The "New" Cognitive Dimension of Competition and War: Calibrating the Problem and NATO's Response

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As NATO has accelerated its adaptations to the new demands of an eroding security environment, it has had to come to terms with the ways in which competition, conflict, and warfare have been altered by the ambitions and innovations of its adversaries. The problem presented by Russia to the Alliance is not the problem presented by the former Soviet Union. Understanding Russia's approach to modern warfare, including its strategic dimensions, is thus a top priority for the Alliance. The Ukraine conflict has demonstrated some of the main elements of the new Russian way of war and their current limits—as well as Russia's own capacity to learn and adapt.[1]

Within the Alliance, consensus has rapidly emerged on the need to account for the more multi-domain nature of conflict and to acknowledge cyberspace and outer space as military operational domains. But consensus has not emerged on the cognitive as an operational domain in its own right, even though the NATO Warfighting Capstone Concept recognized Cognitive Superiority as a NATO warfare development imperative, and NATO is undertaking conceptual work on cognitive warfare.[2] Some allies have recognized cognitive warfare as a new military domain,[3] while others resist doing so on the argument that cognition is an inherent feature of competition and war.[4] The expert community is divided over which aspects of cognitive warfare are the most important to address and how to do so.[5] Given this disagreement, concept development has lagged, though some sound definitional work has been done.[6]

Is the cognitive domain something new, different, and essential that requires a coherent, sustained, and new response of the alliance? Or is it something the Alliance can and should address with existing and somewhat ad hoc approaches? To help stimulate discussion within the

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[2] The NATO Warfighting Capstone Concept (2021), NATO Allied Command Transformation. https://www.act.nato.int/wp-content/uploads/2023/06/NWCC-Glossy-18-MAY.pdf. Accessed January 3, 2024.
[3] David Pappalardo, "'Win the War before the War?': A French Perspective on Cognitive Warfare," War on the Rocks (2022) https://warontherocks.com/2022/08/win-the-war-before-the-war-a-french-perspective-on-cognitive-warfare/. Accessed January 3, 2023.
[4] United States Department of Defense, Joint Concept for Operations in the Information Environment (2018).
[5] "Countering the 'Information Confrontation' Strategies of Russia and China" (2022), CGSR workshop report.
[6] André Lanata, "Cognitive Warfare;" B. Claverie, B. Prebot, N. Buchler, and F. Du. Cluzel, eds., "First NATO scientific meeting on Cognitive Warfare" (June 21, 2021).

alliance and expert community on these matters, this paper addresses the following key questions:

- Is there something fundamentally new about the role of cognition in competition and war that requires new responses from NATO?
- Does Russia's approach to cognitive warfare threaten NATO?
- What can NATO accomplish with a more competitive response?
- How should NATO respond to these threats at the strategic level?

Is There Something Fundamentally New Requiring New Responses from NATO?

A long historical perspective suggests that the cognitive dimension of war is as old as war itself. Sun Tzu emphasized the objective of subduing the enemy without fighting.[7] Clausewitz argued that war is about bringing an enemy to a culminating point at which they choose to no longer run the costs and risks of war.[8] The Soviet theory of reflexive control provided a concept for shaping an enemy's decision by altering factors in their perception.[9] During the Cold War, the U.S. military began seeking to be more efficient than its adversaries in disrupting warfighter "OODA loops," or decisionmaking processes that are broken down into the four stages of observation, orientation, decision, and action.[10] Today, the U.S. Deterrence Operations Joint Operating Concept states that deterrence is about shaping an adversary's calculus of the benefits, costs, and risks of different courses of action.[11]

Accordingly, cognitive warfare tactics and techniques have a rich history. Propaganda and public diplomacy techniques have long been used by non-democratic and democratic governments to shape public opinion.[12] Governments have also applied techniques to influence the decisions of key leaders. A large body of literature from the Cold War period examines how the Soviet government directed its intelligence services and diplomatic apparatus to persistently use a system of "active measures," including but not limited to disinformation, to shape public opinion in foreign countries and influence the decisions of key leaders.[13]

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[7] Sun Tzu, *The Art of War.*

[8] Carl von Clausewitz, *On War* (1874, first translated edition).

[9] Timothy Thomas, "Russia's Reflexive Control Theory and the Military," *Journal of Slavic Military Studies* 17, no. 2 (2004).

[10] John Boyd, *A Discourse on Winning and Losing* (ed., Grant Hammond), Curtis E. LeMay Center for Doctrine Development and Education (Maxwell Air Force Base, AL:vAir University Press, 2018.)

[11] United States Department of Defense, Deterrence Operations Joint Operating Concept, Version 2.0 (2006). https://www.jcs.mil/Portals/36/Documents/Doctrine/concepts/joc_deterrence.pdf?ver=2017-12-28-162015-337. Accessed January 3, 2024.

[12] Nicholas J. Cull, *The Cold War and the United States Information Agency* (Cambridge, U.K.: Cambridge University Press, 2008).

[13] United States House of Representatives, "Soviet Active Measures," Hearing Before the Permanent Select Committee on Intelligence, Ninety-Seventh Congress, Second Session (1982); Ladislav Bittman, *The KGB and Soviet Disinformation: An Insider's View* (New York, NY: Pergamon-Brassey's, 1983); Richard Shultz and Roy Godson, *Dezinformatsia: Active Measures in Soviet Strategy* (New York, NY: Pergamon Brassey's, 1984).

But there is also something new to account for. Three factors stand out.

First, there is a growing recognition of democratic societies' vulnerability to manipulation from outside. Divided publics, powerful social media, unprotected voting systems, and weak leaders have all been targeted in the United States and elsewhere.[14] The effects of such efforts have proven difficult to gauge.

Second, Russia has shown itself to be willing to target those vulnerabilities. Its interference in the domestic political processes of many countries is a well-established fact.[15] China and others have engaged in some similar activities.[16] This reflects their development of national strategies aimed at undermining the U.S.-led world order and at rolling back regional orders to which they object. Towards these ends, these countries engage in forms of conflict short of direct, large-scale military combat with the United States and its allies.

Third, technological innovation has put many new tools in the hands of those who develop cognitive warfare tactics, with cyber tools proving especially powerful as generators of new tactics. Russian military experts have put technological innovation at the center of a new "information confrontation" strategy[17] that integrates non-military, indirect, and asymmetric means into Russia's multi-domain military.[18] Similarly, military analysts in China have been exploring the potential psychological warfare applications in advanced computing, biotechnology, and brain science.[19]

Does Russia's Approach Threaten NATO?

Russia's information confrontation ambitions are fairly clear: to shape the Alliance's information environment in a manner conducive to its interests in peacetime, crisis, and war. But as we have seen in Ukraine, Russia's actual performance may well fall short of its ambitions. Does the Russian threat to NATO in the cognitive dimension rise above the nuisance level?

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[14] Tihomira Doncheva and Sanda Svetoka, "Russia's Footprint in the Western Balkan Information Environment: Susceptibility to Russian Influence," NATO Strategic Communications Centre of Excellence (2021); Blake Johnson and Joshua Dunne, *How the CCP is influencing the Pacific islands information environment*, Australia Strategic Policy Institute (2023).

[15] Federal Bureau of Investigation, "Russian Interference in 2016 U.S. Elections," https://www.fbi.gov/wanted/cyber/russian-interference-in-2016-u-s-elections. Accessed January 3, 2024.

[16] Sarah O'Connor, Fergus Hanson, Emilia Currey, and Tracy Beattie, *Cyber-enabled foreign interference in elections and referendums*, Australia Strategic Policy Institute (2020).

[17] Defense Intelligence Agency, *Russia Military Power* (2017).

[18] Sergei Chekinov and Sergei Bogdanov, "Asimmetrichniye deystviya po obespecheniyu voennoy bezopasnosti Rossii [Ensuring Russia's Military Security by Asymmetric Means]," *Voennaya Mysl*, no. 3 (2010), pp. 13-22; Sergei Chekinov and Sergei Bogdanov, "The Nature and Content of New Generation War," *Voennaya mysl,* no. 10 (2013), pp. 13-25; A.A. Bartosh, "Sderzhivaniye i prinuzhdeniye v strategii gibridnoy voyny [Deterrence and Coercion in Hybrid Warfare Strategy]," *Voennaya mysl*, no. 9 (2021), pp. 18-34.

[19] Elsa Kania, "Minds at War: China's Pursuit of Military Advantage through Cognitive Science and Biotechnology," Prism 8, no. 3 (2019); Nathan Beauchamp-Mustafaga, *Chinese Next-Generation Psychological Warfare*, RAND Research Report (2023).

The case that it does not rests principally on the argument that Russia's information confrontation strategy has largely failed in Ukraine. This may yet prove to be wishful thinking. In the global context, Russia has succeeded in preventing the formation of a coalition against its actions in Ukraine sufficiently broad to effectively enforce sanctions. In the regional context, Russia is playing the long game, hoping to erode Western resolve to support Ukraine over a period of 2-3 years.

A better case can be made that Russia's approach to information confrontation does present a novel and substantial threat to the Alliance. To grasp this point requires an understanding of Russia's strategy. Russian strategic analysts have generated a great deal of work on the strategic significance of non-military measures in warfare. These analysts, and their leaders, clearly perceive a threat from the West, led by the United States, which they see as well armed with modern information communication technologies and the ambition to re-make the Russian political order in its own image with a so-called "color revolution."[20] They fear that the West aspires to use advances in information communication technologies and influence, including through non-governmental organizations, to topple the Russian government.

But they also perceive opportunity—to utilize non-military means to deter and defeat U.S. and Western strategies. Some experts link these opportunities to President Putin's call in 2006 to out-think adversaries using asymmetric and cost-effective methods.[21]

Reflecting trends in Russian strategic thought, Russian Chief of the General Staff Valeriy Gerasimov noted in 2013 that information confrontation is the only means of conflict that is used across each phase of the conflict continuum.[22] Gerasimov further noted that information confrontation is both a non-military and military measure, and he emphasized that the ratio of non-military to military measures is 4:1 during the initial phase of conflict operations as well as in the phase of crisis.

Russian military practice under Gerasimov's leadership reflects this theoretical approach to information confrontation across each phase of the conflict continuum, judging from remarks by other senior Russian military officials, including General Alexander Dvornikov, former commander of Russia's Southern Military District and of Russian Armed Forces in Syria. Commenting in 2018 on his perception of Western involvement in conflicts in the Balkans, Iraq, Libya, Tunisia, Syria and Ukraine, Dvornikov noted the increased use and effectiveness of non-military means of conflict in pursuing the complete submission of the enemy to one's will rather than his physical destruction.[23] Dvornikov also emphasized that Russia has studied this history and applied insights to Russian military operations in Syria.

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[20] Valeriy Gerasimov, "Po opytu Syrii [Lessons from Syria]," *Voenno-promyshlenniy kurer* 9, no. 624 (2016) p. 4.
[21] Vladimir Putin, Message to the Federal Assembly of the Russian Federation (2006). http://kremlin.ru/events/president/transcripts/23577.
[22] Valeriy Gerasimov, "Tsennost nauki v predvidenii [The Value of Science Lies in Prediction]," *Voenno-promyshlenniy kuryer* 8, no. 476 (2013).
[23] Alexander Dvornikov, "Staby dlya novykh voin [Staffs for New Wars]," *Voenno-promyshlenniy kurer* 28, no. 741 (2018).

Today, Russia seeks to wage information confrontation across each phase of conflict (peacetime, crisis, and war) and at the local, regional, and global levels. Russia's Foreign Policy Concept (hereafter "the Concept") released in March 2023 provides a recent authoritative overview of this aspect of Moscow's information confrontation strategy.[24] Building upon the previous Concept from 2016, the 2023 Concept outlines a strategy for promoting Moscow's views globally as well as in specific regions and countries.

Globally, Moscow promotes a revisionist approach to the current rules-based international order. It seeks to accelerate a transition away from the perceived existing U.S.-led unipolar order to a multipolar order in which Russia and like-minded "friendly" countries have increased influence. Harkening back to the concepts of "great powers" and collective security established during the Vienna Conference after Napoleon's defeat in the Fatherland War of 1812, Russia aspires to be one of several centers of power in a new multipolar world order, and it seeks only equal access and balanced dialogue in the information space.

At the regional and local levels, Moscow emphasizes narratives that support a global transition towards multipolarity and resonate with sentiments in specific regions and countries. For example, the 2023 Concept includes a non-geographical regional section entitled "The Islamic World" that emphasizes wide-ranging perspectives for the "Islamic civilization" as a self-sufficient center in the future multipolar world order. In the regional section entitled "The Eurasian Continent," the 2023 Concept declares China and India as two sovereign global centers of strength and development on the Eurasian continent that are pursuing approaches that fundamentally coincide with Russia's approaches to the future world order and resolution of key global issues.

The core elements of this strategy are summarized in Table 1 below.

[24] Russian Federation, Foreign Policy Concept of the Russian Federation (2023). https://www.mid.ru/ru/foreign_policy/official_documents/1860586. Accessed January 3, 2024.

Table 1: Defining Red Success in Information Confrontation

	Peacetime	Crisis	War
Local	▪ The resolve of key NATO allies and partners to defend their interests is weakened	▪ A security environment that is permissive for military action ▪ Increased aversion among key NATO allies and partners to the costs and risks of confrontation	▪ NATO's political resolve and decision-making capacity impaired by fear of rising social and political costs ▪ Reflexive control strategy results in decisions by some key NATO leaders to break with alliance strategy seek de-escalation
Regional	▪ "Win without fighting" by sowing divisions among NATO allies that prove crippling	▪ Regional tensions exacerbated by frequent discussion in regional institutions and media of Russian perspectives, capabilities, and intentions	▪ NATO leaders choose not to intervene in a local war or not to escalate in an ongoing regional war ▪ International political coalition opposed to NATO gains new, more influential members
Global	▪ A more multipolar world that is also more constraining to the exercise of U.S. power ▪ New institutions that compete with Western-led institutions	▪ Russia not isolated politically ▪ Sympathetic discussion of Russian perspectives in international institutions and global media	▪ NATO is deterred from escalating a regional war to a "global war" ▪ Broad international neutrality ▪ Increased partnerships with key global powers

In sum, the threat to NATO posed by Russia's information confrontation strategy is multi-dimensional and potentially crippling to an Alliance whose core functions depend on the political resolve of the people and their leaders. It rises above the nuisance value because it presents the possibility that the political resolve will not be mustered within the Alliance to do what is necessary militarily in response to a provocation. The perception that this may be so will undermine the credibility of the Alliance's threat to act—the very action at the core of the Alliance's deterrence strategy.

In considering threats to the Alliance in the cognitive dimension, it is important also to account for China. Whether China poses a clear and present danger to the Alliance is much in debate within the Alliance. NATO's new Strategic Concept called China a "systemic challenge." But there should be no debate about China's ongoing efforts to shape the information environment to its advantage with a strategy that, like Russia's, differentiates the various opportunities in peacetime, crisis, and war and at the local, regional, and global levels. China is already polluting the transatlantic information ecosystem with propaganda against the AUKUS trilateral security partnership and the increased participation of Australia, Japan, South Korea, and New Zealand in the two NATO summits held since Russia's full-scale invasion of Ukraine.[25] There should also be no debate about the role of information confrontation in the new Chinese way of ("intelligentized") war emphasizing (1) human-machine interfaces to gain battlefield advantages, (2) subversion of enemy decision-making, and (3) the enabling values of advanced AI and biotechnologies.

How Should NATO Respond?

[25] Wang Qi, "AUKUS nuke submarine deal a threat to global security, intl NPT regime: report," *The Global Times*) (August 3, 2023), https://www.globaltimes.cn/page/202308/1295648.shtml (accessed January 3, 2024); Yang Sheng and Fan Anqi, "China warns NATO against destabilizing Asia-Pacific," *The Global Times* (July 12, 2023), https://www.globaltimes.cn/page/202307/1294249.shtml (accessed January 3, 2024).

In responding to these challenges, the Alliance appears to have pursued an incremental, get-started strategy. Rather than catalog and assess those actions here, this paper draws on the preceding threat analysis to set a collection of first principles to guide NATO's next steps.

First, the Alliance's overall approach should be more competitive than it has been. NATO's approach to the cognitive dimension must align with its high-level commitments to strengthen its deterrence and defense posture and to create new strategic advantages while creating strategic dilemmas for its potential adversaries. NATO must out-compete those potential adversaries in a long-term process. This requires a discussion of goals and what this competition can reasonably be expected to achieve—the subject of the closing section of this paper.

Second, NATO must adapt at both the operational and strategic levels. Operationally, this implies adaptations of tactics and technology to get inside the enemy's OODA-loop. Strategically, this implies both defense and offense (that is, information protection and information confrontation strategies of NATO's own). This requires increased capacity at the national and Alliance levels.

Third, at the strategic level, NATO must disaggregate the challenges across the conflict continuum and across the local, regional, and global levels. A complex challenge requires a holistic approach.

Fourth, NATO needs a technology development strategy to support its approach to competition and conflict in the cognitive domain. Russia and China have interesting models worthy of study.

Fifth, NATO needs to prepare for the long term. Competition will likely prove enduring, just as efforts in war to shape decisionmaking are inherent. Toward this end, NATO's net assessment process should pay periodic attention to this problem set.

Sixth, NATO would benefit from improved situational awareness and situational understanding on this matter. There should be broader understanding in NATO and among capitals of how Russia and China are competing to gain cognitive advantages and to subvert allied decision-making across the phases and levels of conflict. This effort should involve increased engagement with expertise across NATO, the European Union, and the Indo-Pacific. NATO headquarters can develop better connections with its Centres of Excellence (CoE), in particular the CoE for Strategic Communications in Riga and the CoE for Cooperative Cyber Defence in Tallinn. It can also increase engagement with joint NATO-EU institutions like the European CoE for Countering Hybrid Threats in Helsinki, as well as institutions with similar expertise in the Indo-Pacific, such as at the Australian Strategic Policy Institute.

What Can Competition Accomplish?

If NATO embraces long-term competition as the right framework for focusing its efforts to meet the new challenges of cognitive warfare, it will come to the question of what goal to set. What is

it competing for? In the debate, there are two common answers: To gain superiority. To win. Both fall short.

Superiority is an achievable goal in some dimensions of cognitive competition but not others. In warfare development, advantages can be built and sustained in situational awareness, rapid analysis, and net assessments. In the battle for hearts and minds, however, it may be possible to counter adversary narratives and undermine their coercive strategies, but it is not possible to eliminate the vulnerabilities of open societies or limit freedoms of speech, press, and assembly in the name of ideological warfare.

Victory is even less helpful as a goal. It implies that competition is not an enduring feature; in fact, it is inherent to an anarchical international system. "Victory" also lacks specificity of a kind to guide supporting activities.

Instead, NATO should focus on achieving more practical goals. These should align with the different requirements of success in peacetime, crisis, and war and in the local, regional, and global levels. These are set out in Table 2 below.

Table 2: Defining Blue Success in Cognitive Warfare Competition

	Peacetime	Crisis	War
Local	▪ The resolve of key protagonists in NATO is maintained despite attempted coercion by adversary ▪ Adversary judges escalation to be too costly and risky	▪ Alliance resolve and cohesion are maintained despite heightened risk, increased coercion ▪ Adversary is deterred because of its concern about unacceptable risk	▪ Resolve and cohesion are maintained despite costs and rising risks ▪ Adversary is deterred from further escalation and seeks de-escalation
Regional	▪ NATO develops and sustains a coherent peacetime strategy to defeat enemy's efforts to "win without fighting"		▪ NATO out-competes the challenger in the OODA-loop
Global	▪ NATO opinion is not isolated from the balance of world opinion ▪ Adversary's agenda is seen as self-serving and dangerous	▪ International political support for NATO continues	▪ Information Initiative is NATO's ▪ Broad international coalition supports NATO goals

Conclusions

Recall the two opening questions: Is the "cognitive" element of warfare something new, different, and essential that requires a coherent, sustained, and new response of the Alliance? Or is it something the Alliance can and should address with existing approaches?

No, the cognitive dimension of conflict is not new. But it is different, given the new ways of war of Russia and China, which include a significant cognitive dimension across the conflict continuum and the novel application of emerging technologies. Yes, the cognitive dimension is essential to an Alliance that depends on the resolve of its publics and leaders to respond militarily if provoked.

In responding to this challenge, the Alliance's existing approach appears to be incremental and ad hoc and not very strategic. Its next steps must be guided by a set of first principles. Greater coherence is both necessary and possible but requires that the Alliance elevate long-term competition as the guiding concept. It requires also that the Alliance set aside superiority or dominance at the strategic level as the guiding principle.

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