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"There Will Be War!": Future War Fantasies and Militaristic Science Fiction in the 1980s[1]

> War can never break free from the magical spectacle.—Paul Virilio (5).

Dear Friend:

There is a line between science and science fiction. I know. I've written on both sides of the line for forty-seven years.

But I'm terribly afraid that Ronald Reagan doesn't know where that line is. And his confusion could cost us billions of dollars.

Or it could cost us our lives.

*Ronald Reagan is having a love affair with a fantastic scheme called *STAR WARS*....—Isaac Asimov.*[2]

Science Fiction and Contemporary War. That line between science and science fiction that the late Isaac Asimov drew in a 1980s fund-raising letter for Americans for Democratic Action has never been totally clear. Today, as the military researches everything from death rays and force fields to Zen and ESP looking for military applications (cf. Gray 1989), and as automated high-tech weapons proliferate promising, though not always delivering, easy victories in computerized wars, that line certainly isn't getting any clearer.

As long as tales have been told, there have probably been pro-war and anti-war stories. That has certainly been the case with sf and its precursors. Early future-war fantasies and stories such as Mary Shelley's *The Last Man* were based on the realization that, thanks to capitalist development and scientific progress, war could now destroy humanity (Franklin 1986, 118). Apocalyptic fears and fantasies, marginalized in Western Culture since the Middle Ages, returned with a vengeance, especially around war, in early proto-sf (117). This became clear in the 19th century when some proto-sf writers, joining in a discourse that scientists and inventors were also promulgating, argued that new scientific weapons would make war obsolete, either through world government, general disarmament, or *Pax Americana* (cf. Franklin 1988). For many years this remained one of the dominant myths of future war writing, along with rearm-or-die cautionary stories (cf. Clarke). But since the Vietnam War, which became a major topic for sf writers (cf. Franklin 1990), there have been several important developments in the relationship of sf and war. Three of these seem particularly significant.

First, the-long standing cooperation between some sf writers and the military has deepened considerably. Second, the prevalent theme of the superweapon offering universal peace (cf. Franklin 1988) has been superseded in the majority of pro-war stories by a more basic claim that war is a necessary aspect of human nature and/or manhood, that it is natural and inevitable, and that humans will need to fight nasty aliens someday besides. While this view has a long history (cf. Clarke) it has now become central to the burgeoning subgenre of future-war sf. Finally, much pro-war sf now focuses around the same metaphors and concepts that preoccupy the command and planning leadership of the US military itself and that shape the way it conceives of postmodern war.[3] This is especially true of such contemporary military tropes as "information is the most important force multiplier," "new technology is the decisive edge in battle," and "there is a necessity for cybernetically connected man-machine weapon systems—cyborg soldiers."

There has been an intimate relationship between technological fantasies and American military culture and policy from the very beginnings of the Republic. Early in US history this was exemplified in the plans and dreams of inventors such as Fulton and then later Edison, but it was also present in popular culture as pulp future war fantasies, comics, and articles in magazines and newspapers on the impact of new technologies (steam, electrical, and nuclear) and weapons (torpedoes, machine guns, and air planes) (cf. Franklin 1988 and Clarke). More recently, as sf became a distinct literature and subculture, many important writers continued this tradition of speculative military futurology, reprising the common theme of inventors and popularizers alike—that modern technoscience would lead to an end of war because war would become too horrible.

War itself has entered a crisis because technoscience has made war so horrific that it is a threat to human survival itself and therefore is profoundly nonsensical.[4] In response to this danger, a significant group of sf authors have been writing from Robert Heinlein's implicit premise[5] that scientific progress will not end war, although it may displace it in time or space. War, in their view, remains natural—a necessary part of being human and of being intelligent, and, in fact, of life.[6] But it is fought out in other times, other dimensions, or, most commonly, on the Moon, on Mars, in the asteroid belt, or beyond the Solar System. Still, the fundamental given is that no matter how distant the future, "There Will be War!"[7] So far, sf has proven to be pretty good futurology, or is it a case of self-fulfilling prophesies?

Not only has science fiction predicted many of the recent changes in war, there is a strong argument that it has influenced them to some extent. Even more clearly, militaristic science fiction and military policy coexist in the same discourse system to a surprising degree. A look at the articles on US Defense Department futurology listed below in the bibliography (Peters, Skantze, Timmerman, US Government 1983, 1986, 1987a and 1987b) will show this. They are sf as policy.

Throughout history war has been a pretty conservative institution. Traditions were wed to technologies and remained stable for tens and hundreds of years. But in the last few centuries this has changed. The cavalry died, air forces were born, and continual technological innovation wasn't just accepted, it was deemed a necessity. New weapons are being created all the time, and they have provoked the creation of new tactics, the staking out of new battlefields, and the elaboration of new strategies; all of which in turn require the development of yet more new weapons. Imagination is now the crucial military resource.

This is certainly not an argument that sf alone *causes* these weapons to be developed and used; contemporary war is obscenely over-determined. Yet, war is a social construction all the same, and at least this one subsection[8] of sf does play a significant role in this process (see Elkins), especially in

validating the institutionalization of what the military historian Martin Van Creveld has called "the invention of invention."

How speculation becomes policy has been examined in some of the work of H. Bruce Franklin. He has written a remarkable account of the role of fantasies in the quest for superweapons by the United States, *War Stars: The Superweapon and the American Imagination.* To quote from his introduction:

To create the objects that menace our existence, some people first had to imagine them. Then to build these weapons, a much larger number of people had to imagine consequent scenarios—a resulting future—that seemed desirable. Thus our actual superweapons originated in their imagined history, which forms a crucial part of our culture. (4)

Franklin traces how American dreams of superweapons leading to peace go back at least as far as the inventor of the steamship, Robert Fulton, who claimed that his inventions would make war obsolete. Even though his ships and mines and torpedoes didn't end war, the illusion that scientific progress would inevitably lead to peace remained a strong part of US technoscientific discourse. A century after Fulton, Thomas Edison was preaching the same gospel. In 1915, as machine guns were cutting down hundreds of thousands of soldiers in Europe, he proclaimed,

The war of the future...will be a war in which machines, not soldiers fight...the new soldier will not be a soldier, but a machinist; he will not shed his blood, but will perspire in the factory of death at the battle line. (54)

Seven years later Edison concluded that the "way to make war impossible is for the nations to go on experimenting, and to keep up to date with their inventions, so that war will be unthinkable, and therefore impossible" (54).

As inaccurate as that particular prediction was, it does seem that the imaginings of Edison were half-right at least in many horrific details, which leads to the frightening question, "what imaginings of today are shaping the wars of tomorrow?" But before it can be answered, the long-standing relationship between fiction and modern war should be briefly reviewed because it shows how sf's current relationship is a potent variation of a venerable tradition.

Modern War and Various Fictions. While most military theorists have argued from history, a number have also used hypothetical battles to illustrate their points, as did the first theoretician of modern war, Niccolo Machiavelli. A fictional battle was the central argument in his *Art of War,* a trick that was intermittently copied thereafter, although arguing from the history of real battles remained predominant. In 1930, another Italian, the theorist of air power Guilio Douhet, described a future war between the Germans and France /Belgium in his *The War of 19—,* which the Germans win because of, surprise, their superior air power. More recently, the retired British General Sir John Hackett has published several accounts of World War III to advance his hyper-armament political agenda. They are cheerfully entitled *The Third World War: August 1985,* and *The Third World War: The Untold Story.*[9]

Such thinking is institutionalized in most militaries, including the US. War gaming and scenario construction, crucial parts of US military practice for over a hundred years, are actually works of military fiction, and when they involve untried weapons, of sf (cf. Allen). Still, while military theorists have long

used fiction (including sf) to illustrate or even to plan their strategies, the reverse process that is now also taking place—sf influencing military developments—is a more recent phenomenon.

Sometimes this influence has been indirect. In 1898, after reading H.G. Wells's *War of the Worlds,* rocket pioneer Robert Goddard dedicated his life to finding a way of flying to Mars, and he started the long development process that led to effective modern military rockets. A number of other aerospace inventors were similarly inspired by Wells and others.[10] At other times the relationship was even more direct. Hermann Oberth, a rocket inventor, worked on special rocket effects for Fritz Lang's sf movie, *Woman on the Moon,* in order to get money for real rocket experiments. In 1932, three years after the film's release, the German authorities seized the film "on the grounds that it was *too close to reality"* (Virilio 58, his italics).

Wells also wrote a book called *The World Set Free* right before World War I that predicted that artificial radioactivity would be produced in 1933 (it was, by Irene and Frederic Joliot-Curie), and that a nuclear war would break out in 1956. By 1932 the Hungarian physicist Leo Szilard had read the book, and it had started him thinking. Within a few years he had developed the laws governing chain reactions which made nuclear weapons possible. Wells's novel continued to influence him. When he heard about the splitting of the uranium atom in 1938, he figured out how to set off a chain reaction and thus make a nuclear explosion. He later wrote, "all the things which H.G. Wells predicted appeared suddenly real to me" (Franklin 1988, 132-38, quoting Szilard).

Sf thinking continued to keep pace with military research. In 1944 the FBI investigated John W. Campbell's *Astounding Science-Fiction* magazine to find out why it had published a short story, "Deadline" by Cleve Cartmill, which had a detailed description of an atomic bomb (Schmidt 6-7, cf Berger). Unfortunately, it was just a case of an idea whose time had come. But this wasn't sf's only connection to World War II by any means.

According to Robert Heinlein, Campbell was also working around that time as a technical writer for one of the war's most important top-secret weapons—radar—in the Empire State Building under the aegis of the University of California along with his assistant editor, Jay Stanton, and the writer Theodore Sturgeon.[11] Heinlein goes on to say that he recruited many other famous or soon-to-be famous writers, including George O. Smith, Murray Leinster (Will F. Jenkins), L. Ron Hubbard, L. Sprague de Camp, and Fletcher Pratt, to work on a special research project based at the Philadelphia Naval Yard to analyze defenses against Kamikaze attacks (Heinlein 1986).

L. Sprague de Camp remembers it somewhat differently. First, he makes it clear that Heinlein was not responsible for bringing all these writers to Philadelphia. While de Camp and Asimov were brought to the Naval Air Materials Center of the Naval Air Experimental Station at Heinlein's suggestion by its director (Heinlein's old Annapolis classmate, Lt. Cdr. A.B. Scoles), the others were in different assignments, e.g., Hubbard was in the merchant marine, Pratt was a war correspondent, and George O. Smith worked in another lab on the proximity fuse. And de Camp himself did not work on any Kamikaze report despite Heinlein's recollection. Instead he was in charge of the Cold Room where his "projects included the F-6-F fighter trim controls, tests on hydraulic valves for aircraft, windshield de-icers, and ultra-violet resistance to paint samples." Meanwhile, de Camp recalls, Asimov "plugged away in the chemical laboratory." De Camp does remember many weekends with Heinlein and the other writers and notes that he never did know what Heinlein was working on (personal communication, Oct 1, 1991).

Heinlein remembered working on three projects during this period and mentions radar and the Kamikaze study (1986, 10-11). His wife Virginia, who met her future husband while at Philadelphia to work in the engineering section of the Naval Air Experimental Station, adds that Heinlein also did research on a "replacement for Plexiglass...for faster-than-sound aircraft" but that she wasn't familiar with most of his work because of secrecy rules, which they kept their whole lives (personal communication, Jan 16, 1993).

While Heinlein's account of his Kamikaze work is not yet corroborated in many of its details, it does stand general scrutiny. The Philadelphia Naval Air Material Center was the chief agency for research of the Navy's Bureau of Aeronautics (OPNAV-16-V); it collected the data on Kamikaze attacks that was then routed to the Office of Naval Intelligence in Washington (OPNAV-23).[12] Virginia Heinlein notes that Heinlein's good friend, Cal Laning, another Annapolis classmate, might well have served in Naval Intelligence during the war and that it "is quite possible that Robert edited (or possibly rewrote) some of those reports.... Certainly the anti-missiles and automating the systems would indicate that the ideas originated with Robert" (Ibid).

Cdr. Laning (later Captain), according to the *Annapolis Directory,* served on submarines and became a communications expert. The Operations Research Group that produced the Kamikaze reports was founded in September 1943 with at least two submarine/communications experts.[13] During the period in question he was, according to Virginia Heinlein's recollection, meeting with Heinlein regularly. It is also clear that there were no other Kamikaze research projects.[14] When all of this is considered, I accept Heinlein's basic claim that, along with several other sf writers, but not de Camp, he worked on Kamikaze counter-measures.

The reports Heinlein probably "brainstormed" on with his friends are quite interesting. While based for the most part on combat accounts sent in from the Pacific, there are several places where the type of grounded imaginings of good sf appear. One of the first reports speculates at some length on the possible uses of rockets in knocking down suicide planes. A later analysis discusses other new technologies, including airborne warning radar, airborne searchlights, radar and radio directed night fighters, electronics to track kamikaze radar emissions, and other radar and airplane improvements. The final report covers, with considerable prescience, various ship defense technologies for "future" wars, including predictions about the importance of atomic weapons, guided missiles, supersonic planes, and land-based cruise missiles. It advocates developing anti-aircraft missiles and conventional anti-aircraft guns with greater range, rate, velocity, and lethality and even "fire control with fully automatic features, great accuracy, [and] quick solution time," which sounds very much like the current Phalanx automatic machine gun systems.[15]

But in most respects the specific details of the cooperation between the sf writers and the military in Philadelphia are not as important as the general outlines. Clearly, by the 1940s, the discourse universes of military R&D experts and technically literate and/or oriented sf writers had become one. This use of sf writers as military analysts may have been the first case, but it was not the last. It is altogether fitting that it was organized by Robert Heinlein, since several of his stories have been seminal in establishing the main themes and approaches of military sf (Franklin 1980), and also in predicting the direction military policies would go. His novel *Starship Troopers* (1959) lays out the basic aspects of the cyborg infantryman in terms that have hardly changed in military ideals or sf since, while *Glory Road* (1963) was one of the first fully realized "there should be war" fantasies.[16]

From World War II to today, military technologists have remained fascinated with sf while many sf writers have remained enamored with war. At times this relationship has become controversial. During the Vietnam War there was also a great deal of debate about the link between sf and military policy, since many sf writers were very much against the war. H. Bruce Franklin's article, "The Vietnam War as American Sf and Fantasy," is an excellent account of this period.

Today, on the cutting, "hairier" edges of computer science and other innovative disciplines, including parts of the military subculture,[17] sf plays a major role in defining what is possible and, just as important, what is interesting. Sf, almost always of the technically detailed, scientifically plausible, and technoscience-obsessed "hard" variety, is the fantasy literature of choice among computer hackers, air force technicians, and military researchers as numerous books and interviews attest (e.g., Broad; Gray forthcoming). It is also an integral part of real policy-making as well.

Sf Writers and Recent Military Futurology.In 1985 at Wright-Patterson Air Force Base, a group of science fiction writers attended a conference to plan for future war with a number of military personnel and futurists. It was called "Futurist II" and was a successor to a top-secret conference called "Futurist I."[18] Sf writer James Gunn, who attended, comments that:

The process itself was interesting and not simply devoted to the consideration of military weapons of the future or war but the development, as well, of ways to make peace and the causes of war, and scenarios in which various desirable and undesirable outcomes might occur. (Personal communication, March 8, 1989)

Joe Haldeman was impressed by the meeting as well. "We saw the future there...." he wrote in the introduction to one sf war anthology, *Space-Fighters* (1). He was also struck by how similar the writers were to the soldiers.

Most of the people were professional futurists or Air Force researchers and pilots, but they threw in a few science fiction writers to give the thing a pleasant nut-like flavor. (I hope nobody would be surprised to learn that the futurists were rather stodgy and conservative, and the Air Force people gratifyingly freewheeling-to-gonzo.) (5)

Haldeman adds that the implications for peace of high-tech war are as profound as for war. He sees a "future...with individual combat becoming obsolete *a fortori* because of the relentless march of technology" (5).[19]

But some sf authors take quite a different tack. Many of them have serious links to the military, either attending conferences (e.g., "Futurist II" or the January 1986 conference on small arms held by the Army Joint Services Small Arms Program[20]) or as "outside" experts. This certainly does not include all the participants or invitees to these conferences. James Gunn remarks, "My memory of the meeting suggests...that the writers provided a humanizing influence and directed the discussions toward alternatives to warfare—ways of preventing war by understanding the causes and dealing with them" (personal communication March 8, 1989).

Another "outsider" was Susan Shwartz. She was critical of an experiment in which a computer chip was implanted in a dog's brain as part of a research program aimed at doing the same to human pilots. A participating F-15 pilot "had a fit on the subject" but, as she notes, she was the one labeled

"squeamish." The conference definitely influenced her work, especially her short story about cyborg clones linked together through computers in fighting teams, "Survivor Guilt," and her related novel, *Heritage of Flight.* Through this work she tries to explore the "psychological implications" she found "worse than disturbing," as well as the important question, "when does following orders mean committing unlawful acts?" (personal communication, May 23, 1989).

But there are certainly numerous militaristic writers. One part of this group pens techno-thrillers set in the near future. These are particularly influential with the military itself. For example, Vice Admiral William Ramsey, while the Deputy Commander-in-Chief of the US Space Command and Vice Commander of the North American Aerospace Defense Command, wrote a rave for Tom Clancy's novels in the *Proceedings—US Naval Institute*: "I had the feeling that Clancy had been a program manager in the SDI Organization." The admiral added, "Clancy's discussions of early-warning satellites, infrared sensors, laser technology, facilities, weapons, and SDI organization are frighteningly precise." His conclusion is that the book should be read by the armed services committees in Congress "before voting for SDI funding" and should be used by the CIA "as a training manual for field operations" (181).

While he was Secretary of Defense, Casper Weinberger wrote a laudatory review of Clancy's *Patriot Games* for the *Wall Street Journal,* which was reprinted in the *Friday Review of Defense Literature of the Pentagon* (Derian 302). During the 1988 presidential campaign, Vice-Presidential candidate Dan Quayle cited Clancy's *Red Storm Rising,* about a mid-intensity conflict with the Soviet Union, to back up his support for the development of anti-satellite missiles that could be fired from jet fighters. As James William Gibson has remarked, "The point isn't that Quayle necessarily wanted to fight World War III, but rather that he saw *Red Storm Rising* as an authoritative text about military policy rather than a fairy tale about powerful mythic warriors and magic weapons" (41).

Gibson notes that there are dozens of these books in circulation. An important aspect of the techno-thriller authors is that, like Clancy, they can become instant experts on foreign policy and military affairs. They also chart the changing tastes in US enemies pretty accurately. As the communist threat becomes less credible in the real world, Drug Lords, Nationalists (IRA and ETA especially), and Arab Terrorists have replaced Soviets as the main opponents.

Gibson argues that, despite the thrilling technoscience, the appeal of these "romances for men" is the same as that of the more traditional "action-adventure" pulp novels—the glorification of war:

They affirm male power as warriors in ways that are accessible to middle-class men. Rambo and his paramilitary brothers live lives far outside the system and depend upon their own bodies and personal weapons for power. In contrast, techno-thriller heroes are educated professionals; they fight with their minds and with the most advanced technology science can develop. Yet their victories are as much male victories as are Rambo's. The sex-and-death dances found in the techno-thriller are only slightly more sedate than the pornographic violence that permeates men's "action-adventure" pulp novels. (43)

The romance in these books is between men and their machines, and between men and men. It is all about giving birth, either to new weapons, or to new warriors. Gibson emphasizes how the stories are about good fathers and bad fathers and their role in *"transforming boys into men through warfare"* (44, his italics). These books are more focused on current politics and near-future war than the work of militaristic pure-sf writers, but the themes are remarkably similar.

"There Will Be War!" In a deluge of future-war sf books since 1980 that includes at least eight free-standing anthologies and seven anthology-series, over 30 volumes altogether, the themes of male bonding, fatherhood, and especially the inevitability of war are reiterated again and again. The US military's recent futures studies have names like "Forecast 2000," "Army 2000," and "Air Land Battle 2000." Two of the sf anthologies are called *Firefight 2000* and *Body Armor 2000.* There are also *Super-Tanks* and *Space-Fighters,* inspired by the US Army's Autonomous Land Vehicle (ALV) and the Air Force's Pilot's Associate program to build computer co-pilots for fighter-bombers and helicopters. Former President Reagan's "Star Wars" program probably inspired the naming of *Space Wars* and *Time Wars*.

But it is in the anthology-series that the message comes through most clearly. Through 1991, the most extensive was THERE WILL BE WAR, of at least nine volumes. Others include THE FUTURE AT WAR, IMPERIAL STARS, THE MAN-KZIN WARS, THE FLEET, and WAR WORLD. There is also THE WAR YEARS series in which David Drake was asked to "start a war" which other sf writers then would join in describing (Fawcett, cover). Jerry Pournelle is the author of a series glorifying the mercenaries of Falkenberg's Legion, and David Drake has HAMMER'S SLAMMERS, and there are other individual volumes and single-author series by writers *Booklist* has labeled "Military Futurists." which consist of novels and short-story collections. Most of these fall into the Heinlein tradition of pure fiction, but not all.

What makes THERE WILL BE WAR, THE FUTURE AT WAR, and *Firefight 2000* particularly interesting is that they are a mixture of classic sf war stories, inferior newer ones, and nonfiction articles defending the Strategic Defense Initiative (SDI or Star Wars), arguing for other high-tech weapons, and sometimes just attacking the left.[21] For example, Vol. 2 of THERE WILL BE WAR, *Men of War,* has an article by Doan Van Toai, "...and Baby Makes Three," reprinted from the *National Review,* and Vol. 7, *Call to Battle,* reprints a *Commentary* article by Peter Collier and David Horowitz, "Another 'Low Dishonest Decade' on the Left" (100-21).

While a few of the authors who have written for these books are not coming from far right-field politically,[22] it is clear that many of them are committed to an extremely militaristic view of the present and the future. This is made abundantly clear from their explicit statements in their nonfiction, and from the "lessons" laid out unsubtly in their sf stories. Notable among them are Jerry Pournelle and Dean Ing, who have attended military conferences, and Poul Anderson and Reginald Bretnor who have not (as far as I can tell). Many retired military officers, military analysts, and military engineers are among the lesser-known writers.

In many ways Jerry Eugene Pournelle is the central figure today. Pournelle's first book, co-authored with Stefan Possony and Francis Kane, was *The Strategy of Technology* (1970), which advocated a policy they labeled "Technological War." It called on the US military to develop high-technology weapons, including a strategic defense system. "Technology is America's manifest destiny" they claimed (xxxii). This was the culmination of Pournelle's career as a military scientist, which included serving as the general editor of the top-secret study, "Project 75," on strategic doctrine and missile technology. Later, he was the principal investigator for the report "Stability and Strategic Doctrine," conducted for Headquarters, United States Air Force, and presented to the Air Council. Pournelle started out as an aviation psychologist and systems engineer for Boeing, became the manager of special studies for Aerospace Corp., and then a proposal manager for Rockwell International before becoming a Professor of Political Science at Pepperdine University and, finally, an openly ideological sf writer and editor, as his Falkenberg stories illustrate clearly.

In *The Mercenary* (1977), Col. Falkenberg organizes the slaughter of a stadium full of protesters. In *Janissaries* (1979), set in the far future, the enemy are "Cuban advisers and Nationalist Front native Marxists" (back cover), Pournelle also uses these stories to attack environmentalists in the form of "ecosymps" who oppose science, nuclear power, and progress in general (Disch 655). He is editor or co-editor of THERE WILL BE WAR and IMPERIAL STARS, contributes to many of the other war anthologies, and has served as director for "organizational support" for the Heritage Foundation's High Frontier project, which was campaigning for SDI.[23]

In his introduction to THERE WILL BE WAR, Vol. 7, *Call to Battle,* Pournelle argues that war is inevitable. "If [today] there are no formal wars, there is no shortage of combat and death; nor is the situation likely to change." "We are blind and our enemies are arming." He quotes "...a bitter truth...'if you would have peace prepare for war,'" and Herman Khan's "if you would have peace, understand war" (1-6).[24]

Stefan Possony, whose article "Who's in Charge Here?" appears in *Call to Battle* (186-96), has a similar point of view. In his introduction to the article, Pournelle charts Possony's career in espionage and academia. According to Pournelle, Possony "has been an intelligence officer and strategy analyst since he obtained his Ph.D. from the University of Vienna in 1933." Then he fled to the US "where he worked in the Pentagon during and after World War II." Next, he "became a professor of political science at Georgetown University, where one of his graduate student was Francis Kane." Finally, "Possony later moved to Stanford University where he remains a Senior Fellow Emeritus of the Hoover Institution on War, Revolution, and Peace" (185). All this to give credibility to an article which is about the "real enemy" in the USSR. In a stunningly inaccurate claim, Possony asserts that "only a true Stalinist [can] ascend to the post of General Secretary" in the Soviet Union (195).

Rigid images of the Soviet Union were an integral part of the Pournelle-Possony outlook. In IMPERIAL STARS, Vol. 1, *The Stars at War,* which is dedicated to Possony, Pournelle claims that the Helsinki Agreement "pretty well ended" any hope the Baltic states had of regaining their independence and that "their incorporation into the Soviet Empire is well nigh complete" (1). This just a few years before they achieved independence. But to justify itself the war establishment requires a ferociously evil and very powerful adversary, so that is how the Soviets were portrayed. Even so, as Pournelle makes clear in his introduction to this series, he has a great deal of respect for empires in general and he approvingly cites Herman Kahn's quip that "the natural state of mankind is empire, and the natural size of an empire is the Earth" (4).

In the series Pournelle and Possony have numerous articles to defend militarizing space. Pournelle also is publishing a revised version of *The Strategy of Technology,* chapter by chapter, as it is being rewritten with the help of grants from the L-5[25] and Vaugn foundations.

The L-5 Society represents another point where sf and public policy share the same discourse space. During the late 1980s there was a ferocious battle within the L-5 Society over whether or not to endorse SDI. The sf publisher Jim Baen and sf writers like Ben Bova and Jerry Pournelle, all members of the board of governors, were among those supporting a pro-SDI stand while many local chapters (including Seattle and Vancouver) and individuals were against it. Even though full-page ads for Baen Books were the most conspicuous support of the L-5 magazine, and despite the support of most L-5 members for SDI, the organization never took a formal position. Phil Chapman, President of L-5 in 1984, probably expressed their confusion best when he remarked in an editorial supporting continued debate, "in my considered

opinion, the SDI can be the salvation of civilization, although it could also trigger the holocaust" (Chapman 4; see also Pournelle, ed. 1984, 11-13).

Pournelle continues to write non-fiction, including a pro-Star Wars book with Dean Ing, *Mutual Assured Survival,* for which then President Reagan signed a cover blurb that says in part:

You and your associates deserve high praise for addressing with verve and vision the challenges to peace and to our national security. Efforts like this can assist us in achieving a safer and more stable future for this country, for our allies, and, indeed, for all mankind. Thank you, and God bless you.

Thomas Disch points out in an article in *The Nation* that these "associates" are Pournelle's fellow members in the pro-Star Wars Citizens Advisory Panel on National Space Policy, including Dean Ing, Larry Niven, Heinlein (until he died), and James Baen of Baen Books, who is Pournelle's editor at Simon & Schuster (655).

Dean Ing also used to be an engineer, for Aerojet General for five years and Lockheed for six. In his book *Firefight 2000,* there's an account of the US Army's 1986 Joint Services Small Arms Program conference on hand-held weapons of the future, and several nonfiction articles about space flight, the L-5 society ("The Future of Flight: Comes the Revolution" with Dr. Leik Myrabo), and the possibilities of autonomous land vehicles ("Vehicles for Future Wars"). Baen Books published *Firefight 2000* as well as his nonfiction survivalist tract, *The Chernobyl Syndrome*, which includes "Fleeing the Firestorm: Escape Tactics for City-Dwellers" and "How to Make a Getaway Airplane." Ing is co-author with Larry Niven and Poul Anderson of the Baen series, THE MAN-KZIN WARS, which is about an intergalactic conflict between humans and a feline race of warriors.

Poul Anderson did not attend the military's conferences and wasn't ever a paid technical expert for the war movement, but he clearly shares the assumption that war is a necessity. In his introduction to *Space Wars*, he writes that "Man is a violent animal" and that "We must face the fact that, evil though it be, war is not the ultimate evil.... Thus neither you nor I will live long enough to see the end of war.... There is no use in protesting the militarization of space" and finally that "proposed systems such as High Frontier...may quite possibly much reduce the present threat to the globe..." (ix-x).

Reginald Bretnor has some very interesting articles in Pournelle's series. In THERE WILL BE WAR, Vol. 6, *Guns of Darkness,* there is "Decisive Warfare: Retrospect and Prospect" (264-86), an update of his 1969 technophile book, *Decisive Warfare.* In Vol. 7, *Call to Battle!,* there is "Specialization in Warfare" (249-58) which focuses on the role of cybernetics and speculates about future weapons that "think." He ends with the fear-filled comment:

When we think about the special weapons, the special enabling devices, the special warriors of the future, we must always try to foresee the unexpected, and hope that our defense authorities and scientists can foresee and develop the unexpected, and try not to be caught too short if the unexpected happens. (258)

Bretnor has also edited a series of his own, THE FUTURE AT WAR, for Baen Books. "There will be war..." says the first blurb on the back cover. "History's only sure thing: The Future at War," it claims on the front. In Vol. 2, *The Spear of Mars,* Bretnor's introduction is about the possibility of war with aliens, a theme echoed by L.J. Stecher Jr[26] in his "Invasions of Earth" (47-62). Even wilder is Joseph Goodavage's

nonfiction essay "UFOs and Stranger Intruders" (63-76), which makes the claim that, since humans are currently making tiny super-intelligent computers (but they aren't!), UFOs may well be alien computers visiting us.

Computers specifically, and cybernetics and other information sciences in general, play a central role in such narratives. Carl Sagan has an article in this collection, "Man: A Transitional Animal" (124-31). It also uses cybernetics as a key metaphor; in this case the prediction is a future of cybernetic organisms, or cyborgs.

> The Earth and the Sun have life expectancies of many more billions of years. The future development of man will likely be a cooperative arrangement among controlled biological evolution, genetic engineering, and an intimate partnership between organisms and intelligent machines. But no one is in a position to make accurate predictions of this future evolution. All that is clear is that we cannot remain static. (127-28)

He goes on to claim that "In a very real sense human beings are machines... information coded in genetic material" bent on reproducing itself. At least he ends with an argument for "A reverence for all life...."

This volume also includes a detailed pro-war polemic by the military analyst T.R. Fehrenbach,[27] "The Ultimate Weapon" (210-29). He quotes Gen. Matthew Ridgway that, "there is still one ultimate weapon...man himself." He calls for war forever. "There is little doubt there will be future wars." But that's good because "war might be described as the rational act of a perhaps ultra-rational species." He states baldly that most barbaric cultures "lived with war joyously." There is a particularly interesting part in which he claims that the proliferation of sf novels about future human star empires with "vast wars" shows "the primordial human factor, the eternal resistance in the human breast to being subordinated to systems and techniques." He ends with:

> In the near future, the Asimovian prediction seems valid: what has happened will continue to happen, and some form of manageable conflict will go on. War is, after all, as Reginald Bretnor wrote, something that men do.
>
> They will *find* a way to do it. (210-29, his emphasis)

Dreaming of wars is something men do *first.*

Some Dynamics of Postmodern War. What does this strange nexus of science fiction and military futures planning tell us about postmodern war and what might come after it? One clear element is the domination of information metaphors and especially those idea(l)s that are most prevalent in military discourse. The centrality of computers to the sf discussed here is only matched by the military's actual fascination and faith in these machines. It is not a simple infatuation; even liberals such as Carl Sagan put information at the center of life itself. By defining, in the article quoted above, evolution as accumulated information, he shows just how far this leitmotiv can be taken. Information is the dominant metaphor of postmodernity.

In military sf, artificial intelligences are a staple. As smart tanks, planes, and spaceships, they buzz through all the military futurist writing, often accompanied by general-purpose robots or even warbots.

A more embodied infatuation with information is the idea of cyborgs. In Dean Ing's collection, *Firefight 2000,* there is an ad for the work of Martin Caidin, also a Baen writer. He's the author of *Cyborg,* the novel that became the television series, *The Six Million Dollar Man.* The ad copy proclaims: "He's Opinionated . . . He's Dynamic . . . He's Larger than Life," and then goes on to list his accomplishments (best selling novelist, pilot *extraordinaire*, and expert on America's space program). The text escalates yet again to proclaim, in italics, *"He's also a prophet of technological change."* The ad calms down enough to note that his "ability to predict future trends verges on the psychic" (259, emphasis in original).

The use of "prophet" here is not innocent. There is a valorization and mythification that is focused and systematic. An important thing to recall about prophets is that while they predict the future, their real functions are always carried out in the present. For the military futurist prophets the main project is to save war. Both military futurology itself and the militaristic science fiction that proclaims over and over *"There will be war!"* demonstrate how tenaciously parts of our culture will cling to the war/warrior traditions even though they may now threaten much more than they protect.

Another crucial prophesy which is closely related to "the future at war" is that humans must leave the planet. "We need 'space to grow,'" an ad for the L-5 society proclaims in the midst of Susan Shwartz's story about interlinked warrior cyborgs. Thomas Disch has this to say about the central role of sf writers in supporting space exploration:

For many science fiction writers and fans the perpetuation of a manned space program stands as the central tenet of their faith in mankind's destiny as explorer and colonizer of outer space ... SF writers have a legitimate claim to be considered not only the prophets of that faith but the builders of the church. If poets are the world's unacknowledged legislators, SF writers have been its unacknowledged civil and mechanical engineers, doodling their designs for rocket ships and spacesuits on that most plastic medium, the adolescent mind. (652)

As Disch points out, the sf desire for space is often turned into political support for the militarization of space as well. Pournelle, for example, has made the habitation of space as central a political goal as the continuation of the military.[28]

In many crucial ways, this military futurism is a case study of what Zoë Sofia (1983, 1984, 1987), a feminist philosopher from Australia, has termed "The Big Science Worldview." Some of its key components may be described as follows:

—"Epistemophilia," the "obsessive quest for knowledge." It is certainly a common theme in these stories, and it is the basic passion of all "hard" science fiction, and of course, of all science. While this passion for knowledge is not necessarily a bad thing, as with all loves it can go wildly out of control.

—"Upwards displacement," most clearly seen in the extraterrestrial longings of the military futures movement, as well as their boundless faith in "high" technology. The "place" of sf is always displaced, into space especially, or into time, and sometimes into another dimension. It is significant that so many sf realities are war worlds, while the postmodern battlespace in real war, in imaginary war, and in future imagined wars is always as deadly/dead as deep space.

—"Half-lives" are desirable. Types of half-lives include inorganic intelligence (especially artificial), cybernetic organisms, aliens and other semi-living subjects such as ghosts. Cyborgs are central here (cf Levidow and Robins). Vol. 1 of Pournelle's WAR WORLD ends with a future history, "Bar-Lev, A Traveler's Tales of Twenty Worlds," which describes how the Saurons, a "warrior-eugenicist" race of the war world (called "Haven" as in a haven for war), had bred cyborgs. "Ultimately the Cyborgs have come to dominate their own people—which we must hope will be their doom. The Cyborgs exist only to fight..." (366). It is fitting that the term "cyborg" was coined in a technical article on the development of man-machine systems in space, for the very possibility of cyborgs is predicated on militarized high technology. When Manfred Clynes first made the word, he defined the cyborg as a "self-regulating man-machine system" that would be integrated at the unconscious level (27). He thought cyborgs would make the best spacemen, which is still NASA policy. For Pournelle, as he weaves what he hopes are self-fulfilling prophesies, cyborgs are spacemen, but they are also the ultimate killer/soldiers.

—"Cosmology Recapitulates Erogeny" is a fancy way of saying that how people view the world reveals what they think erotic. In this light, military futurists, who believe mainly in technoscience and future war, have an erotics similar to that of the Italian Futurist art movement that wrote odes to the machine gun. F.T. Marinetti proclaimed in the *Futurist Manifesto:* "We will glorify war—the world's only hygiene—militarism, patriotism, the destructive gesture of freedom-bringers, beautiful ideas worth dying for and scorn for woman" (quoted in Lifton and Humphrey, 60). That this kind of libidinal economy is by definition patriarchal, and is often fascist, is discussed at length by a number of interesting people.[29]

—"Logospermatechnos" means that the mind breeds real brain children as myths and technologies. Pournelle says proudly of his WAR WORLD series, set in one of the "shared universes" where various sf authors write within an imagined reality, that it is "a universe I created."[30] He could make a universe, and so he chose to make one where war is fought eternally.

As mentioned in endnote 5, the great historian of militarism, Alfred Vagt, defines militarism as any military activity that does not contribute directly to the purpose of military forces—to prevent or win wars (12-17). Contemporary militarism often emphasizes something slightly different—the tendency of military institutions and their allies not only toward self-aggrandizement but also toward the promotion of war itself. Certainly, the work of the men cited here is militaristic in both senses.

Envoi. As this article has tried to demonstrate, there is an intimate intertwining of metaphors and careers among the future-war sf writers and the postmodern US military, and the motivation for this is partly ideological. There is a significant subculture around military futurology which cannot see any clear line between sf and real war. Such blurring does not make for sound military policy and it no doubt contributes to the incredible public misconceptions about international conflicts (Gray 1994). Star Wars, for example, long discredited on scientific grounds, limps along with a new name into the 21st century on a reduced budget of mere tens of billions of dollars a year because the inevitability of war is still beyond challenge in the decisive discourses. And as long as inevitable war remains an unexamined assumption there will always be some truth to it. For if people are sure that "There will be War!" then there will be, for history has shown that he who prepares for war, finds one.

But like any good story, the inevitability of war is really just an elaborate construction of images, characters, plot (history), and facts (created by non-human nature and/or by human technoscience). To be sure, the story has many authors and even more readers but there is always the opportunity to change the ending. Simply to discuss this pattern is to begin to challenge it, but the real change comes

from imagination most of all. As much great anti-war sf has demonstrated, new endings to old tales can be found by reworking old tropes (such as enemy) or through redefining key metaphors and themes. Recognizing ideologies, and the limits of thinking only in terms of ideology, is crucial for this. Ideologies predetermine endings, imagination generates new ones.[31] Perhaps technoscientific imagination is now the crucial military factor, perhaps not. But cultural imagination is certainly a necessity for peace. If we can't even imagine a peaceful world, how will we make one?

NOTES

1. I would like to thank my colleagues in the Cultural Studies of Science and Technology Research Group at the University of California at Santa Cruz for their assistance, and also the Oregon State University Center for the Humanities for a home and support during this article's revisions. Both of *SFS*'s anonymous reviewers offered very detailed and helpful comments on several successive drafts of this paper.

2. Isaac Asimov in a mass fund-raising letter sent out by Americans for Democratic Action in the late 1980s.

3. This term was originally used by Fredric Jameson when he labeled Vietnam the first postmodern war (1984, see also Gray 1994). Recently, many insightful observers have noted the incredible importance of high technology weapons, especially computers, to the practice of contemporary first-world armies and to the permanent military mobilization around the world that has existed since 1945. They have labeled this new type of war permanent war, technology war, high technology war, technological war, technowar, perfect war, imaginary war, computer war, war without end, Militarism USA, light war, cyberwar, high modern war, hypermodern war, and pure war. Though all these labels have something to recommend them, none does justice to the complexity and sweeping nature of the recent changes in war, which, significantly, also include the development of an appropriate-technology style of war (also called People's War or Guerrilla War) that can, under the right conditions, successfully counter computerized high-tech armies.

So why choose "postmodern" over the other labels? There seems to be two good reasons. First, "modern war" as a category is used by most military historians, who usually see it as having started in the 1500s and continued into the middle of the 20th century (i.e., World War II), when the logic and culture of modern war changed significantly. This new kind of war, while clearly related to modern war, is different enough to deserve the appellation "postmodern." This is precisely so since the single most important difference is the shift from modern war's quest for total war to postmodern limited wars, necessitated by nuclear and other super weapons. Second, even though "postmodern" is a very complex and contradictory term, and even though it is applied to various fields in wildly uneven ways temporally and intellectually, there is enough similarity between the different descriptions of specific postmodern phenomena and postmodernity in general to persuade me that there is something systematic happening in areas as diverse as art, literature, economics, philosophy, and war. For an extended discussion see Gray 1991 and Gray 1994.

4. As even a large number of military experts and veterans have argued. See Keegan 1976 and 1993; J. Glenn Gray, and the statements of numerous retired generals (including Hap Arnold, Omar Bradley,

Dwight Eisenhower, Lord Mountbatten, and Admiral Rickover), and such groups as Veterans 2000 and Generals for Nuclear Disarmament, quoted in Gray 1991.

5. Which is not to say that this was Heinlein's major premise or that he was a militarist, as some of his contemporary imitators clearly are. Heinlein's work was very complex whether one reads it as a "refusal of material actuality" (George Slusser, "Heinlein's Perpetual Motion Fur Farm," *SFS* 9:66,n9, #26, March 1982) or as a very successful ideological project (Franklin 1980). Heinlein's politics were also very complicated, something all of his critics have not conceded, and he certainly wasn't a "very representative American" as Franklin claimed (1980, 5; cf Mullen). Heinlein's mix of libertarian and patriotic impulses led to a philosophy that was not only anti-racist (see Fred Erisman, "Robert Heinlein's Case for Racial Tolerance, 1954-1956," *Extrapolation* 29:216-26, Fall 1988), anti-prison, anti-draft, and sex-positive but that was also pro-military and pro-space militarization. In an interview he once pointed out that two of his very different classics, *Starship Troopers* and *Stranger in a Strange Land,* had the same basic theme, "love and duty—and how they are related to the survival of our race" (Heinlein 1972, 76).

What is a militarist? It is not someone who supports having a military or making war, if necessary. The historian Alfred Vagt said that militarism is any military activity that did not contribute directly to the purpose of military forces—to prevent or win wars. Postulating that military virtues are civil values, arguing that democracy must be militarized in order to preserve it, describing war as man's highest activity, structuring the economy for war and only war, believing that war is inevitable and necessary, are all militaristic (Vagt 12-17). There is a further discussion of militarism at the very end of this paper.

6. Which is a very dubious assumption. The vast majority of people do not fight in wars, so it can hardly be termed inevitable "natural" human behavior any more than rape can be so termed just because some people rape. The sad reality that most (but certainly not all) cultures have taken part in wars is because it takes only one aggressor to have a war, or at least a massacre. War cultures inevitably spread like an out-of-control cancer. See especially Mansfield, Keegan 1993, Gray 1992, 1994, and forthcoming.

7. Of course there are many other views on war expressed in contemporary sf, including a very generous sampling of anti-war, even pacifist, writing. These writers also are dealing with the current crisis of war but their epigram might well be that "either war is obsolete, or humans are." The main focus of this essay, however, is on the latest generation of pro-war sf writers whose work has actually become part of contemporary war's discourse.

8. Sf is not monolithic but it is hard to know how to divide it, as Fredric Jameson (1987) and others have pointed out. Certainly the pro-war sf subculture is a very important part of the sf community. It is also an important ideology in sf and beyond (H.-J. Schulz, "Science Fiction and Ideology: Some Problems of Approach," *SFS* 14: 165-79, #42, July 1987). As such some may claim it is the ideologically dominant outlook in sf, but I would just say it is an important subideology. So what is sf? Genre? Culture? Community? Market? Ideology? In this article, just for the sake of argument, it is all of the above and all within a discourse system, of many subdiscourses, that is coextensive with Earth civilization.

9. The first book was actually co-authored with Air Chief Marshal Sir John Barraclogh, Sir Bernard Burrow, Brigadier Kenneth Hunt, Vice-Admiral Sir Alan McGeoch, Norman Macrae, and Major-General John Strawson and includes photos of World War III. The sequel was apparently just Hackett's work. By late 1991 the original had apparently sold over two million copies in 12 translations. Hackett's publishers (Sidgwick & Jackson) told Ian F. Clarke that in the 1990s most future war stories were shifting from

Europe to areas east of Suez, especially Japan and China. See the letter from Ian F. Clarke extracted in *Nuclear Texts & Contexts,* No. 7, Fall 1991, 10.

10. Elena Zheltova, "Cultural and Religious Themes Associated with the History of Flight," talk at the Smithsonian National Air and Space Museum, August 8, 1990.

11. See Heinlein's "Agape and Eros: The Art of Theodore Sturgeon," which is the introduction to Theodore Sturgeon's last novel, *Godbody* (1986). The story of Campbell, Stanton, and Sturgeon working at the Empire State building has not been completely confirmed but I'm inclined to believe it. First, because Virginia Heinlein remembers hearing the same thing at the time (personal communication, January 16, 1993). Second, Heinlein himself is both adamant ("No, I have not jumped my trolly..." [10]) and specific. And third, I have confirmed that the University of California had an early, and extensive, involvement with radar and radar training. For example, as of February 1942, the University of California and MIT were the only universities working for The Microwave Committee. See Jon Geise, Project Director, *The History of US Naval R&D in World War II,* by the University of Pittsburgh Historical Staff for the Office of Naval Research, 1950, at the Navy Historical Center, Washington, D.C., Boxes 374-6, especially Box 374, Section D-1, 289.

12. See Geise (note 11 above), especially Vol. I in Box 375, 162 (on OPNAV-16-V) and 194-5 (on OPNAV-23). The action reports collected by OPNAV-16 are "Comments and Recommendations on Defense Against Japanese Suicide Attacks on US Naval Vessels: Excerpts from Aircraft Action Reports and Battle Narratives. October 1944" and the related report of December 1944, number OPNAV-16-V #E419 and #E511, respectively. Both are in the Naval Historical Center Archives, Washington, D.C. Naval Yard, in the "WWII Command File CNO Air Intelligence Series, E. 115-803" box.

Adding to the confusion, OPNAV-16-VE later became part of OPNAV-23, as noted in *United States Naval Administration in World War II, Office of Naval Intelligence,* Vol. 3, 26 (c), unpublished, 1234-35, available at the Naval Center Library. This same report also notes that OPNAV-16-VE Evaluation Section was often called to work on special projects as requested by the Asst. Secretary of the Navy (Air), the Deputy Commander of Naval Operations (Air), the chief of the Bureau of Aeronautics, and others in the Navy Dept. It goes on to note that such reports included the Kamikaze reports (pp. 1233-4).

13. Geise report (note 11 above), 1456-60.

14. I base this not only on my extensive researches but also on Rear Admiral D.S. Fahrney's unpublished report *The History of Pilotless Aircraft and Guided Missiles* (undated but probably written 1949-1958), especially Chapter 14, Part 11, "The Japanese Story," which discusses the reports in question (1087). This history is in the library of the NASA Historical Office in Washington, DC, and it is no doubt in a number of US Navy collections as well.

15. See the reports prepared for the Headquarters of the US Fleet: "Anti-Aircraft Action Summary Suicide Attacks, April 1945—Cominch P-0009" and the update of October 1945, and the "Anti-Suicide Action Summary—Cominch P-00011" (preliminary August 1 and final August 31, 1945). All included in the Naval Historical Center Archives, Washington, D.C. Naval Yard, in Box 258, "WWII Command File Fleets, United States Fleet, Amphibious Operations, P.000534-P.07000."

16. *Starship Troopers* remains influential. It was chosen, along with Keith Laumer's *Star Colony* and Piers Anthony's *Bio of a Space Tyrant,* for Ace's Combat Command series, supervised by Bill Fawcett, of role-playing war stories. See Mark Acres, *Combat Command in the World of Robert A. Heinlein's Starship Troopers: Shines the Name* (NY: Ace Books, 1987).

17. For example, the Air Force Academy organizes a yearly conference on science fiction and military policy called "Nexus." The 1989 conference was subtitled "On Science Fiction and Science Fact" and featured Ray Bradbury, David Brin, and Octavia Butler as speakers. Brin's talk, fittingly enough, was slated to be on cyborgs, "Symbiosis of Living Beings and Technology." There were many panels on artificial intelligences and information technologies as well as several on women in space and technology.

18. It seems eleven writers were invited and eight attended. Earl Cooper and Steven Shaker in "The Military Forecasters" (*The Futurist,* May-June 1988, 37-43) say that 40 writers were invited, but 40 was probably the total number of participants. They also list Greg Benford, Jerry Pournelle, and Frederik Pohl as attending but, while they were invited, they did not attend (Personal communication from Benford, March 10, 1989; Pournelle, March 1989). On Pohl, who didn't remember himself, both Gunn, June 7, 1989, and Shwartz, May 23, 1989, recall that he was prevented from attending because of an automobile accident. Susan Shwartz notes in her letter that Joe Haldeman's business manager and wife, Mary Gay Haldeman, also participated. From published records, and information from writers who did attend, it seems the sf writers were Gordon Dickson, James Gunn, Susan Shwartz, David Brin, Joe Haldeman, Dean Lambe, Larry Niven, and Dean Ing. The conference was organized by Anticipatory Sciences, Inc. and budgeted at $44,105. While it was reported at the time that the conference would be repeated, this seems unlikely as the main organizer, Stan Tremaine, Deputy Director for Developmental Planning at the base, has since retired. (On repeating the conference, personal communication from James Gunn, March 8, 1989. I heard about "Futurist I" and Tremaine's retirement from Helen Cavanaugh, Public Affairs, Wright-Patterson AFB, phone interview, Sept. 19, 1990.)

19. Joe Haldeman is a Vietnam veteran who has often been outspoken in opposing militarism and has edited an anti-war sf anthology, *Study War No More.* He notes that once he was invited to an SDI conference at Goddard AFB, but "the general in charge saw my name on the list and went through the roof. He and I tangled very publicly over SDI once." (Personal communication, March 30, 1989.) Frederik Pohl has also publicly stated his opposition to SDI and is certainly not a militarist.

20. Held at the Battelle Institute in Seattle. It included "a few science-fiction writers," according to Dean Ing in his introduction to *Firefight 2000* (NY: Baen Books, 1984, 12). Along with Ing, Frederik Pohl attended, as he noted in his letter of March 7, 1989.

21. James Baen vaguely remembers that the mixing of fiction and nonfiction articles in one sf volume was his idea but "it might have been Bretnor's." While not wishing to divulge exactly how well military sf books are selling, he did admit that they were all in the top 30% of his list, although some volumes do much better than others. The single most important selling point, in his experience, is the compiler. He ascribes the general appeal of military sf to the assurance that the collections won't have "much vapid academic introspection," which I understand to mean that it isn't feminist, new-wave, or in a word, soft. Phone interview, August 15, 1990.

22. E.g., Haldeman and others discussed above and Carl Sagan, discussed below.

23. See General Daniel Graham, ed., *High Frontier: There is a Defense Against Nuclear War* (Tor Books, 1983), with an introduction by Robert Heinlein and preface by Jerry Pournelle, for an account of the High Frontier-Heritage relationship, High Frontier co-authors (including Pournelle), and an elaborate argument in support of militarizing space. Gen. Graham is a former Deputy Director of the CIA.

24. Pournelle says the same in his Introduction to Drake's *Hammer's Slammer*, "Mercenaries and Military Virtue" (ix), but there he attributes the first quote to the Roman Senator Appius Claudius and doesn't cite Herman Khan for the second.

25. L-5 took its name from the discovery by the mathematician Lagrange that there are 5 points between the Earth and its moon where satellites, or even captive asteroids, can be kept in a stable relationship to both planets with very little energy. Originally established to push for the immediate colonization of space, L-5 merged with the more staid National Space Society in the early 1990s.

26. Stecher is a retired Naval officer who once commanded a guided missile cruiser and served on the DOD-NASA Golovan Committee to study moon landings that recommended the Lunar Orbit Rendezvous method (Bretnor 1988, 61-62).

27. Fehrenbach is a Korean War veteran whose "total military experience ranges from private to general staff officer." He has written widely on war, including *The Battle of Anzio, This Kind of War, Crossroads in Korea, Fire and Blood,* and *Comanches*. According to Bretnor, his "writings have been used at the military academies, by the National Security Council, and for the orientation of general officer designates of the Army" (1989, 229).

28. An approach that may well backfire with many people. I overheard my five-year-old son's best friend, Pablo, say to him, "Corey, I don't want to go to space. There's too many wars up there."

29. See especially Klaus Theweleit, whose psychohistory of early fascism, *Male Fantasies, Vol. 1: Women, Floods, Bodies, History* and *Male Fantasies, Vol. 2: Male Bodies: Psychoanalyzing the White Terror* (Minneapolis: University of Minnesota Press, 1987, 1989) is very persuasive. Modris Ekstein in *Rites of Spring: The Great War and the Birth of the Modern Age* (Boston: Houghton Mifflin, 1989) defines Nazi erotics in a similar way. Susan Mansfield's *The Gestalt of War: An Inquiry Into Its Origin and Meaning as a Social Institution* (NY: Dial Press, 1982) is an excellent discussion of war and gender. Carolyn Merchant in *The Death of Nature: Women, Ecology, and the Scientific Revolution* (NY: Harper & Row, 1982), Evelyn Fox Keller in *Reflections on Gender and Science* (New Haven: Yale University Press, 1985), and Donna Haraway in *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (NY: Routledge, 1989) and *Simians, Cyborgs, and Women: The Reinvention of Nature* (NY: Routledge, 1991) are among many feminists who have explored the links between the dominant constructions of masculine identity in science and misogyny.

30. Jerry Pournelle, "Generic Letter" (a personal newsletter), Feb 28, 1989, p 3.

31. For examples, see George Slusser and Eric Rabkin's excellent collection of essays on war and sf, *Fights of Fancy: Armed Conflict in Science Fiction and Fantasy* (Athens: University of Georgia Press, 1993).

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ABSTRACT

The longstanding relationship between technological fantasies and American military culture and policy, well chronicled up to the Vietnam War in the work of H. Bruce Franklin, has developed even further in the last twenty years. The significant "future war" subculture within sf and the techno-thriller genre share a surprising number of participants, metaphors, and ideological positions with the command, planning, and R&D subsections of the US military. In some places the discourses of sf and real war have become one and the same. Sf publications, for example J.E. Pournelle's THERE WILL BE WAR series, are used for straightforward ideological ends (and to turn a profit of course). But it turns out to be a complex ideology. Beneath the traditional defense of militaristic virtues such as warrior masculinity, preparedness, and nationalism in these Future War stories, there is also a close adherence to many of the central ideological assumptions of high-tech postmodern war. Specifically:

* epistemophilia and infomania (that information, either tactical, strategic, or scientific, is the most crucial military and social resource);

* cyborgism (the presumed superiority of man-machine information and weapon systems);

* technophilia and computerism (machines win wars rationally, computers are the most important war machines);

* simulationism (simulations and modeling are just another aspect of the real);

* extraterrestriality (space is a necessity, militarily and culturally); and

* warism (war is natural and inevitable).

Noticing these ideological assumptions is a crucial step toward understanding the dynamics of war today, and inevitably of peace as well. Technological invention/ construction and scientific discovery/experiment are acts of imagination before they are acts with artifacts. In this age, where future imagined wars, ancient mythopoetical conflicts, and real wars seem so capable of mutually reinforcing each other, a close look at future-war sf shows that it is an understandable process. Thus it reveals how we can also imagine, even understand, quite different ends and means than future war, if we use different assumptions at the start. (CHG)