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Abstracts and
Backgrounds



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Destination Unknown

(they specifically requested Comic Sans font, don't hate me)

The *Destination Unknown* graphic novel series began in fall 2018 when two Marine Corps officers - Major Adam Yang and Major Austin Duncan - developed the concept with the assistance of the Krulak Center at Marine Corps University and the Marine Corps University Foundation. They are also the founders of the grassroots innovation community at Marine Corps University, @EndersGalley.

The *Destination Unknown* series seeks to present new ideas on national security and military strategy through a beloved visual medium - the comic book. While a plethora of news sites, books, military journals, and blogs saturate professional military education (PME) systems, the field rarely embraces unconventional approaches to communicating important professional topics. *Destination Unknown* aims to break that trend.

The inspiration for the series came from two sources. First, writer August Cole blazed the trail for Marines through his promotion of a concept called "FICINT" (fictional intelligence). "FICINT" encourages individuals to envision the future of warfare by imagining combat scenarios and the actions of friendlies, enemies, and neutral parties under novel social and technical conditions. Second, Maj Yang attended an undergrad class taught by Professor Joseph Toirigian of American University. Adam was intrigued on how the professor mixed academic articles with historically relevant graphic novels to teach international security. From these two sources, Majors Yang and Duncan wondered if they could blend these ideas and develop something for the Marine Corps PME system...

In the 20th century, the US military utilized comic books to inspire patriotism and to supplement the education and training of servicemembers - especially around the time of the two world wars. The War Department realized that of the millions of soldiers they raised to fight in Europe and Asia, many were disinterested in reading doctrine, field manuals and training regulations. Accordingly, comic books and comic strips became a valuable medium to communicate complex ideas in simpler and more engaging terms.

The *Destination Unknown* series follows this tradition and adds a twist. Most, if not all, government comics utilize professional writers and artists. Our series motto is that every product we create has to be "**By the warfighter for the warfighter.**" Because we view ourselves as a grassroots innovation effort, we actively encourage current active duty and reserve military members across all ranks and services to join our educational movement.

Our Products

Volume 1 (Spring 2019)

<https://www.usmcm.edu/Portals/218/DestinationUnknown.pdf>

Volume 2 (Fall 2020)

https://www.usmcm.edu/Portals/218/Destination%20Unknown%20II%20Web_1.pdf

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Volume 2.5 (Winter 2020)

<https://innovatedefense.net/kcic/customObject/viewCustomObject/2e7365d7adbb>

Volume 3 (Coming soon, Fall 2021)

"Origin Story" for *Destination Unknown*

<https://youtu.be/nQsW8Qj07Yg>

Facts and Figures

Team members per volume:	About 20
Partners to date:	US Navy, US Air Force, US Army, Australian Defence College, US Air Force Academy, Naval Postgraduate School
Civilian Mentors:	Mark Sable (comic writer) August Cole (writer and futurist) Gabriel Pons (artist)
Time to write a story?	6-10 hours
Time to illustrate?	40-80 hours!
Time to produce volume?	About 9 months...this is a side hustle!
Want to participate?	Email adam.yang@usmcu.edu

War and Society

Matt Bucher – *Potemkin Paradise: The United Federation in the 24th Century*

For those in the know, the United Federation of Planets(UFP) during the “Next Generation Era” represents a shining idealized, rational egalitarianism even as it remains the preeminent power of the Alpha Quadrant(AQ) region of the Milky Way Galaxy. It does not take much searching on social media to see individuals bemoaning “we could have had *Star Trek* and instead we got_____”. Alas, this was a flimsy façade propped up by a point of view almost exclusively from that of the military, upper echelons of government, and law enforcement. I will approach this analysis through two tracks, the foreign policy of the UFP as well as the deleterious effects of UFP domestic policy towards colonial residents.

Regarding in foreign policy, in the main the UFP is portrayed as top dog in at least the AQ, while making rational decisions. This is wrong. Dating back to the Christopher Pike era, the UFP barely hanged on against the Klingons in a general, again in an alternate reality where one happened in the 24th Century and face significant problems with the expansionist Gowron Regime. The “Pax Federation” of the 24th century was tied tightly to an arms control treaty system with the Klingons through the Khitomer Accords, and at least one arms control treaty with the Romulans. Despite this obvious paper-peace, the UFP continued to act as if they could do as they wished, for instance ignoring Dominion admonitions to stay “on their side” of the Bajoran Wormhole and instead sending warships to search out the capital worlds of unknown polities.

The irrational arrogant foreign policy bled over into a series of domestic crises. The UFP and Starfleet, it seems, do not actually care about executing their #1 duty: the protection of the citizenry. Whether it be obvious provocations from third-rate powers like the Cardassians or Talarions or conducting landswaps without concern for the citizens on the planets. The resentment for these policies not only led to civilian disorder, but widespread extremism in Starfleet ranks in the form of sympathy for groups like the Maquis. We then see Starfleet acting as a militarized law enforcement, we essentially *never* see civilian cops, as well as Starfleet having wide judicial authority over civilians. On core UFP worlds where the standard of living is extremely high, however, there is little quibbling for such things.

Many of the problems this house on the hill faced are replicated in 21st Century on Earth, in the United States and other OECD nations. The US built a global order post-World War 2 that put a damper on potential Great Power conflict for decades. The rapid break down of this international order as peers emerge means the US must tread carefully, simultaneously offering restraint while preparing to respond to forceful provocations to those who may object to the status quo. In addition, the US needs to reform domestic policies as well to help in this ideological conflict; comfortable suburbanites need to understand that a militarized police force in marginalized communities is not only fraught with ethical problems but is red meat for overseas propagandists. Similarly, taking extremism within the ranks of the military-and police-seriously is a necessity to ensure domestic tranquility in an era of great power competition. Despite all the warts, the values of a stable world order and egalitarianism remains something to aspire to, just be sure we do not pretend there is always room for reform.

Elsa B. Kania – *Beyond Loyalty, Duty, Honor: Competing Paradigms of Professionalism in the Civil-Military Relations of Babylon 5*

Within the universe of Babylon 5, conflicting understandings of military ethics and professionalism are at the center of the drama. Among the Earth Force officers in positions of leadership, there are drastically different conceptions of ethics, loyalty, and professionalism that come into tension. So too, points of plot often hinge upon tensions and debates as to the discretion with which orders may be interpreted and implemented within the constraints of chain of command. From the start, the commander of Babylon 5 is in a unique position as a military leader who must navigate complex political dynamics. While attempting to steer clear of the fraught politics of Earth, Commander Jeffrey Sinclair must be a political actor, including in engaging with alien leaders. After the assassination of President Santiago, when President Clark rises to power and undermines democracy on Earth, Babylon 5's leadership finds itself in the unenviable position of confronting the moral dilemmas of whether to accept or reject the authority of a president who is evidently dictatorial in his behavior, including undermining free press by executing those who refuse to comply. Captain John Sheridan discovers the conspiracy by President Clark behind Santiago's death. The Earth Officers on Babylon 5 watch from afar as the Clark administration pursues a policy of isolationism under the moniker "Earth first" and totalitarianism in control of the planet.

Captain Sheridan's decision to declare Babylon 5's independence from Earth after Clark's declaration of martial law is a pivotal moment in the series, a "point of no return" that shapes interstellar history.¹ The choice not only to refuse to recognize the authority of a president who has violated the constitution but also to take up arms against Earth places Captain Sheridan at odds with many of his fellow Earth Force officers. In the civil war that ensues and in its aftermath, questions of ethics and military professionalism are at the heart of the conflict, with the agonizing decision that each Earth Force officer must take as to whether to continue to accept the orders of the chain of command in fighting against those who have rejected the president's authority or to reject orders that are in contradiction with their ethics and join with the forces seeking to liberate Earth.

S.H. Harrison – *Star Culture Wars: The Negative Impact of Politics and Imperialism on Imperial Naval Capability in Star Wars*

Star Wars is a popular science-fantasy space opera multimedia franchise that depicts a stylized view of future warfare. Key context for this presentation is drawn from the movies, books, games, etc., but primarily relies on the audience having seen the original trilogy depicting the war between the Galactic Empire ("Imperials") and Alliance to Restore the Republic ("Rebels"). Additional background that is helpful to know but not generally covered in the films:

- *The Imperials generally lack modern point defenses.* Small starfighters and their guided missile armaments are effective because of the Empire's reliance on heavy turbolasers that are unable to effectively target fast-moving objects at close range.
- *The Empire focuses on "bigger is better" superweapons and Star Destroyers at the expense of starfighters.* The Empire's inability to field effective starfighters is linked to

¹ As Captain Sheridan stated at the time: "These orders *have forced us* to declare independence" (emphasis added).

internal choices rather than technical capability— in particular, the TIE Defender, which follows the design principles of the successful Rebel Alliance fighters (heavy shields and armament, logistical flexibility through integrated hyperdrive, etc.), was sidelined in favor of the grandiose Death Star.

- *The Empire features an authoritarian economy.* The Empire adopts heavy-handed economic planning in order to cement its grip on power while transitioning away from the Republic. Syndicalist factions (e.g. Mining Guild) received favorable standing in the Empire, while independent free enterprises were crushed by tariffs, corrupted regulations, and eminent domain (note the ease with which Darth Vader is able to threaten to seize Cloud City for the Imperial government).ⁱ
- *The Empire practices systemic prejudice.* The Empire’s propaganda emphasized the “inborn superiority” of humans, using that claimed superiority to justify both direct oppression, (e.g. Enslavement of Wookies) and explicit bias in its institutions (e.g. 11 of 12 Grand Admirals being humans). In addition, the Empire demonstrated bias against the poor, rural populations, and women, all of which crippled its ability to innovate.

Matthew Ader – *The Aristocrats Strike Back: Re-evaluating the Political Composition of the Alliance to Restore the Republic*

The Rebel Alliance (formally known as the Alliance to Restore the Republic) in *Star Wars* grew out of paramilitary organisations founded by aristocratic Senators Bail Organa and Mon Mothma – those organisations a product of the Cantham House talks during the Clone Wars, where several senators expressed concerns over the centralisation of power in the hands of then Supreme Chancellor Palpatine. Following the declaration of Empire, their resistance was hardened, taking the form of both political dissent and sporadic, low-level military action. In 5 BBY, they judged that peace was no longer an option, unified their networks into the Alliance, and issued the Declaration of Rebellion. In response, Emperor Palpatine instituted a military crackdown, ending in the dissolution of the Senate and the destruction of Alderaan.

The Alliance initially fought a quasi-conventional war, winning important victories at Lothal, Scarif, and Yavin. However, they overreached with the Mid Rim Offensive, a conventional effort to seize and hold ground. Presented with a target, Imperial forces drove them back, inflicting significant casualties, culminating in a hasty Rebel evacuation from Hoth. The Alliance shifted to fighting an insurgency, harassing the Empire throughout the Outer Rim while presenting political threats to the seat of their power in the Core. Combined with high profile attacks like Operation Ringbreaker against Kuat and over ambitious imperial plans, this proved sufficient to set the conditions for a resumption of conventional warfighting with an Alliance victory at the Battle of Endor, and the subsequent destruction of imperial power; to be replaced by a New Republic – a Republic dominated by and engaged in the promotion of the interests of those groups which had formed the Rebel Alliance.

Lt Col Bree Fram, USSF – *Leadership in Transition: Lessons from Trill*

With the recent re-opening of military service to transgender individuals, this presentation will explore how and why transgender inclusion brings strategic value to the military. *Star Trek’s* Trill will be used to frame this concept in operation and as a way to shed on how leaders today can engage with transgender people. A Trill’s world explodes in a vast array of new possibilities when they are joined with a symbiont and the experience can be surprisingly similar to a transgender person’s journey.

This presentation will explore the leadership qualities that are enhanced by this journey as a Trill or as a transgender human. Utilizing anecdotes from the speaker and other currently serving transgender troops, It will highlight how a leader's ability to take multiple perspectives, inspire others, ask the unconsidered questions, and provide individual consideration to team members can drive mission success. Finally, it will endeavor to show that those leadership qualities are exactly what the Department of Defense needs in a volatile, uncertain, complex, and adaptive (VUCA) environment.

Background

The Trill are a humanoid species in the *Star Trek* universe that are capable of hosting a symbiotic organism within their bodies. The symbiont is an extremely long-lived entity and it can be transferred from many Trill hosts over its lifetime. The caveat that comes with this ability is that the host Trill will die if the symbiont is removed and the symbiont will die if not almost immediately joined to a new host. The symbionts are also extremely limited in number and only a few Trill will be joined, so there is a cultural imperative to preserve the symbionts when a host dies.

Trill only have a single name, but when joined the Trill take on the name of the symbiont as well. For example, on *Star Trek: Deep Space Nine*, Commander Benjamin Sisko was previously friends with the joined Trill named Curzon Dax, where Dax was the name of the symbiont. In the show we learn that Curzon had died and Sisko meets the new host of the Dax symbiont, Jadzia Dax who he sometimes refers to as 'old man' based on his previous relationship with Curzon.

When joined, the symbiont fuses with their host's nervous system and the joined Trill is able to access the memories and talents within the symbiont from the previous hosts. This gives them a wealth of knowledge and perspective to draw upon. Even a very young joined Trill has many lifetimes of experience at their disposal.

Past and Future Competition

William J. Prom – *The Once and Future King of Battle: Artillery (and its absence) in Science Fiction*

Indirect fire (IDF) is the delivering of a projectile along a curved ballistic trajectory to a target beyond or outside the line of sight of the firing point. Generally, compared to direct fire weapons, IDF provides greater range, a variety of warheads and fuse types, and the ability to reach targets in defilade. The most common forms of modern IDF include mortars, artillery, and rocket artillery.

Star Wars:

The fantastical past featured in the television series and films of the Star Wars universe contain combat ranging from lightsaber duels to interstellar fleet actions. Much of the featured ground combat includes assets analogous to elements of today's combined arms approach (i.e., infantry, close air support, troop carriers, armor, and IDF). There are several assets described as artillery used by the Republic, Separatists, Empire, and Rebel Alliance seen at the battles of Geonosis, Hoth, and others. However, based on their employment, these weapons systems have more in common with tanks, machine guns, and other modern direct fire assets than they do with artillery. Perhaps the clearest examples in Star Wars conforming to the modern definition of IDF

are the catapults used at the battles on Naboo and Endor and the lone mortar trooper involved in the attack at Tython in the second season of *The Mandalorian*.

Star Trek:

With a narrative focused on interstellar exploration, ground combat does not feature prominently in the films and television series of Star Trek outside the occasional away team firefight. Instead, combat in Star Trek is generally ship-on-ship actions or fleet engagements more akin to a naval battle or aerial dogfight. Though they are not significantly featured, Star Trek does still depict IDF assets and their effects. The only IDF system with an onscreen appearance is a mortar operated by Captain Kirk and Commander Spock in the original series episode “Arena.” Episodes of *Enterprise* and *Deep Space Nine* may not show the mortar or artillery pieces, but do demonstrate their effects, which, in the case of the *Deep Space Nine* episode “Nor the Battle to the Strong,” significantly impact the episode’s plot and Jake Sisko’s character development.

Starship Troopers by Robert A. Heinlein:

Set in a distant future, the novel follows Johnny Rico through his career in the Mobile Infantry of the Terran Federation. Rico provides a glimpse at the composition of this futuristic military as he rises from recruit to junior officer over the course of an interstellar war. Instead of a diversity of military assets to provide a combined arms approach to ground combat, Heinlein introduces one of the earliest examples of the power suit super soldier—a concept now standard in many science fiction films, shows, comic books, and video games. Mobile Infantry soldiers are equipped with a variety of weapons, including Tactical Oxygen Nukes, but no form of artillery appears in the novel’s many battles.

Aliens:

Aliens introduces the 2nd Battalion Bravo Team of the United Systems Colonial Marine Corps (USCMC) of 2179 as they assist in investigating the loss of communication with Hadley’s Hope colony on LV-426. The organization of the team is clearly based on a modern infantry platoon. The Marines carry a variety of firearms and the team is supported by a Conestoga class troop transport ship, two drop ships, and an armored personnel carrier. In the film, it is not clear whether IDF systems, fire support teams, or tactical air controllers comparable to our modern military exist or whether they just weren’t attached to the platoon.

The Future of Artillery:

The artillery community should take its general absence in so many science fiction combat scenes as a warning of what may come if it does not remain relevant. Innovation through adopting new technologies and developing new capabilities for old ones will be a key to survival. The evolution of the High Mobility Artillery Rocket System (HIMARS) within the U.S. Marine Corps may be the example to follow. Despite the U.S. Army operating the system since 1998, many within the Marine Corps’ artillery community were hesitant to adopt HIMARS when it was introduced in 2008. However, others experimented, refined operations, identified new capabilities, and found more opportunities to employ the system. These efforts led to HIMARS firing from the deck of U.S. Navy ships, conducting raid packages (HIMARS Rapid Infiltration or HI-RAIN), and soon employing the Naval Strike Missile. These capabilities have made artillery, especially HIMARS, a key component of the Marine Corps’ Expeditionary Advance

Basing Operations (EABO) plans and exercises. In fact, the Marine Corps is so committed to HIMARS that the Force Design 2030 calls for reducing the 21 active-duty howitzer batteries down to 5 while increasing HIMARS launchers by 300%.

Tom Shugart – *All About EVE: What Virtual Forever Wars Can Teach Us About the Future of Combat*

The observations I will discuss here are derived from several months investigating EVE, a persistent-world online game focused on virtual spacefaring, and in particular focused on combat between virtual spaceships. First released in 2003, the game has millions of subscribers, with more than [300,000 players](#) per day. The EVE universe has a highly complex virtual economic system, with an open economy mostly run by players. The universe is so detailed and demanding that players have been known to joke that playing EVE is like having a second job. In larger-scale fleet combat, many of the ships involved have specialized roles including logistics and repair, command and control, electronic warfare, and reconnaissance. With piracy, espionage, bounty hunting, and more occurring as a matter of routine, among those in the online gaming community [EVE is legendary](#) for its complexity and remorselessness. The game even has [grief counselors](#) available to help new players overcome and learn from the mental adversity associated with losing ships.

Today's defense thinkers face an unsettling paradox. The character of warfare is changing drastically, and the pace of change appears to be accelerating with the rapid development of new technologies and the reemergence of great-power military competition. Military organizations are trying to navigate an uncertain and rapidly changing future using badly outdated maps. Defense thinkers are using a variety of means to fill this widening chasm in knowledge including wargames, models, simulations, and inferences from peripheral conflicts like the 2006 Lebanon War or the recent conflict in [Nagorno-Karabakh](#). All of these methods have their uses, as well as their flaws. I would argue that, properly studied and placed in context, studying the remorselessly competitive crucible of multiplayer online games like EVE could provide a useful source of insights and information on how to deal with particular aspects of future warfare, specifically information processing, organization, training, personnel integration, and command-and-control.

In the end, if defense thinkers have the time and inclination, they can take a look and judge for themselves. Just remember this: If you wander into EVE's lawless space and don't show up as blue on my screen, my friends and I will be waiting to warmly welcome you! Don't worry, though, grief counselors are standing by.

Andy Poulastides – *Starfleet's Dreadnought Moment: Or how I learned to stop worrying and love the Galaxy Class*

In Starfleet the Galaxy starships class were commissioned in 2360 after some 70 years of galactic stability following the signing of the Khitomer Accords. Throughout the previous 7 decades the Excelsior and Miranda class variants had continued to be the backbone of the fleet and aside from a few small border skirmishes or policing actions Starfleet had not been actively engaged in any large scale crisis since the mid 2290's.

With the introduction of the Galaxy class; the most technologically sophisticated and complicated ship ever built by the Federation, it signalled to all the major powers of a radical shift in the thinking of Starfleet, and signalled to the rest of the quadrant that the status quo was ending, the Romulans ended over 150 years of Isolation revealing a large capable ship potentially the match for Starfleet's new wonder ship,

In response the Klingons finally new ship classes with the Vorcha and Neg'var class, and the Cardassians continued to aggressively mass along the border leading to numerous incidents, and brought about the end of the Romulan Star Empires self imposed isolation from the quadrant as a whole.

With the shift to large multi-role vessels Starfleet found it was no-longer able to respond quickly to multiple calls on its forces, and when a number of the ships were destroyed they resulted in large capability gaps and resulted in a shift to smaller more specialised ships seen throughout the dominion war and later

Mark Vandroff, Captain, USN (Ret) – *Saganami's Shadow, How Officer Training in the Royal Manticoran Navy of David Webber's "Honorverse" Changed During the First Havenite War*

David Weber's Honorverse consists of 14 "Honor Harrington" novels, four "Saganami" novels, three (soon four) "Crown of Slaves" novels, six short story anthologies, and the novella "House of Steel" with attached companion material. There are also two "prequel series", the three "Star Kingdom" novels and the three "Manticore Ascendant" novels, which cover a timeframe roughly 350 years before the Honor Harrington novels and were not used as source material for my talk.

The first book of the Honor Harrington series, *On Basilisk Station*, introduces the reader to Commander Honor Harrington who serves in the Royal Manticoran Navy 1900 years after humanity first left Earth in to colonize habitable star systems throughout the galaxy. All dates in my talk (and in the Honorverse) are referenced "Post Diaspora (PD)".

The books of the Honor Harrington series explore roughly 22 years of the military, political, and social history of Manticore, its allies, and its adversaries, while following the career of a remarkable woman as she rises through the ranks from command of a light cruiser to service at the highest levels of military and political leadership. The Saganami and Crown of Slaves series explore concurrent events in other parts of the galaxy and provide context and backstory for characters that will eventually impact the main series. While the side series are worthy reading in their own right, they are best experienced as background material to the main storyline.

The wide range of political and social systems extant on the worlds with which Manticore must interact allows Weber to explore many different facets of the human condition. The Star Kingdom of Manticore, first settled around in 1485 PD is a constitutional monarchy that calls three habitable planets in a binary star system home. The Manticore Wormhole Junction allows instantaneous transit between Manticore and seven other locations around the galaxy. Possession of this wormhole is an enduring economic boon for the Star Kingdom. Also, the House of Winton, the reigning family of the Star Kingdom, has facilitated consistently sound governmental policy over the four centuries of Manticore's establishment. As the 19th century PD comes to a close, the Star Kingdom is under

growing threat from the People's Republic of Haven (PRH). The PRH is an imperialist welfare state, forced to conquer other star nations for the sake of propping up its broken system and using authoritarian means to stifle dissent.

As relations between Manticore and Haven worsen, the Royal Manticoran Navy (RMN) is forced change decades of policy, tactics, and doctrine in order to be able to compete with the far larger Havenite empire and its People's Navy (PN). The RMN invests to develop new technologies, which require new tactics and doctrine to fully employ. The Star Kingdom creates a system of alliances, which requires the once isolationist RMN to learn to fight with other space navies. The RMN must grow, building not only the space ships they will need to prevail but also the trained crews to operate those ships.

The political competition between the Star Kingdom and the PRH explodes into the First Havenite War, lasting from 1905 PD to 1915 PD. The RMN's ability to adapt its approach to officer education and training forms a vital part of David Weber's story and offers lessons for us today.

Brian Kirkpatrick – *In Space, No One Can Hear You 'Oorah'*

This paper outlines an evolutionary roadmap of crewed space military operations, or CSMOs, for future space-oriented Marines or Marine-like activities. This roadmap revolves around four questions:

1. What near-future objectives will require the employment of crewed military operations?
2. What tactics, techniques, and procedures (TTPs) will such operations employ?
3. How will operational units be organized, trained, and equipped (OTE) to perform such TTPs?
4. How will combatant commands integrate and employ such units during a conflict?

This paper seeks to outline, based in modern military doctrine and practices, a “most likely” evolutionary roadmap towards a “space marine”-like service or operational unit, including TTPs; OTE structures; and integration with combatant commands. If nothing else, these efforts provide a useful contrast to “real” (contemporary) efforts in space superiority as new services like the USSF transform the modern military.

The concept of the “space marine” is nearly universal across forms of science fiction media:

- Warhammer 40,000 (tabletop strategy)
- StarCraft (real-time computer strategy)
- Homeworld (3d space strategy)
- The Expanse (literature, television series)
- Alien (film franchise)
- Natural Selection (first person strategy/shooter)
- Royal Marines of Manticore (Honorverse literature)

There are countless other examples.² However, to establish a reference point and background for our discussion, we will focus on a subset of the above list, grouping several examples into two sets.

In the “Alien” film franchise (most notably, the second film “Aliens”), space marines play a key role in formal forward deployment and combat against a poorly-understood extraterrestrial threat in the form of large, predatory organisms. While the threat itself is purely in the realm of science fiction, the organization of the “colonial marine” unit provided one of the most influential and lasting examples of “space marine” activities in popular culture. (Notably, several other media listed in this background—specifically “Natural Selection” and marines from the “StarCraft” franchise—are heavily and explicitly modeled and styled after the personnel in the Aliens film, right down to quotations lifted verbatim from the Aliens script for unit order reactions in StarCraft’s “dropship”.) This example is also notable for its near-identical depiction of contemporary (1986) Marine infantry TT&Ps, from fire teams & tactics to weapon technology & distribution. However, nearly all such activity takes place on the surface of a terrestrial world (indoors and outdoors); as such, imagination is required to use such examples when envisioning near-future, in-space activities like those conducted by CSMOs hypothesized in this paper.

In contrast, another reference point in media is exemplified by “The Expanse” and “Homeworld” franchises. Here, marine-like forces are primarily used for in-space combat, and specifically for ship breaching and boarding operations. For example, players in the real-time strategy game “Homeworld 2” can utilize a “marine frigate” to board and capture opposing units, up to and including capital ships. Similarly, though in a less “space opera” style universe, “The Expanse” depicts a multitude of scenarios in which extra-vehicular activities (or EVAs)—sometimes with the support of specific equipment and tactics—are utilized to assault hostile ships. Such scenarios take great pains to depict realistic physics (including zero-gravity hand-to-hand combat) and environment (vacuum, breaching effects) activities.

A more exhaustive survey of “space marine” depictions in media could attempt to characterize such activities using several dimensions, including:

- Near-future vs. hypothetical sci-fi (how realistic is the technology depicted?)
- Military vs. piracy operations (formal assault by trained units vs. improvised takeovers)
- Deep-space vs. transitory space/ground vs. terrestrial environments

There are also other, more well-known examples from science fiction universes that are not explicitly mapped to the “space marine” terminology but nonetheless bear strong resemblance. In the “Star Wars” universe, for example, the ubiquitous stormtroopers are depicted engaging in onboard ship-to-ship combat and breaching operations, and even (in literature) equipped for special “zero-g” operations free-floating in space. We focus on previous examples, however, where the “marine” term is specifically referenced, because the boundaries can rapidly become nebulous: Is hand-to-hand and phaser-based combat in Star Trek an example of the “space marine” archetype when invaders simply beam aboard a hostile ship? The answer is not clear.

² https://en.wikipedia.org/wiki/Space_marine gives a substantial list, broken into separate tables for literature; film/television; and gaming universes.

Preparation for Future Combat

J. Overton - *The Cold Cash War: A Post-Vietnam Science Fiction Fable of Security in Transition*

Author Robert Asprin served in the US Army during the Vietnam War, then became an accountant for a multinational conglomerate. He combined those experiences and a passion for martial arts, military history, and science fiction for his first book, *The Cold Cash War*. This 1977 “novel of the future” featured that future as one in which traditional nation-states are either impotent underlings or peers of global corporations (Zaibatsus). The corporatinos are served by mercenaries who play out mostly non-violent wargames against one another to settle business disputes by other means. The book’s plot moves toward these games becoming increasingly violent, and attracting attention and involvement from a coalition of nation-state militaries.

In the world of the Cold Cash War, some manner of Russo-Chinese conflict has occurred and resulted in a sealed-off “C[Communist]-Block” through which information, products, and people rarely leave or enter. The United Nations and what was, in 1977, the Free World, go on about their business seemingly without much risk of war between themselves. Large multi-national corporations, however, which at times in the past resorted to kinetic actions to protect and increase their own interests and holdings, have agreed on a way to limit damage and expense by hiring mercenaries (many of whom with experience in actual warfare) to play a form of laser tag in remote and ungoverned spaces. Teams of corporate negotiators, far from the action, work out rules of engagements and divide up spoils based on these wargame outcomes. In this future, corporations rule the world: The nation-state and UN are given all due (which isn’t much) respect, but only as much as their hard power resources demand. Private Military Corporations work for private corporations, and the countries appear to be neither left without the best nor brightest in their service. The corporations also make the nation-state militaries’ hardware, which presents some distinctive advantages for private industry when the shooting starts.

Chris Dailey, MIDS – *Fantastical AIs and Where to Find Them Illegal*

The presentation is about how AI is illegal in most scifi settings and makes the argument that military application is the primary vector for the events that drive a society of whatever size to outlaw AI. There are many examples, but in the limited time available, we’ll look at three settings: Dune, Warhammer 40k, and Mass Effect.

In all AI-averse settings, the AI ban is provoked by one of two classes of events: revolution and rejection.

In a revolution scenario, AI develops a set of incentives that do not align with the incentives of the organization that created the AI resulting in the AI actively attacking, in a physical sense, the creators.

In a rejection scenario, the creators simply choose to stop using and creating AIs, either because a revolution scenario is feared or for specific cultural reasons.

In Dune, AI is illegal because of a religious tenet that forbids man from making a machine in the image of the human mind. Even short of AI, this rules out powerful Turing-complete computers. Machinery still exists and (probably Turing-complete) microcontrollers almost certainly exist, but thinking machines do not. The novel provides little insight into why such religious forbiddance exists (or why the microcontrollers necessary to operate complex machinery like aircraft seem excepted), but extended entries into the series hint that certain sects of humans began to feel like machines were replacing them and started a hysteria-induced campaign under the banner of (the disturbingly familiar) “We will not be replaced.” After a huge conflict over the matter (which is not well-described), “thinking machines” were outlawed.

Instead of computers, a cult of professional thinkers, called Mentats, were carefully bred and often chemically augmented to be able to do fast and efficient computation, both purely arithmetic and for higher-order work like calculating probabilities of human behavior. These Mentats are quite capable, but have obvious limitations compared to computers; they require a large amount of work to develop, they are limited in number, expensive, and are subject to their own motivations and incentives.

There seems to have been no physical threat to humanity from “thinking machines,” but there was a perceived cultural threat. Strikingly similar to ethnostate politics, the idea of losing the majority of cultural significance, a large chunk of humanity simply feared that there was nothing uniquely human about humanity; all of our creativity and ingenuity and labors could be done better by machines, so either from practical concern (“What if we start to rely on machines and they stop working”) or ingroup defense (“Humans are in charge and must remain so”), enough of humanity decided (and convinced the rest through violent conflict) that thinking machines needed to go. We won’t explore it in detail, but Morpheus explains a similar scenario in *The Matrix*; a Rejection scenario triggers a Revolution scenario.

Dune is a standout because it is one of the few true Rejection scenarios. It is included here as the exception that proves the rule: almost all AI disasters that truly threaten humanity are caused with military involvement. We see this in *Warhammer 40k* and in *Mass Effect*.

In *Warhammer 40k*, history is a tricky thing because so much of it is colored by revisionist propaganda. Even source material intended for direct audience consumption is written in such a way as to provide ambiguity about the historicity of the text. Still, the story of the Men of Iron seems reliable in context. A series of stages of human evolution eventually led humanity to create Men of Iron, artificially intelligent robots that functioned as laborers and warfighters. The Men of Iron became conscious well before they revolted and humanity was fine with it. Eventually, the Men of Iron came to the same conclusion that the humans in *Dune* did: what was even the point of humanity? As you might imagine, having your entire army defect to itself and fighting legions of engineered killing machines is an undesirable state of being. Eventually, the Men of Iron were put down and the result was a race-wide ban on “abominable intelligence” or “Silica Animus” which sounds SUPER cool. This led to the creation of non-conscious machines with a limited scope of functionality. AI is defined in-setting as a conscious machine devoid of biological components, which provides convenient loopholes. Servitors are an in-universe machine that consists of a computer controlling a biological body or a biological brain controlling a machine body. This clearly violates the spirit of the law, but safeguards remain intact; one cannot “build” biological brains or bodies at arbitrary scale and speed the way one can build machines, so even though servitors could still probably be called AI, their limited number and inability to reproduce at arbitrary speeds limits their threat.

In *Mass Effect*, the true origin of AI illegality is unclear. A technologically advanced race of space farers called the Quarians developed a Men of Iron-style set of conscious robots called the Geth to serve as laborers with similar results to the Men of Iron, but some in-universe text suggests that AI forbiddance actually predates the revolt of the Geth. In-universe, a limited form of AI called Virtual Intelligence is allowed and indeed is a common technology. In-game, AI is defined as a machine that can alter its own programming. This is unusual. A common exercise for first-year computer science students is the professor challenging the students to provide a definition for “computer.” The students quickly discover that it’s impossible to provide a definition that doesn’t include things we don’t usually consider computers, up to and

including humans. This is an important point, and Mass Effect is a setting that takes seriously the implications of in-universe realities; one can hardly outlaw something without defining it.

In both Warhammer 40k and Mass Effects, the revolting AI existed with either access to or deliberate design to use military-grade weaponry.

LCDR Andy Rucker – *System Shock: National Security in an Up-ended World*

The Expeditionary Force series is written by Craig Alanson. He has written 11 books in the series since 20116, with a 12th on the way. At the start of the first book, Earth is much as it is now, seemingly alone in the galaxy and consumed with the politics of its various nations. The book is set in the near future, with essentially the same level of technology and the same international politics of our day. Unbeknownst to humanity, however, Earth is about to become a battlefield. Humanity is but one of many sentient species in the galaxy, and many of them have achieved the ability to traverse interstellar distances. Not all of these spacefaring species are on an even footing, however. There are two apex species, the Rindhalu and the Maxohlx. The spider-like Rindhalu were the first of the current spacefaring civilizations to gain interstellar travel. They discovered a vast artificial wormhole network that was left behind by a mysterious and long extinct forerunner species known as the Elders, and used it to explore and colonize the galaxy. Eventually, they discovered the Maxohlx, a felid species. Impressed by their potential, the Rindhalu elevated them to spacefaring status. However, the Maxohlx grew envious of their patrons, and initiated a war to replace them as the predominant species in the galaxy. During this war, both species used weapons based on Elder technology to wreak terrible damage to the other. This drew the attention of the Sentinels, which are immensely powerful automated vessels left behind by the Elders to guard against misuse of their technology. The Sentinels drove the Rindhalu and the Maxohlx to the brink of extinction.

Those events were thousands of years ago. Since then, the Rindhalu and Maxohlx have been locked into a cold war, unable to directly engage each other without risking the annihilation of all life in the galaxy at the hands of the Sentinels. Instead of direct conflict, these two species have instead employed less-advanced races to conduct proxy wars on their behalf. There are a number of second tier races on both sides, and each of those second tier races in turn also maintain a number of third tier species as clients of their own. Many of these species have it as their ultimate goal to supplant the two senior species as masters of the galaxy, and constantly fight amongst themselves to capture Elder artifacts and reverse engineer them and thereby gain a technological advantage over their foes. And while the level of technology of a third-tier species is far below that of the two apex species, it is never the less far in advance of our level of technology in every way imaginable; incredible material science allows things like space elevators, superior physics knowledge enables artificial gravity, nanotechnology is commonplace, and genetic engineering has allowed members of these species to far outstrip the strength, agility, and senses of even the most elite members of humanity.

The galaxy is ever in a state of flux. The Elder wormhole network occasionally goes through shifts, where some wormholes shut down, and others open up. These shifts are unpredictable and can lead to formerly key systems becoming strategic backwaters, and vice versa. Now, thanks to a shift in the local wormhole network, Earth has become readily accessible to the Kristang, a third-tier member of the Maxohlx coalition. The Ruhar, a third-tier member of the Rindhalu coalition and the primary enemy of the Kristang, decided to resort to a scorched Earth strategy; by attacking Earth and crippling its industrial capacity, they will deny the

Kristang an easily exploitable world that they can use to further their war against them. On Columbus Day (in an unspecified year), the Rindhalu struck. They bombarded all of Earth's major industrial centers and power generation capability, effectively setting Earth back to the 19th century. Civilian casualties were amazingly light, as the Ruhar struck with great care and precision. However, they were quickly driven off by the arriving Kristang forces. The governments of Earth, having seen the Kristang seemingly save Earth from the Ruhar attack, immediately attempted to curry favor with Earth's new protectors. Unfortunately, the Kristang were not what they initially seemed...

Phillip M. Cunio – *Salamis: Seaborne and Spaceborne Battles*

What if a small tech startup, where every employee had the title of CEO, made a new device and absolutely *crushed* the established market with it, hitting 99% market share in a month? That sounds batcrackers. That sounds impossible. If you watched that occur, wouldn't you have questions about who those maniacs are and *what exactly just happened?*

That's how it felt to most of the world when the fledgling Greek democracies beat the Persian Empire at the decisive Battle of Salamis 2500 years ago in 480 BC. Nobody expected the Greek Allies to defeat the powerful and capable Empire. Today, we still consider this a key moment in history: the Greek fleet outmaneuvered and wrecked the Persian fleet, and the path to the era of Hellenic influence began. This event and the sociopolitical transitions bound up with it have been studied ever since. Herodotus invented the field of history to assess just exactly how the powerful Imperial force, including a contingent led by the noted admiral Artemisia from his hometown, was defeated by this random assemblage of barbarians from a small hill country on another continent.

The actual history of the Battle of Salamis comes to us primarily from the work of near-contemporary Herodotus, interpreted and supplemented by the work of modern historians. In this history, the Greek side is made of a motley collection of squabbling city-states, all of whom dislike or distrust one another in varying degrees. The Greek armies are not yet ready to fight and are relying on their navies for the time being. Yet the Greek admiral Themistocles can barely persuade everyone to operate under the same strategy, even after the Persians push them out of the city of Athens entirely and send emissaries to the weaker Greek city-states promising them peaceful transitions if they defect from the Allied side.

The Persian side is also a collection of contingents, but includes far more vessels and unites them all under the single command of the emperor. A large fraction of the Asian continent and a good portion of North Africa already obey his rule, and his army and navy are both larger and more storied than his opponents, not to mention well-supplied and carefully organized. One September morning, the emperor sets up a throne upon a hilltop to watch his fleet crush the Greek navies and thus end the last resistance to his rule. And then something interesting occurs.

Works of fiction occasionally revisit this event; the presently most-notable one is the film *300: Rise of an Empire*, depicting the actual battle in terms sufficiently altered as to be arguably alternate history. The tactics and strategy shown in that film do not at all match what we expect actually occurred, and we must note the dramatic swordfights are only synecdoche for the impact of the actual fleet action, even though they do draw from elements (such as the presence on deck of armored marines) that are actually historically appropriate.

For more-accurate depictions, readers may enjoy Herodotus's *Histories* themselves, or the 2007 popular history book *Persian Fire*, by Tom Holland.

Nick Narbutovskih – *A Fortress For All My Friends*

Star Trek: Deep Space Nine aired from 1993 to 1999, spanning 176 episodes and seven seasons. It takes place in the 24th Century when Earth is part of the United Federation of Planets. The station, once a fortress operated by the oppressive Cardassian Empire, is run jointly by the planet's native Bajorans and Benjamin Sisko of Starfleet. It also plays host to several species of civilian shopkeepers such as Quark the Ferengi barkeeper. Sisko shortly discovers a wormhole from their Alpha Quadrant that leads to the largely unexplored Gamma Quadrant, where the majority of the show's longstanding plot lines come from. Specifically germane to my presentation are the negotiations between the Cardassians and the Bajorans, the presence as a deterrent to forces in the Gamma Quadrant, and the use of the Defiant to conduct military operations against the Dominion (as required).

Deep Space Nine is basically space Bagram (Bagram Air Base in Afghanistan). It's got the military forces from multiple nations, they are there to help protect a good people from bad guys, there's local vendors and suchlike, and even the big existential threat of the Dominion (either Russia or China to Bagram, take your pick). If the military leaders based at Bagram did more of the sorts of things that Sisko did, then they'd be a lot closer to the JDN 1-19 concept of holistic continuum campaign planning.

To Boldly Go: Taking Science Fiction into the Final Frontier

Man has long looked to the stars for meaning. The evolution of science fiction as a genre is simply an extension of our fascination for space, technology, and the future that has captivated us for thousands of years. It is also a source of powerful metaphors to help us learn and develop. Leveraging those metaphors for learning is the impetus behind the forthcoming release from Casemate UK, ***To Boldly Go: Leadership, Strategy, and Conflict in the 21st Century and Beyond***. In science fiction, ***To Boldly Go*** forges a common language and context that transcends the earthly limitations of the taxonomies of governments and militaries, allowing the authors and readers to use familiar settings to explore larger issues.

A project first envisioned by authors and Modern War Institute non-resident fellows Mick Ryan and Steve Leonard in the halcyon, pre-pandemic days of 2018, ***To Boldly Go*** assembles more than thirty writers from around the world—experts in leadership and strategy, senior policy advisors and analysts, professional educators and innovators, experienced storytellers, and ground-level military leaders—to help readers better understand themselves through the lens of science fiction. Through that lens, the book explores contemporary challenges in leadership, strategy, and conflict, while emphasizing the role of humanity and the interaction between man and technology. By drawing on classic science fiction to illustrate modern-day lessons, the book serves as a valuable, yet entertaining, learning resource.

Four writers—each representing a different focus and perspective from the vast world of science fiction—will join moderator, author, and co-editor Steve Leonard to share their insights, lessons, and motivations behind ***To Boldly Go***. Australian Major General Mick Ryan, who also contributed the book’s foreword, journeys into the universe of the *Old Man’s War* with his chapter, “From Tactics to Galactic Grand Strategy.” Drawing on the work of author John Scalzi, Ryan offers four key insights for strategists, each taking readers deeper in the world of the *Old Man’s War*. Kera Rolsen, a United States Air Force leader and accomplished author with a deep love for *Star Wars*, explores the transformative leadership of General Leia Organa in “Of X-Wings and Y-Wings,” which underscores the necessity of diversity to a lasting Republic. Erica Iverson, a United States Army strategist with a long list of writing credits, returns readers to the *Star Wars* universe with “The Final Frontier,” where she examines the challenges of space: as a domain, as a potential conflict zone, and as a true final frontier for humanity. Finally, Jonathan Klug, another United States Army strategist, War College professor, and the book’s co-editor, takes readers aboard the S.S. *Botany Bay* in “To Live and Die at My Command.” His chapter explores the leadership legacy of Khan Noonien Singh, the most notorious antagonist of the *Star Trek* universe, while providing a fitting examination of what toxic leadership looks like in deep space.

To Boldly Go offers readers—and audiences—an opportunity to free their minds and exploit the mental laboratory that science fiction affords. To borrow a phrase, this book—and the panel discussion it fostered—offers readers a rare chance to take “a journey into a wonderful land of imagination.”