NATO Foundation
Defense College

Policy Background Paper

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The international security arena is increasingly and rapidly marked by issues that are transnational and complex. The Foundation's Game Changers 2020 Dossier (https://www.natofoundation.org/game-changers-2020-dossier) has offered a balanced and diverse overview on 12 pivotal security issues that will change profoundly the global strategic dynamics. In this conference we have singled out three of them: climate change, the security-health nexus and artificial intelligence.

Climate change is unfortunately a fact and it is remarkable that in some important US companies almost half of the stakeholders declare their interest about environmental, social and governance (ESG) investments, signalling that this is not a purely political issue. The debate on how major countries are not reaching their objectives pledged in the 2015 climate Paris Agreement and if even agreed measures are sufficient to avoid an irreversible warming of the planet is still ongoing: China is evidently a partner to reckon with, considering its level of emissions. On the other hand, NATO has already to face concrete problems.

First of all, climate is indeed inextricably intertwined with the scarcity of water, arable land and sufficient crops' yield because warmer temperatures favour on one hand a process of desertification, and on the other extreme rainfalls that wash away fertile soil. This has since long been pinpointed as a recipe for local and international conflicts (e.g. water wars and several land conflicts in Latin America, Africa and Asia) and has been a historical object of contention. Then, as shown by repeated debates in the US Congress, all major bases of the four services are already affected by unfavourable climate changes. Naval bases could by unserviceable with rising waters, for instance. Finally, logistics, especially expeditionary ones, are heavily influenced by the availability of drinkable water and edibles.

The nexus between security and health has been, since more than a year, explored by the Foundation and it has been clearly shown by the present pandemic. Nevertheless, its wider implications on the transatlantic relationship have still to be assessed beyond past media debates. One area is of course a coordinated action and reaction vis-à-vis diplomatic forays by competing

powers (Beijing's mask diplomacy or the targeted medical missions of Moscow), but the other is how to strengthen political and operational mechanisms within NATO and with the European Union. It is clear that the initial reaction may be considered satisfying, but it is far from perfect and systemic. A vigorous coordinated policy in terms of controlling high security biolaboratories in the framework of the Biological Weapons Convention needs to be devised and enacted. At the same time, vastly diverging approaches in managing the pandemic at national level are defensible with the sovereignty argument, but unhelpful against a transcontinental disease that impacts global trade to say the least. Finally, NATO's out of area missions have been quite effective in retaining operational capabilities and in supporting local populations, but again the sanitary chain needs to take full stock of the lessons.

One week ago, the Chinese Jiŭzhāng (Nine Chapters) quantic computer established a new computational record, completing a complex task in some 600 seconds against the 600 million years needed by the fastest conventional computer, and overtaking the precedent result of the quantic Sycamore Google machine. These technological milestones are some of the elements necessary to build the future Artificial Intelligence environment. That AI might be desirable in abstract is clear in a vast number of defence and security sectors: multimedia intelligence analysis, encypher and decypher, automatic surveillance, automated/autonomous defence and attack systems, scenario and predictive analysis, cyberwarfare, criminal intelligence, for instance.

What is still largely unchartered water is the man-machine interaction with very high-speed operations, in other words how can an operator still be the indispensable decision-making element in the loop. Some precedents are not exactly encouraging, as it happened with highly automated air defence systems that shot down civil aircraft or fired against friendly ships or with highly automated financial systems creating major problems.

It is evident that, regarding strategic deterrence decisions also in the cybersphere, current AI error rates might be considered unacceptable vis-à-vis the risk of an accidental nuclear exchange or of an unintended catastrophic international shutdown of critical infrastructures. Moreover, the prospect of

having fully autonomous weapon systems might raise the reasonable issue of a new arms control regime.

More than even the challenges for the international community and the wisdom of major decision-makers are unprecedented and complex.

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