



Astronaut Dave Bowman (Keir Dullea), aboard *Discovery One* spacecraft, interacts with HAL 9000 computer in Stanley Kubrick's 1968 film *2001: A Space Odyssey* (Allstar Picture Library Limited/Alamy)

Executive Summary

Henry Kissinger, Eric Schmidt (former Google CEO), and Daniel Huttenlocher (dean of the MIT Schwarzman College of Computing) have been speaking to audiences on the topic of artificial intelligence (AI) and humans, the subject of their book *The Age of AI* (Little, Brown and Company, 2021). They believe we will soon reach a point where machines develop their own language and start communicating in a way we humans do not understand. It is then that “we pull the plug on them,” according to Schmidt. Kissinger suggests that a global discussion among governments and industry must occur soon and develop agreed-on limits to prevent AI from getting out of control.

History is full of such calls for global restraint of potentially dangerous machines, such as the 1921–1922 Washington Naval Conference, which hoped to limit the spread of naval battleships and constrain expansionist powers, especially in the Pacific. We also

have the many nuclear arms control agreements, including the 1970 Nuclear Non-Proliferation Treaty, in which nearly all the world agreed to the peaceful use of nuclear power and swore to work together for the elimination of nuclear arms. Chemical and biological weapons have also been subject to such agreements with good progress toward elimination.

But have we not seen this movie before, that is, new capabilities that can seemingly overwhelm humankind’s ability to control them? While Schmidt doubts these machines could become truly conscious, they likely could develop a decisionmaking capability that could, when operating on the battlefield, advantage both the offense and defense to quickly overwhelm the opponent. In practice, Schmidt believes if sufficiently resourced the AI-supported offense wins, and the defender loses. But can warfare become so simple that the offense can overwhelm the defense simply by having better analysis and the ability to carry out such computer-assisted plans?

Kissinger and his coauthors are asking the right questions: Where does AI place our current military advantages as well as those we plan to have in the future? Does AI script us into an arms race of multiple types, both hardware and software? Maybe we have already been in one for years that will now accelerate. How does AI play a role in the Joint Warfighting Concept (JWC)? This issue brings both answers and more questions about how the United States plans to meet the future militarily.

Building on General Mark Milley’s discussion in *JFQ* 110 (3rd Quarter, 2023), our Forum section welcomes three articles that expand his discussion of future joint warfighting. First, Thomas Walsh and Alexandra Huber interview the Services’ vice chiefs about how the concept affects their efforts to implement Joint Force Development and Design in their plans for the joint force. Vice Chairman Admiral Christopher Grady offers his thoughts on how we can build the joint force in line with the JWC. In an exclusive to *JFQ*, NATO’s Supreme Allied

Commander Transformation Philippe Lavigne provides his perspective on how Alliance nations are adjusting national and NATO plans for modernization, especially during the extant threat of Russia to Ukraine and nearby nations.

As we do each October issue of *JFQ*, we present the winners of the Secretary of Defense and Chairman of the Joint Chiefs of Staff (CJCS) Essay Competitions, held this past spring at National Defense University. With judges gathered from across the professional military education enterprise, over 90 essays competed and 4 were selected, with a dual winner in one category. In the Secretary of Defense Strategic Research Paper category, Karl Scheuerman of the Eisenhower School connects the dots between Russia's threats to stop wheat exports and how that could impact the U.S. food supply. The first of two winners in the CJCS Strategic Paper category, Benjamin Donham of the U.S. Army War College writes about how AI could be applied successfully to joint medical operations. The other winner in this category, Nathaniel Peace from the Air War College, suggests a strategy to achieve space denial through deterrence.

In a first for *JFQ*, we offer a special section on U.S. Africa Command, featuring my interview with USAFRICOM Commander General Michael Langley, USMC, and three articles from his command staff. In an overview of the guiding principles adopted by the command, Melissa Stafford, Benjamin Okonofua, William Campbell, and Garth Anderson discuss the continuing value of diplomacy, development, and defense in the region. Looking more deeply into the first of these principles, Rose Keravuori, Peter Bailey, Eric Swett, and William Duval describe how USAFRICOM is working to implement the concept of Defense Diplomacy. With such a large geographic area of responsibility and a relatively small amount of assets to call on, Opher Heymann and Peter Yeager outline a range of opportunities for the command to make a difference across the continent.

Our Features section offers four articles from the field, including views on potential problems between China and

Russia in the Arctic, managing risk, understanding the history of Black Soldiers in World War II, and how modern military members can best learn from their industrial partners. Adam Lajeunesse, P. Whitney Lackenbauer, Sergey Sukhankin, and Troy Bouffard offer important insights into the challenges of Chinese and Russian use of the Arctic. On managing risk, Bryan Groves, Jerad Rich, and Kaley Scholl educate us on how to best employ the joint force's existing frameworks for successful outcomes. Returning *JFQ* alumnus Bryon Greenwald provides us with his take on how the experiences of Black combat Soldiers in World War II can help us best leverage diversity and inclusion efforts today. Michael Lima discusses Training With Industry and shares his perspective on why more such assignments would help both sides of the commercial defense industrial base.

Rounding out this issue, along with three outstanding book reviews, is our Recall article. Casey Miller, Carl Jappart, and Matthew Jackson offer their lessons learned from the Allied response to the German U-Boat offensive of 1942.

As the outline of the JWC begins to become clearer to the joint force and beyond, we hope to hear from you about how it relates to your vision of the future, AI, geopolitical issues, and more. While this world may seem increasingly complex and complicated, sharing your thoughts on how to deal with it is always of value to our nation's leadership and your battle buddies alike. *JFQ* is always ready to air them out. **JFQ**

—William T. Eliason,
Editor in Chief

To the Editor

In their letter to the editor (*JFQ* 110, 3rd Quarter 2023), Michael P. Fischerkeller, Emily O. Goldman, and Richard J. Harknett concede that “employed persistently over time, a ‘deterrent effect’ might result from cyber campaigns.” It is certainly accurate then to claim that persistent engagement will effect a level of deterrence by creating friction against malicious activity. This does not mean that persistent engagement was adopted by U.S. Cyber Command as a deterrent strategy.

Certainly, too, competition below armed conflict can indeed result in political change (and thus is consequential). But it is hard to understand or share their claim that such “[c]ampaigns in competition are not less consequential than actions in crisis and armed conflict.” (Political influence campaigns are not less consequential than conventional or nuclear war?)

Deterrence is much easier to conceive at the strategic end of the competition continuum (for example, deterring strategic attack via cyberspace against critical infrastructure) and much harder at the low end, below armed conflict, as I specifically argue in my article titled “Cyber Deterrence Is Dead! Long Live ‘Integrated Deterrence!’” (*JFQ* 109, 2nd Quarter 2023). A whole-of-government and cross-domain effort is needed to better shape the domain. This is why the Department of Defense is advancing *integrated* deterrence that involves all military domains across the spectrum of competition and that leverages all instruments of national power.

Broad claims that deterrence does not apply to cyberspace are unhelpful if they cannot accept any nuance that cyberspace activity can contribute to deterrence below armed conflict (however small) and that cyber deterrence at the strategic level probably does in fact exist.

—James Van de Velde
Professor, National Defense University