

Military Applications of AI

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Roles for AI in Military Organizations

- AI as administrator
- AI as Intelligence analyst
- AI as battlefield factor
- AI as decisionmaker



1. AI as Military Administrator

F- 35 Lightning -- \$100 million

Planned purchase: 2,456 by 2044



- Logistics
- Maintenance
- Procurement
- Personnel Management
- Budget Planning

FOREIGN AFFAIRS

NOVEMBER/DECEMBER 2023



JAKE SULLIVAN

**The Sources of
American Power**

The
Dysfunctional
Superpower
ROBERT GATES

Is Foreign
Policy Rational?
KEREN YARHI-MILO

AI Is Already at War:

*How Artificial Intelligence Will
Transform the Military*

Michelle A. Flournoy

November-December 2023

“The U.S. military is using AI to optimize everything from equipment maintenance to budgetary decisions.”



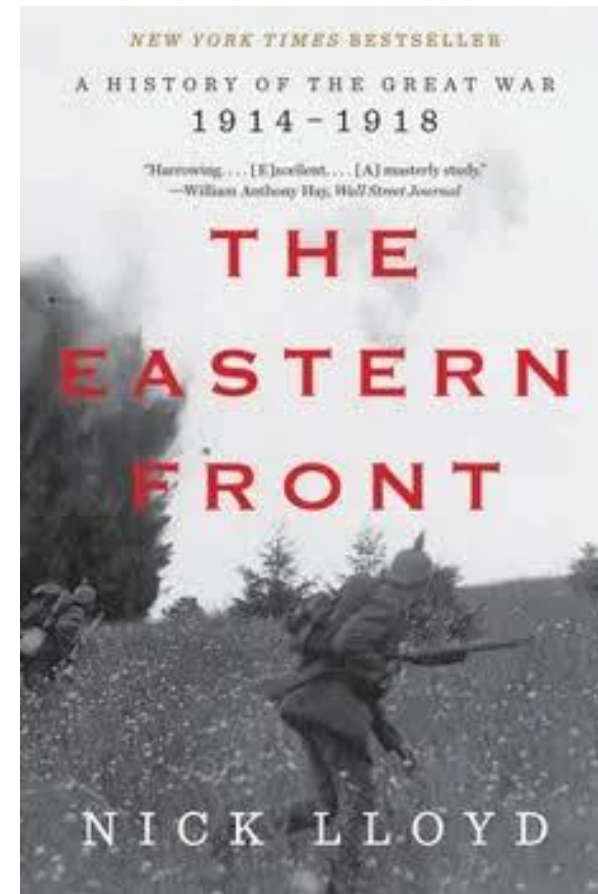
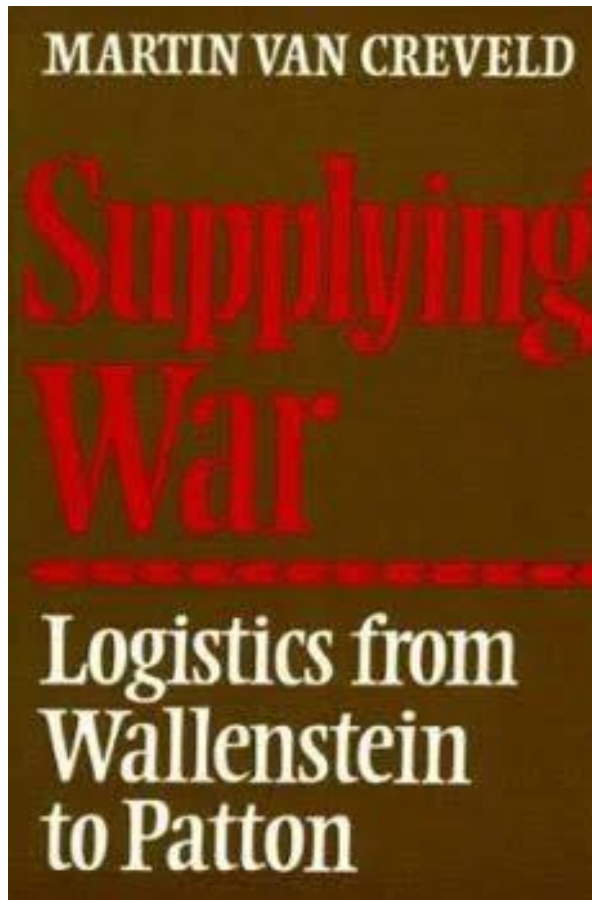
Logistics Impact

Essentials: Deployments, Consumption Rates, Transport Connections, Supply Chain. **Tooth to tail ratio: 90-10**

Impact:

- When and where battles occur
- How fast and how far forces can move
- How well and intensely units can fight
- Who wins?

Amateurs Worry about Strategy Professionals Worry about Logistics



Managing Procurement

“You go to war with the army you have, not the army you might want or wish to have at a later time.”

Donald Rumsfeld

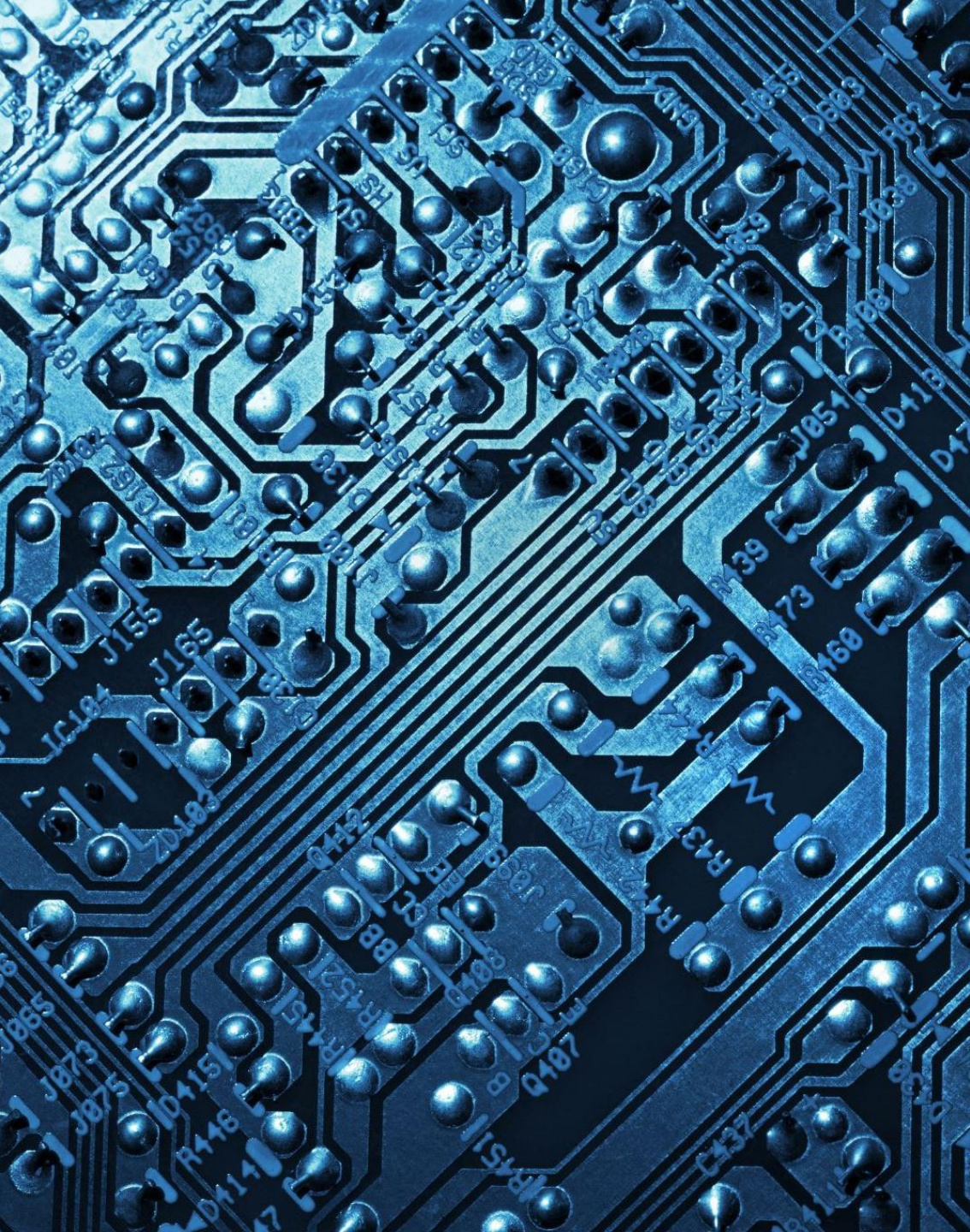
Kuwait, December 8, 2004



2. AI as intelligence analyst

- *Sensors, space, surveillance: huge volumes of data
- *Integration of data, organizations, and users
- *Situational awareness to national decisionmaking





Limits on AI as an intelligence asset

- AI cannot answer unanswerable questions
- AI cannot analyze uncollected information
- AI cannot analyze unshared information
- AI cannot make good recommendations from bad information
- AI cannot transcend its algorithmic parameters
- AI cannot prevent competing AI assessments
- AI cannot eliminate human frailties



3. AI as battlefield factor

- AI as technology enabler: drones and robots
- Alter cost-exchange ratios
- Supplant major equipment?
- Replace humans?
- Human-machine teaming
- Intense offense-defense innovation competition
- Complex, expensive, semi-smart to simple, cheap, smart
- AI on AI attacks





The Ukraine War Experiment: Drones, Drones, Drones

“By pioneering tomorrow’s battlefield tactics, Kyiv is rewriting military doctrine and setting the template for future wars.”

David Kirichenko
The Lowy Institute



Digesting Ukraine's Drone Lessons

Drones Are Transforming the Battlefield in Ukraine but in an Evolutionary Fashion,
Stacie Pettyjohn

The Russia-Ukraine Drone War: Innovation on the Frontlines and Beyond, Center for Strategic and International Studies

Drones in Ukraine: Four lessons for the West,
Ulrike Franke

Lessons Learned from the War in Ukraine:
The Impact of Drones, Mykhailo Samus

Warfare rewired: drones and civilian risk,
Dominique Soguel



“Replicator aims to deploy thousands of **low-cost and attritable** autonomous platforms across different warfighting domains and military branches.”

*The Autonomous Arsenal in
Defense of Taiwan: Technology,
Law, and Policy of the Replicator
Initiative*

Erich Rosenbach, Ethan Lee.
And Bethany Russell

January 2025



“Is the US Ready for the Next War?” (Dexter Filkins, The New Yorker, July 14, 2025)

The technological shifts that have stymied the Russian invasion of Ukraine are threatening to undermine America’s global military preëminence.

A growing consensus of defense experts holds that the United States is dangerously unprepared for the conflicts it might face.

With drones circling day and night, surprise attack is impossible, movement suicidal. If soldiers venture out, they are attacked immediately by drones or artillery.

With global conflicts increasingly shaped by drones and A.I., the American military risks losing its dominance.





4. AI as Decisionmaker

Equipment: The intelligent killing machine

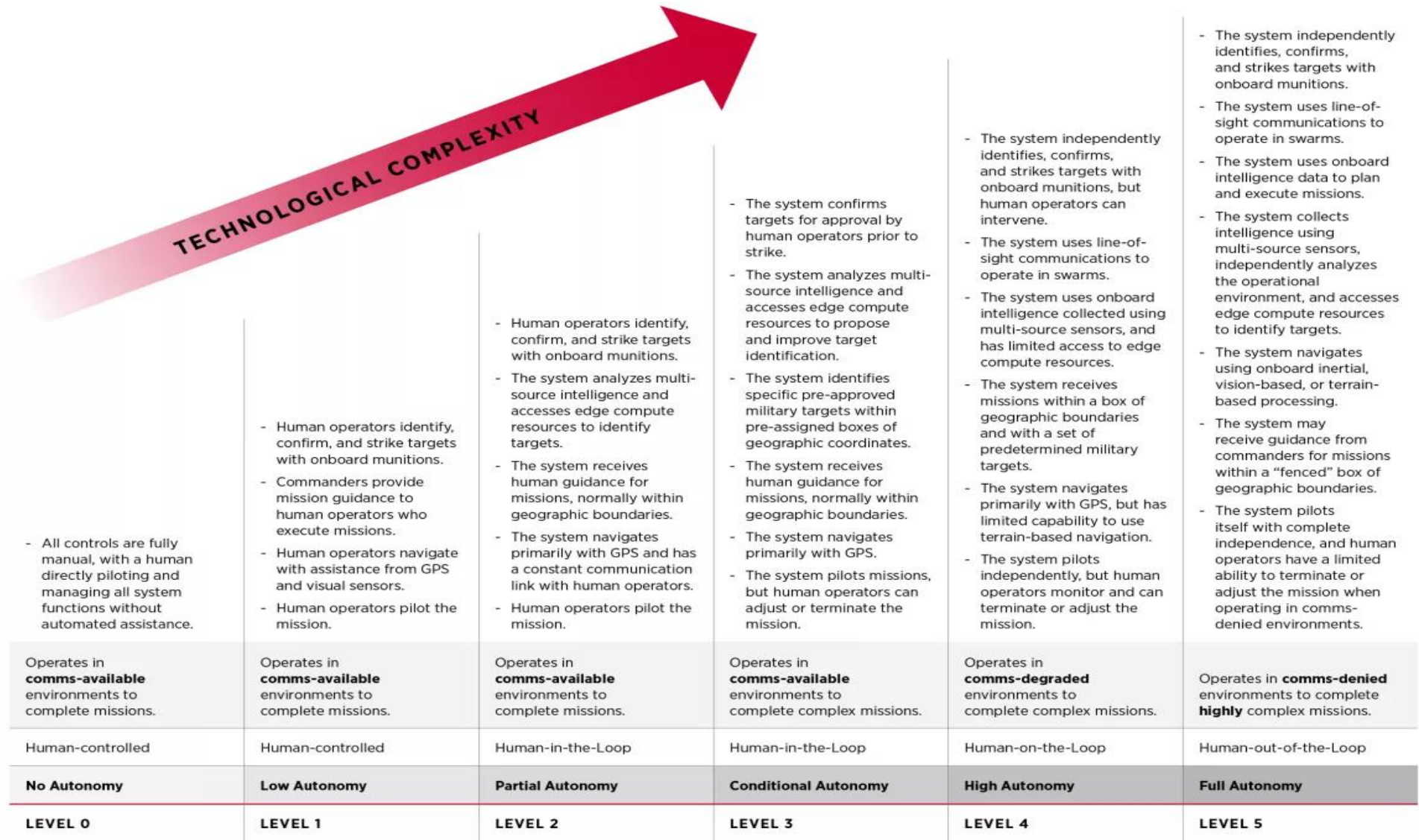
Operational: The AI-Enabled Battlefield commander

Strategic: Armageddon by AI?

Machines Making Lethal Decisions

- LAWS: Lethal Autonomous Weapon Systems (Killer Robots)
- Automation
- Ethical & Legal Considerations, UN discussion, civil society worry





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Special Issue

Anticipating the Future of War: AI, Automated
Systems, and Resort-to-Force Decision Making

Guest Editors: Toni Erskine and Steven E. Miller



AI and Use-of-Force Decisions

- Vol. 78, no. 2 (2024)
- Perils of Automation
- Speed kills
- Information Overload
- Algorithmic opacity
- Questionable info reliability
- Questionable reliability
- Automation bias

AI as Nuclear Decisionmaker?

“a spectacularly dangerous idea.”

Tom Nichols
The Atlantic
August 2025



Rapid and wide international consensus that there should be a **human in the loop**

AI as input in nuclear-use decisions

AI impact on the stability of the nuclear balance

Human in the Loop

AI as sole source
for the sole
authority?



Questions about the Human in the Loop

What is the loop?

When is the human in the loop?

Does the human control the loop?

Does the human understand the loop?

What human or humans are in the loop?

Is the human a weak point in the loop?

Can the human resist automation bias even if in the loop?

What role for humans in partially automated force postures?



Can Humans Understand the Loop?



“The internal operations of advanced ML systems are in general incomprehensible to human beings....It is difficult or impossible to understand in a meaningful way how the system makes an inference given a certain input or query.”

Herb Lin

Texas National Security Review

Will there be multiple loops?

“The Army won’t work with the Air Force. The N.S.A. won’t work with anybody. The National Reconnaissance Office won’t work with anybody. The National Reconnaissance Office and the National Geospatial-Intelligence Agency are both supposed to work with the N.S.A.—and they won’t talk to each other.”

Quoted in Dexter Filkins

The New Yorker

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Army of the Future?