

The Future of Weapons of Mass Destruction when Emerging Technologies Arise

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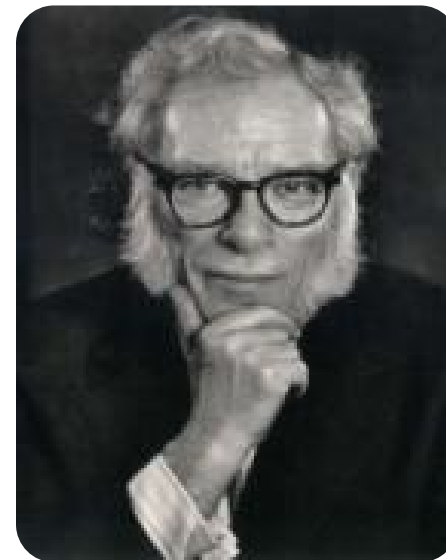


Agenda

- Research Question
- Threatcasting Methodology
- Findings
- Output
- Discussion

Disclaimer: The views expressed are those of the author and do not reflect the official policy or position of the U.S. Department of the Army, the Department of Defense, the U.S. Government, or NATO.

“Predicting the future is a hopeless, thankless task, with ridicule to begin with and, all too often, scorn to end with.”



- Isaac Asimov

What are the future implications of **Emerging Disruptive Technologies** (EDTs) on the future of **Weapons of Mass Destruction** (WMD) warfare?

U.S. military

European Defence Agency (EDA)

White House

NATO STO

Academics

Forbes

U.S. Intelligence Community

Various Think Tanks

What are the future implications of **Emerging Disruptive Technologies** (EDTs) on the future of **Weapons of Mass Destruction** (WMD) warfare?

Nuclear

Radiological

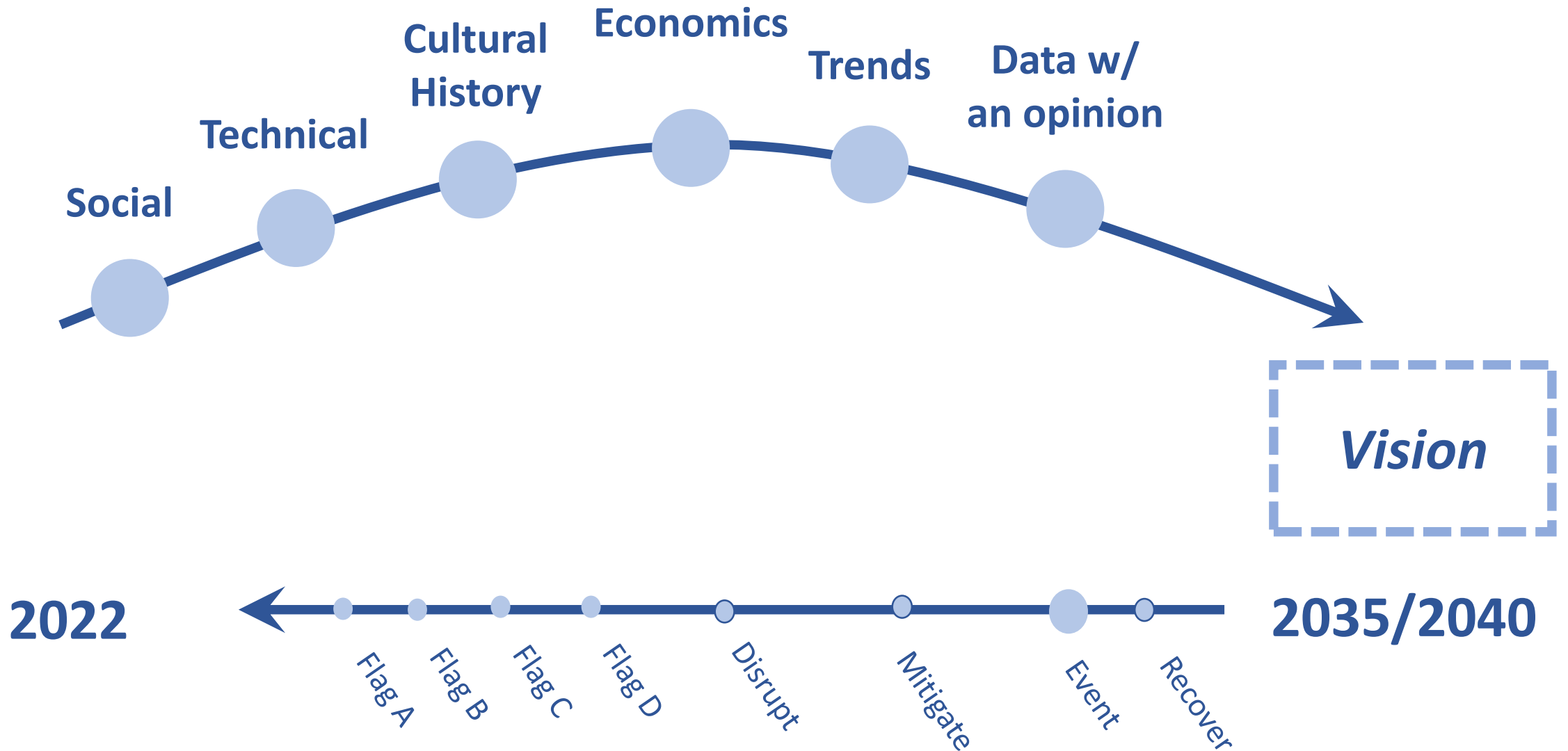
Chemical

Biological

What are the future implications of Emerging Disruptive Technologies (EDTs) on the future of Weapons of Mass Destruction (WMD) warfare?

- How might EDTs increase the **lethality** and **effectiveness** of WMDs in kinetic warfare?
- How can civic leaders and public servants **prepare** for and **mitigate** these projected threats?

Threatcasting Methodology



Subject Matter Experts (SMEs)

Dr Melanie Sisson

Dr John Arquilla

Sarah Gamberini

Dr Genevieve Bell

Dr P.W. Singer

Col. Beth Markos

Andrew Hessel

US Air Force Futures Rep

Nuclear Deterrence and EDTs

Cyber, EDTs, Proliferation

Quantum Sensing

Human Behavior

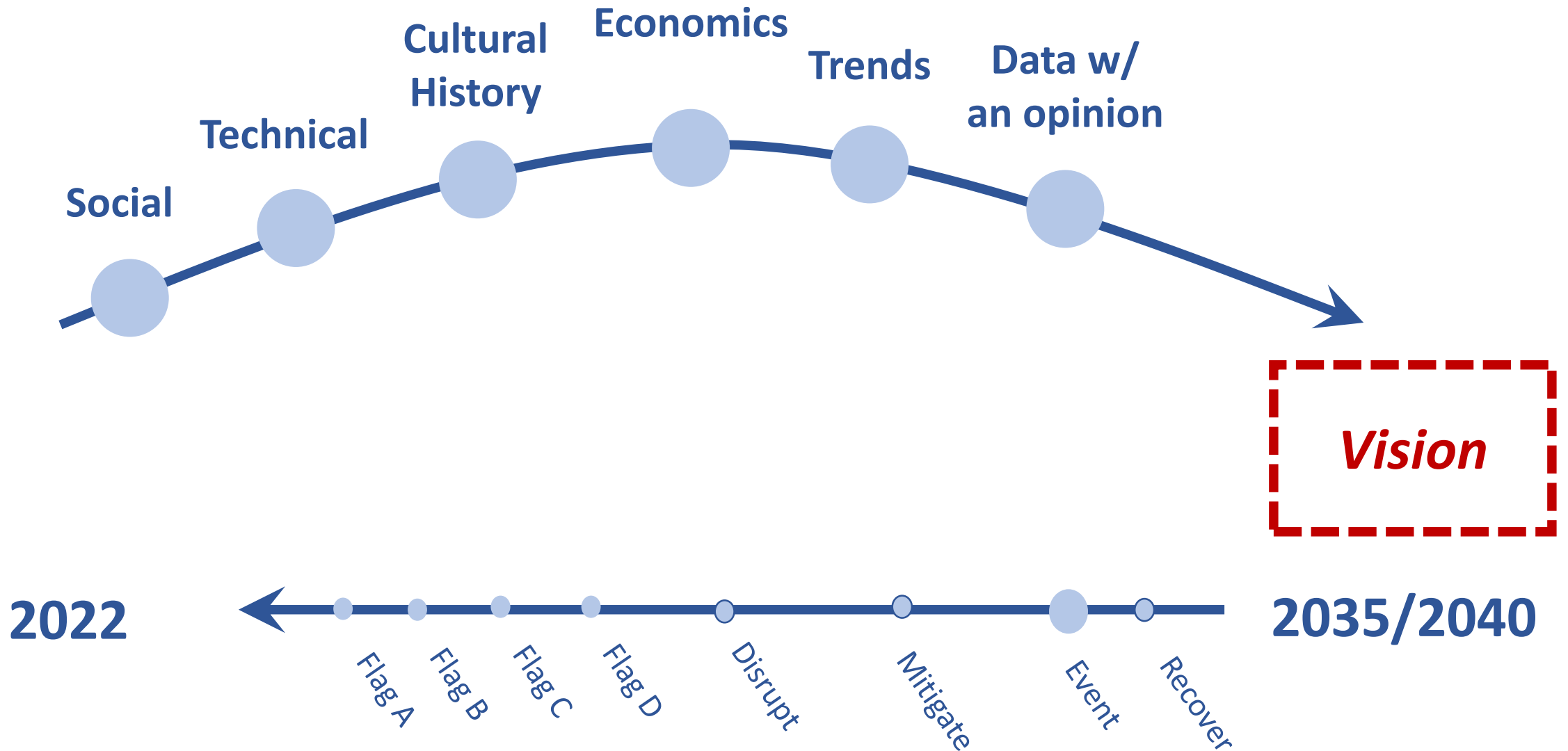
Strategic Surprise, Technology

EDTs impact on nuclear capabilities

Biological WMDs enhanced by EDTs

2022 Air Force Global Futures Report

Threatcasting Methodology



Workshop: 01-02 March 22 in Norfolk, VA

60+ participants

95 synthesized points from SMEs

52 visions of the future

Analysis / Synthesis by 5 analysts

7 general threat spaces

Recommendations



1. NATO should widen the Nuclear “Firebreak” to minimize Conflict Escalation
2. NATO should Raise the Bar for the Intent to Use WMDs
3. Expand NATO’s Understanding of Insider Threats and Motivations



4. NATO should Address Plausible Scenarios of EDTs Interacting with each other and WMDs.
5. NATO should Measure and Stabilize Complex Systems
6. NATO should Develop a Solutions Mindset for Long-Term Potential Attacks

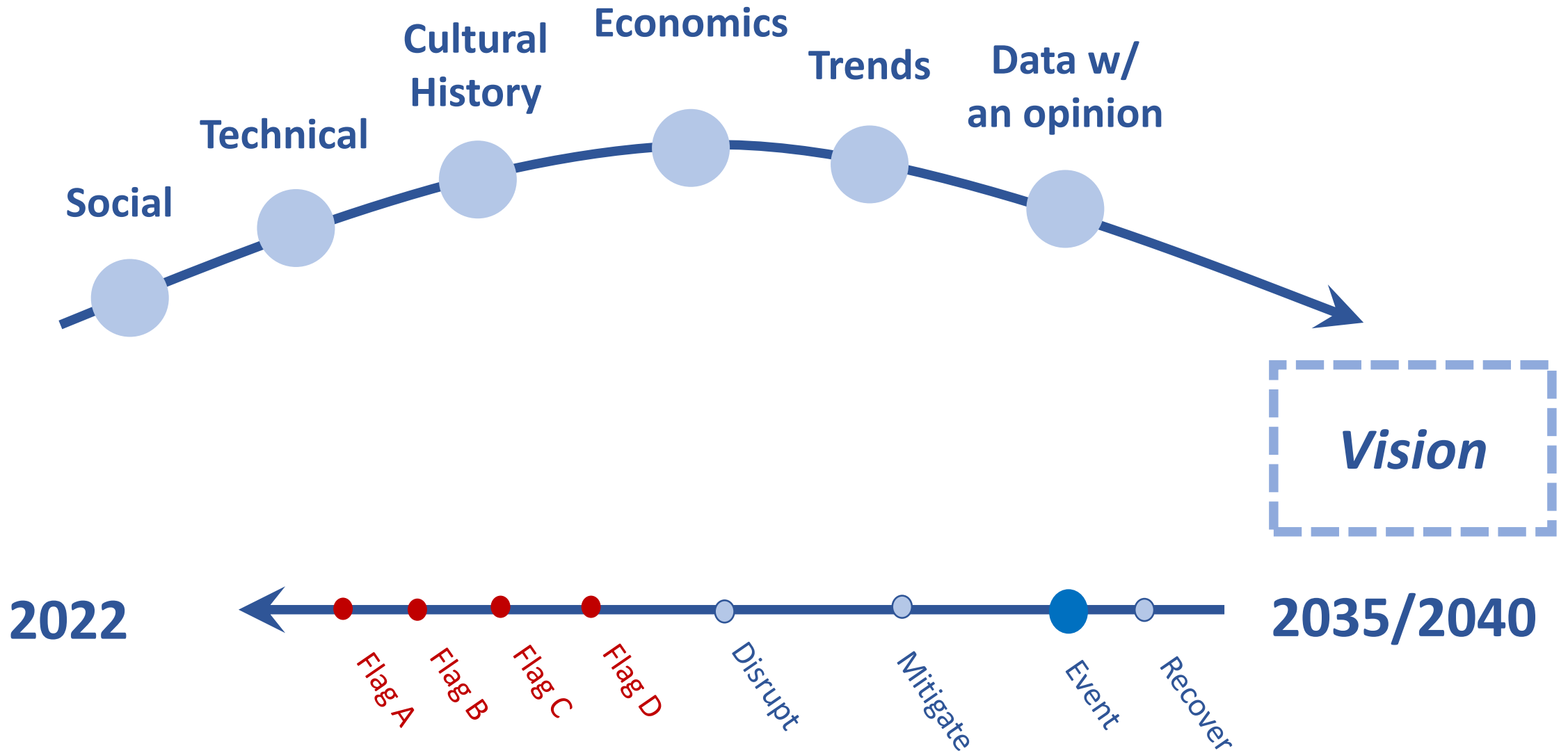
Speed
Scale
Destruction



7. Interaction with non-nation states and corporations



Threatcasting Methodology

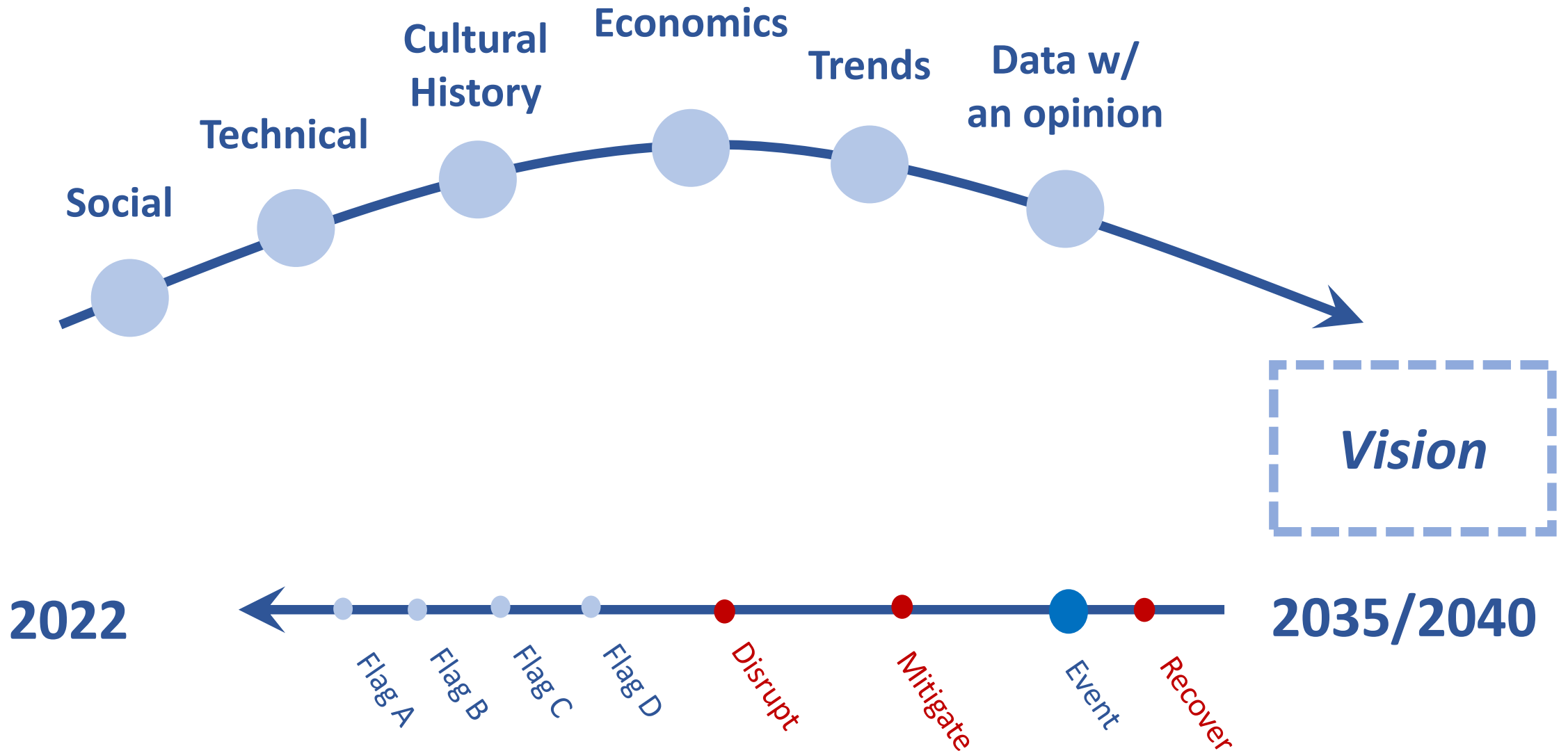


Indicators (signals or trends) that a specific threat future is underway

3 bins:

- EDT Technological Progresses and Break Throughs
- Geopolitical, Cultural, and Business Trends
- Early Use, Rehearsals, and Attacks

Threatcasting Methodology



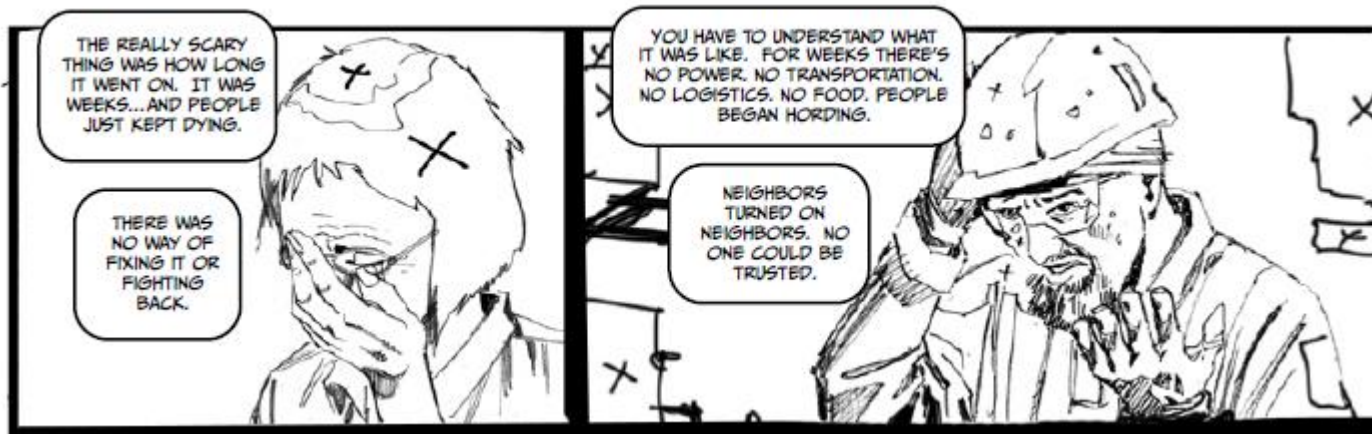
What can we do?

- Out-Think the Adversary
- Out-Excel the Adversary
- Out-Fight the Adversary
- Out-Pace the Adversary
- Out-Partner the Adversary
- Out-Last the Adversary



Technical Report

2x short graphic novellas



Comments?

Discussion?

Next Threatcasting workshop
Threat of 6G / NextG to mil operations
Spring 2023
Norfolk, VA (USA)



<https://cyber.army.mil/Work-Areas/Threatcasting/>