller, folklorist and sf writer Anthony Nanson's "Composting Dragons: Recovery, Radicalization and Re-enchantment of Oral Folklore in a Gloucestershire Landscape" promised to be of interest for the scholar of sf and fantasy. Geoffrey Berry, based at Monash University and supervised by Tom Moylan, gave a talk on "Critical Ecotopias: Indigenous and Literary," which compared Ursula K. Le Guin's masterpiece *Always Coming Home* (1985) to the songlines (or Kujika) of the Yanyuwu aboriginal elders from northeast Arnhem Land in Australia as recorded by the anthropologist John Bradley. Berry's comparison of the anthropological vision of Le Guin and the modern attempts to preserve a culture and sense of place that is now threatened with extinction leads him to the view that "critical ecotopias" such as Le Guin's *Always Coming Home* forms a companion genre to the Yanyawu Kujika. Berry is also scheduled to edit an issue of *Green Letters*, ASLE-UKI's organizational journal, on the theme of Ecotopias. Finally, Eric Robertson of the University of Utah gave a paper on "The Queer Sublime: Volcanoes, Guts, and Sloppy Sounds in Shelley's *Frankenstein*," in which he utilizes the Kantian and Schopenhauer's sublime, along with George Bataille's exploration of the eruptive power of the Earth to articulate a theory of the queer gothic.

The well-attended SFRA panel that I organized, "Struggling with Novelty in Science Fiction," was designed around the conference themes of compost and recycling. Michelle Yost delivered a paper entitled "Upcycling the American Pastoral: A New Perspective on Hollow Earth Utopias" via Skype, Katherine Buse explored the failure of the ecological imagination in "Change We Can't Believe in: *The Windup Girl* on the Ethics of Global Warming" while I explored the motif of compost and the interanimation of natural and cultural domains in "All Energy is Borrowed"-Terraforming: A Master Motif for Physical and Cultural Re(Up)cycling' (all based at the University of Liverpool). Bardini chaired the panel and treated us to his characteristic charm with an introduction that recycled the names and songs from various Liverpool based bands. Nanson noted in the Q&A session the link between the hollow earth theme and that of terraforming, as spaces for the projection of enquiries into landscape, while Buse introduced to many ASLE-UKI conferences a text that had not received much attention within that scholarly domain, but which many attendees commented upon with interest.

The links between ASLE-UKI and the SFRA that I discovered at this conference were profound and exciting. Many ecocritical scholars develop concepts that were arguably first developed within sf discourse, for example the notion of the post- and transhuman and the idea of the critical utopia. Apart from the clearly sf themed papers discussed above, there was much wider discussion of science and the environment that clearly chimed with many themes explored by sf. Furthermore, I would like to see Bardini's work reflected upon more widely within sf scholarship, and believe he would make an excellent keynote for further conferences within the field. This experience confirms the possibility that many fruitful links are yet to be developed between the SFRA and ASLE-UKI.

Employment Stories from SFRA Members: Finding a Job Should Not Be Science Fiction

Jason W. Ellis

WHILE RE-EXTENDING the call for short essays on personal hiring experiences as science fiction scholars and job hunting advice for SFRA members (send 500-1000 words to dynamicsubspace@gmail.com—additional details in *SFRA Review* 301), I thought that I would share a few online resources that might be useful and some anecdotes from my own search for a permanent position. As far as I have seen so far this job search season, there are no jobs calling for "science fiction" expertise. However, there are a fair number of literature, digital humanities, and rhetoric & composition job listings (among others) in which our research and pedagogical interests in SF can be applied. Despite the list being shorter than most of us on the job market would prefer, I believe that there are many opportunities for job seeking SFRA members to distinguish themselves as potential candidates. Advice on how specifically to accomplish this—beyond our first two contributions in *SFRA Review* #301 by Joseph F. Brown and Jennifer Kelso Farrell—will have to wait until the next issue. In the meantime, our own Gerry Canavan, who landed a fine job at Marquette University this past season, contributed two very good articles about the job market for ABDs to *Inside Higher Ed*, which you can find here: <http://www.insidehighered.com/advice/2012/09/19/essay-job-hunting-humanities-abd> and here: <http://www.insidehighered.com/advice/2012/09/26/essay-going-humanities-job-market-abd>.

His advice is sterling. It is my hope that this column reinforces his penultimate point in the second article: "Lean on each other." Please consider sharing your experience as a job seeker or hiring committee mem-

ber—particularly regarding the role SF scholarship and teaching played in your application materials and interviews. Our shared experiences might help other SFRA members on the job market during this challenging time, but even if our advice does not measure up to the reality of the situation, we certainly can support one another. While not an SFRA member, Chris Blattman, Assistant Professor of Political Science & International and Public Affairs at Columbia University, offers advice from the perspective of the hiring committee on his blog here: <http://chrisblattman.com/2012/10/15/phd-students-advice-for-the-academic-job-market/>. Admittedly over 12 years old now, Walter Broughton and William Conlogue's "What Search Committees Want" (originally appearing in Profession, but now online) provides a significant view into the operations of the search committee machine. It can be found here: <http://www.mla.org/resources/jil/jil_jobseekers/jil_jobseekers_pro>.

Finally, if you are not already familiar with it, the Academic Jobs Wiki <http://academicjobs.wikia.com/wiki/Academic_Jobs_Wiki> provides important support for job seekers: semi-anonymous (n.b., IP addresses are recorded for anonymous and registered users—I know of cases where contributors were identified with a modicum of legwork) sharing of job listings, search experiences, and search updates. Look for more job stories in the next issue. Until then, good luck!

Terraforming 101

Chris Pak

IN HIS LANDMARK technical survey of planetary adaptation in *Terraforming* (1995), Martyn Fogg suggests that the study of terraforming involves a variety of environmental, social, political, legal and ethical complexities that impact on real-world considerations of planetary adaptation (24). Elsewhere he defines terraforming as

> a process of planetary engineering, specifically directed at enhancing the capacity of an extra-terrestrial planetary environment to support

life. The ultimate in terraforming would be to create an uncontained planetary biosphere emulating all the functions of the biosphere of the Earth, one that would be fully habitable for human beings. (Fogg 2009)

Terraforming for Fogg is a subset of planetary engineering, 'the application of technology for the purpose of influencing the global properties of a planet,' and it sits in opposition to both geoengineering and astrophysical engineering. He defines geoengineering as 'planetary engineering applied specifically to the Earth. It includes only those macroengineering concepts that deal with the alteration of some global parameter, such as the greenhouse effect, atmospheric composition, insolation or impact flux,' while astrophysical engineering 'is taken to represent proposed activities, relating to future habitation, that are envisaged to occur on a scale greater than that of "conventional" planetary engineering' (Fogg 2009). While these definitions offer useful analytical categories, consideration of terraforming as it has developed in sf has ranged across all these examples of physical transformations of space. Jeffrey Prucher in *Brave New Words* (2007) lists two senses of terraforming that break with Fogg's definition. The first of these alternative senses relates to the planetary adaptation of worlds according to the parameters of alien planets, while the second coincides with Fogg's definition of geoengineering.

The categories of planetary and astrophysical engineering that Fogg describe offer useful labels for considering the nature of the physical transformation of space that sf imagines. Nevertheless, this article considers all cases of planetary adaptation outlined above as pertinent to a discussion of terraforming. This inquiry will primarily be historical and aims to survey the development of the terraforming motif in sf without desiring to be exhaustive. Narratives such as Kim Stanley Robinson's *Mars* trilogy (1993-1996), while perhaps the most significant from the contemporary perspective with regard to the ways in which it makes use of the terraforming theme to engage in enviro-ethical speculation, will not be discussed at great length. Rather, given the prevalent scholarship and popularity that such narratives receive, this article aims to situate such texts within a wider tradition of terraforming narratives as an aid and spur for further research.

Terraforming Post 1940s:
Scientific Romances and American Pulp SF

The term "terraforming" was coined by Jack William-

son in his short story "Collision Orbit," published in *Astounding* in 1942. Several terraforming narratives had already been published prior to 1942, along with stories of living worlds, a motif that anticipated the Gaia Hypothesis and that often co-occurred with instances of terraforming. The Gaia Hypothesis would later be instrumental to the revisioning of the terraforming narrative in the 1980s. H.G. Wells' *The War of the Worlds* (1898) featured a Martian red weed that displaces Earth's ecology, what would now be considered a form of ecopoiesis (the biotic modification of planetary environments). Wells' *The Shape of Things to Come* (1933) is a future history that recounts an episode of "geogonic planning" during the world state's technocratic management of Earth. This example of geoengineering is embarked upon after Earth's unification as a scientific utopia follows a period of war. Wells sent a copy of this text to Stapledon, whose own role in pioneering the future history as essays in myth creation, a form which 'construct[s] imaginary worlds to embody metaphysical theses' (Stableford 1985: 138), was secured with *Last and First Men* (1930). This text describes the human terraformation of Venus and Neptune, the former of which leads to the genocide of the indigenous Venusians. Extending these themes in *Star Maker* (1937), Stapledon recounts many instances of alien civilisations who engage in terraforming. The discovery that the stars and galaxies are living entities, and the presence of metaphors that align the Earth to 'a creature alive but tranced and obscurely yearning to wake' (*SM* 15), illustrates the early co-occurrence of terraforming and Gaian themes.

Wells and Stapledon exerted a great influence on sf and popular culture. The importance of their contribution to the terraforming motif lies in their incorporation of scientific themes into their texts and their influence on scientists and on later sf writers. Stapledon for example incorporated elements from J.B.S. Haldane's scientific paper "The Last Judgement" (1927) into *Last and First Men*. Lovelock himself has described his love of sf on many occasions and at least one historian, Jon Turney, has suggested that Wells and Stapledon, among other writers of scientific romance, influenced the development of the Gaia Hypothesis (Turney 45-46). *The Shape of Things to Come* inspired a film, William Cameron Menzies' *Things to Come* (1936), which disseminated to a wide audience the concept of planetary adaptation.

Other proto-Gaian living world stories were published during the period prior to Williamson's coining of terraforming in 1942. Sir Arthur Conan Doyle's "When

the World Screamed" (1926), a story that bears many resemblances to the Gaia Hypothesis and that Lovelock may have read, is a scientific romance that, while not technically a terraforming narrative, feeds into the construction of the living world motif. During the 1930s American pulp stories began utilising the living world motif: Laurence Manning, an early space rocketry pioneer and gardening enthusiast, wrote "The Living Galaxy" (*Wonder Stories* 1934) which, framed as a history lesson to a child of the future, tells of intrepid explorers who encounter a living galaxy that their fear compels them to destroy. This story included some reflection on the nature of closed life support systems. Manning's "The Man Who Awoke" (1933) was serialised the year before in *Wonder Stories*, a tale that resonates with Wells' *The Shape of Things to Come* and which features societies that engage in various acts of geoengineering. In 1935 John Russell Fearn's "Earth's Mausoleum" (*Astounding*) described the geoengineering of Earth, a project led by visiting aliens long trapped within the Moon. Once Earth has been organised and technologically transformed the aliens turn their attention to organising humankind for the grand project of terraforming the Moon, only to fail in the attempt due to the terrorism of a minority opposed to the alien presence. This story is significant for its extended examination of the human impact of terraforming and for developing many of the themes that would feed into later terraforming narratives. It is clear that terraforming and proto-Gaian themes and narratives were being developed during the period prior to the coining of "terraforming" and influenced future scientific speculation by scientists.

Postwar Terraforming Stories 1945-1959

While many terraforming themes were developed prior to 1942, it was only after the 1950s that narratives focussed solely on terraforming began to be published with regularity. Ray Bradbury began publishing a series of elegiac and pastoral short stories in *Planet Stories*, *Thrilling Wonder Stories* and a range of other pulps that were collected and released with additional stories and vignettes as *The Martian Chronicles* (1950). Jack Vance's "I'll Build Your Dream Castle" (*Astounding* 1947) is a tale of corporate exploitation and one-upmanship in which Farrero, a former employee of Marlais and Angker, secures a monopoly over the design and construction of habitable asteroids. The first novel length treatments of terraforming begin with Robert Heinlein's *Farmer in the Sky* (1950) and Arthur

C. Clarke's *The Sands of Mars* (1951). Heinlein's juvenile introduced to young audiences ecological concepts related to closed life support systems and portrayed the terraforming of Ganymede in terms of the American Pioneer tradition. Clarke's novel ironises the romanticism that accompanies such portrayals of terraforming while acknowledging the Pioneer template in its own structure. Isaac Asimov's "The Martian Way" (*Galaxy* 1952) deals with the efforts of a group of "scavengers" on Mars who attempt to gain economic and political independence from Earth.

In contrast to these variously optimistic visions of terraforming, Walter M. Miller's "Crucifixus Etiam" (*Astounding* 1953) and Poul Anderson's "The Big Rain" (*Astounding* 1954) and *The Snows of Ganymede* (*Startling Stories* 1955; novelised 1958) depict the human exploitation by dystopian societies that accompanies terraforming. Frederick Pohl and C.M. Kornbluth's *The Space Merchants* (serialised as "Gravy Planet" in *Galaxy* 1952; novelised 1953) likewise portrays a dystopian future in which terraforming is embarked upon as a stage in the capitalist expansion of a multinational corporation before being co-opted by an oppositional group of conservationists (Consies). Toward the end of the decade Cordwainer Smith's "When the People Fell" (*Galaxy* 1959) and Poul Anderson's "Sister Planet" (*Satellite Science Fiction* 1959) use the figure of the alien to consider human relationships to human and non-human others. Smith's "When the People Fell," set in his Instrumentality universe, offers an iconic image of terraforming that draws connections between the exploitation of aliens and the exploitation of people. Anderson's "Sister Planet" is set on a scientific outpost on the ocean world Venus, which has established trading partnerships with a dolphin like "cetoid" life form that brings valuable resources from the ocean depths. Their sentience is questioned by everyone except the protagonist and, in an echo of Stapledon's portrayal of the genocide of the Venusians in *Last and First Men*, a member of the scientific team stationed on Venus proposes "'the largest and most significant engineering project of history. […] The colonization of Venus'" ("Sister Planet" 114-115), an endeavour that would result in the cetoids' extinction. While the scientists agree that such genocide is unacceptable, the narrator attempts to ensure that its possibility is negated by murdering the scientific team and many cetoids, thus sowing distrust between the two sentient species.

These works represent an important period in the gradual cohesion of textual elements and the terrafor-

ming motif, generating the first distinctive dialogue in the tradition. Taken together, they express a consensus, with each text voicing its own attitude toward, or hopes and anxieties about, the future. Many of these stories feature domed settlements that allow the colonists to overcome the problems of habitation and establish boundaries for their communities. Images of the garden, farm and wilderness are used to portray the alien conditions and technological adaptations on planets undergoing terraformation. Heinlein, Clarke and Asimov tackle the theme of the colonist's economic and political independence from Earth, while Miller and Anderson invert the successes of the colony portrayed in these works to depict communities that are exploited as slave labour within the framework of a rigid hierarchy. Like Bradbury, Smith and Anderson use the figure of the alien to critique colonialism and the limits of a narrow vision that excludes alternative approaches toward valuing other cultures, organisms and their environment.

Fewer proto-Gaian living world stories appeared during the 1950s. Murray Leinster's "The Lonely Planet" (*Thrilling Wonder Stories* 1949) continues the enquiry into human-alien communication that he famously portrayed in "First Contact" (*Astounding* 1945). Recounting the story of Alyx, a living world whose proximity to humankind generates its emergent consciousness, this narrative explores the human fear and rejection of alien others. Stanislaw Lem's groundbreaking *Solaris* (1961, first English translation 1970) deals with another confrontation with a Gaian planet but, in contrast to the anthropomorphised living worlds depicted in Leinster and Bradbury's short stories, Lem offers an incomprehensible entity that in many ways resonates with Stapledon's vision of the *Star Maker*. Richard McKenna's "The Night of Hoggy Darn" (*If* 1958) is an important Gaian and terraforming story which offers a mythic account of the conflict between humanity and the native stompers on an alien planet. McKenna's 1963 rewrite of this story as "Hunter, Come Home" (*The Magazine of Fantasy and Science Fiction*) incorporates a significant mystical, Gaian element to the sentient ecosphere against which is thrown into relief a deeper tendency toward fear and aversion when humankind is confronted with an uncontrollable other. "Hunter, Come Home" stands at the confluence between terraforming and proto-Gaian themes and incorporates ecological motifs to depict a world of harmoniously interconnected life, symbolised by the mixed plant-animal heritage of the indigenous phyto species.

Transformations of the Terraforming and Gaian Theme in 1960s SF

Susan Stratton argues that 'the sense of urgency that created ecocriticism has marked SF since the 1960s' (Stratton 4), a period that coincides with the growth of the counter culture and American environmental awareness. This sense of urgency can be traced further back, and while it may not have "marked" sf to the degree evidenced by the explosion of ecologically focused sf stories in the 1960s, the upsurge of ecotastrophe stories in the 1950s focussed attention onto the role of humanity as instigators of or subject to ecological crisis (Stableford 2005, 137). Illustrative of this sense of urgency in the 1960s is Clarke's 1961 "Before Eden" (*Amazing*), a proto-ecopoiesis story of the thoughtless contamination of Venus and the extinction of its native life, which anticipated Rachel Carson's 1962 account of chemical contamination on Earth in *Silent Spring*. Carson's text could itself be considered an account of geoengineering and a work of sf.

The turning point for the terraforming narratives of the 1960s is marked by Frank Herbert's *Dune* and Heinlein's *The Moon is a Harsh Mistress* (serialised in *If* 1965-1966). Frank Herbert serialised "Dune World" and "The Prophet of Dune" in *Analog* from 1963-1965 before the acclaimed terraforming novel *Dune* was published in 1965. This was followed over the next couple of decades by the publication of a series of *Dune* stories, some posthumous; *Dune Messiah* (1970) and *Children of Dune* (1976) are the most relevant from the terraforming perspective, and complete a relatively self-contained trilogy. Recalling earlier terraforming narratives of the 1950s, Heinlein's *The Moon is a Harsh Mistress* tells of a convict population on the Earth's terraformed Moon and their attempt to gain political and economic independence. Heinlein's text re-uses narratives and tropes that can be traced through to the developing coherence of the terraforming boom of the mid 1980s and 1990s. Le Guin's groundbreaking *The Dispossessed* (1974) is a critical utopia set in her Hainish Universe. In this story Odonians struggle on a resource scarce Moon to maintain a society that rejects the capitalist corruption of their ancestral homeworld Io. Jerry Pournelle's *Birth of Fire* (1976) capitalises on the American Pioneer tradition to portray a revolutionary Mars that struggles to establish autonomy from Earth. It features the slogan "Free Mars," which would later appear in other works, including Robinson's *Mars* trilogy. These works exemplify the way in which wider

cultural trends feed into terraforming narratives in the 1960s and 1970s to transform the way in which the motif is used.

The Gaia Hypothesis, Terragouging and Pantropy in the 1970s

It was during the 1960s that terraforming first began to receive sustained attention from scientists interested in developing proposals for planetary adaptation based upon then contemporary data of the solar system: Carl Sagan wrote on the possibility of terraforming Venus by seeding its clouds with microbial life in "The Planet Venus" (*Science* 1961). It was not until the 1970s, however, that scientific speculation on terraforming began to burgeon. Sagan turned his attention to Mars in "Planetary Engineering on Mars" (*Icarus* 1973) while M.M. Averner and R.D. MacElroy's NASA report "On the Habitability of Mars: An Approach to Planetary Ecosynthesis" was published in 1976. Sagan also attempted to popularise scientific speculation on the colonisation and terraformation of the solar system in *Carl Sagan's Cosmic Connection* (1973), which was closely followed by Adrian Berry's *The Next Ten Thousand Years* (1974). Technical scientific consideration of terraforming and popular scientific accounts would continue to be published in increasing number throughout the 1980s-2000s; significant works of scientific speculation include James E. Oberg's *New Earths* (1981), for which Jack Williamson wrote the foreword and other sf writers including Clarke, Anderson, Asimov, Heinlein and Stapledon are acknowledged.

Lovelock began to popularise the Gaia Hypothesis with the publication of *Gaia* in 1973, although he had written several technical articles on the subject beginning in 1971. By this time proto-Gaian images had appeared in much sf as literal living worlds or as extensions of local and regional ecological zones to planetary scales. Le Guin's "Vaster Than Empires and More Slow" (1971) features a Gaian planet whose forests are interconnected and form a single planetary consciousness. James White's "Major Operation" (1971) portrays a Gaian entity that has been the target of atomics by the intelligent indigenous Drambons; the Sector General Hospital, an intergalactic hospital specialising in exotic medical cases, engages in surgery to cut away the cancerous sections of land in a terraforming operation. Ernest J. Callenbach's millenarian *Ecotopia* (1975) is another landmark text and, although not a terraforming text under a narrow definition of the term, it can be considered a geoengineering text that informs the

development of ecologically conscious terraforming stories. In *Ecotopia*, the American West Coast has gained independence and has begun the process of political and economic decentralisation. On a social level the ecotopians have begun to develop ecologically oriented lifestyles and cultures. This text brings together political, cultural and ecological considerations, demonstrating their interconnections and imbrication by showing how changes to one dimension impact on others. Le Guin's *The Word for World is Forest* (1972) offers a critique of the Vietnam War and portrays the imperial colonisation and enslavement of the indigenous population alongside the destructive logging of the planet. This logging is an example of terragouging, which refers to terraforming where 'whatever necessary would be done to facilitate extraction of raw materials for earthly consumption' (Murphy 2001: 270). Suvin calls this story a red-green novel, 'one that combines acute sensitivity to ecology not only with the condemnation of a colonial war but also with a depth search for its psychological equivalents in the macho mentality that wants to tame and rape the environment as well as women' (Suvin 2008: 133). Gregory Benford's *Jupiter Project* (serialised in *Amazing* 1972; novel publication 1975) is a direct homage to *Farmer in the Sky* and tells of a scientific community inhabiting a space station orbiting Jupiter (Benford 2011). The role of the scientific station is to monitor Jupiter for signs of alien life, a long-term project that is threatened when Earth decides to terminate it for political and economic reasons. The inhabitants of the station, some of whom were born there, decide to resist decommissioning and remain to plan for the eventual terraforming of Ganymede.

Another group of texts that appeared in the late 1970s dealt with transformations of the body as a method for inhabiting alien planets (known as pantropy, a concept coined by James Blish in the stories collected in *The Seedling Stars* 1957). Frederik Pohl's *Man Plus* (1976) deals with the terraforming of Mars as a strategy to avoid the predicted economic and social collapse of Earth's societies. Roger Torraway is cyborged to allow him to survive on the Martian surface and successfully terraform it. The narrative itself is a nostalgic reflection on the Cold War space race, while the "Plus" of the title ironically echoes Hugo Gernsback's use of the symbol to indicate the superiority of the hero of *Ralph 124 C41+* (serialised in *Modern Electrics* 1911-1912; novelised 1925) over the rest of humankind. John Varley's short story "Retrograde Summer" (*The Magazine of Fantasy*

and Science Fiction 1975) explores terraforming on a social level, examining the range of lifestyles that might develop in an intergalactic community geared toward planetary adaptation. These texts signal the growth in popularity of narratives of pantropy, a trend that would continue to be developed and transformed alongside terraforming stories throughout the 1980s-1990s.

Douglas Adams' *The Hitchhiker's Guide to the Galaxy* (1979), written at the end of the decade, parodies terraforming by portraying it as a creative act of literal design and construction; an art form in its own right, for which its practitioners win awards. Terry Pratchett also parodies the notion of terraforming and geological time in *Strata* (1981), in which investigation into the mystery of the origins of a flat planet (a literal discworld) leads to the discovery that the universe and all its planets are artefacts created by an unknown alien civilisation. The evidence of fossils in the strata of many planets is simply a red herring that supports the long existence of the universe; the cosmos is instead revealed to be a new creation with a history far short of the geological. These two parodies indicate how far terraforming has been assimilated into sf discourse as their subversion of terraforming themes depend for their success on the dialogic relationship of these reworkings to the wider terraforming megatext.

Corporations, Cyberpunk and the Confluence of Terraforming and Gaia in the 1980s

Stories that draw directly from Lovelock's Gaia hypothesis begin to appear in the 1980s. The theme of the Gaian planetary ecology had been developed in the context of terraforming since McKenna's "Hunter, Come Home," Herbert's *Dune* and White's "Major Operation," but in the 1980s the implications of Gaia as a planetary ecology regulated by life itself begins to dovetail with terraforming. During the 1970s and 1980s new knowledge of the solar system opened up by the Mariner (1973) and Viking (1975) probes meant that sf writers interested in developing scientific plausibility had increasingly to respond to the new image of the solar system constructed by science, especially if they continued to set their stories within its boundaries.

James Lovelock and Michael Allaby's *The Greening of Mars* (1984) uses the utopian form to portray the terraforming of Mars in terms of the insights to terraforming offered by the Gaia hypothesis. This landmark text firmly associates Gaia with terraforming in stories of space colonisation. Kim Stanley Robinson's short story "Green Mars" (*Asimov's Science Fiction* 1985) and

the first two novels of Pamela Sargent's *Venus* trilogy (*Venus of Dreams* 1986 and *Venus of Shadows* 1988), continue this focus on ecology, terraforming and society. These narratives explore the political, economic and socio-cultural factors involved in the terraforming of Mars and Venus respectively, and are pivotal texts for the development of the socio-political terraforming narrative. Another series of ecological stories related to Callenbach's *Ecotopia*, though strictly not terraforming or Gaian narratives, is Robinson's *Orange County* sequence (*The Wild Shore* 1984, *The Gold Coast* 1988 and *Pacific Edge* 1990) and Le Guin's *Always Coming Home* (1985). Nevertheless, *Pacific Edge* and *Always Coming Home* adapt the ecotopian form to explore visions of appropriate human relationships to Earth and, along with Robinson's 1997 *Antarctica*, can be considered geoengineering narratives.

Octavia Butler's *Xenogenesis* trilogy (*Dawn* 1987, *Adulthood Rites* 1987 and *Imago* 1989, collected as *Lilith's Brood* 2007), recapitulates Wells' red weed with its portrayal of an organic spaceship that engages in biological terragouging: it consumes all of Earth's resources in order to reproduce. Brian Stableford's "Wildland" (1989) continues this theme with its portrayal of a Gaian organism that displaces Earth's non-human life and establishes ecological hegemony over Earth. Bruce Sterling's "Sunken Gardens" (*Omni* 1984) is a cyberpunk story set in his Shaper universe. The repeated terraforming of domed pockets of the Martian landscape takes on social significance as a safety valve in the form of a competition, which regulates through a system of social advancement and diversion the dangerous tensions between posthuman factions. This competition revolves around an ecological aesthetics of terraforming that turns planetary adaptation into a direct expression of artistic and political value. Ian McDonald's "The Catharine Wheel" (*Asimov's Science Fiction* 1984) anticipates the story related in his pastiche *Desolation Road* (1988), which follows the growth of a small community on a Mars undergoing terraforming. The inhabitants of the eponymous town develop a pastoral sense of place and community that is tested by the encroachment of the Bethlehem Ares Railroad Corporation and the Martian government, led by former members of the Desolation Road community itself. Frederick Turner's ambitious 10,000 line work of sf poetry, *Genesis*, was published in 1988. Its form recalls the Homeric epic and mythologizes terraforming by aligning future works of macroengineering to the Olympian feats of the Classical heroes of antiquity.

Lovelock's Gaia Hypothesis, with its implicit mystical element, alludes to the Greek Gods of the Classical epic and helps to furnish the narrative of *Genesis* with an ecotheist movement that provides an ideological opposition to the conduct of science on Earth and Mars.

The 1980s-1990s Terraforming Boom

Robinson's groundbreaking *Mars* trilogy was published in the early half of the 1990s and was complemented by a collection of short stories that were written in the 1980s-1990s and published as *The Martians* in 1999. The *Mars* trilogy resembles Sargent's *Venus* trilogy and offers a complex examination of the problems and opportunities associated with developing sound relationships to the Martian environment. Alison Sinclair's *Blueheart* (1996) is another utopian terraforming narrative resembling Sargent and Robinson's trilogies, but it locates the terraforming debate on an ocean planet inhabited by adapted humans, some of whom have been illegally modified. Brian Aldiss and Roger Penrose's *White Mars* (1999) is also similar in form but offers a more explicit opposition to terraforming than any of the above texts. It features a Gaian entity that, once recognised as an alien creature, challenges the ethical dimensions of the terraforming project. All these texts share similarities with David Brin's Gaian narrative *Earth* (1990), which combines ecotastrophe (echoed by Robinson's portrayal of Earth in the *Mars* trilogy) with an apocalyptic tale of cosmic destruction via a new type of black hole. These themes are interwoven into a story of the emergence of a Gaian consciousness.

Other terraforming stories during this period include Orson Scott Card and Kathryn Kidd's *Lovelock* (1994), the first novel of the as yet uncompleted *Mayflower* trilogy. This story takes place on the Ark, the first colonising spaceship sent to begin the terraformation of new planets. A new scientific discipline, Gaiaology, cued by the title of the text, signals the focus on planetary ecosystems essential for modern treatments of terraforming. Much of the story is devoted to the central theme of enhanced animal intelligence; the main protagonist is a Capuchin monkey adapted for its role as "witness" to the chief Gaiaologist's life and work on board the Ark. Short stories of the period include Landis' "Ecopoesis" (*Science Fiction Age* 1994), a murder mystery set on a Mars undergoing a failed ecopoiesis and G. David Nordley's "Dawn Venus" (*Asimov's Science Fiction* 1995), the story of Bik Wu's struggle to gain custody of his son after his ex-wife's death; echoing the Pioneer

myth, he travels to Venus in order to claim land to terraform in order to improve his chances of winning custody of his son.

Many short stories of this period explore the relationship between memory and landscape and often reflect nostalgically on Earth and history. Joe Haldeman's "For White Hill" (1995) features an alien civilisation that threatens Earth with destruction; the narrative is a first person account of the experiences of one of several artists who arrive on Earth for a competition geared toward the creation of a monument to human history. Robert Reed's "A Place with Shade" (*The Magazine of Fantasy and Science Fiction* 1995) continues this theme of memory: Mr Locum is a professional terraformer hired to adapt a privately owned planet and to teach the owner's daughter his trade. She traps him in the world he has created and forces him to face the ethical implications of his actions. Philip C. Jennings' "The Road to Reality" (*Asimov's Science Fiction* 1996) focuses on the terraforming of a planet by virtual reality consciousnesses. There are implicit connections made between virtual reality and terraforming, both of which are involved with the creation of worlds. An ethical stance, centred on the responsibility of the creators toward the created, governs the text's philosophical inquiry. Stephen Baxter's "People Came from Earth" (1999) is the story of a Lunar colony that is slowly deteriorating due to resource scarcity, fading cultural memories and the contamination of bodies insufficiently adapted to their environment. William H. Keith Jr's "Fossils" (*Asimov's Science Fiction* 1999) is likewise a story of memory: the last of the old strains of humans inhabiting Eos Chasma on Mars refuses to evacuate the area in the face of an impending flood. The posthuman narrator attempts to convince Paul Norris to leave but fails. Instead, it witnesses Norris' televised attempt to ride out the flood on a raft improvised from his home.

Concluding this period of terraforming narratives is Jack Williamson's *Terraforming Earth* (2001), a collection of linked stories that tell of a small Lunar colony and its cloned inhabitants who periodically travel to Earth to witness the changes visited upon the planet. This group, along with many of the stories after 1996, tends to see the grandeur of the colonisation and terraforming project with jaded eyes and reflects warily on the future that humankind is adapting for itself. As the title indicates, there is a movement away from reflecting on the terraformation of other planets and a focus on the perceived ecological crisis on Earth.

Terraforming in the Years 2000; and the Rise of Multi-Format Media

The 1990s was arguably the high point for terraforming narratives, signalled by Robinson's *Mars* trilogy and the developing scientific and cultural dialogue surrounding notions of planetary adaptation. This dialogue is still developing and is increasingly infiltrating discourses outside sf, suggesting that the terraforming narrative will continue to be transformed in ways that may rival the aesthetic achievements of the narratives of the 1990s. Two debut novels, Karl Schroeder's *Ventus* (2000) and Liz Williams' *Ghost Sister* (2001), were published in the early 2000s. *Ventus* recasts Gaia as sentient nanotechnology designed to terraform a planet that has been forgotten by the interplanetary society known as the Archipelago, while *Ghost Sister* contrasts two visions of Gaia that emerge as a consequence of terraforming. Both narratives situate their terraformed planets far from the solar system and their societies as "future primitivists." Sargent published the final volume of her *Venus* trilogy in 2001, preceded by a short story set in the same universe, "Dream of Venus" (2000). Benford's "The Clear Blue Seas of Luna" (2003) alludes to and incorporates much science from the pages of Fogg's *Terraforming* (to whom this story is dedicated) and Oberg's *New Earths*, thus demonstrating the crucial link between sf and scientific discourse that had by this time become clearly established in terraforming narratives. *Black Man* (2007) by Richard Morgan resonates with Miller's "Cruxifixus Etiam"; in this story Mars has been terraformed and is used as a prison planet. Finally, Reed returns to the theme of terraforming in "A History of Terraforming" (2010), which dramatises a slow struggle toward a worldview in which humanity is able to feel at home in the multiple environments that they have built for themselves.

Terraforming has also begun increasingly to infiltrate film and television. James Cameron's blockbuster film *Avatar* (2009) recapitulates the tradition of red-green terragouging narratives such as Le Guin's *The Word for World is Forest* and is an indicator of the discursive drift into popular spheres of the related terraforming and Gaian themes. Terraforming features as the renegade astronauts' goal in the two part "Space Race" episode of *Archer* (2012) and as a rumoured corporate agenda in Riddley Scott's *Prometheus* (2012). Earlier examples of relevant film and television include David Lynch's *Dune* (1984), the *Star Trek: The Next Generation* episodes "Home Soil" (1988) and "Family" (1990), the

Star Trek II movie *The Wrath of Khan* (1982), the *Red Dwarf* "Rimmerworld" (1993) episode, Joss Whedon's *Firefly* (2002) series and the *Firefly* film *Serenity* (2005), and anime such as *Origin: Spirits of the Past* (*Gin-iro no kami no Agito* 2006). This attention to terraforming in other media can be extended to that of computer gaming: Lovelock assisted with the design of the simulation game *SimEarth: The Living Planet* (1990). Together with such real time strategy games as *Dune II: The Building of a Dynasty* (1992) and *Sid Meier's Alpha Centauri* (1999), and such 3D shooters as *Red Faction* (2001), there is ample potential for an investigation of terraforming in multiple media.

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Sex in the Machine:
The Ultimate Contraceptive

Victor Grech, Clare Thake-Vassallo and Ivan Callus

Introduction

VIRTUAL SEX is akin to narcissism as in effect, such sex, without direct physical contact with another being or with an artificial intelligence, is equivalent to masturbation. In Greek mythology, Narcissus was cold in nature and was cursed by being made to fall in love with his own reflection in a woodland pool "until he died from exhaustion and unsatisfied desire" (Hard 217).

Ennui in the face of the real world and lack of mating opportunities may ensue because of the spread of virtual reality environments which, to the individual, are more predictable, controllable, compliant, and hence more entertaining and satisfying than real life.

This paper will trace the development of sex toys from dolls to cyberspace, and compare this development with sex with robots leading on to sex in virtual environments (VR) within the science-fiction (SF) genre. An interdisciplinary flavour will inevitably intrude as the author is a medical doctor, and hence, real-life medical conditions will be mentioned in relation to this theme, where appropriate.

Non-fiction

In real life, the simulation of sex has been achieved through sex dolls and other aids. A sex doll may be defined as a sex aid for the purposes of masturbation and may consist of a complete replica or only part/s of the (male or female) human. These dolls may be remarkable simulacra of the human body, to the extent that at first glance they may appear almost indistinguishable from real persons, and can even be positioned, with an endoskeleton that includes moveable joints, and even motorised parts such as a moving pelvis. Such dolls are customisable and may cost up to $10,000 (Ferguson 45).

Sex dolls are as old as mythology, as seen in the story of Pygmalion who fashioned a sex doll from ivory which was so real, that he became besotted with her, to the extent that he fed, bathed and slept with her, until Aphrodite eventually brought the statue to life, allowing him to marry his Galatea (Hard 574). In the contemporary setting, a sex doll "represents woman in her most objectified form […] man's ultimate sexually idealized woman […] rendered harmless […] immobile, compliant, and perhaps most importantly silent" (Ferguson 5).

The first recorded life-size dolls originate in the seventeenth century as *dames de voyage* or *damas de viaje* composed of sewn cloth or old clothes and used by French and Spanish sailors during long sea voyages (Ferguson 16). More sophisticated dolls were created in the early 20th century by "true Vaucansons in this province of pornographic technology, clever mechanics who […] prepare entire male or female bodies, which [...] subserve fornicatory purposes," to the extent of being able to simulate ejaculation (Bloch 660). The first sex dolls to be marketed as such appeared in 1955, a figurine named "Bild Lilli" which was the precursor of the modern Barbie doll (Ferguson 27-28), and more details on the history, connotations and repercussions of the sex doll may be found in Ferguson's "The Sex Doll: A History."

Henrik Christensen of the European Robotics Research Network Experts predicts that "people are going to be having sex with robots within five years" (Habershon). Even more contentiously, Levy reasoned that ongoing progress in robotics and artificial intelligence will soon result in the production of robots that will be indistinguishable from humanity in appearance and functionality, hence humans will inevitably fall in love with robots, have sex and even marry them.

Science-fiction

Lester del Rey's "Helen O'Loy" (1938) was one of the first stories to depict sex with robots or androids. Androids derive from the marriage of two concepts: simulacra, devices that exhibit human likeness and automata, devices that exhibit independence. The term was first used by Mathias Villiers de l'Isle-Adam in his work "Tomorrow's Eve" (1886), featuring a mechanical robot. In "Helen O'Loy," two men, a mechanic and a medical student, modify an ordinary household robot so as to allow the extremely realistic and highly attractive female robot to have emotions. The robot, Helen, promptly falls in love with the mechanic, who, in Frankensteinian fashion, initially rebuffed his creation. He later relented and married the robot, gradually artificially ageing her potentially immortal face and body. When he dies, the robot asks to be deactivated, destroyed with acid and buried with her husband.

The issues of automatic contraception, robotics and offspring are elegantly depicted in "The Joy of Living (1954)." Women are tempted by the makers of robots to care for mechanical babies, with the argument that this does not spoil one's figure and one does not waste time changing nappies and giving feeds. Men are also targeted to buy a perfect mechanical woman (Nolan). Indeed, robot sex, and hence, automatic contraception, is frequently depicted in SF, for example, as an illicit activity, in Asimov's "The Caves of Steel" (1954) and "Robots of Dawn" (1983).

Even more intriguingly, Asimov's "Satisfaction Guaranteed" (1951) depicts a handsome male robot who realises that his married female owner has poor self-esteem, and in order to raise her standing among her friends and neighbors, he simulates illicitly making love to her by kissing her, thus demonstrating to the voyeurs (who do not know that he is a robot) that she is capable of attracting a handsome man and consummating an adulterous relationship.

The android lover is graphically depicted in Piercy's "He, She, and It" (1991), where an android is a re-creation of the equivalent of a golem by two Jewish scientists, a being who "transgresses not only the conventional boundary between human and machine, but between male and female as well" (Booker 347). He is the perfect lover, hygienic, obedient, indefatigable and considerate, a trope repeated in feminist novels. His programming is such that he "derives his pleasure primarily from pleasing his partner" (347), a being whose "marvellous organ is scrupulously clean" (347). His "entire body is free of the kind of physical imperfections that characterize human men" (347). However, this android "differs substantially from Haraway's notion that the problematic gender of the cyborg is considerably more "dangerous" than that of the sensitive male, whose very androgyny may in fact involve an attempt subtly to appropriate power," (348) and also imbricates the trope of the sanitisation of sex, a common element in cyberpunk with its technological appropriation and misappropriation, "a phenomenon embodied, for example, in the distaste for "meat things" shown by many of Gibson's male characters" (348).

In the *Star Trek* universe, the android Data's sexuality is explored in several episodes. For example, in Lynch's "The Naked Now" (1987), Data has sex with the *Enterprise's* inebriated security officer, who precedes the intimate encounter by coyly but pointedly asking him: "you are fully functional, aren't you?" to which Data replies "of course, […] in every way, [...] I am programmed in multiple techniques, a broad variety of pleasuring."

The issue is further confused when androids believe that they are ordinary biological humans and have no inkling whatsoever that they are artificial constructs. The wife of Data's creator is such an individual, constructed by Data's creator in Pygmalion fashion, complete with real memories as a replacement when his original wife died (Sheerer "Inheritance"). This is prefigured by the *Star Trek: The Original Series* episode *Requiem for Methuselah* (1969) wherein an immortal human creates an immortal android woman companion who does not know that she is an artificial construct (Golden "Requiem"). Such androids have also been depicted in more mainstream narratives, such as "The Stepford Wives" (Levin).

Ridley Scott's *Blade Runner* (1982) takes this one step further, portraying the "Tyrell Corporation" which manufactures organic androids, proudly declaiming in its motto that it's products are "more human than human." The company's ultimate product is a female android, Rachel, "the product of a cynical psychotechnological experiment" (Fitting 348), with complete artificial memories of her nonexistent past, memories taken from Eldon Tyrell's own niece, memories which lead her to believe that she is human, such that "the replicant Rachel […] stands as the image of a cyborg culture's fear, love, and confusion" (Haraway "Simians" 178). Because for the Tyrell Corporation,

> [p]erfect simulation is thus its goal […]. With Rachel the system has reached perfection. She is the most perfect replicant because she does not know whether she is one or not. To say that she simulates her symptoms, her sexuality, her memory, is to say that she realizes, experiences them (Bruno 68).

Thus, Rachel functions as the ultimate sex doll and "fulfils the common male fantasy of the completely pliant woman who serves all a man's needs" (Kellner 7).

In SF, simulation has also been depicted in the *Star Trek* universe in the "holodeck," a holographic and interactive theatre, wherein holograms possess not only form and appearance but also tangible physical bodies. The first hint of the possibilities that such environments may supply in the sexual realm is in the Lynch's episode "11001001" (1988) where a perfect woman is recreated by the computer on the starship *Enterprise*. Unsurprisingly, an alien entrepreneur uses the holodeck to create licentious programs for hire (Landau "The Forsaken"). The holodeck is also used to relieve potentially biologically fatal sexual frustration in an alien Vulcan (McNeill "Body and Soul").

Conversely, holographic characters have occasionally been shown to achieve independent sentience and a de-

sire to consummate sexual relationships. The starship *Voyager* sports a holographic doctor who experiences true family life with a wife and two children (Williams "Real Life"), and in an alternate future, is revealed to have married a human female (Croeker "Endgame"). Intriguingly, he also claims to have somehow fathered a child while on an away mission on an extrasolar planet (Beaumont "Blink of an Eye").

The ultimate VR environments are explored in Moore and Kuttner's "Two-Handed Engine" (1955), Knight's "Semper Fi" (1966), Gunn's "The Joy Makers" (1976), and "If I Forget Thee" (1977), and in Bear's "Moving Mars" (1993). In these stories, humans increasingly turn to virtual reality environments and cannot be bothered to procreate, since in their fantasy worlds, sexual urges are easily satisfied and families can be created at will. Gunn, above, logically extends the search for happiness by having all of humanity forced permanently into a real-life comatose existence, with minds roaming at will in virtual reality, prefiguring "The Matrix" (1999).

More recently, in Brambilla's "Demolition Man," (1993) depicts an amalgamation of Los Angeles, San Diego, and Santa Barbara into pacifist utopia called "San Angeles," where sex leading to "The rampant exchange of bodily fluids was one of the major reasons for the downfall of society. After AIDS, there was NRS, after NRS, there was UBT." For this reason, even kissing is outlawed and procreation is laboratory accomplished after "[f]luids are purified, screened, and transferred by authorized medical personnel only […] the only legal way." Sex only occurs in a virtual world when two consenting adults don special helmets that allow the fantasization of a virtual sexual encounter.

Discussion

The rapid and insidious extension and marketing of all aspects of technoculture into contemporary society allows this essay to progress from sex with gadgets, to machines, to virtual sex. Indeed, "even more striking is how quickly we adapt to and take for granted the technologies in our daily lives that were science fiction just an eyeblink ago" (Cooper 1).

The contemporary intersection of VR and sexuality is arguably that of online multiplayer gaming. This may be a compulsion, or even an obsession, as in the cyberuniverse, through the aid of computers one may raise virtual pets, families, communities or even entire universes, with seemingly omnipotent power.

"The trance state experienced by many computer users has become a staple of science-fiction film and cultural jokes," (Haraway, "Simians" p. 178) and the trend in this direction may be seen in individuals who compulsively play multiplayer online games in virtual worlds and who experience significant loss of time in the real world (Wood), even to the extent of inflicting unusual, computer games related injuries (Cowley). Such games have even been shown to increase rates of aggression, abnormal sexual behaviour, substance abuse, disordered eating, obesity and academic difficulties (Strasburger).

The Internet has also been used to express and exploit sexuality, "whether cybersex or use of the internet to make sexual contacts" (Ross 342). Disturbingly, "the evidence suggest that there are those who would prefer a simulacrum to living flesh." (Ferguson 5) since like the sex doll, VR environments "offer verisimilitude, the appearance of truth. The aim of the image is to displace reality" (Ferguson 5).

> Experiments and observations on consenting human subjects have shown that Cybersex itself was experienced by some cybersex-initiates as 'liberating'. It allowed participants to explore new behaviours in terms of verbal/sexual self-expression, and was particularly constructed as inhibition-freeing by some women (and men) whose social roles would 'normally' preclude them from uninhibited sex talk and/or the writing of erotica. (Green 181)

To the extent that to such subjects "there is the sense of almost unlimited scope—nothing is impossible in cyberspace. The cyber-romance is restricted only by the limits of expression and imagination, not by the corporeality of physical presence" (Green 182).

With further development of technology "as well as being a two-way exchange, cybersex offers an increasingly multi-sensory experience. Leaving aside the (rare and expensive) 'pleasure suit,' webcams can communicate images of cybersexual partner(s) who have a particularly exhibitionist disposition" (Green 182).

This technology has been espoused by some members of the social and medical professions as having the potential to reduce the risk of infection with sexually transmitted diseases (Miller). On the other hand, compulsion is a pathological extension of such desires and indeed, it has been noted that "[c]ompulsive cybersex has become a significant problem for many men and women who have fallen prey to the accessibility, affordability, and anonymity of online sexual behaviours" (Southern 697), and such individuals may present with "underlying trauma, depression, or addiction" (697). This is mostly attributed to "maladaptive coping, conditioned behavior, dissociative reenactment of life trauma, courtship disorder, intimacy dysfunction, and addictive behaviour" (697). Treatment of such disorders includes "relapse prevention, intimacy enhancement, lovemap reconstruction, dissociative states therapy, arousal reconditioning, and coping skills training" (697). With obsession and imagination, like the replicants in "Blade Runner," characters engaged online are hyperreal, since "[n]o original is […] invoked as point of comparison, […] no distinction between real and copy remains" (Bruno 68).

Baudrillard intriguingly subdivides SF into three stages: the classical or 'counterfeit' with the creation of utopian or dystopian worlds. Secondly, 'production' or genre SF which appropriates science and technology to produce credible futures, and thirdly, that of simulation itself in which the hyper-real become facsimiles without originals, an area that Baudrillard does not name as he declaims that "[t]he most likely answer is that the good old imaginary of science fiction is dead and that something else is in the process of emerging" ("The Transparency" 119). In this postmodern milieu, Baudrillard's statement, referring originally to prostheses, is arguably equally applicable to the replacement of a human being with a virtual partner as

> When prostheses are introduced at a deeper level, when they are so completely internalized […] when they impose themselves […] as the body's "original" model […] this point means the end of the body […] the individual is now nothing but a cancerous metastasis of his basic formula. ("The Transparency" 119)

The fascination with the verisimilitude of such technology may carry away individuals as ever novel and practically limitless situations and characters may be created in a virtual environment, as we are cautioned by Baudrillard who contends that "the real is not what can be reproduced, but that which is always already reproduced […] the hyperreal […] which is entirely in simulation" ("Simulations" 146).

Baudrillard further warns against our deception by such artificial beings, since "[t]he unreal is no longer that of dream or of fantasy or a beyond or a within, it is that of hallucinatory resemblance of the real with itself" ("Simulations" 142). He also counsels against our beguilement by "an operational double, a metastable, programmatic, perfect descriptive machine which provides all the signs of the real and short-circuits all its vicissitudes" (4). This is because

> [t]o simulate, in fact, is a more complex act than to imitate or to feign. To simulate implies actually producing in oneself some of the characteristics of what one wants to simulate. It is a matter of internalizing the signs or the symptoms to the point where there is no difference between "false" and "true," "real" and "imaginary." (Bruno 68)

This possibility may potentially irrupt from SF into the real world. Indeed, the cultural theorist Paul Virilio warns that mankind risks metamorphosing into "terminal citizens," immobilizing the individual into a sort of "valid invalid." A similar view is shared by Jean Baudrillard, that "simulation […] is the generation by models without origin or reality: a hyperreal" ("Simulacra" 1) sometimes to the extent that "present-day simulators attempt to make the real, coincide with their models of simulation" (2).

One final warning that SF enjoins us is to heed Frankenstein's plight, as such beingsoffer a glimpse of a liberated and empowered humanity, which could be realized thanks to the wonderful possibilities of technology; but so too, they indicate the terrible price of that seductive empowerment in the substitution for our humanity of the qualities and characteristics of the machine. (Fitting "Futurecop" 345)

One cannot help but wonder whether sentient beings operating at computer speeds would tolerate or even countenance the possibility of having sex with mankind. For example, in Bole's "The Ensigns of Command" (1989), an alien humanoid female develops romantic feelings for Data but soon realises that Data is incapable of any reciprocation. This may be because such beings are unable to experience the pleasure and experience, the qualia associated with sex that humanity takes for granted. Qualia

> are recognizable qualitative characters of the given, which may be repeated in different experiences, and are thus a sort of universals; […] The quale is directly intuited, given, and is not the subject of any possible error because it is purely subjective. (Lewis 121)

It is doubtful whether artificial intelligences could be programmed to experience sex-related qualia, and if this possibility existed, whether they would wish to have such possibilities.

Only two examples will be given, of the temporal dissociation of experience that is inevitable in a human-

computer interaction. The android Data tells the Captain: "zero point six eight seconds, sir. For an android ...that is nearly an eternity" (Frakes, "Star Trek: First Contact").

Even more extraordinarily, the sentient computer that pilots a starship in Niven's *Man-Kzin Wars* withdraws, internally recreating endless simulations of the universe. It

> dreamed. "Let there be light," it said. The monoblock exploded, and the computer sensed it across spectra of which the electromagnetic was a tiny part. The fabric of space and time flexed, constants shifting. Eons passed, […] through a universe ten light-years in diameter. Interesting, the computer thought. I will run it again, and alter the constants. Something tugged at its attention, a detached fragment of itself. The machine ignored the call for nanoseconds, while the universe it created ran through its cycle of growth and decay. After half a million subjective years, it decided to answer. Time slowed to a gelid crawl, and its consciousness returned to the perceptual universe of its creators, to reality. (Pournelle)

Inevitably, the computer wonders whether the so-called reality to which it had been recalled is also

> a simulation, a program. As it aged, the computer saw less and less difference. Partly that was a matter of experience; it had lived geological eras in terms of its own duration-sense, only a small proportion of them in this rather boring and intractable exterior cosmos. (Pournelle)

A potential way for such computers to slow themselves down would be through the use of what are contemporarily known as emulators, hardware or software that duplicate the functions of a first computer operating system while underneath, running a different operating system. These techniques are often used to run software that would otherwise fail to function, or function at far too high speeds on modern and much faster computer systems than when the software was initially created (van der Hoeven).

Interestingly, Westfahl has considered the serial immortality of our playable characters in computer games as preparation for a potential posthuman future wherein "we may be living in Mario's world, nonchalantly risking our lives to heighten our skills and knowledge, moving from body to body in a steady process of self-improvement" (Westfahl 220), but it is difficult to imagine how the simulation of sex in VR environments

can possibly provide any form of practice for the facing the future.

In conclusion, this paper has shown how SF has exposed base human desires that appropriate available mechanism and technology in order to satisfy these urges, in agreement with David Hume (1711 – 1776), a Scottish philosopher, historian, economist, and essayist who remains renowned for his philosophical empiricism and scepticism. Hume famously concluded that desire rather than reason governed human behaviour, famously stating that "[r]eason is, and ought only to be the slave of the passions." (II.iii.3/415)

It is abundantly clear, even now, that "sexuality is precariously teetering on an ambiguous electronic precipice […] access, affordability and anonymity combine to turbo-charge […] online sexual interactions" (Cooper 1-2), and it will require a determined effort for humanity not to be overwhelmed by its more sordid desires.

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Science Fiction, Imperialism and the Third World: Essays on Postcolonial Literature and Film

Philip E. Kaveny

Science Fiction, Imperialism and the Third World: Essays on Postcolonial Literature and Film. Ericka Hoagland and Reema Sarwal, eds. North Carolina: McFarland, 2010. Paper, 231 pages, $35.00, ISBN 978-0-7864-4789-3.

Order option(s): Paperback | Kindle

ERICKA HOAGLAND and Reema Sarwal have made have a major and timely contribution to scholarship on the world of the fantastic on a foundational level through the collection that was released in 2010. It is even timelier today. Any of us who follow the current media accounts of political unrest and revolution in former spheres of imperial or colonial influence will find that in 2012 stability is even more an exception rather than the rule than it was two years ago. I would add as that the world is perhaps closer to technologically enhanced catastrophe than it was on the eve of WWI a hundred years ago. Yet it is important to remember that these are essays on science fiction not geopolitics, though the political is inescapable in all these essays, as are ethical considerations that intersect with geopolitics. Here science fiction and science fiction criticism have the moral courage to say not only what is, but also what could, might or should be.

The editors did an outstanding job of putting together this collection of fourteen essays and it should appeal to a broad range of readers all the way from the academic specialist working within the scope of its subject areas to the informed reader who is deeply interested in the expression of really big ideas in a timely and relevant manner. Thus it I give it my highest recommendation as an essential part of any academic or public library collection.

These essays have functioned for me as an access point to what is broadly characterized as post-colonial science fiction, much of it produced in what the editors reluctantly refer to as third world writers. I was so impressed, then motivated, by Andy Sawyer's references to Caribbean Canadian writers Nalo Hopkinson & Uppinder Mehan's 2004 anthology *So Long Been dreaming: Postcolonial Science Fiction and Fantasy* in his introduction that bought the book. I am now reading the kindle edition as I write, and in the process being exposed to some really fascinating writers who I have sadly neglected. These writers, according to Nalo Hopkinson, "have mastered master's tools to remodel master's house." Having my academic roots in the UW-Madison Vietnam Era protest, I think perhaps we should have pulled down the house.

The four-section format allows their contributors to do analyses, conceptual modeling, and thought experiments applying various critical methodologies to selected texts many by third world writers. It also provides cultural space to discuss and reflect on imperialism and post-colonialism not as historical periodization but rather, in the editor's terms, as a broad conceptual lens through which their subjects may be examined. They are examined not only as literary and dramatic representations but as realities of our lived experience as they affect all aspects of our lives from what we pay at the gas pump to where are loved ones may be forced to fight and die as the American wars in the Middle East move into their third decade, taking on a 'forever war' quality. Yet even that is not the best aspect of the collection. What is best is that it is not about the west the 'royal we,' so to speak, but it is about what the west has constructed or designated as 'other.'

Further contextualizing the essays in a foreword by noted Science British Science Fiction critic Andy Sawyer, who addresses some of the difficulties in using terms as broad as science fiction, imperialism, third world, and postcolonial literature to frame the study. Sawyer with his usual economy and precision details the thought behind the title in way that problematizes, and at the same time operationalizes, the terms as being defined by through the process of being used.

It seems to me that critical work of this type has a special relationship to its subject matter. That is because the liminal space between science fiction as a cultural product and science fiction criticism as form of socially necessary labor is like the genre boundary between science fiction and fantasy; that is to say it is a highly permeable barrier. Science fiction criticism at its best is written with literary artistry in spite of the efforts of some in the establishment to make it otherwise. And of course science fiction is highly politicized literatures in both its hegemonic and counter hegemonic iterations. Fred Pohl has said on a number of occasions science fiction was "the only free press in America in the 1950's." Four times Hugo Award Winner Lois McMaster Bujold told a number of us at an informal dinner that that salient attributes of all science fiction are that all works are political. Critic Darko Suvin, who is mentioned and cited several times in this collection, is famous for saying that even reading the first sentence of the worst piece of genre trash is a step towards ending alienation. And of course many writers like Samuel R. Delany function regularly as both writers and critics. In the rest of this review I am going to briefly cover the four sections of the collection. Much as I would wish to, I simply do not have the space to address all of the essays so it is best to think of the ones I have chosen as representative of the overall quality of the collection.

In Part One: Reinventing Alternative History, I'd mention "Organization and the Continuum: History in Vandana Singh's 'Delhi'" by Grant Hamilton. This essay was my access point to Vandana Singh's short story "Delhi" and I found Hamilton's understanding of postmodern philosophy, particularly his application of Foucault, Deleuze, and Said, thought provoking—for example Foucault's challenge of the idea of the historical as a record of fact where he argues it is really only the part of the dynamic by which we say what we are not. For most of my life I have identified with an Anglo-American tradition that is not really my past: when my eleven ancestors, all Kavenys, fled from famine Ireland in the winter of black '47 we were not white, we were the population of a colonized country. When my father was born in 1898, we were Irish, but we were still not white. Essays on *Dune* by Gerald Gaylord, Barnes' *Lion's Blood* and *Zulu Heart* by Juan F. Elices and *The Calcutta Chromosome* by Suparno Banerjee are also of great interest.

In the Part Two: Forms of Protest, consider "Body Markets: the Technologies of Global Capitalism and Manjula Padmanabhan's *Harvest*" by Shital Pravinchandra. This article is one of the jewels in the collection as the author gives just enough of the play, which it is based on dealing with the cultural nuances of the international organ trade, that I almost felt like it was being performed in my head. It provoked me to think how one of the central tenets of early, and now global, capitalism plays out as the worker is only construed to be organic capital and as a component in the productive process, only worth its replacement cost. One can also be enlightened with essays on Pat Murphy's "His Vegetable Wife," by Diana Pharaoh Francis and on apocalypse in speculative fiction by Roslyn Weaver.

In Part Three: Fresh Representations, I was particularly struck by "Critiquing Economic and Environmental Colonization: Globalization and Science Fiction in *The Moons of Palmares*," by Judith Leggatt. I feel that this article would be an excellent starting point in marking a course on representations of Native Americans in science fiction along a historical continuum and as a way of framing the operations of colonial and post-colonial power structures. Other interesting essays included one on SF in Bengal from 1882-1974 by Debjani Sengupta, Robert Heinlein's *Moon is a Harsh Mistress* by Herbert G. Klein, and Bollywood's *Koi* by Dominic Alessio and Jessica Langer.

Part Four: Utopia/Dystopia ends with "Octavia Butler's *Parable of the Sower*: The Third World as Topos for a U.S. Utopia" by Gavin Miller. Highly thought provoking, even disturbing, it raises issues with the portrayal of the US as a failed state being an opportunity for a kind of inter-galactic evolution and transformation of humankind. Of course I will have to go back to the text he analyzes for a deeper understanding of the argument. The other two essays, one on a Mexican Cyberpunk novel by Juan Ignacio Munoz Zapata and on shapes of dystopia and the politics of power by Jessica Langer, add both unfamiliar texts and contexts to our knowledge of multilingual speculative fiction.

To conclude, time and space do not allow a summary the other ten well written and thought provoking articles by well-qualified authors, but only a mention in passing. However, I do want to make one last comment about what philosopher Ludwig Wittgenstein calls the family resemblance between the speculation of science fiction and science, and of science fiction and science fiction criticism, and formal speculative philosophy. I feel justified in doing this based on many years of academic stoop labor in the latter field. Both are deeply concerned with really big ideas in all possible worlds. Yet science allows the world of our shared lives to work itself in science fiction. The biggest idea I can think of right now is something P.J. O'Rourke said on in the late 1990s on the Larry King show when asked what he thought Americans in the 21st century would find most unusual. He simply answered that they will find themselves living in a third world country. Cleary this collection helps American and European, and of course non-Western readers, to envision that world realized.

Green Suns and Faërie: Essays on Tolkien

Carol Franko

Verlyn Flieger. *Green Suns and Faërie: Essays on Tolkien*. Kent, Ohio: Kent State University Press, 2012. Paper, 331 pages, $24.95, ISBN 978-1606350942.

Order option(s): Paperback

THE VALUE OF PERSISTENTLY exploring a major writer's oeuvre is an underlying message of this collection by distinguished Tolkien scholar Verlyn Flieger—author of such works as *Splintered Light: Logos and Language in Tolkien's World* (1983, rev. ed. 2002) and *A Question of Time: J. R. R. Tolkien's Road to Faerie* (1998 Mythopoeic Award winner for Inklings studies); coeditor of other works including *Tolkien's Legendarium: Essays on The History of Middle-earth* (with Carl Hostetter; 2002 Mythopoeic Award winner for Inklings studies) and *Tolkien on Fairy-stories by J.R.R. Tolkien* (2008; with Douglas A. Anderson); and founding coeditor (with Douglas A. Anderson and Michael D. C. Drout) of *Tolkien Studies: An Annual Scholarly Review*. *Green Suns and Faërie* is a valuable resource for teaching and research, a pleasure to read, and a fine representative of Flieger's scholarship—of her "lifelong conversation with Tolkien's work," as she puts it (viii).

Of the twenty-five essays, twenty are from 2000 or later. The essays are grouped topically in three sections—Tolkien Sub-creator, Tolkien in Tradition, and Tolkien and His Century—and they range in date from the 1981 classic "Frodo and Aragorn: The Concept of the Hero" to several first published here, including the delightful "Bilbo's Neck Riddle" and "Tolkien, *Kalevala,* and 'The Story of Kullervo.'" Flieger's absorbing analysis of the Tolkien manuscript, "The Story of Kullervo," itself published for the first time in 2010 in *Tolkien Studies*, supplies, as Flieger argues, "an essential step along the road from [Tolkien's] adaptation [of the Finnish story] to invention that resulted in the Silmarillion [specifically Turin's story]" (185).

In *Green Suns and Faërie*, Flieger uses Tolkien to read Tolkien, a more flexible and richer approach than the phrase might at first suggest, since using Tolkien here includes her study of Tolkien's entire oeuvre of fiction, letters, essays, and unpublished manuscripts of any of these genres, as well as biographical and critical studies of Tolkien. Conversely, interpreting Tolkien here ranges from close readings of key passages (like Sam's words that conclude *LOTR*), pressing for previously unconsidered meanings, to consideration of Tolkien's influence on filmmakers, to informed speculation on Tolkien's process as adapter and inventor—his creative work with sources whether Old English, Old Norse, Celtic/Arthurian, Finnish, or early 20th century fiction drawing on "the notion of hereditary memory"(94). Overall, Flieger effectively conveys Tolkien's complex relations with his invented mythology and its strange yet believable "faërie" in terms of his conscious craft and his ambitious and eclectic imagination. Flieger often emphasizes a modern and sometimes postmodern component in Tolkien's desire to forge narrative worlds that he and his readers can imaginatively inhabit, and she investigates how he crafted his Secondary world so that it would often achieve full Secondary believability.

In the opening essay "Fantasy and Reality: J.R.R. Tolkien's World and the Fairy-story Essay," and in at least seven others, Flieger demonstrates the substantial and supple terms of Tolkien's "On Fairy-stories," and the value of testing and interpreting his criteria and his fiction in light of one other. "Green sun" is from "On Fairy-stories," where Tolkien speaks both of fantasy's appeal—its "arresting strangeness"—and the sub-creator of fantasy's task: "To make a Secondary world inside which the green sun will be credible" (qtd. in Flieger 6). By exploring green suns in *The Lord of the Rings*, including elven rope, the phial of Galadriel, and the one ring, "Fantasy and Reality" persuasively argues for Tolkien's thrifty use of genuinely magical elements, showing that his Secondary world overlaps considerably with the Primary one in elements like skillful ropemaking or the psychological effects of obsession. Flieger here introduces a motif important to this collection: she links Tolkien's green suns, his fantasy elements that signal a departure from Primary world reality, with Tolkien's memorable line also from OFS, that "creative Fantasy is founded upon the hard recognition that things are so in the world as it appears under the sun; on the recognition of fact but not a slavery to it" (qtd. in Flieger 5).

Flieger's teasing out of the many "hard recognitions" in Tolkien's fantasy allows her, for example, to connect her interpretation of Frodo's abused body ("The Body in Question") to a continuing theme in Tolkien scholarship, Tolkien as twentieth-century survivor of World War I. For me, Flieger's least compelling use of "On Fairy-stories" to examine Tolkien's fiction is in "Tolkien on Tolkien: 'On Fairy-stories,' *The Hobbit*, and *The Lord of the Rings*" because although she argues reasonably that Tolkien is developing his narrative strategies in *The Hobbit*, parsing that story as a negative example of Tolkien's criteria for inner consistency and appropriate tone does not illuminate *The Hobbit*. More than making up for this lapse, if it is one, are three conceptually exciting pieces: "The Music and the Task…" which examines rigorously the green sun of Middle-earth's fate and free will paradox; "When is a Fairy Story a *Faërie* Story? *Smith of Wootton Major*," which makes new Tolkien's ideas about "faërie" in OFS by examining them in relation to this strange, late story; and "Allegory Versus Bounce: Tolkien's *Smith of Wootton Major*," which records a fascinating debate between Flieger and Tom Shippey.

Green Suns and Faërie contains much more of interest: treatments of ecological themes; meditations on self-reflexive moves by the Beowulf poet, Tolkien, and Peter Jackson; and essays that intertwine close readings with biographical speculation, as in their different ways do the excellent "Whose Myth is it?" and "Gilson, Smith, and Baggins." Although Flieger mocks her early ambition to "educate the untutored general reader in the medieval and mythic aspects of Tolkien's work, its epic and romance and fairy tale underpinnings" (252; see also viii), the joining of accessibility and in-depth research in this collection makes it appealing and useful to a true variety of Tolkien-loving readers from the untutored to other scholars.

Science Fiction America: Essays on SF Cinema

Susan A. George

Davis J. Hogan, ed. *Science Fiction America: Essays on SF Cinema*. North Carolina: McFarland, (2006) 2011. Paper, 288 pages, 79 photos, $35, ISBN 978-0-7864-6612-2.

Order option(s): Paperback

SCIENCE FICTION AMERICA: Essays on SF Cinema is a 2011 reprint of a 2006 offering from McFarland. While the McFarland website states that it is "especially known for covering topics of popular appeal in a serious and scholarly fashion," and for going to "great lengths to manufacture [their] books to the highest standards and library specifications," McFarland is not, strictly speaking, an academic press. However, they do and have turned out scholarly books, have an excellent turnaround time for production, and their books are affordable and available as e-books. All that being said, unfortunately this reprint is not one of their best efforts. To begin with the title is misleading as the collection starts with a discussion of a British film, *High Treason* (silent version 1929/sound 1930) and also discusses early TV shows such as *Superman* (1952-1958)—not strictly American nor film. And while this might seem to be a quibble over title semantics, some of the collections other shortcomings are far more significant.

That it is more journalistic and in many ways more a collection of nostalgic reminisces isn't really the problem either; the problem lies in the lack of proper citation of sources and the rather naïve, even offensive, critical edge or lack thereof evident in the articles. For example, in Robert Tinnell's contribution, "*Logan's Run* to Relevance," he notes that "carousel" is government-sponsored euthanasia and that for those who "stand on the right of the political spectrum they might say that this dark aspect of *Logan's Run* has already been fulfilled via abortion" (220). He further writes that, "in [the *Roe v. Wade*'s] aftermath abortion became much more commonplace in this country. For some women, abortion is a method of birth control" (220). Although statements like this are often heard and presented as "common sense" knowledge in heated debates regarding reproductive rights, it is more than inappropriate in an anthology that is being held to "the highest standards." Especially when the author provides no support or evidence for the statement thus making this selection, as are others in the collection, unsuitable text for the classroom except perhaps as an example of logical fallacies and why you need to avoid them.

Now, as I write this and think about it, overall the book did have a sort of "boy's club" feel as many of the various authors, all men accept one, included boyhood memories in their pieces. In addition, decades of gender politics and that the possibility that women might read the book didn't seem to occur to the authors nor the editor. For example, another author, Chase Winstead, in his essay "Two Faces of Voyeurism: *Nude on the Moon* and "X"—*The Man with the X-Ray Eyes*," writes about innocent and harmless male voyeurism in the 1950s fostered and promoted by Hugh Hefner's *Playboy*. He goes on to state that for the 1950s white male "sophisticate" who read *Playboy* and the women he encountered daily, "sex was natural and it was good, and the male expression of it began with the act of look-

ing. The most desirable women, Hef insisted with his boyish smile, understood this, and played along. Happily they played along" (178). Again these statements are not supported with any evidence or data. And while it is true, as Alfred C. Kinsey revealed in *Sexual Behavior in the Human Male* (1948) and *Sexual Behavior in the Human Female* (1953), that Americas were engaging in more than post-matrimonial missionary position intercourse the reaction to Kinsey's work makes it clear that no one completely understood, happily or otherwise, the sexual politics of the decade.

Moreover, Winstead's discussion of voyeurism fails to acknowledge the power and privilege of looking that has been discussed widely by feminist scholars and in critical race theory. The only support for the author's claim that voyeurism, filmic or otherwise, is just good clean fun comes when he discusses the very low-budget 1962 sexploitation SF film *Nude on the Moon* directed by Doris Wishman, who made several "nudie" films in the sixties. Turning specifically to this film, the author almost giddily informs the reader that

Top-billed Marietta (a guess is that she worked as a Miami showgirl) is darkly pretty and possessed of breast that are, well, magnificent. Wishman takes care to see that Marietta and the other good-looking, deliciously endowed women in the cast arch their backs, stretch their arms above their heads, lean over, lie back, and allow their torsos plenty of mischievous side-to-side wriggle. (180)

To that I don't know what to add!

Although still basically personal narratives, there are several essays that are engaging. For example, Alan Dirk Lester's "Godzilla vs. the Military-Industrial Complex" is not scholarly but he makes some good points about the film as he tries to defend showing it to his three year old nephew when his "*uber*-pacifist and doctorate-certified intellectual" brother-in-law objects (131). I guess I can add anti-intellectual to my criticisms here. Both selections by the collection's editor, David J. Hogan, "*Atomic City*, Atomic World" and "Secret Identity, Fragile Identity: TV's Superman in 'Superman on Earth,' 'The Stolen Costume,' 'The Face and the Voice,' and 'Panic in the Sky,'" set the various texts well within their historical and cultural context though the sources of specific details are left undocumented. So, if you want a frequently sexist rose-colored glasses view of some SF films and TV shows, then this is the book for you. However, if you are looking for accessible, well-researched and formatted essays on SF films for undergraduate classes—find another anthology.

Lab Coats in Hollywood: Science, Scientists, and Cinema

Christopher Leslie

David A. Kirby. *Lab Coats in Hollywood: Science, Scientists, and Cinema.* Cambridge, MA: MIT Press, 2011. Cloth, 280 pages, $27.95, ISBN 978-0-262-01478-6.

Order option(s): [Hardcover](#) | [Paperback](#) | [Kindle](#)

THE QUALITY of the science in science fiction sometimes leaves something to be desired, so much so that it makes critics wonder if the "science" in sf should be replaced by "speculative." David A. Kirby's ethnographic study of scientific consultants for science in film suggests a different solution. It is true that even respected scientists are not always able to fix scientific errors in films, but providing accurate scientific fact is not necessarily the most important work that film can do. Instead, Kirby documents the way in which science in film can be seen to participate in the social construction of technology (SCOT). This allows Kirby to define plausibility in science fiction as being something that has an anchor in scientific reality, not just something that is accepted by a widespread audience. Given the importance of plausibility in the genre, Kirby has done scholars a great service in exploring what exactly it means to consider a script's science plausible.

Kirby focuses on the science in wide range of films, including several that are known for their scientific accuracy: Fritz Lang's *Frau Im Mond* (1929), George Pal's *Destination Moon* (1950), Stanley Kubrick's *2001: A Space Odyssey* (1968), and Stephen Spielberg's *Jurassic Park* (1993). In these films and others, Kirby finds a productive collaboration between the filmmakers striving to make an enjoyable as a mass product, the scientific consultants who are hired by the filmmakers, and the crew that is ever mindful of the technical limitations of the filmmaking process. This teamwork has done well since the twentieth century: many ideas from *Frau Im Mond* were used by NASA for actual space missions, which shows how invention in films can be inspiring to practitioners in the field. *Jurassic Park,* however implausible being some of its narrative background, was interesting in the way it proposed the hypothesis that dinosaurs evolved from birds and could in fact have been warm-blooded animals, a theory that

did not have widespread support in 1993. "The whole idea of the film," the film's scientific consultant reports, "was to get people to look at dinosaurs as birds, rather than as reptiles" (128). In this way, Kirby joins SCOT proponents who seek to understand technical innovation as a social process.

When science goes wrong in these films, Kirby has found out, it is not necessarily due to the failure of the filmmakers' interest in science. *Frau Im Mond*, for instance, features an atmosphere on the Moon; in consulting with Willy Ley, Fritz Lang pointed out that he would have trouble with standard movie themes if he had to put his characters in diving suits. However, it was not entirely established that the Moon did not have an atmosphere when Lang was in production, and he asked his scientific consultant to base his ideas on the theory of an 1858 astronomer who proposed that the far side of the moon had one. Those working on the 1997 film *Contact* faced a similar situation when they advised the filmmakers that an alien signal would probably be transmitted as a pure tone. The sound editors working on the film told the scientists that there was no way they could use a pure tone because it would not be interesting enough for a film. While this probability would be known to radio astronomers, it comes from a category Kirby calls expert science and these rules are seen as bendable when there is a larger cinematic imperative.

The benefits of the collaboration between the entertainment industry and scientific community become visible in Kirby's analysis. A wardrobe specialist working with NASA to create realistic space suits ended up influencing the design of real-life space suits. Not only were Chris Gilman's designs "sexier," which appealed to an image-conscious agency, but also Gilman's experience in costume design so improved the wearability, visibility, and comfort of the suits that NASA sought him out for help on their future models. Manufacturers donate their scientific equipment to film in order to get product placements before scientists and engineers who are likely to use their equipment. Filmmakers have a double imperative to use accurate science. If they get the science wrong, there are likely to be castigated by reviewers when they find out that the science is incorrect. By tapping in to interesting, novel, or unconventional scientific ideas as well as scientific debates that are coming under political scrutiny, however, a film can get free press coverage when the news media attempt to explain and understand the ideas of the film.

It is not always the case that the best science wins out,

however. One of the most interesting analyses in the book is the contrast between two 1998 films about missions to deflect near-Earth objects: *Armageddon* and *Deep Impact.* The "scientifically ludicrous" *Armageddon* earned more money than the "more scientifically accurate" *Deep Impact* (224), which demonstrates that earnings potential is not necessarily the only benefit. In terms of popularizing and extrapolating current astronomical ideas, however, *Deep Impact* did a decent job of helping the audience to understand thinking about near-Earth objects and knowledge about comets in general. Although some scientists might be dismayed that the comet was not depicted as a dirty snowball, the grey ground was chosen because the filmmakers could not imagine how they would film a black ground on a dark sky; they did their best, however, to explore the ways in which lights would have to be used to see. In this way, the plausibility of the movie sticks mostly to accepted scientific facts as much as possible. Although the scientific consultants were not able to change the color of the comet, they were able to dissuade the writers from the original idea of having the Apollo Lunar Excursion Module land on the comet for the simple reason that the comet would not have enough gravity to allow for a landing. The resulting dialogue between scientific knowledge and cinematic restrictions led to a plausible narrative that contains markers of the scientific community. "None of the consultants would claim that the speculative scenario they helped design was likely to ever occur," Kirby writes. "At the end of this process consultants provided filmmakers exactly what they required: a scenario that could be defended as plausible and one that allowed them to create drama through the visualization of extraordinary events" (159).

Lab Coats in Hollywood is an interesting and important read that would be helpful in a variety of classes, such as a science fiction seminar, a science fiction film or media class, or a seminar on science and technology studies. Its utility as a course book is somewhat marred by its thematic approach; Kirby has arranged his chapters around different issues that emerged from his ethnographic work. While this makes the book an interesting read, it does slow down the reader who is looking for a specific insight into, say, *Jurassic Park,* because the same film appears in different chapters. This might make it difficult to use the book along with other course content. For this reason, the book should also be in libraries, where a reader would have more time to find what he or she is looking for.

Astounding Wonder: Imagining Science and Science Fiction in Interwar America

T. S. Miller

John Cheng. *Astounding Wonder: Imagining Science and Science Fiction in Interwar America*. Philadelphia, PA: University of Pennsylvania Press, 2012. Cloth, 392 pages, $45.00, ISBN 978-0-8122-4383-3.

Order option(s): Hardcover

WHEN I FIRST PICKED UP John Cheng's *Astounding Wonder: Imagining Science and Science Fiction in Interwar America*, I was surprised that I had never encountered the author's work in shorter form, as the book is a long and ambitious monograph with the imprimatur of a highly respected university press that only infrequently deigns to publish works of SF scholarship. Despite the deep familiarity with the early history of science fiction on display in *Astounding Wonder*, it indeed appears that Cheng has not published on SF in the 15 years separating the completion of his dissertation in 1997 and the publication of this book based on it. This is unfortunate, as *Astounding Wonder* makes a major contribution to science fiction studies. Much of the book's appeal derives from its slightly foreign disciplinary perspective: the book is primarily a piece of social and cultural history, rather than originating from the same literary, media, and/or cultural studies background of the majority of SF scholars. The point may seem banal or trivial, but a history of early SF written by a historian will differ dramatically from a history of what is ostensibly the same subject written by a literary critic. To be se sure, the few references to Continental theorists scattered throughout the text typically seem more dutiful than enthusiastic, such that more dedicated cultural theorists may find some of Cheng's analysis tepid, but the real strength of the work lies in its wealth of primary material: almost every other page contains an excerpt from a reader's letter to the editor or other similar document. As a historian's history of the pulp era, then, Cheng's book contributes both original documentary research and a new perspective to the history of science fiction, above all encouraging us to reexamine the emergence of modern SF in all of its various social, cultural, political, and economic contexts.

Astounding Wonder consists of eight chapters spread over three parts with the vague titles of "Circulation," "Reading," and "Practice." The first of these provides an overview of the pulp milieu out of which genre SF emerged; the second is a somewhat eclectic collection of themed studies focusing on, for example, race and gender; and the last will probably prove the most stimulating and seem the most original to SF scholars, as it develops the more familiar theses of the first sections into a sophisticated account of early fandoms and other forms of popular science activity like amateur rocketry societies. From the outset, Cheng makes it clear that he understands science fiction as a product of a prior pulp publishing industry, but also of interwar popular science, and he finds several ways to connect the two by reminding us that "pulp magazines contained more than stories," namely, "editorials, features, and letters from readers, as well as their cover art and illustrations" (81). Under Cheng's careful eye, these apparently marginal elements of the SF pulps become windows into a larger cultural history.

For example, in literary studies, we may not think first of the influence of the advertising industry and postal regulations on the formation of SF, but in the first chapter Cheng argues brilliantly that "the pulps emerged as an indirect consequence of advertising's arrival in magazine publishing" (23), with fascinating implications for the later intersections of advertising and the SF pulps. This opening chapter is as much a history of pulp publishing itself as it is of science fiction's emergence in that context, and as such it nicely complements existing accounts of the SF pulps like those by Mike Ashley and Gary Westfahl (although this portion of Cheng's study may have benefited from greater reference to Westfahl and other SF scholars).

The second chapter focuses on the fundamentally interactive and dialogic nature of early SF; while Cheng tells a story that will be familiar to most SF scholars, he fills in the narrative with some interesting details and invaluable historical data. For example, I learned that from their earliest days the SF pulps simply published many more reader letters than other types of pulp magazine (55). In other words, the central thesis of this chapter—that "reading *and* writing and all their important cultural associations became integral parts of [early readers'] experience of science fiction" (57)—is not a new idea, but is here elegantly articulated and thoroughly documented, even to the point of including some analysis of the geographic distribution of the availability of SF pulps (65-66).

Although the third chapter begins the section on "Reading," this examination of "Fact, Fiction, and the Authority of Science" serves as a kind of companion piece to the second chapter, which itself had gone on to demonstrate how SF readers appealed to a democratic vision of science, but also one that was objectively authoritative in some way. Building upon this argument, Chapter 3 explores the complexities attendant upon the fact that "[i]nterwar science fiction's participatory culture depended implicitly on the authority of a universal, generic science" (106), and argues that SF readers found ways to separate the concept of authority from knowledge: that is, Science had authority, but the scientific knowledge of particular individuals could be continually contested. Only in the following chapter does the relative timidity of Cheng's theoretical engagements become more problematic. This treatment of domesticity and gender focuses largely on the common narrative function of women as representations of the household who allowed men to prove their virtue. Scholars with other theoretical investments in these subjects may think the argument somewhat superficial, but will still find the chapter a useful starting place for pursuing other analyses of gender issues in these fictions, and a helpful guide to stories of major relevance like David H. Keller's "The Feminine Metamorphosis" and Francis Flagg's "An Adventure in Time."

Gender naturally gives way to race as the topic of Chapter 5, which professes to explore "the place of racial dynamics within [the] scientific sublime" of pulp SF (148), but also attempts to provide a comprehensive picture of those dynamics through an analysis of Asians alone. I found Cheng's justification for the exclusion of all other nonwhite races inadequate—indeed, it is almost nonexistent—yet the chapter does work quite well as a narrower case study of how, for example, "[t]he modern Oriental villain was the antithesis and perversion of the celebrated ideal of the American inventor" (164). Cheng persuasively argues that American anxiety about the industrialization of science or about other points of concern like evolution could be displaced onto a racialized other, a form of narrative practice that extended to the representation of alien creatures as racial others.

Chapter 6, on "Einstein, History, and the Dimensions of Time Travel," rapidly changes gears to examine time travel stories and the temporal speculations of SF readers, who often cited Einstein's theories as a justification for the possibility of time travel but ignored the genuine implications of those theories in favor of an older concept of time travel through a linear dimension—and almost invariably to the future rather than more messily to a mutable past. The argument here meanders more so than in previous chapters, and can become repetitive: one quotation has even been (I assume) inadvertently repeated in a similar context two pages after its initial appearance (194, 196). Yet, while the chapter itself is somewhat muddled, Cheng manages to argue convincingly in support of his larger thesis, also at play in Chapter 3, that contemporary transformations in the *practice* of science were lost within pulp science fiction's particular representation and idealization of science.

Chapter 7, the first of two in the final "Practice" section, treads some familiar ground in its discussion of the large-scale organization of SF fandom towards the end of the1930s, but contextualizes these later developments alongside some less frequently discussed predecessors, including various boys' clubs and correspondence clubs. Here Cheng also analyzes various technologies of fan production, and pays commendable consideration to the role of ethical and political issues in early fan activities. In fact, because of the strength of Chapters 2 and 7, I would especially recommend the book even to scholars with little interest in pulp SF but who may be working in new media and contemporary fan studies: Cheng does a remarkable job of documenting the many ways that fan engagement with SF flourished long before the Internet age.

The book's last chapter, and also its longest, is dominated by the history of the American Interplanetary Society (later the American Rocket Society), and is also the most successful example of how Cheng, by pursuing pulp ephemera like advertisements and letters to the editor, has been able to tell a new, previously neglected story that parallels the standard literary history of early SF. Cheng emphasizes not only the overlap in the membership of the AIS and science fiction fan groups—a result of its heavy recruiting in the pulps—but also their similarity as social enterprises "practic[ing] within the same popular scientific culture" (298). Other important reference points in this chapter are the science education and science journalism of the time, further historical contexts that traditional literary histories can neglect; Cheng notes, for example, that the public could "read reports of rocket science as they did science fiction: for technical detail, adventure, or both" (255). Out of Cheng's detailed analysis of how the AIS/ARS conducted and reported on its experiments in rocketry emerges a trenchant analysis of how "fiction" of various sorts informed scientific practice in both the amateur and evolving professional scenes.

Occasional infelicities in Cheng's account of literary

history and specific applications of literary theory are largely forgivable. For example, Cheng states that the term "author" was "[t]he product of eighteenth- and nineteenth-century literary developments" (27), ignoring a great deal of work done in the past few decades in both medieval and early modern studies concerning earlier theories of authorship. Cheng also makes the mistake, in my view, of consistently using William Gibson's story title "The Gernsback Continuum" as shorthand for interwar science fiction's supposed "flattened sensibility of fiction and history" (207), whereas I think the phrase must evoke—as the story itself does—a more complex interpenetration of the futures imagined by the past, our present, and our present's own futures. At other times Cheng simply colors his cultural history in overly broad strokes, resulting in some obviously flattening generalizations: "[G]oodness inevitably triumphed in pulp fiction's morally driven plots. Almost without exception heroes overcame natural and supernatural obstacles and/or human weaknesses and perversions" (30). This may be true, but the exceptions are quite important: Lovecraft, after all, was a pulp writer, and the ways in which his new form of weird fiction imagined science remains an essential but almost entirely ignored piece of the bigger picture of the period that Cheng wishes to paint. Of course, such an ambitious project will always have some gaps that it cannot cover.

In the end, then, I will not declare *Astounding Wonder* the definitive history of pulp science fiction, as Cheng's larger-picture perspective simply remains too distant, omitting, for one, extensive biographies of major figures in the business of SF like Gernsback, as well as comprehensive "life histories" of particular publications. Nevertheless, it will prove an extremely valuable cultural history to students and scholars studying this era and its fiction, and more generally should help to expand science fiction studies into a yet more multidisciplinary endeavor.

American Science Fiction: Nine Classic Novels of the 1950s

Jim Gunn

Wolfe, Gary K., ed. *American Science Fiction: Nine Classic Novels of the 1950s*. 2 vols. New York: Library of America, 2012. Cloth, 1672 pages, $70, ISBN 978-1-59853-157-2.

Order option(s): Paperback

THE LIBRARY OF AMERICA, which bills its publications as "literary classics of the U.S." and its dedication "to publishing, and keeping in print, authoritative editions of America's best and most significant writing" has begun to include science fiction. It's about time!

To its earlier editions of Philip K. Dick, Kurt Vonnegut, Edgar Rice Burroughs, and H. P. Lovecraft, LOA has now added nine volumes of science fiction from the 1950s, a decade that editor Gary K. Wolfe has identified as a "true Golden Age" of science fiction. I couldn't agree more. Of course I may be biased. Although I started writing SF in 1948 and got my first stories published in 1949, I had three novels published in the 1950s and two more in the early 1960s that were written in the 1950s. And looking back on what was happening all around me in the science-fiction world, I remember a state of continual stimulation, of anticipation of the next great thing about to appear on the horizon.

Maybe it was a true Golden Age, or maybe it was only my Golden Age. When I started teaching my SF novel course back in the 1970s—with its emphasis on the works that informed SF readers ought to have read if they want to read, with understanding, further in the field—out of the twenty-five novels I assigned six were published in the 1950s, two more in the 1940s, and four more in the 1960s.

What was it about the decade that was so meaningful? Well, Gary tells you why in an essay that is published on-line (www.loa.org/sciencefiction) rather than in the volumes. Available there as well are essays reprinted from Robert Silverberg and Barry Malzberg, even more informative because that was their decade as well. A good part of the reason is that science fiction had been validated by the technological events of World War II typified by the German rocket attacks on London and the nuclear bombs that exploded over Hiroshima and Nagasaki. Rockets and atomic bombs—the two subjects with which SF had been derided—were now part of the real world, and so was science fiction.

Publishers thought so too. More than fifty SF magazines were published in the 1950s and the book market that had largely been absent for two decades got going, first mostly by fan publishers before the mainstream publishers, led by Doubleday, got into the business. Tony Boucher, in Reginald Bretnor's *Modern Science Fiction*, counted more than 70 SF novels published in 1972. Most important, among the new magazines starting up were two challengers to the dominance of *Astounding Science Fiction: The Magazine of Fantasy (*that would add "and Science Fiction" to its title with the second issue) in late 1949 and *Galaxy Science Fiction* in 1950. Suddenly there were exciting options, and where options existed readers and writers responded to them. The magazines were still the place to look for innovation, and until the novel market began its explosion in the 1950s the era of 1938-1950 was considered the Golden Age because of the stories and serials in the magazines. The 1950s are here considered the Golden Age because of the novels, though often they made their biggest impact as magazine serials. Another reason the 1950s was a Golden Age for SF novels is that there were so few of them that people, and especially writers, could read them all and talk about them and respond to them. Innovation was not only noticed but noticed in context.

The novels: Fred Pohl and Cyril Kornbluth's *The Space Merchants*, Ted Sturgeon's *More Than Human*, Leigh Brackett's *The Long Tomorrow*, and Richard Matheson's *The Shrinking Man* from the period 1953-1956; and Robert Heinlein's *Double Star*, Alfred Bester's *The Stars My Destination*, James Blish's *A Case of Conscience*, Algis Budrys's *Who?*, and Fritz Leiber's *The Big Time* from the period 1956-1958. Certainly a stellar list, fully capable of upholding the Wolfe-Malzberg-Silverberg claim of the 1950s as the Golden Age. And yet a list like this asks for quibbles, and maybe quibbles will clarify the reason for the choices as well as the breadth of the field from which the choices were made.

Let's get the consensus choices out of the way: certainly *The Space Merchants, More Than Human, The Stars My Destination*, and *A Case of Conscience* belong in everybody's collection, although I feel that Bester's *The Demolished Man* was more generically significant though not as flamboyant as *The Stars My Destination*. Certainly *The Stars My Destination* is the personal Bester favorite of many readers and critics, and its choice may have been influenced by a desire to balance the volumes for time period, as may have been the reason for the choice of *Double Star*, rather than my favorite, *The Puppet Masters* and maybe even *Who?* rather than *Rogue Moon*. One might also claim that the Brackett choice, valid as it may have been, also was motivated by a desire to include a female author from a period when few women were writing SF novels. The inclusion of *The Big Time* is not quite so obvious, and the fantasy *The Shrinking Man* even more so.

Other candidates from the period include Hal Clement's *Mission of Gravity*, Isaac Asimov's *The Caves of Steel*, Clifford Simak's *Time and Again,* Jack Vance's *The Languages of Pao*, Walter Miller, Jr.'s *A Canticle for Leibowitz,* Ward Moore's seminal alternate history *Bring the Jubilee*, Chad Oliver's anthropological *Shadows in the Sun* and *Mists of Dawn*, Henry Kuttner and C.L. Moore's *Fury* (which was published in 1949 but reprinted in 1956), Edgar Pangborn's *A Mirror for Observers*, almost any of Philip K. Dick's 1950s novels (although, to be sure, Phil, like Vonnegut, had his own LOA collection), Poul Anderson's *Brain Wave*, and Vonnegut's *The Sirens of Titan* (about which Leslie Fiedler once said that if all the books in the Library of Congress were burning, this is the one he would save). I'm sure readers will have other personal favorites.

In an article published on "Omnivoracious," Gary gave reasons for his selections, including the length of *A Canticle for Leibowitz*. He also excluded "fix-up" novels from stories published in the 1940s, like *City* or *The Foundation Trilogy* (thought that doesn't explain the omission of *The Caves of Steel*, to my mind Isaac's finest novel). A further, perhaps unconscious, bias might have preferred the new over the old, social, perhaps even literary, over more traditional science fiction. Four of the five selections were serialized in *Galaxy* and the fifth (*Double Star*) was serialized in *Astounding* perhaps by agent's choice. It's hard to imagine Horace Gold turning it down. The other four seem to have been book originals. A shortened version of *Rogue Moon*, incidentally, was serialized in *Fantasy & Science Fiction*. Serialized in *Astounding* during the 1950s were several Hal Clement "hard" SF novels, *Mission of Gravity*, *Needle,* and *Iceworld*, among others.

I might add that the titles I had on my novel class reading list from the 1950s were *The Space Merchants, Mission of Gravity, The Caves of Steel, The Languages of Pao, The Puppet Masters,* and *The Sirens of Titan*. And to this I added Arthur C. Clarke's *Childhood's End*. The Golden Age indeed!

Death Sentences

Paweł Frelik

Kawamata, Chiaki. *Death Sentences*. Minneapolis: U of Minnesota P, 2012. Paper, 296 pages, $17.95, ISBN 978-0-8166-5455-0.

Order option(s): Paperback | Kindle

IN THE ANGLOPHONE WORLD, Kawamata Chiaki is probably completely unknown outside the Asian Studies community—even the always-informative *Wikipedia* provides only three short sentences on the writer. In Japan, Chiaki was already famous in the science fiction fandom as a high-schooler. Later, as a student at Keio University, which was Japan's incubator of surrealist poetics, he was influenced by the movement. At the same time, in the 1970s, Japan was entering its golden age of science fiction. The imbrication of these two modes of writing—even worldviews—was most evident in Kawamata's own New Wave manifesto "Ashita wa dotchi da" [Which way to tomorrow?] (1972) and his long influential essay "Yume no kotoba, kotoba no yume" [Dream words, word dreams] (1975). Informing both texts was the conviction that at the heart of science fiction is not a view of out-of-control technology but one of out-of-control sensitivity. Accordingly, as Takayuki Tatsumi notes in his very informative introductory essay, "Kawamata does not distinguish between Edgar Rice Burroughs and William S. Burroughs" and opts instead to redefine "inner space as another world, a world growing out of 'nothing' in a utopian sense" (xviii).

Kawamata's sixteenth novel, *Death Sentences* [Genshigari] (1984) almost immediately became a commercial and critical success, receiving the fifth Nihon SF Taisho Award (Japan SF Grand prize), often compared to the Nebulas. It is also his first text to be published in English—the translation was done by Thomas Lamarre and Kazuko Y. Behrens. Additionally, the University of Minnesota Press have appended the volume with two excellent essays: Takayuki Tatsumi's foreword "From Surrealism to Postmodernism" positioning Kawamata's career within Japanese science fiction and surrealism, and Thomas Lamarre's "Afterword: Vortex Time," which concentrates on the novel and its engagements with the complex politics of surrealism.

Plot-wise, *Death Sentences* is not very complicated, even considering that the action moves between several interconnected timeframes. The first narrative thread is set in the 1940s and focuses on André Breton and other Surrealists in New York and Paris. The second is set in the 1980s Japan—two plotlines here concern the independent art house Kirin Publishers as it prepares the edition of newly uncovered Surrealist papers and the chronologically later police operation of tracking down individuals referred to as "the afflicted," who have come into contact with "the stuff." Consisting of merely one extended sequence of events, the third thread shifts action to the year 2131 on Mars, where a unit of the corporate Martian Guard is charged with the elimination of a small community reportedly indulging in a drug-like habit. Connecting these three stories is the surrealist poem entitled "The Gold of Time" written in 1948 by the young Vietnamese-French poet Hu Mei/Who May. (There are actually three texts in *Death Sentences*, two of them earlier, but "The Gold of Time" is the most crucial for the novel's plot.) Regardless of the medium in which it is presented, the poem has the quality of removing readers out of their timeline and transporting their enraptured mind (soul? identity?) into another dimension. Full immersion comes at a price, though—readers have to part with their earthly existence, which leads to a plague of what looks like suicides. While the motif may resonate with Kōji Suzuki's novel *Ring* (1991), later made into the eponymous film (1998), which was then remade in Korea (*The Ring Virus* [1999]) and the U.S. (*The Ring* [2002]), the real difference is not the medium of the viral text but its character. *Ring*'s videotape is a curse while Who May's poem works like a potent drug, filling its readers with bliss and slowly making them indifferent to the real world.

This may seem like a great deal of material to include in one medium-length book, but *Death Sentences* is surprisingly slow-paced and, in many passages, almost contemplative. There are very few moments when it reaches any kind of intense tension. Because of the non-chronological arrangement of the timeframes, there is also very little suspense here and a careful reader can predict the general movement of events relatively early—perhaps with the exception of the Martian sequence. The novel reads very naturally, almost casually—doubtless thanks to the great translation. This unhurried flow is definitely intended as the text's main thrust is not in the original plotting (although the central ploy of a viral text is certainly captivating) or the characters' psychology but in the reflection on the nature of surrealism and science fiction—both separately and jointly. *Death Sentences* explores this particular juxtaposition both *in* the text and *as* a text, the juxtaposition particularly important and sensitive given the numerous intersections between the movements on the one hand and some sf critics' ferocious denials of a real connection between them on the other.

References to both discourses are strewn all over the novel. Apart from Breton's and Duchamp's centrality in one of the narrative threads, numerous other Surrealist artists are marginally involved or name-checked—Arshile Gorky, Antonin Artaud, Paul Éluard, Francis Picabia, Yves Tanguy, or Kurt Seligmann. More allusively, in the 2131 timeline, the translator of the Surrealist documents into English is named Leonore Bunuel, clearly a reference to Leonora Carrington and the Spanish-Mexican director. Among the invoked names are also two less commonly known painters who are important for the bridging of surrealism and sf—Oscar Dominguez, who right before the World War Two went through a "cosmic" period with such paintings as "The Memory of the Future" (1938) (partly reproduced on the cover of Aldiss' *Penguin Science Fiction* [1963]), and "Nostalgia for Space" (1939), and Wolfgang Paalen, who insisted on the joint exploration of the arts and sciences as a key to the secrets of the universe. On the sf side, P. K. Dick is mentioned as the writer whose "otherworldly descriptions were exceedingly close to surrealism" (100), while the shadows of such novels as Orwell's *1984* or Bradbury's *Fahrenheit 451* continually hover over Kawamata's text.

Most explicitly, however, the uneasy relationship of sf and Surrealism is succinctly summarized in a conversation between Breton and David Hare, an American editor who advises to publish Who May's first text, "Another World," in a science fiction magazine—but to wait ten years before doing so:

> Readers haven't matured enough yet. There are some, but this is too avant-garde. This fantasy world called 'another world' is quite attractive. It is truly beautiful. It is full of an otherworldly sense of wonder. Unfortunately, however, it doesn't have a principal hero or heroine. Moreover, the vocabulary is too specialized. The absence of a hero is a fatal flaw in this genre. At least the editors who currently work in this genre in America think so. (54-55)

However harsh this assessment might seem, it was definitely true in the 1940s when the conversation is taking place—it might be interesting to query the 1980s, when *Death Sentences* was published, or, for that matter, the 2010s about the validity of this diagnosis. More importantly, however, underlying this assessment – and much of Kawamata's novel—is the anxiety of commercialization. Hare's advice, Breton's and Duchamp's discussions if they can feasibly "market" Who May's texts as Surrealist, the cooperation between Kirin and a large corporate entity on a Surrealist exhibition and book series, and the extermination of a Martian community singularly addicted to pursuing a literary dream all serve as indirect questions that Kawamata asks about the place of artifacts of imagination in contemporary world—questions without glib answers, one may add. From this perspective, *Death Sentences* is much more than a sophisticated and elegant engagement of two genres—it inquires into the connections between art and resistance to the dominant modes of cognition and consumption. That science fiction and Surrealism are involved in this interrogation is not a coincidence—both discourses have held high claims regarding their position and role in the society, but both have also been subject to intense inflation as a result of commercialization

Death Sentences is about Surrealism but it is not a Surrealist novel. As Thomas Lamarre notes in his excellent essay, Kawamata largely avoided the hackneyed aesthetic gestures of the movement (250), whose only instances are brief citations from Who May's poems. It is also about science fiction—even if only by virtue of the passage mentioned earlier—but it is not really a science fiction novel, at least not according to most definitions of the genre. In the Anglophone world, *Death Sentences* will be undoubtedly defined as slipstream—its only truly science-fictional element is the 22nd-century Mars setting but even there the idea of a viral text undermines the genre's prescribed rationality. The fact that the novel received Japan's premiere SF award, and back in the 1980s at that, says more about the perception of the genre in this country than about the text itself. Of course, there have been British or American novels that attempted to mix sf and surrealism, but they have either been considered almost a genre unto themselves like J. G. Ballard's fiction or largely—and unjustly—consigned to (near) oblivion like Lisa Goldstein's *The Dream Years* (1986) or Richard Kadrey's *Metrophage* (1988). The Japanese interpenetration of the two artistic worlds may, of course, be a result of complex circumstances arising from, among others, the long-standing French-Japanese cultural exchange, but it is also instructive in demonstrating how arbitrary and ultimately limiting Anglophone science-fiction's self-policing of boundaries is.

Call for Papers - Conference

Title: The 2013 Academic Conference on Canadian Science Fiction and Fantasy
Deadline: 15 February 2013
Contact: Dr. Allan Weiss (aweiss@yorku.ca) Department of English York University 4700 Keele St. Toronto, ON M3J 1P3

Topic: The 2013 Academic Conference on Canadian Science Fiction and Fantasy will be held on Friday, June 7, and Saturday, June 8, 2013, in Toronto, Ontario, at the Merril Collection of Science Fiction, Speculation and Fantasy, one of the world's most important collections of fantastic literature. We invite proposals for papers in any area of Canadian science fiction and fantasy, including:

    -studies of individual works and authors;

    -comparative studies;

    -studies that place works in their literary

     and/or cultural contexts.

Papers may be about works in any medium: literature, film, graphic novels and comic books, and so on. For studies of the audio-visual media, preference will be given to discussions of works produced in Canada or involving substantial Canadian creative contributions.

Submission: Please submit proposals (max. 500 words), preferably via email, to: Dr. Allan Weiss (aweiss@yorku.ca) Department of English York University 4700 Keele St. Toronto, ON M3J 1P3. Papers should be no more than 20 minutes long, and geared toward a general as well as academic audience.

Call for Papers - Journal

Title: *Eaton Journal of Archival Research in Science Fiction*
Deadline: 1 February 2013
Contact: Jeff Hicks and Josh Pearson at University of California, Riverside (eatonjournal@gmail.com)

Topic: [UPDATE] We are proud to announce the addition of John Rieder, Mark Bould, Catherine Coker, Jess Nevins, Rob Latham, Sherryl Vint, Art Evans, Roger Luckhurst, and Melissa Conway to our board.

We are now soliciting articles for the first issue, scheduled for publication April 10th, 2013, and for subsequent issues of the *Eaton Journal of Archival Research in Science Fiction*. The *Eaton Journal of Archival Research in Science Fiction* is a peer-reviewed, open-access, online journal hosted by the University of California at Riverside, affiliated with the UCR Library's Eaton Collection of Science Fiction & Fantasy. Graduate student editors run the Eaton Journal, with scholarly review provided by an interdisciplinary executive board made up of SF scholars, research librarians, and archivists.

The Eaton Journal creates a space for science fiction scholars to share their findings and their experiences within the several archives dedicated to science fiction found throughout the world. *The Eaton Journal* is also the only journal dedicated to providing a place for archival librarians to discuss the challenges of managing significant science fiction collections and share their best practices for facilitating as well as conducting archival research in SF.

Each of the journal's bi-annual issues will feature three types of articles, each of which addressing a different aspect of our focus on developing an interdisciplinary dialog around archival research in SF:

- Scholarly articles with a significant research component: These articles will not simply be notes and speculations regarding material in an archive, but rather will use archival materials to build critical arguments that go beyond the textual and theoretical claims of conventional literary research. While these articles must still be textually and theoretically sound, we hope to provide a venue for research that makes archival evidence its primary focus.

- Methodological/Pedagogical articles: Just as the journal will be a showcase for the best archival research in SF, it will also provide a space where SF scholars, librarians, and archivists can develop innovative and incisive strategies for research within the archive, and for integrating that research into the academic genres of publication, presentation, and dissertation. From a pedagogical standpoint, the journal will be a space to discuss methods for developing, transmitting, and assessing archival research skill-sets within the academy, publishing articles that promote skill-sharing both among faculty and between faculty and graduate students.

- Articles spotlighting neglected authors, emerging archives, and other research opportunities: The third type of article featured in the journal is that which identifies newly discovered or undeveloped archival resources, or points to authors whose archival traces offer particularly rich opportunities for scholarship. This will also be a space for articles that seek to expand the bounds of the SF archive, exploring new mediums, materials, or discourses as sites for SF scholarship.

Submission: *The Eaton Journal* is a refereed and selective journal. All articles submitted to the E*aton Journal* pass through a three-stage peer review and revision process: (1) the article is initially reviewed by the graduate student editors of the journal; (2) if it is judged to be potentially publishable, then the article is sent to our executive board for further review; and, (3) if the outside reviews are positive, an *Eaton Journal* editor is then assigned to work with the author to prepare the article for eventual publication.

The Eaton Journal of Archival Research in Science Fiction accepts contributions with the understanding that: under the author's warranty (1) the article has not been previously published in English, and will not be published elsewhere until after it has been published in the *Eaton Journal*; (2) that in any subsequent republication of the contribution, the author will acknowledge its first publication in the *Eaton Journal of Archival Research in Science Fiction*; (3) that the *Eaton Journal* retains the right to republish the contribution in any issue or re-issue of the journal in any form, including a possible future printed edition of the journal, and to reprint the contribution in any anthology sponsored by the *Eaton Journal*; (4) that the author has obtained all necessary rights and permissions pertaining to media quoted or reproduced in the submission; and, (5) that the author will be financially responsible for any legal action taken against the *Eaton Journal* by cause of his/her contribution.

The Eaton Journal of Archival Research in Science Fiction will not review article submissions that are under consideration elsewhere or that have been published previously.

FORMATTING GUIDELINES: When submitting an article to the Eaton Journal, please format it according to the following guidelines:

1. Submission must be in MS Word .doc file format.

2. Submissions should be between 5,000-12,000 words.

3. For the text itself: margins at 1", double spaced, font size 12 pt. or smaller.

4. Submissions must use the most recent MLA Style for all documentation.

5. Images and other embedded media should be placed in-text throughout the submission, not located together at the end. All images and figures should be properly captioned according to most recent MLA style. Authors are responsible for securing rights to all images and figures used within their submission. Authors must produce evidence that these rights have been obtained before an image or figure will be published.

6. Submissions must include Notes and Works Cited at the end as regular text. In other words, please do NOT use the "automatic" footnote/endnote function on your word processor to generate these. They sometimes tend to disappear when traveling through cyberspace or when the document is converted. For matters of writing style with respect to endnotes, works cited, and references in running text, contributors should follow the style of the MLA Style Manual, 1999, or newer. Precise information on the following must be provided. For books: the place of publication, publisher, date, page numbers for quoted or paraphrased passages, and (for articles in anthologies) inclusive page numbers. If the edition cited is a later edition, provide also the date of the first edition. For articles in periodicals: volume number or (if there is no volume number) whole number, date of issue cited, page numbers for quoted or paraphrased passages, and inclusive page numbers.

7. In order to ensure blind readings from the Editorial Committee and Editorial Board, authors must remove any identifying information from the content of the submission and from the document's 'properties'.

8. On a separate document, include your name and your postal and e-mail addresses, the title of your essay, and a brief abstract of its contents (3-5 sentences).

The Science Fiction Research Association is the oldest professional organization for the study of science fiction and fantasy literature and film. Founded in 1970, the SFRA was organized to improve classroom teaching; to encourage and assist scholarship; and to evaluate and publicize new books and magazines dealing with fantastic literature and film, teaching methods and materials, and allied media performances. Among the membership are people from many countries—students, teachers, professors, librar- ians, futurologists, readers, authors, booksellers, editors, publishers, archivists, and scholars in many disciplines. Academic affilia- tion is not a requirement for membership. Visit the SFRA Website at http://www.sfra.org. For a membership application, contact the SFRA Treasurer or see the Website.

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