

The International Security Environment: A Look Into Militant Alliances, Military Inclusion, Artificial Intelligence, and Strategic Stability

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Abstract

By perusing through new data on global power projection capabilities as well as analyzing governmental documents, the security environment has displayed great volatility as it evolves over the past decades. From the decapitation of militant leaders, to gender inclusivity in the military, and the application of artificial intelligence on nuclear command and control, this project aims to highlight just some of the most important variables that have shaped the realm of international security. From tracing the decapitation of militant leaders from across the globe, each group was analyzed to see if there was a breakdown with their respective alliances as the central leadership collapsed. Moving into the realm of various militaries across the world, many countries have exhibited constant growth in progressive reforms to include female and LGBTQ members into special ops and promotion in officer ranking positions while other countries are still at a standstill in their progress. As technology advances into the stages of incorporating artificial intelligence into society, whether it be social media, military applications, or machine learning, there are a myriad of implications that must be considered. Evidence suggests that nuclear armed states may exacerbate instability amongst each other and soon dive into a full-blown AI arms race.

Military Innovation and Inclusion

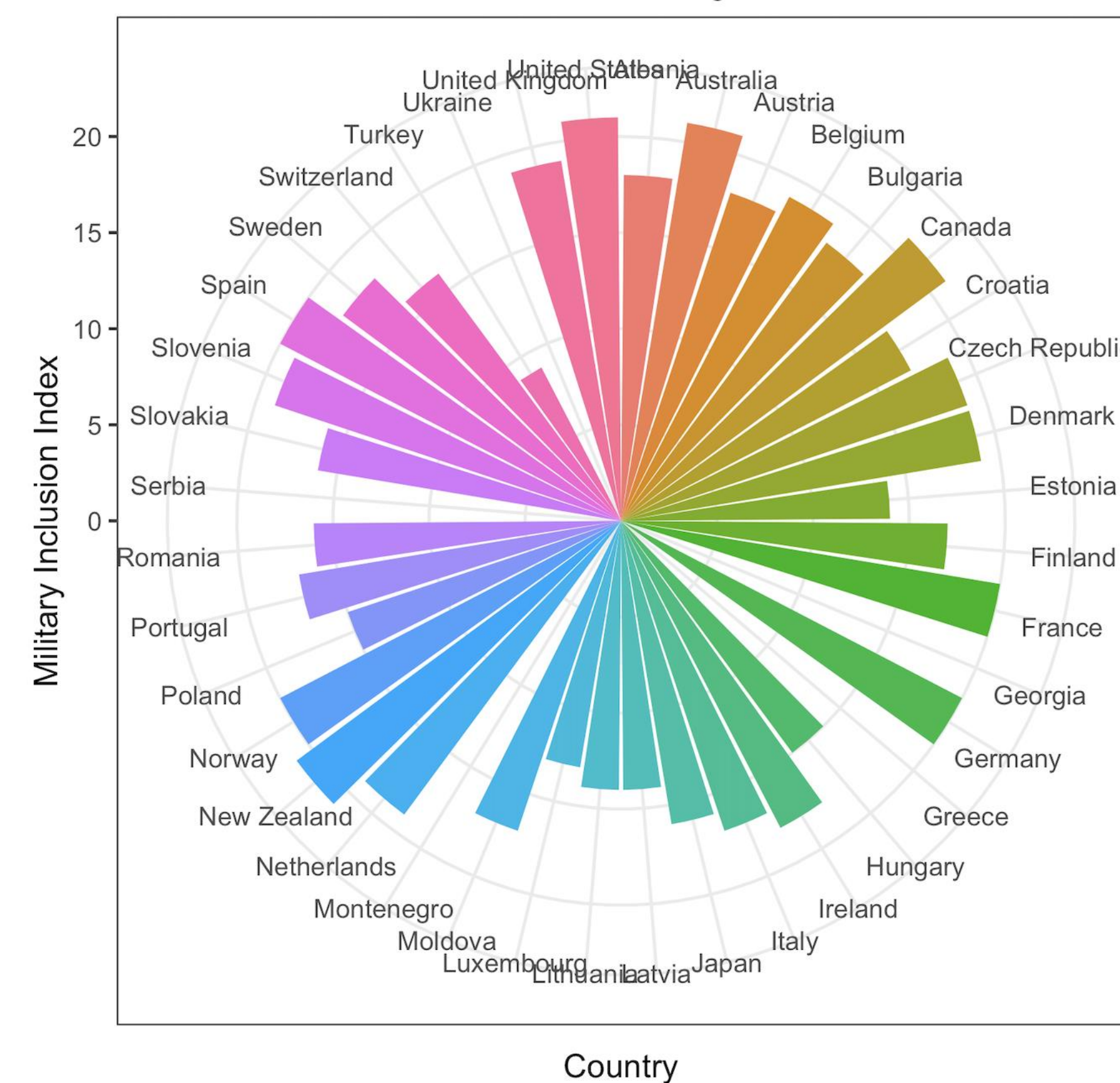
The Institutional Commitment to Inclusion (ICI) index measures the extent to which a given military institutionally commits to gender inclusion. A country will exhibit a high ICI index score if their military invests in recruiting and retaining an inclusive force, lifts of occupational restrictions, and dedicates attention to harassment and sexual assault. A country's total military inclusion index score is computed by the following:

Institutional Commitment to Gender Inclusion Index	
Participation of women	Gender awareness
Occupational restrictions* (0 – 6)	Family programs (0 – 2)
Formal rank restrictions (0 – 2)	Harassment policies/monitoring procedures* (0 – 5)
Percentage of active force (0 – 5)	LGBTQ+ exclusion (0 – 2)
Percentage of officer ranks (0 – 4)	

Military Inclusion Across Countries

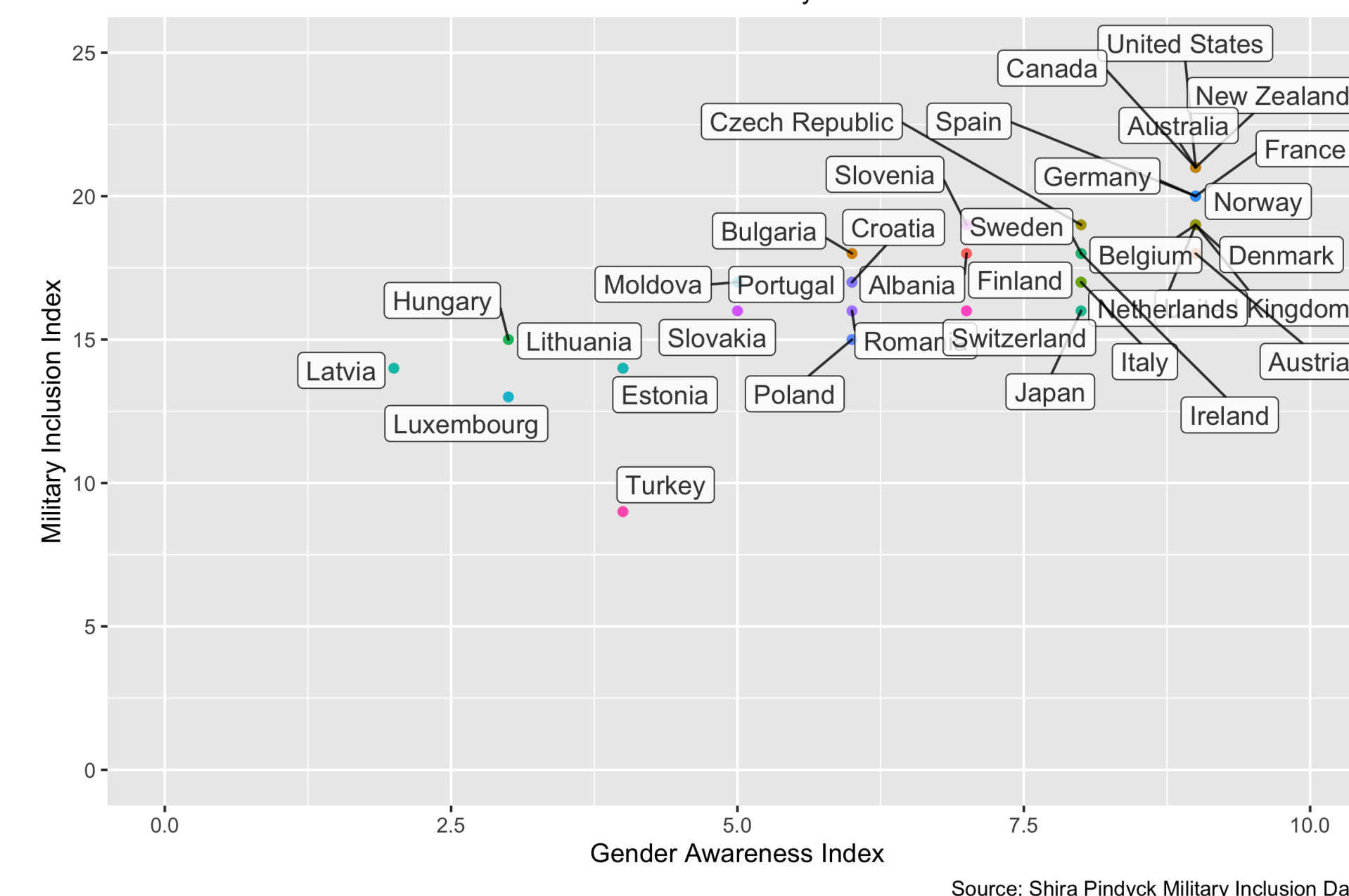
Military Inclusion Index Number by Country in 2016

Question: Which Countries Exhibit the Highest Levels of Gender Inclusion?



Source: Shira Pindyck Military Inclusion Data

Gender Awareness Index vs. Military Inclusion Index in 2016
Positive Correlation Between Gender Awareness and Military Inclusion



Source: Shira Pindyck Military Inclusion Data

Evidence suggests that countries in the Baltic and Eastern European region imposed greater restrictions on their military forces that prevent the women and members of the LGBTQ community from serving. Progressive countries include the Western European countries, Canada, New Zealand and the USA.

Decapitation of Militant Leaders and its Effect on Their Alliances

Whether established based on ideology or through motives to seek reparations from a corrupt government, militant groups from across the face incredible obstacles when an essential leader is decapitated. These organizations try hard to maintain the established alliances with other militant groups that have helped push and grow their respective movements. However, in some cases, these connections fall apart due to a lack of resources.

Variables that Maintain Stable Alliances

- Decentralized organizational structure
- Strong membership sentiment between groups (ideology)
- Shared common enemy

Variables that Obstruct Alliances

- Membership decline of decapitated group
- Internal disputes among leadership
- Cash flows/weapons are cut leading to shortage of capital
- Changing identities within organization

Case Studies

➤ Decapitation of Hagop Hagopian of ASALA + PKK

The brutal assassinations led by Hagopian faced immense criticism from the PKK at the outset of the alliance. After his demise, Monte Melkonian and Hagop Darakjian assumed leadership. Assassination attempts on officials declined and the ASALA and the PKK were able to reconcile relations through a more humane approach of leadership and apprehensions against the Turkish government kept ideological values strong.

➤ Decapitation of Ivan Marino Ospina of M-19 + Shining Path (SL)

Suspecting the electoral system was corrupt, M-19 was consolidated on the idea of uniting the Colombian people. They were introduced to SL through the robust narcotics traffic where both groups received funding from. Ospina's death paved the way for the rise of Antonio Navarro Wolff who saw a different approach. In 1989, the M-19 guerrilla group became a legal political party and became the M-19 Democratic Alliance (AD M-19), but Navarro would soon learn that the military structure developed in the 1970s could not simply be grafted onto the new party. SL saw no need to partner with a movement that was changing their identity. They had a stable source of income and had inherited much of M-19's war tactics and would later prove to be even more brutal than M-19.

Artificial Intelligence and Strategic Stability

The rapid expansion of AI military applications across the globe merits a high level of focused attention to minimize its negative impacts on strategic stability, and to prevent strategic surprise. There have been mounting fears that the United States is underprepared to manage the new challenges, and that the nation will end up "offset" due to the sheer scale at which the Chinese intend to deploy AI. The definition of AI is not very clear, however, for most currently popular applications, AI consists of algorithms that form the basis of pattern recognition software that is able to interpret, organize, and make predictions. The fundamental assumptions underlying survivability and credibility may well be called into question over time as state and non-state actors begin to deploy a broad range of AI techniques in weapon systems, command and control, and decision support systems.

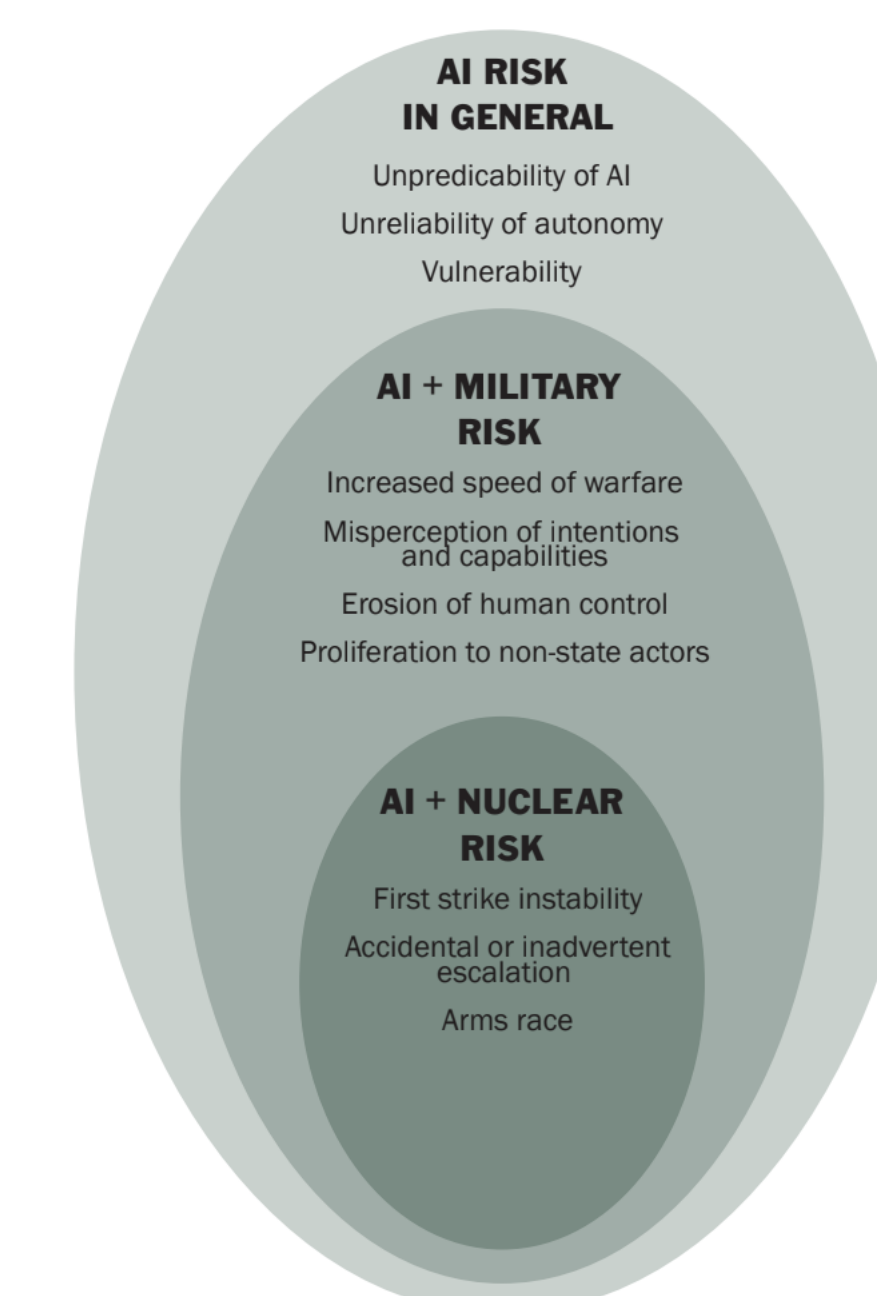
Advantages of AI Among Nuclear-Armed States

- Superior AI incorporated NC3 systems would likely outweigh asymmetries in arsenals sizes and thus, put an adversary with less capable systems and more missiles at a disadvantage.
- Enables faster and more reliable early-warning and ISR tools. (Greater situational awareness)
- Fosters the development of more survivable delivery systems. (Hypersonic weapons and unmanned submarines can penetrate through A2/AD barriers)

Consequences of AI Among Nuclear-Armed States

- The potential of AI "support" tools substituting the role of critical thinking, empathy, creativity, and intuition of human commanders in the strategic decision-making process can be detrimental.
- Should a nuclear-armed state decide to use machine learning algorithms for collection and processing of ISR information, this would open the possibility for an opponent to use a method known as data poisoning to undermine or manipulate the performance of early-warning systems.
- The adoption of recent advances in AI by one or several nuclear-armed states could trigger a security dilemma. (Increase in one's state's security increases another state's insecurity)
- As AI-enabled decision-making tools are introduced into militaries, human operators thus be more inclined to follow their recommendations blindly.

Risks of Artificial Intelligence



Key Advantages of Autonomy

KEY ADVANTAGE OF AUTONOMY	WHAT IT MEANS	UTILITY FOR MISSIONS
SPEED	Faster implementation of the OODA loop	• Air defence • Cyber-defence • Electronic warfare
AGILITY	Reduced reliance on command and control	• ISR • Cyberwarfare • Electronic warfare • Submarine and mine hunting • Logistics operations
PERSISTENCE	Constant performance of unmanned systems for dull, dirty and dangerous missions	• Logistics operations in enemy territory • Casualty evacuation • Countermine operations • Long-range ISR • Air defence
REACH	Access to communications-denied environments	• Casualty evacuation • Submarine and mine hunting • ISR in A2/AD environments • Strikes in A2/AD environments • Logistics operations in A2/AD environments
COORDINATION	Ability to coordinate weapon systems in structured and strategic way	• ISR in complex and cluttered environments • Combat operations in A2/AD environments • Force protection

Conclusion

The realm of international security is both broad and ever evolving. From militant groups, to military technology, and more nascent fields such as artificial intelligence, we can trace the history and evolution of the global-political environment. Exploring organizational dynamics and alliance breakdowns in the event of decapitated leaders may serve as a foundation for understanding how to counter terrorism and destruction. Continuing the data collection of the extent of inclusion of militaries across the world can help lay the groundwork on where progressive measures are being taken and where they are lacking, creating a trend that may help provide a clearer visualizations of which countries are adapting to equality in their forces. Ongoing research in the field of artificial intelligence suggest that it may enable faster and more reliable early-warning and intelligence, surveillance, and reconnaissance tools, thus, providing greater awareness. In the same vein, such powerful machine learning may lead to the risk of automation complacency and bias. Machines have no moral compass, no sense of intuition, no feelings toward empathy, and cannot distinguish actions that may signal de-escalation. If AI-enabled machines were to be integrated into NC3 networks, what measures could be taken, if any, to offset this lack of psychological cognition? While the nuclear arms race was about quantity and quality of warheads, the cyber weapons arms race will be about maintaining informational (machine learning) superiority over the enemy. How would states be able to track proliferation or non-proliferation of AI-enabled technology given that it is hard to quantify its exact powers? Many questions are still left to be answered and the field is only growing bigger.

References & Acknowledgements

- Intellectual property of the ICI index is credited to Shira Pindyck. Inclusion Index compiled along with Julie Sohnen and Julia Ciocca.
- Central Intelligence Agency. (1984, January). THE ARMENIAN SECRET ARMY FOR THE LIBERATION OF ARMENIA: A CONTINUING INTERNATIONAL THREAT. Retrieved June 6, 2020
- Gunter, M. M. (1991). Transnational Sources of Support for the Kurdish Insurgency in Turkey. Journal of Conflict Studies, 11(2).
- Gunn, C. (2014). Secret Armies and Revolutionary Federations: The Rise and Fall of Armenian Political Violence, 1973-1993
- Townsend, M. (2016, October 20). After the Violence Abated: The Aftermath of Sendero Luminoso.
- Hudson, R. A. (1995). Colombias palace of justice tragedy revisited: A critique of the conspiracy theory. Terrorism and Political Violence, 7(2), 93-142.
- T4GS. (2019, February 13). AI and the Military: Forever Altering Strategic Stability. Technology for Global Security.
- Boulanin, Vincent, Lora Saalman, Petr Topychkanov, Fei Su, and Moa Carlsson. "Artificial Intelligence, Strategic Stability and Nuclear Risk," June 2020.
- Geist, E., & Lohn, A. J. (2018). How Might Artificial Intelligence Affect the Risk of Nuclear War? Santa Monica, CA: RAND.