



See the Future:

Narrative-Driven Defense Innovation and Insight

By August Cole

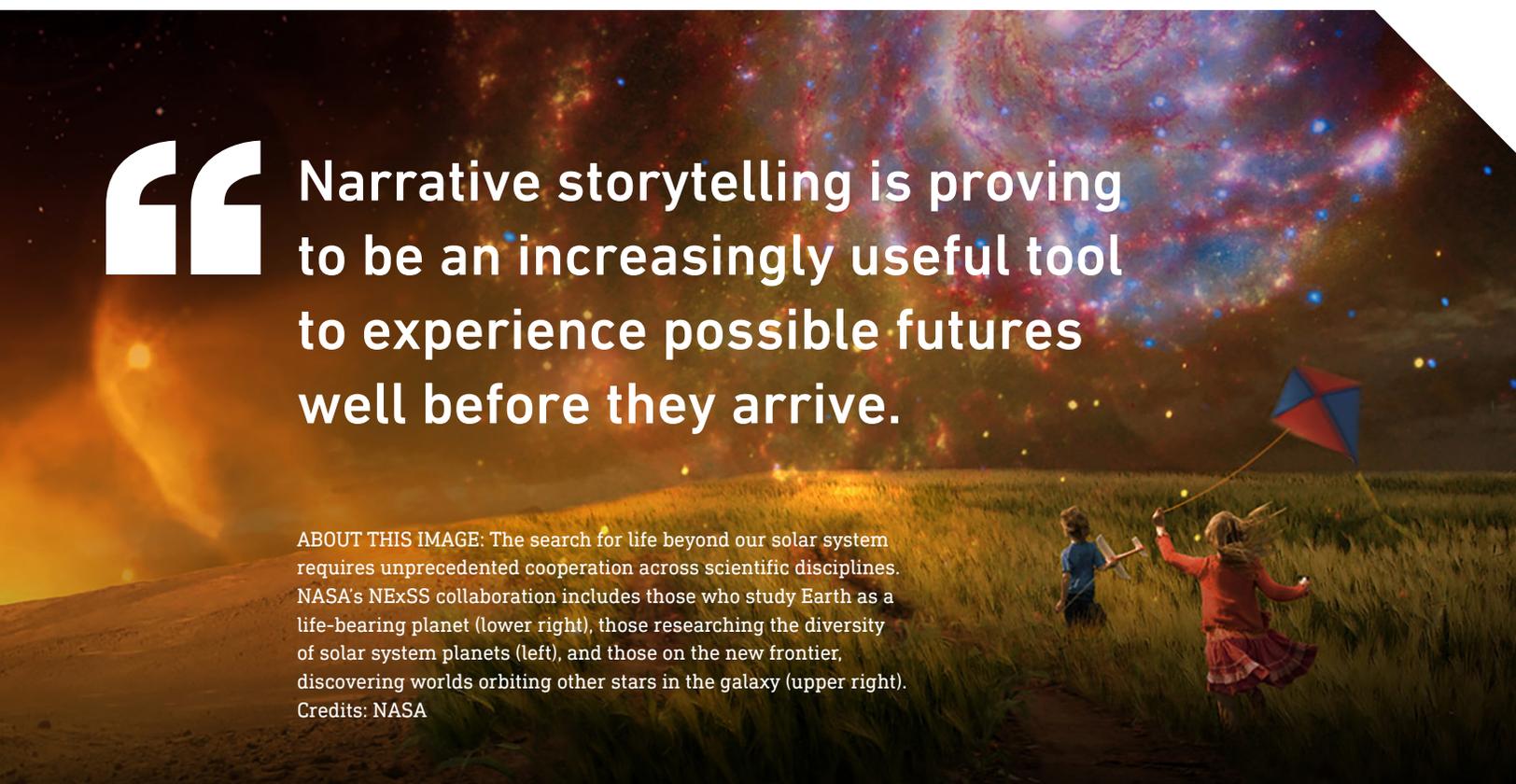


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Inspiring – and cautionary – future narratives have new relevance as conventional foresight and analysis frequently cannot capture the impact of proliferating defense-applicable civilian technology, newly empowered actors and entities, and profound demographic and societal changes. This kind of inventive forward-looking thinking can address a crucial paradox at aerospace and defense firms: Companies need to consider more forces or drivers of change. However, the complexity and pace of the current environment can quickly lead to information overload, shutting down creative thought or encouraging simplistic linear models of how the future is “supposed to” unfold. Leaders should consider the power of narrative to make real imagined futures built on developments that might only be dimly perceived today.

The largest defense companies have more than 100,000 employees dedicated to conceiving, building and maintaining the systems and capabilities that will shape the future of war and peace. At the same time, they are being asked to peer further into the future at a time when uncertainties about the international security environment, technological change (both civilian and military), and further globalization make linear prediction more difficult than ever.

Yet, how many of these people are able to engage actively with issues beyond their inbox? Even if they find the spare the time to step back and take the time to contemplate the future, what are the chances that another think tank report, corporate slide deck, or strategic planning memo will actually jolt them out of their



“ Narrative storytelling is proving to be an increasingly useful tool to experience possible futures well before they arrive.

ABOUT THIS IMAGE: The search for life beyond our solar system requires unprecedented cooperation across scientific disciplines. NASA's NExSS collaboration includes those who study Earth as a life-bearing planet (lower right), those researching the diversity of solar system planets (left), and those on the new frontier, discovering worlds orbiting other stars in the galaxy (upper right). Credits: NASA

day-to-day worldview? The challenge is not simply to inform or enlighten, but to inspire those charged with making sense of an onrushing future, emotionally as well as intellectually. To truly inspire and engage, defense leaders should consider the power of narrative to make real imagined futures built on developments that might only be dimly perceived today.

The enduring power of narrative stories to preview the future in the aerospace industry is obvious. At the dawn of the Jet Age and the Cold War, authors such as Isaac Asimov emerged as leading voices on how technology could shape humanity for better – or for worse. Asimov's three laws of robotics, first articulated in a short story from 1942,

were cited by a top Army researcher at a recent robotics and technology conference [as being relevant as they were when they were first written](#). The standard-issue gadgets in the original Star Trek series inspired 20th Century engineers to chase dreams like [handheld medical diagnostics](#), [stun guns and deflector shields](#).

In the 21st Century, inspiring – and cautionary – narratives have new importance because conventional foresight and analysis often fails to capture the impact of proliferating defense-applicable civilian technology, newly empowered actors and entities, and profound demographic and societal changes. Consider the strategic, commercial and political implications

of who will first set foot on Mars. Will it be a private American company such as SpaceX -- or a national effort like China's space program? From Microsoft to the Air Force, narrative storytelling is proving to be an increasingly useful tool to experience possible futures well before they arrive. Using science fiction stories, film or even video games to render the impact of transformative breakthroughs accomplishes three things: (i) it viscerally immerses and inspires readers and participants in alternative visions of the future; (ii) it allows leaders to reach and engage new audiences that may have crucial insights to share; and (iii) it gives voice to important, but sometimes less well-heard perspectives.

“How can we use the medium of fiction to help us imagine what happens next?” asked former NATO Supreme Allied Commander Adm. James Stavridis during [a talk at the Johns Hopkins Applied Physics Lab “The Future of Humans and Machines” conference in May](#). He shared the stage with LinkedIn co-founder Reid Hoffman, who remarked that narrative techniques can play a crucial role today in figuring out how to prepare for tomorrow: “How do we create the right kinds of science fiction prizes to start imagining from now, this very complicated future?”

This kind of inventive forward-looking thinking can address a crucial paradox for leaders at aerospace and defense firms: Companies need to consider more forces or drivers of change. However, the complexity and pace of the current environment can quickly lead to information overload, shutting down thought or encouraging simplistic linear models of how the future is “supposed to” unfold. Rather than try to combat such complexity, through narrative it can be a source for organizational inspiration and solutions, whether provided by professional storytellers or through the creative expression of front line employees.

Narratives around defense capabilities traditionally focus on showcasing, in discreet terms, a specific program. Yet this often rings hollow because of the interdependence and dynamism of modern conflict. Something different is needed. Rendering a more realistic fictional vision of a future operating environment that brings the human

dimension to the fore does more good, especially over the long term, for the company and customer. Ironically, these stories can reflect a more accurate picture of the possibilities than traditional approaches, which are often discarded as marketing pablum.

Authenticity isn’t the only challenge. As the daily business – and strategic – environment becomes more cacophonous, capturing, and holding, attention is increasingly difficult. A recent Microsoft study concluded that humans currently have an attention span [shorter than a goldfish \(8 seconds vs. 9 seconds\) because of digital distractions](#). Yet human beings continue to be driven by story as a key means of “sense making.” Non-traditional approaches such as futuristic vignettes help create emotional connections to characters overcoming problems, an essential trait that aids in holding the attention of a reader or viewer.

Narrative also opens debates to new audiences because stories travel better than Power Point. They offer the possibility of fresh perspectives that can counteract doctrinal and calcified views. For defense firms struggling with entrenched perspectives, stove-piped organizations, or disconnected decision-making processes, narrative can provide a means of creatively engaging with as many viewpoints as possible, including dissent. This outreach is especially important on big strategic and operational challenges that will determine both the future course of a business, let alone the national security of the country.



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TURNING ART INTO ACTION



A structured approach aids a creative process focused on delivering insights. It is no different in finding ways to implement narrative techniques within a company's futures and strategic planning activities, in particular for aerospace and defense companies. The following techniques offer applied ways to develop and employ fictional narratives:

Over-the-Horizon:
Developing written character-driven short-vignette narratives around emerging technologies and internal/external futures assessments

Red Team:
Stress testing program assumptions/risks around future operating concepts through short stories used to prompt discussions by senior leaders evaluating corporate strategy options

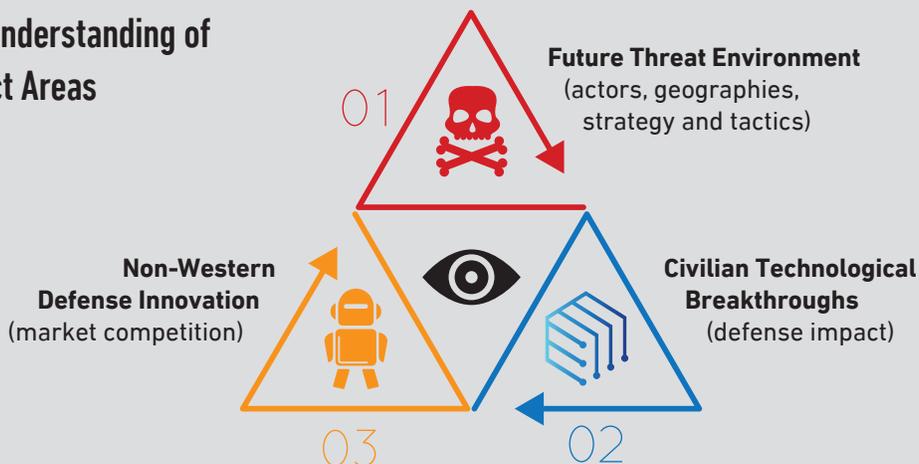
Narrative Workshop:
Internal development of in-house narrative capability to facilitate regular production of stories and other creative elements to augment analytics and strategic foresight

'See' the future:
Concept art or storyboards depicting visual narratives of future technology and operational doctrine to enrich strategic discussions or inspire the solicitation of company-wide creative visions of the future

Reading the Future Landscape

When it comes to defense, this approach is particularly useful when trying to stoke conversations or to develop an understanding of three distinct areas:

Develop an Understanding of Three Distinct Areas



Future Threat Environment

Understanding just who an adversary is and where they might be in a future conflict is an increasingly vexing line of exploration. Is it, as in this year's Ghost Recon: Wildlands blockbuster video game title, a narco-trafficking empire that has just taken over Bolivia with designs on expanding further? Unlikely. But the thought exercise on pushing the boundaries of conventional thinking that follows playing a concept-driven game like that is worthwhile. When it comes to strategy and tactics, what narratives can do exceptionally well is allow a scenario to play out in a visceral manner but with the lowest stakes of all – fictional ones. This allows a test run of sorts that is essential in coming up with myriad operational concepts, many of which in reality will see adversaries integrating different forms of warfare in unexpected ways. In the Marine Corps

science-fiction story supplement to the service's benchmark futures document, the Marine Corps Strategic Environment Forecast, the preface noted ["should any elements of these futures come to pass, it will not be the first time that you have thought about these scenarios."](#)

Civilian Technological Breakthroughs

With civilian innovation leading everything from mobile technology to Big Data (inverting the 20th century government-led innovation paradigm), it is imperative to be on guard for world-changing breakthroughs beyond usual areas of concern to the defense industry. While focusing on game-changing hypersonic weapons out of China, it might be easy to miss the significance of a private-sector breakthrough in the biological domain that doesn't fit a



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standard threat-response model. As the National Intelligence Council (NIC) wrote in its [Global Trends 2035](#) report: “Biotechnologies such as genome editing will revolutionize medicine and other fields, while sharpening moral differences.” Being able to work through how a society might reallocate defense spending to healthcare after a breakthrough that ends dementia among the elderly is perfectly suited to the sort of narrative exercise that fuses political, legal, and scientific dimensions with the all-important character-driven human elements so we truly understand the stakes.

Non-Western Defense Innovation

A failure of imagination is one of the worst sins of all when assessing

competitors. More so in the defense industry, which today is in the midst of a globalization moment. China is in the throes of fielding two different 5th generation fighters, and its leading technology firms are aggressively investing in AI and robotics. Meanwhile, People’s Liberation Army investment and reform points toward a military force at ease operating globally. What does this mean for Defense Department assumptions about Chinese power projection, and accordingly US acquisition priorities as it relates to the Asia Pacific? *Ghost Fleet: A Novel of the Next World War* answers confronts this uncomfortable question about the nature of 21st century military supremacy not through a white paper, but a military thriller in the style of Tom Clancy’s 1986

novel *Red Storm Rising*. Tackling a near-existential question for defense planners with a story instead of a report also permits the discussion of controversial or hot-button issues such as cyber vulnerabilities in US defense systems or how to ally super-empowered individuals like space entrepreneurs and hackers to work for America’s wartime interests.

Making New External And Internal Connections

With any of the above subjects, and myriad others, another benefit of using narrative techniques is the ability to communicate with broader audiences, internally and externally. Storytelling can crystallize a company’s picture of the future in a format that constituents

may actually feel connected to. For example, the US Air Force in its 2016 Air Force Future Operating Concept white paper featured brief vignettes depicting drones and fighters flying together and Big Data-driven predictive logistics to [“stimulate the imagination” about the service’s future missions](#). “Set in 2035, these sections do not attempt to forecast a precise or comprehensive future, but instead reflect the major transformations in how AF forces will operate,” [the Air Force wrote](#).

People may not make time to read more than the conclusion of a white paper but they are more likely to read a well-crafted, character-driven short story or even watch a relevant movie. Growing the community of people who can offer insights is crucial because innovative and disruptive concepts now move globally with something as simple as a Tweet or a viral video.

Future As Prologue

Narrative storytelling is not a replacement for conventional forecasts or scenario analysis. But it is a crucial addition to the toolkit of today’s defense leaders to plan, and prepare for, increasingly complexity and the accelerating pace of how ideas move around the world.

Getting the best ideas means catching the attention and interest of internal audiences, as well as external ones. They also let a writer or reader be the adversary, to better understand an opposing point of view or to confront problems deemed difficult or impolitic

to otherwise discuss. Underscoring the value of narratives, Microsoft recently commissioned science fiction writers for [Future Visions: Original Science Fiction Stories Inspired by Microsoft](#), whose “authors were inspired by inside access to leading-edge work, including in-person visits to Microsoft’s research labs, to craft new works that predict the near-future of technology and examine its complex relationship to our core humanity.”

Never losing sight of the “human element” is essential to forecasting the future, and an essential quality of any story that depicts alternate worlds seen through the eyes of their inhabitants -- no matter what level of technology they find “normal” or where they live. Growing investment in artificial intelligence and robotics, as well as bioengineering, will ripple through global business, politics and civil society without the brakes being applied by any one country. “Automation and artificial intelligence threaten to change industries faster than economies can adjust, potentially displacing workers and limiting the usual route for poor countries to develop,” wrote the NIC in its Global Trends 2035 report. Moreover, the defense business itself is globalizing after years of lagging other manufacturing-oriented industries.

Even in the present day, coming to terms with the full impact of these rapid technological changes is almost overwhelming. But it need not be in the future, if those scenarios can first be glimpsed through narrative.



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About the Author

August Cole is the writer-in-residence at Avascent. A former Wall Street Journal reporter, he is the co-author of *Ghost Fleet: A Novel of the Next World War* and the editor of the Atlantic Council's *War Stories from the Future* military science fiction anthology. He has written numerous short stories exploring the future of conflict that draw out the wartime human impact of emerging technologies such as artificial intelligence and robotics.

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