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The Coming Storm of Autonomous War Robots and the West's Dangerous Phobias

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EXECUTIVE SUMMARY: The war in Ukraine is acting as a super-accelerator in the development of low-cost, low-tech, mass-produced robotic military systems – robot armies, in other words - by actors with little financial or technological ability. One of the biggest questions weighing on the future global and regional balance of power is who will be the first to link these robot armies to artificial intelligence, which would allow them to operate autonomously. The West is possessed by phobias and obsessions that hinder it from adopting such systems. By contrast, forces that place a strong emphasis on the development of asymmetric capabilities – including both state and non-state actors hostile to the West – have absolutely no such inhibitions, creating a dangerous potential new reality.

Totems and taboos in the history of warfare

The war in Ukraine has shattered notions of "traditional" military power, yet many armed forces around the globe insist on remaining stubbornly attached to antiquated military technologies and methodologies. This blindness to an unprecedented new military reality is not unique in human history. It has occurred before, sometimes with dramatic consequences.

The belief that new military technologies and methodologies will permanently and irrevocably replace the old, and therefore never need updating or

superseding, is wrong. Moreover, in some cases there is not just stagnation but a deliberate bucking of the historical current. This can arise out of a desire to maintain a social, political and military status quo so the privileges of various elites are not affected – but it can also occur simply because a society's obsessions and phobias prevent its acceptance of the new reality. This was the case of the Mukluks in Egypt, but the most typical case was the ban on firearms in Japan.

A massive ban on firearms was imposed in Japan at the beginning of the seventeenth century. This was done because firearms undermined the sovereignty of the central government and the prominent role of the samurais in the country's social structure. Samurais derived their social and political status from their fighting skills with melee weapons – skills they spent their whole lives acquiring. Firearms, by contrast, gave any peasant, after only a short period of training, the ability to kill a samurai with ease. The new weapons thus threatened the country's social and political establishment.

Other factors also played a role in the prohibition of firearms at that time. The sword had an aesthetic grace and a symbolic function compared to what was perceived as the ungainly appearance of firearms. Firearms required clumsy and ugly movements to wield, in contrast to the elegant and harmonious movements required by the sword and spear. Eastern forms of warfare depended heavily on hereditary traditions that were entirely absent in the case of firearms. Also, there was a strong reaction against foreign influences during the seventeenth century, and firearms were considered by the Japanese to be just such an unwelcome intrusion.

The aesthetic dimension of weapons and combat methodologies might make Western audiences laugh, but it has played a role in matters of war in Europe, as Professor John Lynn argues in the "Aesthetics of War" chapter of his study entitled *Battle: A History of Combat and Culture*. And let no one think these concerns belong to the past. One of the main factors stopping "traditional" military organizations, including many of today's Western armies, from adopting large numbers of low-cost robotic systems in "mosaic" structures is the fetishistic obsession with combat platforms of great symbolic and aesthetic importance, especially manned high-tech fighter aircraft like the F-35.

The coexistence of old and new applies not only to weapons systems and combat methodologies but to the forms of warfare themselves. In his study *A Philosophy of War*, political philosopher Alexander Moseley identifies the evolutionary stages of warfare – animal warfare, primitive warfare, civilized or political war, modern warfare, nuclear warfare and post-modern warfare – and claims that these forms coexist.

The Spaniards reject a weapon from the future

Newer military technology is not guaranteed to replace the older just because it is more effective. This truth applies even if the new technology is dramatically superior. In fact, it is in those cases where the strongest objections usually arise. In such instances, the military and political bureaucracies of the time are often simply unable to grasp the technology's capabilities.

A good example is the submarine Ictineo II, which was designed and built by the Spanish engineer Narcis Monturiol in 1864. In 1859, Monturiol built the Ictineo I, which took its name from the combination of the Greek words *ichthy*s (ιχθύς) and *naus* (ναυς). This vessel had many characteristics that appeared in much later designs, such as a system to reject carbon dioxide. However, its propulsion system relied on the muscle power of the crew. To solve this problem, Monturiol designed the *Ictineo II*, which had an air-independent propulsion system. (This means the combining of chemical substances produced both steam that drove the submarine's propeller and oxygen for the vessel's atmosphere.) Apart from the innovative propulsion system, the *Ictineo* II had a double hull and many other features that were subsequently incorporated into modern submarines.

No Spanish government agency had any interest in the Ictineo II and it met an inglorious end. Its inventor was forced to hand it over to his creditors and it was destroyed to be sold as scrap. Replicas of the two submarines are in the Naval Museum of Barcelona.

One wonders what might have happened if the Spanish bureaucrats had understood the dynamics of this ship, the design of which was as sophisticated as if it had been brought from the future by a time traveler. Consider what Spain might have accomplished had it invested in this submarine, developed it and "married" it with the torpedo that appeared a few years later. The naval battle in

the Manila Bay with the US Navy in the 1898 war might have had a different outcome, and the history of naval power and the role it played in shaping the global balance of power might have been entirely different.

We face just such a situation today. The war in Ukraine has greatly accelerated developments in the field of robotic systems, with the result that we are now facing a potential new geopolitical reality. **The swift and shocking development of low-cost, mass-produced robotic weapons systems is expected to change the international balance of power in the near future**, and the consequences of the new reality may be dramatic.

A coming of age in Ukraine

Military operations in Ukraine demonstrated the importance of robotic systems of all types. It has been shown that drones costing a few hundred dollars, based on commercially available technologies (COTS), deployed for both strike and reconnaissance missions can do the job as well or even better than expensive robotic aerial vehicles developed by big military companies. Furthermore, we have seen that such systems can be mass-produced by small companies or even by makeshift "family" artisanships using 3D printers and other cheap machinery. Finally, low-cost peripheral technologies like guidance and communications systems have been developed, mainly by Chinese companies. These systems can be purchased online by anyone and integrated into robotic aerial or ground vehicles or surface or submerged vessels. Thus, **just as World War I dramatically accelerated the development of aircraft, so the war in Ukraine is dramatically accelerating the development of low-cost, low-tech, mass-produced robotic systems**.

Robotic waves of mass destruction

These developments shape a potential new geostrategic reality. Military operations in Ukraine are but the spumes of the coming robotic wave. The cheap mass production of war robots, by anyone, makes it possible to produce “super-swarms” or “mega-swarms” consisting of hundreds, thousands, or even tens of thousands of robotic systems.

These systems **will no longer function as an artillery supplement but as a substitute for weapons of mass destruction that are able to create critical effects at the strategic, not just the tactical, level**. Cost and technology are no longer prohibitive for the creation of such robotic mega-armies, even by non-state actors with limited funds at their disposal. The only limitation on the development and effective operation of such torrents of war robots is that they would have to be "liberated" from their human masters, because in such numbers they could not be guided by humans. Thus, they would need to be equipped with artificial intelligence systems for automatic identification, detection and tracking of targets and autonomous decision-making to attack them. **The relevant technologies already exist and are both cheap and commercially available.**

Pizza delivery with artificial intelligence

In China, for years now, people have been able to buy things using "pay-with-your-face" applications on their mobile phones. One can easily see that in a similar way, a robotic system would be able to autonomously find, identify, track and attack targets. Also, recycled cell phone cameras can be used as sensors in attack drones and small projectiles of various configurations and types. Thus, organizations like Hezbollah will have the ability to construct massive armies of robotic systems – not to mention countries like Iran, North Korea, or Turkey, which can produce much larger quantities of low-cost systems and then offer them to proxies.

The big question – the answer to which will have great influence on the shaping of the geostrategic reality in the Middle East and worldwide – is who will be the first to "marry" large numbers of low-cost robotic strike systems with artificial intelligence that will permit them to function independent of human control. Who will be willing to adopt such technologies?

The answer is not good for the West.

From demonic gunpowder to demonic military robots

It is undeniable that for the time being and at least for some time into the future, the West has the lead in the field of weapons technologies. But this is not enough. The issue is what the West is willing to do with those technologies. The West

appears to be setting a mine in its own path regarding the use of advanced military technologies by demonizing robotic combat systems.

In the early days of gunpowder, the introduction of firearms caused a reaction not only in Japan but also in Europe. Many writers, such as Miguel de Cervantes and Shakespeare, strongly opposed their use, accusing them of increasing the brutality of warfare as well as allowing lowly foot soldiers to easily kill noble knights. The Chinese and the Muslims were alternately blamed for the discovery of gunpowder, while some Protestant writers attributed the "devilish" invention to the dark figure of Berthold Swartz, a German Franciscan monk and alchemist.

In addition, for a long time, neither scientists nor soldiers could understand or psychologically accept the concept of firing a gun and almost simultaneously destroying a target a great distance away. Thus, they treated firearms in a metaphysical way and attributed to them demonic properties. For example, when a rifleman of the early gunpowder era succeeded in hitting a target with three shots in succession, his success was attributed to the help of the devil. He was sent on a pilgrimage to purge his control by demonic forces. Many great figures of the time, including Martin Luther, argued that cannons and arquebuses were products of Satan.

These notions are dangerously similar to today's concerns, which are religious in essence, about the use of autonomous robotic warfare systems. Consider, for example, the declaration by a thousand scientists a few years ago in which the famous astrophysicist Stephen Hawking participated. According to that document, the use of autonomous war robots is "the greatest existential threat" to humanity. Some of the scientists who signed the declaration characterized the use of autonomous war robots as "summoning demons".

The ”man-god” and his phobias

In this writer's view, the explanation for this excessive concern lies at the core of modern Western civilization. As Cambridge professor John Gray points out in his book *Straw Dogs*, the humanism of the West evolved into a kind of religion that took the place of the banished God. In a way, Man now considers himself a god, thus creating the idol (*Weltbild*) of the *man-god* to which Dostoyevsky refers in his

book *The Possessed*. The magic wand of this self-proclaimed god is an irrational conception of "Science", the supposed possibilities of which know no bounds.

Thus, fears were born that the deified Man could use his new powers in a self-destructive way by creating creatures that would turn against him. These fears, and the belief in the omnipotence of Science, gave birth to a series of striking literary works, starting with *Frankenstein* by Mary Shelley and continuing through *The Island of Dr. Moreau* by H. G. Wells and Philip K. Dick's *Second Variety*. **The same fears and metaphysical beliefs, camouflaged by "scientific" understanding, are now trying to prevent the development of robotic warfare systems.** And they are very likely to succeed.

The robotic revolution of the Chinese war machine

Here lies the critical point. As Columbia professor and senior advisor for innovation at the US State Department Alec Ross writes in his study *The Industries of the Future,* **at a time when the West is struggling with its fears and obsessions, non-Western actors with no such cultural anxieties or inhibitions are rapidly advancing in their development of autonomous robotic systems**. The most notable example is China, which, long before the Ukraine War and the dramatic changes it brought about, planned to build no fewer than 41,800 military robotic aerial vehicles of various configurations by 2023 at a cost of about $10.5 billion. These estimates were reported in the Pentagon's 2015 annual report to Congress on China's military development. Today, new developments are likely to have dramatically increased that number.

The result will be to shift the tide of military power even further to the East, further weakening the Western powers and neutralizing whatever technological advantage they enjoy today.

However, the prime candidates for the adoption of massive, low-cost robotic armies are countries as well as non-state actors that place great emphasis on the development of asymmetric combat capabilities. Forces that fit this description include Iran's Revolutionary Guards Corps (IRGC), the Ansar Allah organization in Yemen (better known as the Houthis), and Hezbollah.

Commercially available technologies (COTS) enable the creation of robotic aerial vehicles by almost anyone. Thus, **the possibility arises that even non-state actors with little technological capability could either develop, or procure from willing countries, large numbers of robotic systems equipped with artificial intelligence. These systems would give those actors combat capabilities superior to the seemingly much more powerful and technologically advanced systems of their rivals, if those rivals remain locked in "traditional" expensive options**.

We have to start looking right now for antidotes to these robotic floods, which may appear on the battlefield a lot faster than we thought just a few years ago.

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