Everywhere man

By Margaret C. Roth, USAASC   November 28, 2018

SHOW CAPTION +   1 / 3

Whether it's his fiction and nonfiction, his work as a TRADOC 'mad scientist,' the interviews he's done with defense media, the pages of Popular Science, or some other venue, P.W. Singer is the Army's must-read thinker.

In the ongoing, all-consuming exploration of the future battlefield, the recently published book "LikeWar: The Weaponization of Social Media" adds a new dimension. Only this battlefield is already well-established: the internet.

"[T]he internet has become a battlefield," one that "changes how conflicts are fought," co-authors P.W. Singer and Emerson T. Brooking write. "[T]his battle changes what 'war' means," with victory going to those who command more attention, more effectively. The principles of warfare on the internet are already pretty clear, they write. In fact, Prussian general and iconic military thinker Carl von Clausewitz (1780-1831) "would have implicitly understood almost everything it is doing to conflict today." But, as "LikeWar" explores, social media have created new rules for war and politics that would have flummoxed Clausewitz and are doing much the same to today's leaders.

The evolution of warfare is more than comfortable territory to P.W. (Peter Warren) Singer. It is where he has built much of his life's work. Singer is a strategist at New America, a Washington, D.C.-based think tank "dedicated to renewing America by continuing the quest to realize our nation's highest ideals, honestly confronting the challenges caused by rapid technological and social change, and seizing the opportunities those changes create." He is also an author and an editor at Popular Science magazine and an official "mad scientist" for the U.S. Army Training and Doctrine Command.

To call Singer prolific is a glaring understatement. So is just naming the six books he has authored, both nonfiction and fiction. The Wall Street Journal has called him "the premier futurist in the national-security environment." The Smithsonian Institution has named Singer one of the nation's 100 leading innovators. Defense News includes him among the 100 most influential people on defense issues. Foreign Policy magazine has him on its Top 100 Global Thinkers List. And Onalytica Ltd., a social media data analysis consultancy, counts him among the 10 most influential voices in the world on cybersecurity and 25th most influential in the field of robotics.

These many titles of authority are no casual hyperbole. Singer comes by them honestly, and with surprising humility. His thinking and writing venture into virtually every corner of defense: the nature of warfare in all of its realms--land, sea, air, space and cyber--military history, doctrine, emerging and future technologies, war gaming, organizational change and more.

Given mundane but necessary time constraints, Army AL&T had a painful choice to make in talking with Singer: where to focus its discussion. We chose transformation to be Topic A, namely the transformational aspects of technology and whether there's any realistic hope for DOD to transform its acquisition system into one that could be responsive to emerging technologies. The theme is all too familiar to Singer, based on his experiences with the military.

"The pressure point for the acquisition system is going to be, 'How do I have my tentacles out there so that I am aware of this technology, when and where these breakthroughs are happening, and I'm incorporating it as rapidly as possible?'" he told Army AL&T in an interview, explaining how the game-changing technologies are increasingly proliferated around the world. "The thinking can't be, 'We're going to be the only ones with this technology.' Rather, it should be, 'We're going to be the ones that make use of it the best.'"

THE NEXT

Straightforward and plainspoken, Singer asks as many questions as he answers; but then, that's the point. Reading some of the interviews Singer has done with the military specialty media, one of the key questions he has embraced centers on technology, which now happens to be the focus of the Army's push to modernize so that it can establish a decisive advantage in the battlespace. Is the U.S. military in a position to seize advantages that are already there, such as the internet? It's one thing to adapt technologically in response to a known threat, but quite another to waste no time in harnessing technology to claim the battlefield in the first place.

Singer is no ivory tower polemicist. He has worked in the thick of conflict in his work with DOD, both on the battlefield and in the Pentagon, participating in war games and talking with scientists, Soldiers, generals, even Iraqi insurgents.

In 2009, recognizing that the U.S. military had no guarantee of maintaining the technological edge it had enjoyed in global warfare for the past few decades, DOD contracted with Noetic Group, an international strategic consulting firm, to assess the implications of emerging technologies on future warfare. The method was Project NeXTech, led by the Rapid Reaction Technology Office within the Office of the Secretary of Defense and in which Singer played a central role.

Through research on the state of emerging technologies with leading scientists, engineers, academics, military leaders, policymakers, investors, journalists and futurists, NeXTech set out to define "what are the technologies that today's naysayers derisively describe as 'science experiments' that will actually be key to shaping the battlefield of tomorrow?" according to a September 2013 report by the Center for a New American Security. "The goal that guided them was to identify what technology right now is akin to where the computer was in 1980 or the Predator [aerial drone] was during the 2001 Quadrennial Defense Review--real but not yet noticed as transforming the world."

NeXTech comprised a series of war games in partnership with the U.S. Army War College, the U.S. Naval Postgraduate School and the U.S. Naval Academy, among other organizations, to examine the barriers to use of the technologies as well as their appropriate uses from tactical, strategic, doctrinal, legal and ethical standpoints. The project focused on five areas of technology with the potential to produce "game-changers"--biotechnologies (e.g., human enhancements), energy (e.g., lasers and superefficient batteries), materials (e.g., 3D printing), hardware (e.g., robots) and software (e.g., electromagnetic and cyber weapons).

While the outcome of NeXTech was primarily to shape senior defense leadership's decision-making on resource-constrained planning and investment in science and technology, it was a starting point in the slow reorientation of defense priorities toward emerging technologies in a globally competitive environment.

TECHNOLOGY OUTPACING GOVERNMENT

In an interview in November 2013 with the late journalist Matthew Power published on TED Talks' website, Singer observed that in the four years since NeXTech concluded, the pace of technological change and the pace of government were getting further and further apart. The difference has only grown, he told Army AL&T.

"It's getting worse, because in some areas we're no longer playing catch-up. We're literally moving in the opposite direction" in terms of defense policy and its people, he said. Singer cited as an example the Trump administration's decision last spring to eliminate the White House position of cybersecurity coordinator, a position created under President Barack Obama. National Security Adviser John R. Bolton stated that the post was no longer necessary because lower-level officials had already made cybersecurity issues a "core function" of the president's national security team.

"It took us a long time to wake up to the threats and challenges [in cybersecurity], and we started to build organizations," Singer said. Eliminating the cybersecurity coordinator "left pretty much everyone in the field mouths-open, stunned by that idea that we would no longer try to have strategy and top-level coordination on a topic as important as cybersecurity."

The White House cybersecurity coordinator was in charge of shaping national cybersecurity policy and the political responses to national cybersecurity incidents. Instead, Bolton assigned the task to two National Security Council senior directors, at a time when defense and intelligence officials anticipate more cyberattacks, not fewer, given cyber threats from major powers such as Russia's NotPetya ransomware and North Korea's WannaCry ransomware.

In addition, Singer said, "There's the larger challenge of a geopolitical economic and technologic race with China, where China is behind but moving at a much faster pace ahead. And there have been a series of decisions that really attack some of the core advantages that allowed us to be ahead--specifically, spending on research and development and attracting the world's top talent to America."

"You look at the history of leading American technology companies, and the overwhelming majority of them were started by either an immigrant or son of an immigrant." Yet current national immigration policy has moved to create the opposite, with dangerous potential consequences, he said, evoking the United States' deportation in 1955 of Qian Xuesan, the first director of Cal Tech's famed Jet Propulsion Lab who would go on to found the Chinese intercontinental ballistic missile and space rocketry program.

Those days of McCarthyism and the Red Scare were over a half-century ago, but the current national policy's singling out of certain Muslim countries for restrictions on immigration to the U.S. are painfully familiar, Singer said. "You can pretty much [draw] a direct line between actions driven out of bias that harmed national security. ... We know what works, we know what doesn't, from history, and we're ignoring these lessons today.

"It's a deep worry. I do a fair amount of travel, and it's something that our allies are deeply, deeply worried about, as well."

TECH COMPETITION

On the plus side, Singer sees DOD's outreach to Silicon Valley as a "saleable" step in the right direction as the Army modernizes. "I don't think it's the end-all, be-all solution, and the challenge is multifaceted," he said.

"One is, at the end of the day, the Pentagon's spend in Silicon Valley is not going to be enough to alter the behavior of the large tech companies. It is enough to open up opportunities for some of the smaller companies and startups and the like, but it's not going to change what, as we've already seen, the Googles or the Apples are going to do."

The second major challenge is that, whereas the Soviet Union competed technologically with the United States, now China is also competing economically for American investment, which colors U.S. companies' willingness to do business with DOD. "The China market is crucial to so many companies' future prospects. And so it leads them to look at that relationship with the Pentagon--that full-fledged jump into, you know, a more traditional defense industry role--with a different kind of eye.

"That's just a reality, and we're not going to be able to change it with the opening of a small office" of DOD's Defense Innovation Unit nested amid major tech companies. "But I'm very, very gung-ho of the idea of having more and more of a presence by the Pentagon not just in Silicon Valley, but these tech clusters all over the nation. It's incredibly important for them to be out there technology-scouting, finding opportunities."

The reason lies in the very nature of the game-changing technology that exists today. Unlike the atomic energy or aircraft carrier or ballistic missile of earlier generations, the organizations that research, develop, buy and use the technology will be both government and the private sector, and it will comprise both civilian and military applications.

"So you think of something like artificial intelligence [AI] or robotics or big data: These are areas where the breakthroughs won't be coming out of exclusively governmental labs funded primarily by the Defense Department. They're going to be coming from lots of different directions. The users of them are not going to be exclusively governmental or even military in the first generation, the way we saw with some of these past key technologies, even arguably the start of the computer."

Additionally, given the nature of the technology, it's becoming easier and easier to use--AI, for example--because of machine intelligence. A drone that is flown by a brain-machine interface lowers the barrier to use by "all sorts of different actors; the 'pilot' didn't have to learn how to become a pilot to fly this complex piece of machinery," Singer noted.

CHALLENGING THE STATUS QUO

Truly challenging war gaming is essential to this dominance, Singer said. That means looking at new technologies across multiple different scenarios, as the NeXTech project did in 2009. "Too often in these war games--not just war games, but when we're thinking about a certain weapon system or technology--we put it into the context that we're most familiar with or we most want for the future."

In NeXTech, by comparison, "we were thinking about scenarios that ranged from high-intensity conflict to counterinsurgency to an embassy evacuation to a response to an earthquake--all different kinds of settings that U.S. forces have been in--and saying, OK, in these different contexts, how might the technology be used? And then, secondly, not just how might the U.S. use it, but how might it be used against us? How might a drug cartel use it? How might a terrorist group use it? How might a high-end military use it? How might a midtier military use it?"

The U.S. military conducts very useful war games and training exercises, he said, but with common challenges across the board. "Even when it's a challenging scenario, a high-end conflict with another state, it's still framed in a very familiar way, instead of trying to come at it from multiple angles."

A second challenge is the people chosen to be the "bad guys." The general approach is, "I take some part of my organization and say, 'You go think like the bad guys'--as opposed to actual people who think like bad guys. So there tends to be a limited framing."

Additionally, the exercises often are designed to validate existing concepts or planned programs of record to demonstrate "that this was a good investment, as opposed to really, really kicking at the tires. There's also a little bit of what I call the back-to-basics problem." That problem, as Singer sees it, is that the exercise is not so much a war game as a large-scale training event with the guiding principle being, "We haven't been doing X for 15 years. We need to get back to basics"--as opposed to asking, "OK, how maybe have the basics changed?"

Finally, he said, multinational exercises "too frequently are about making allies feel good about themselves."

As an example of "a really good effort," Singer pointed to Fort Polk, Louisiana, home to the Joint Readiness Training Center. On a historical note, Fort Polk was established in 1941 for the Louisiana maneuvers, in which, against the backdrop of World War II, the Army set out to "figure out what not just tanks, but mechanization and wireless communication at large, had done to war and how we needed to change to adjust for it."

Singer noted that since then, Fort Polk, with its collection of villages and counterinsurgency sites, "has become the training and thinking ground for everything from, how do we stop Soviet tanks to after 9/11"--to, most recently, a cyberspace "battleground." Singer has advised one of the companies involved in that program.

Called the Social Media Environment and Internet Replication, its purpose is "basically building a fake internet over the fake wars that take place at Fort Polk." The "insurgents" chat online, recruiting, reporting, pushing their story just as the Islamic State group does. "I find it utterly fascinating from a historic standpoint, because a little over a generation ago, the military had literally created the internet with ARPANET and then walked away from it [and] handed it off to the civilian side."

SCI-FI LEADS THE WAY

As a rare combination of novelist, nonfiction writer and scholar, Singer sees elements of science fiction today predicting what technologies the military will spin in from the civilian world tomorrow.

"Artificial intelligence, of course, and autonomous robotics are some of the most frequent technologies that pop up in sci-fi, and they are definitively part of military futures," he said. "Brain-machine interface technology, you know, is already being played with in labs and in video gaming. I see that moving over to the military in the future."

Three-D printing is "really the 'Star Trek' replicator in a certain way, already popping up on military bases in a mostly ad hoc manner."

Singer also predicts that the U.S. military is also going to see more biological technology. "There are amazing breakthroughs happening in the biosciences and genomics affecting, of course, not just diseases, but shaping what humans can do that they couldn't do previously. And if it's being used in health, if it's being used in sports, we shouldn't be surprised to see it make its way over to the world of war, too."

This crossover from fiction to fact is nothing new, he said. "Science fiction has always played with technologies that then become real and then are applied to war, whether it was the flying machine or the undersea boat or H.G. Wells' concept of an 'atomic bomb.' It's going to be the same thing in the 21st century. Of that, I'm confident."

MARGARET C. ROTH is an editor of Army AL&T magazine. She has more than a decade of experience in writing about the Army and more than three decades' experience in journalism and public relations. Roth is a MG Keith L. Ware Public Affairs Award winner and a co-author of the book "Operation Just Cause: The Storming of Panama." She holds a B.A. in Russian language and linguistics from the University of Virginia.

This article is published in the October-December 2018 issue of Army AL&T magazine.

RELATED LINKS

Army AL&T Magazine   [http://asc.army.mil/web/publications/army-alt-magazine/]

U.S. Army Acquisition Support Center   [https://asc.army.mil/web/]